

Sizewell C Project
Combustion Activity Permit Application
Appendix C: Air Emission Risk Assessment

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APPENDIX C: AIR EMISSION RISK ASSESSMENT

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1 EXECUTIVE SUMMARY

1.1 Purpose

The purpose of this report is to provide supporting information to the environmental permit application for a construction combustion activity at the Sizewell C Limited (hereafter referred to as Sizewell C Ltd.) Main Development Site (MDS) (which excludes some associated development (AD) areas). The site is located on the Suffolk coast, to the north-east of the town of Leiston. During the construction phase of the MDS, generating equipment with an aggregated rated input in excess of 50 megawatts thermal (MWth) is expected to be operated. This Air Emissions Risk Assessment (AERA) forms part of the combustion activity application.

1.2 Scope

The assessment uses detailed dispersion modelling to predict the impact of combustion emissions from diesel generators and non-road mobile machinery (NRMM) and to quantify their impact on human and ecological receptors. Due to the project stage, the expected size and number of plant and their associated running hours have been based on industry experience, including Hinkley Point C (HPC). The main construction period during which diesel-powered generators are expected to be operated is from 2024 until the first quarter of 2027; from that point the site will be predominately powered via adoption of a 132-kilovolt substation. Due to the uncertainty, a worst-reasonable case approach has been taken.

The air concentrations have been predicted using the Atmospheric Dispersion Modelling System (ADMS 6) with results presented in tabular form and as contours of ground level concentrations on a background map of the area. The assessment considers short and long-term effects in relation to the Air Quality Standards (AQS) set in legislation and in United Kingdom (UK) and international guidance. The pollutants covered by the assessment are oxides of nitrogen (NO_x and NO₂), ammonia (NH₃), carbon monoxide (CO), sulphur dioxide (SO₂) and particulate matter (PM₁₀ and PM_{2.5}).

The main assessment presents the reasonable worst-case scenario for the peak construction period:

- A total of capacity of 82.4MWth of hybrid diesel generators operating on site, including the use of static package substation generators, mobile crane and lighting generators and static AD generators servicing activities related to Sizewell C Ltd. that fall within the permit boundary or are in the vicinity of the identified sensitive receptors but are not part of the main construction of the power station. The generators are expected to operate for 5400 hours per year, to reflect working hours and bank holiday closures.

Additional scenarios were modelled considering different MWth generator capacity on site ranging between 82.4MWth and 123.3MWth, including scenarios with no hybrid use as well as scenarios covering the early works generators for 2024 and 2025. These scenarios do not form part of the main report that presents the reasonable worst case scenario only and are presented in Appendix D.

1.3 Summary of conclusions

In summary, the findings of the assessment are as follows:

At human receptors:

- There are no exceedances predicted of the UK air quality objectives for all pollutants and averaging periods considered in this assessment. The predicted increase in ambient air pollutant concentrations at human receptors screens out as insignificant based on the Environmental Agency criteria for assessing air emissions for an environmental permit application.

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At ecological receptors:

- All impacts modelled at local designated sites screen out as insignificant.
- There are no exceedances of annual and daily mean NO_x and annual mean SO₂ critical levels at all national and international sites. The predicted increase in concentration screens out as insignificant according to the Environment Agency (EA) screening criteria. Impacts from annual NH₃ emissions screen out as insignificant for receptors E1 (Alde-Ore & Butley Estuaries) and E3 (Orfordness-Shingle Street). Impacts on annual mean NH₃ do not screen as insignificant at receptors E2 (Minsmere-Walberswick Heaths and Marshes), E4 (Sandlings), E5 (Sizewell Marshes) and E6 (Leiston – Aldeburgh).
- For national and international sites nitrogen deposition screens out as insignificant at receptors E1, E3, and E6. Acid deposition screens out as insignificant at all sensitive habitats.

1.4 Definitions

Term / Abbreviation	Definition
µg/m ³	Microgrammes per metre cubed
AADT	Annual Average Daily Traffic, A daily total traffic flow (24-hrs), expressed as a mean daily flow across all 365 days of the year
ACA	Ancillary Construction Area
AD	Associated Development
ADMS	Atmospheric Dispersion Modelling System
AERA	Air Emissions Risk Assessment
APIS	Air Pollution Information System
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQO	Air Quality Objective
AQS	Air Quality Standard
CERC	Cambridge Environmental Research Consultants
CL	Critical Load
CO	Carbon Monoxide
CoCP	Code of Construction Practice
CRoW Act	Countryside Rights of Way Act
CWS	County Wildlife Site
DCO	Development Consent Order
Defra	Department for Environment, Food and Rural Affairs
Dust	Dust comprises particles typically in the size range 1-75 micrometres (µm) in aerodynamic diameter and is created through the action of crushing and abrasive forces on materials
EA	Environment Agency
EALs	Environmental Assessment Levels
EDRMS	Electronic Document and Records Management System
EQS	Environmental Quality Standards

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Term / Abbreviation	Definition
ER	Emissions Rates
ESC	East Suffolk Council
EU	European Union
HPC	Hinkley Point C
HRA	Habitats Regulations Assessment
IED	Industrial Emissions Directive
LAQM	Local Air Quality Management
MCA	Main Construction Area
MDS	Main Development Site
MWe	Megawatts Electric
MWth	Megawatts Thermal
NAEI	National Atmospheric Emissions Inventory
NH ₃	Ammonia
NO	Nitrogen Monoxide
NO ₂	Nitrogen Dioxide
NO _x	Oxides of nitrogen (NO _x = NO + NO ₂)
NRMM	Non-Road Mobile Machinery
NWP	Numerical Weather Prediction
O ₃	Ozone
OS	Ordnance Survey
PC	Process Contribution
PCM	Pollution Climate Mapping
PEC	Predicted Environmental Contribution
PM ₁₀	Particulate matter with an aerodynamic diameter of less than 10 micrometres
PM _{2.5}	Particulate matter with an aerodynamic diameter of less than 2.5 micrometres
SAC	Special Area of Conservation
SCR	Selective Catalytic Reduction
SID	Supporting Information Document
SO ₂	Sulphur Dioxide
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
TCA	Temporary Construction Area
UK	United Kingdom
VOCs	Volatile Organic Compounds
WHO	World Health Organisation

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1.5 References

Ref	Title	Location	Document No.
1	Local Air Quality Management Technical Guidance LAQM.TG (22) (2022) Defra.	https://laqm.defra.gov.uk/wp-content/uploads/2022/08/LAQM-TG22-August-22-v1.0.pdf	
2	Interim Baseline Survey Report (2023) NNB Generation Company (SZC) Limited.	Teamcenter	101260005
3	Code of Construction Practice (2021) NNB Generation Company (SZC) Limited.	https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010012/EN010012-008183-Carly%20Vince%20-%20Other-%20Code%20of%20Construction%20Practice%20(clean%20version).pdf	PINs Reference Number: EN010012
4	2023 Air Quality Annual Status Report (ASR) (2023) East Suffolk Council.	https://www.eastsuffolk.gov.uk/assets/Environment/Environmental-Protection/Air-Quality/East-Suffolk-Council-ASR-2023.pdf	
5	Air Pollution Information System.	https://www.apis.ac.uk/	
6	Air emissions risk assessment for your environmental permit (2016) Environment Agency.	https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit	
7	European Union Withdrawal Act 2018 (2020) H.M. Government.	https://www.legislation.gov.uk/eu-legislation-and-uk-law	

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2 INTRODUCTION

2.1 Background, aims and objectives

This Air Emissions Risk Assessment (AERA) has been undertaken to support the combustion activities environmental permit application for the construction of the Sizewell C Ltd. nuclear power station.

It is expected that, during the construction phase of Sizewell C Ltd. MDS, generating equipment with an aggregated rated input over 50 MWth will be operated, and therefore, Sizewell C Ltd. requires an environmental permit for the power generation equipment on site. This is based on the assumption that, during the early stages of the Sizewell C Ltd. construction phase, site electrification will be limited, and diesel generators will be employed, together with NRMM.

Pre-application discussions with the EA confirmed that an environmental permit for the construction combustion activities is required. The environmental permit will be made under Schedule 1, Part 2, Chapter 1, Section 1.1 of the Environmental Permitting (England and Wales) Regulations 2016 (as amended):

Part A(1) (a) Burning any fuel in an appliance with a rated thermal input of 50 or more megawatts (MW).

It should be noted that the environmental permit will regulate emissions from the diesel generators only. NRMM and road emissions are not regulated under the Environmental Permitting Regulations. However, the contribution from NRMM and road emissions from the haul road within the site boundary will be considered as part of the assessment as these will contribute to the overall air quality. In other words, the process contribution (PC) is the contribution from the generators only, but the predicted environmental concentration (PEC) is the sum of the contributions from the generators, the NRMM, on-site road emissions and off-site (background) sources.

The site, for the purposes of this AERA, is divided into eight working areas to reflect the varying level of construction activities, energy requirements and in turn associated combustion emissions. The scope of the assessment is limited to combustion emissions from the eight working areas. Consistent with the EA AERA guidance, for combustion sources fired on diesel, the principal releases of NO_x, SO₂, CO, NH₃ and PM₁₀ and PM_{2.5} are considered. NH₃ from vehicles was also considered as this contributes to total nitrogen deposition.

The objective of the study is to assess the impact of NO_x, NO₂, SO₂, NH₃, CO, and PM emissions against the relevant air quality standards/objectives (AQS/O) for the protection of human health and ecological receptors for the peak construction period.

This report presents the approach, detailed methodology and findings of the AERA.

2.2 Site description

The site is located on the Suffolk coast, to the north-east of the town of Leiston and within the administrative boundary of East Suffolk Council (ESC). The site is located to the north and north-west of the existing Sizewell A and B power station complex.

The site consists mainly of agricultural land with ecological and human receptors in the vicinity. For the purposes of this assessment, the site has been divided into eight working areas that require varying degrees of construction and associated emissions. A list of the working areas and a description of the closest relevant receptors is presented in Table 2-1. The location of the working areas is shown on Figure 2-1. Specific receptor locations are discussed in further detail in section 3.5.2.

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Table 2-1 Working Areas

Working Area	Description of Receptors
Main Construction Area (MCA)	<p>Closest residential receptor: Rosery Cottages (860m to the south) and Sizewell Village (1km to the south)</p> <p>Sizewell Marshes Site of Special Scientific Interest (SSSI): adjacent to the west and north</p> <p>Minsmere - Walberswick Ramsar: 180m to the north</p> <p>Southern North Sea Special Area of Conservation (SAC): 140m to the east</p> <p>Outer Thames Estuary Special Protection Area (SPA): 140m to the east</p> <p>Sizewell Levels and Associated County Wildlife Site (CWS): 200m to the north</p>
MCA perimeter	<p>Closest residential receptor: Rosery Cottages (840m to the south) and Sizewell Village (960m to the south)</p> <p>Sizewell Marshes SSSI: adjacent to the west</p> <p>Minsmere - Walberswick Ramsar: adjacent to the north</p> <p>Southern North SAC: adjacent to the east</p>
Temporary Construction Area (TCA) compounds south-east	<p>Closest residential receptor: Ash Wood Cottage (340m to the south)</p> <p>Sizewell Marshes SSSI: adjacent to the south and east</p> <p>Minsmere - Walberswick Ramsar: 50m to the east</p> <p>Southern North SAC: adjacent to the east</p> <p>Outer Thames Estuary SPA: adjacent to the east</p> <p>Sizewell Levels and Associated Areas CWS: within the working area boundary</p>
TCA compounds south-west	<p>Closest residential receptor: 1,2 and 3 The Common (260m to the west)</p> <p>Sizewell Marshes SSSI: 150m to the southwest</p>
TCA compounds north-east	<p>Closest residential receptor: Ash Wood Cottage (100m to the north)</p> <p>Sizewell Marshes SSSI: adjacent to the east, west and southwest</p> <p>Minsmere - Walberswick Ramsar: 100m to the east</p> <p>Sizewell Levels and Associated Areas CWS and Southern Minsmere Levels CWS: within the working area boundary</p>
TCA stockpiles	<p>Closest residential receptor: Plantation Cottages (adjacent to the north), The Round House (within the boundary) and Old Abbey Farm (adjacent to the north)</p> <p>Sizewell Marshes SSSI: 350m to the north and 100m to the southeast</p>
Ancillary Construction Area (ACA)	<p>Closest residential receptor: Leiston (adjacent to the west)</p> <p>Sizewell Marshes SSSI: 330m to the north</p> <p>Sandlings SPA/Leiston Aldeburgh SSSI: 580m to the southeast</p> <p>Sizewell Marshes SSSI: 450m to the southeast</p>
TCA rail	<p>Closest residential receptor: Old Abbey Farm (130m to the west)</p> <p>Sizewell Marshes SSSI: 310m to the west</p>

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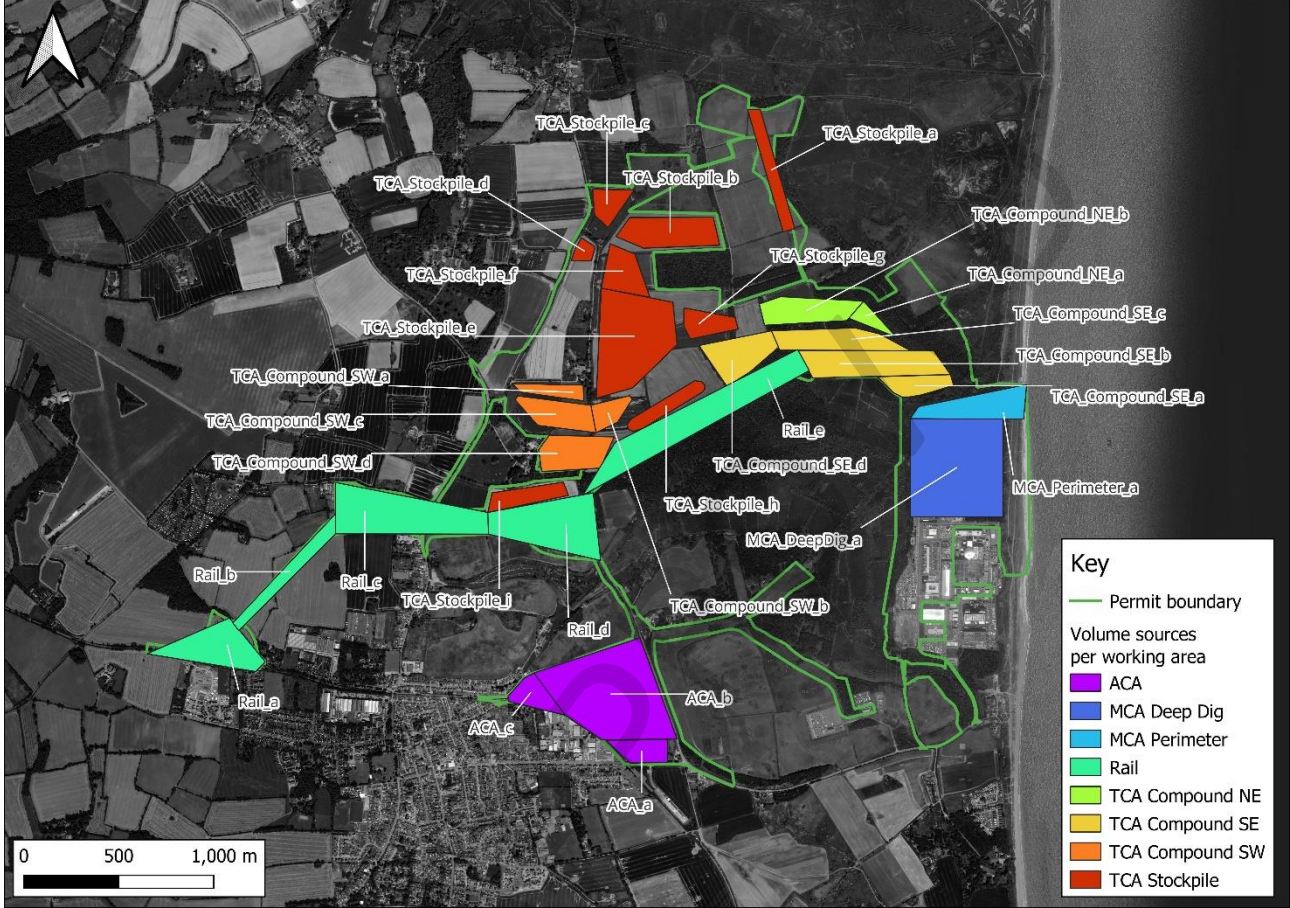
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The closest Air Quality Management Area (AQMA) is approximately 10km to the southwest of the site, at Stratford St. Andrew, and will not therefore experience significant impacts from the proposed installation.

Figure 2-1 Site boundary and modelled working areas



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3 ASSESSMENT METHODOLOGY

3.1 Dispersion model setup

The model used in this assessment was the latest version of the ADMS 6 atmospheric dispersion model developed by Cambridge Environmental Research Consultants (CERC). The model was used to predict the ground level concentration of pollutants emitted to atmosphere from the proposed installation, which for the purpose of the construction activity permit is the SZC Ltd redline boundary. ADMS 6 is an advanced dispersion model used to model the air quality impact of industrial installations. The model has been used extensively throughout the UK for regulatory compliance purposes and is accepted as an appropriate air quality modelling tool by the EA and local authorities.

ADMS 6 parameterises stability and turbulence in the atmospheric boundary layer by the Monin-Obukhov length and the boundary layer depth. This approach allows the vertical structure of the boundary layer to be more accurately defined than by the stability classification methods of earlier dispersion models. In ADMS, the concentration distribution follows a symmetrical Gaussian profile in the vertical and crosswind directions in neutral and stable conditions. However, the vertical profile in convective conditions follows a skewed Gaussian distribution to take account of the inhomogeneous nature of the vertical velocity distribution in the convective boundary layer.

A number of complex modules, including the effects of complex terrain, percentile concentrations and the calculation of long-term averages of hourly mean concentrations are included in the model.

A range of input parameters is required including, among others, data describing the local area, meteorological measurements and emissions data.

3.2 Combustion emissions and construction scenarios

3.2.1 Static generators

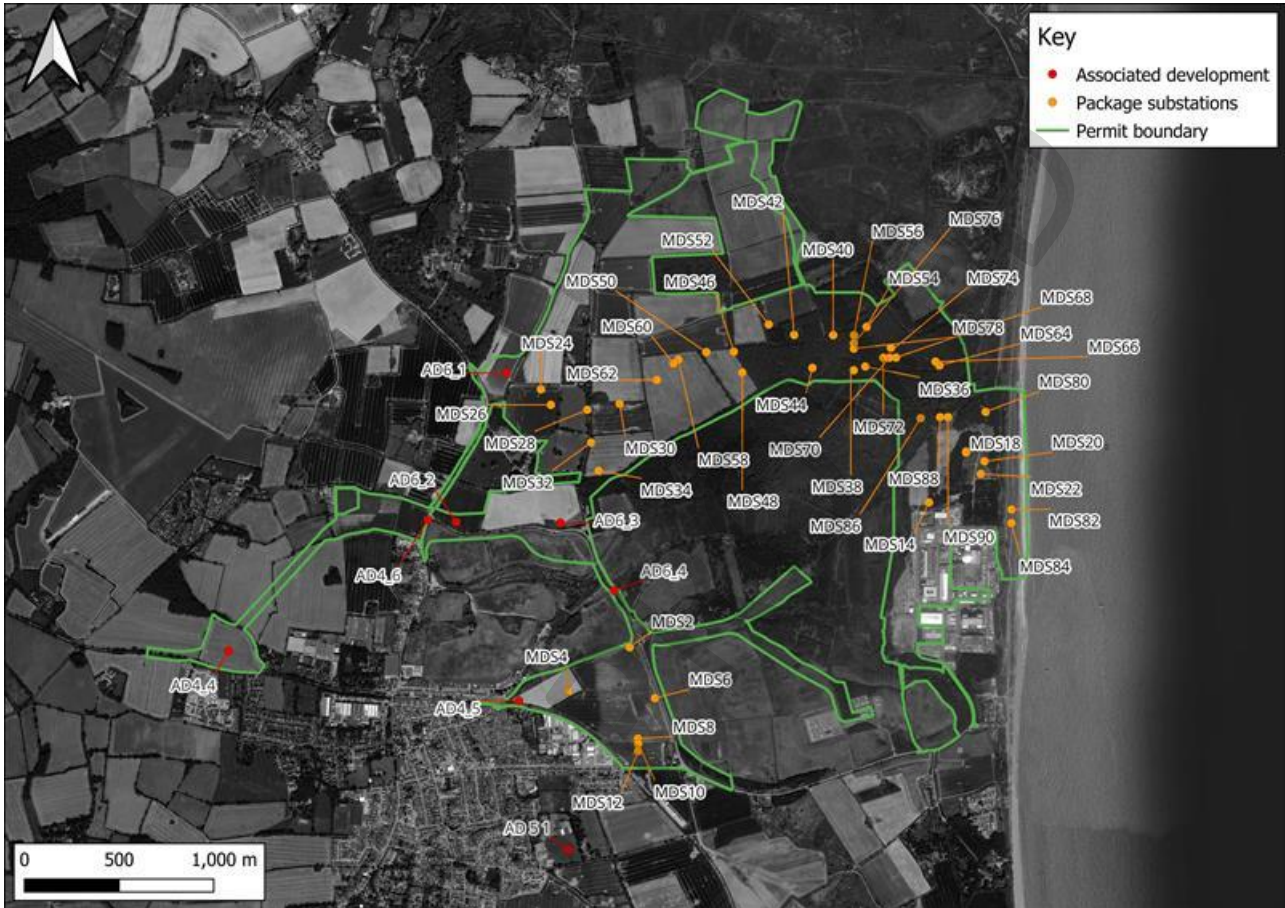
Due to the project stage, the expected size and number of plant and their associated running hours have been based on industry experience, including HPC. Due to the uncertainty, a reasonable worst-case approach has been taken.

The modelled generator locations are shown in

Figure 3-1. It should be noted that the assessment also considered emissions from Associated Development 5_1 (AD5), although it is outside the permit boundary, due to its proximity to identified sensitive receptors. AD5 has not been included in the permit application because it does not support the construction activity.

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Figure 3-1 Peak construction modelled generator locations



The emission factors (g/kWh) have been derived from the NRMM Stage V emissions limits for pollutants NO_x, CO, and PM (PM₁₀/PM_{2.5}). Stage V emission factors depend on the net power rating (MWe) of the generator and a sample is shown in Table 3-1. Full details of the model inputs and emission rates are provided electronically (Appendix A).

Emissions of SO₂ for the generators were calculated based on the MWth capacity of each generator and an assumed 0.1% fuel sulphur content.

Stage V equipment over 100kVA (200MWth, assuming 40% efficiency and a power factor of 0.8) require Selective Catalytic Reduction (SCR). Therefore, NH₃ emissions were considered, assuming a concentration of 5ppm, in line with anticipated ammonia slip from diesel generators with SCR that can vary from 2ppm – 5ppm.

Table 3-1 Sample of emissions rates (ER) for modelled generators

Generator size (KVA)	Rated power (kWe)	Rated power (kWth)	Stage V	ER NO _x (g/s)	ER PM (g/s)	ER CO (g/s)	ER SO ₂ (g/s)	ER NH ₃ (g/s)
1200	960	2400	P > 560	8.93 x 10 ⁻²	4.67 x 10 ⁻³	0.467	5.68 x 10 ⁻²	5.00 x 10 ⁻³
6.2	5	12	P < 8	1.17 x 10 ⁻²	6.22 10 ⁻⁴	1.24 x 10 ⁻⁴	6.22 10x ⁻⁴	n/a

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3.2.2 Mobile diesel generators

Due to the project stage, the expected generators have been based on industry experience, including HPC. Therefore, as is common practice in modelling construction sites, they have been modelled as volume sources covering the working areas. Volume sources have been selected due to the proximity of the receptors, and volume sources are preferred to area sources when receptors are this close to the source. Note, a sensitivity test of volume versus area sources is presented in Appendix E. Emissions for the mobile generators have been modelled with a depth of 3m, apart from the MCA deep dig which has been modelled at 1.5m as this area is intended to be excavated during construction to accommodate the main power plant. Emissions are spread uniformly across each working area. This is a typical approach, in line with the approach taken for similar construction site air quality assessments, such as for HPC.

Where available, emission rates have been estimated based on actual emissions for each type of generator. Information regarding the generators, including the power rating that is used to derive emissions, has been provided by the contractor. The modelled mobile generator locations are shown in Figure 2-1.

3.2.3 Non-Road Mobile Machinery

During the peak construction period, NRMM will be used across all the working areas. NRMM emissions are not regulated by the combustion activity environmental permit but are considered in this assessment in order to calculate their contribution to the total concentrations of pollutants. The volume sources for the NRMM were taken from the latest parameter plan provided and reflect the same working areas as the modelled mobile generators for lighting and cranes. The modelled NRMM volume sources are shown in Figure 2-1.

According to the latest information provided by the supplier of NRMM, they are only currently using Stage V equipment, and therefore this assessment assumes that all NRMM will operate at the upper limit of emission rates allowed within this stage. The number and type of NRMM in use per working area is consistent with the Development Consent Order (DCO) application for the construction phase and has been modelled accordingly. No adjustments are made to the operating hours of NRMM for the short term modelled concentrations (i.e., it is assumed that the equipment will be operating 8760 hours per year, to ensure a level of conservatism), and all equipment is assumed to be operating at 100% power load.

3.2.4 Roads

During the peak construction period there will be a decrease in annual average daily traffic flows (AADT) on the local road network although there will be increased traffic within the permit boundary on the haul roads and access roads. AADT emissions are not regulated by the combustion activity environmental permit but are considered in this assessment to assess the impact of ammonia (NH₃) which contributes to total nitrogen deposition. During the peak construction period there will be a decrease in AADT related to the Sizewell C Project. The reduction in traffic flows on the local roads is expected due to the use of the Park and Ride facilities by site staff and workers. Therefore, for the peak construction period covered in the main assessment only the haul road traffic was considered to ensure a conservative approach. However, for the early works (2024 and 2025) scenarios, reported in Appendix C, traffic associated with construction on the local network was considered.

The modelled road network used in this assessment is shown in Figure 3-2. As noted above, only the haul road was included in the peak construction models.

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Figure 3-2 Modelled Road Network



3.2.5 Modelled scenario

The modelled scenario (hereafter referred to as scenario 1) included a total of capacity of 82.4 MWth of hybrid diesel generators operating on site, including static package substation generators capable of hybrid use, mobile crane and lighting generators and static AD generators that fall within the permit boundary or are in the vicinity of the identified sensitive receptors. The generators are expected to operate for 5400 hours per year, to reflect working hours and bank holiday closures and annual emissions were adjusted accordingly. Daily concentrations were prorated to reflect a 12-hour swift as the model was run assuming 24 hour operation for the generators and NRMM equipment. The use of hybrids was reflected using a .fac file¹, in which the hybrid package substations were assumed not to operate in the evenings. This scenario has excluded the standby package substation generators.

Additional scenarios were modelled considering different MWth of capacity of generators on site ranging between 82.4MWth and 123.3MWth, including scenarios with no hybrid use as well as scenarios covering the early works generators for 2024 and 2025. These scenarios do not form part of the main report that presents the most likely scenario and are presented in Appendix C and D.

Details of the additional modelled scenarios were included in the model inventory calculations spreadsheet provided to the EA AQMAU for sign off.

¹ A .fac file is used in the model to account for diurnal changes in emissions for a modelled source.

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3.3 Meteorology

For meteorological data to be suitable for dispersion modelling purposes, a number of meteorological parameters need to be measured on an hourly basis. These parameters include wind speed, wind direction, cloud cover and temperature. There are only a limited number of sites where the required meteorological measurements are made. The year of meteorological data that is used for a modelling assessment can also have a significant effect on determined ground level concentrations.

Wattisham meteorological station is the closest station to the site, however, it is located approximately 45km to the southwest and it is not a coastal location. Therefore, Numerical Weather Prediction (NWP) meteorological data has been commissioned specifically for the location of the site and provided by the UK Met Office. NWP data are widely applied and accepted by regulators, particularly for locations where no suitable meteorological stations are present. Further detail and graphical descriptions of the NWP wind roses are given in Appendix G (Figure G-1). Wattisham meteorological data was used in the roads model to align with the DCO previously submitted and is also shown in Figure G-2. A sensitivity test using surface the Wattisham station for the generator modelling is presented in Appendix E.

3.4 Surface characteristics

The predominant surface characteristics and land use in a model domain have an important influence in determining turbulent fluxes and, hence, the stability of the boundary layer and atmospheric dispersion. Factors pertinent to this determination are detailed below.

3.4.1 Surface roughness

The roughness length, z_0 , represents the aerodynamic effects of surface friction and is defined as the height at which the extrapolated surface layer wind speed profile tends to zero. This value is an important parameter used by meteorological pre-processors to interpret the vertical profile of wind speed and estimate friction velocities which are, in turn, used to define heat and momentum fluxes and, consequently, the degree of turbulent mixing. The surface roughness length is related to the height of surface elements; typically, the surface roughness length is approximately 10% of the height of the main surface features. Thus, it follows that surface roughness is higher in urban and congested areas than in rural and open areas.

The area immediately around the site is a mixture of beach, industrial, woodland and open/coastal land. In view of this, a variable roughness length has been applied across the modelling domain. A sensitivity test using surface roughness of 0.5m is presented in Appendix E.

3.4.2 Surface energy budget

One of the key factors governing the generation of convective turbulence is the magnitude of the surface sensible heat flux. This, in turn, is a factor of the incoming solar radiation. However, not all solar radiation arriving at the Earth's surface is available to be emitted back to atmosphere in the form of sensible heat. By adopting a surface energy budget approach, the effects of surface albedo and the latent heat flux can be taken into account.

The surface albedo is a measure of the fraction of incoming short-wave solar radiation reflected by the Earth's surface. This parameter is dependent upon surface characteristics and varies throughout the year.

As snow covered ground is only likely to be present for a small fraction of the year, the surface albedo of 0.23 for non-snow-covered ground advocated by Oke (1987) has been used whilst the model default α value of 1.0 has also been retained, these are the default parameters used across the majority of air quality modelling studies in the UK.

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3.4.3 Terrain

There are no significant terrain features in the area immediately surrounding the site and so the consideration of complex terrain data is not included within the model. Within the Sizewell C (SZC) construction site itself, however, the relative ground heights will vary due to the working platform depths of some aspects of the construction. Following a conservative approach, all emissions will be considered at ground level, with minimum vertical momentum.

3.4.4 Buildings

The effect of buildings on dispersion can only be modelled for point sources and given that the modelled sources (aggregated emissions from diesel generators and NRMM) are parameterised in the form of volume sources, the effect of buildings on dispersion is not explicitly modelled. Instead, the effect of buildings will be incorporated through the choice of a suitable surface roughness length.

3.5 Modelled domain and receptors

3.5.1 Modelled domain

A cartesian grid centred on the ecological receptors has been modelled, with a grid resolution of 200m, to assess the impact of atmospheric emissions from the site on local air quality. This resolution selected ensures it captures the maximum process contribution from site emissions. The modelled domain is shown in Figure 3-3.

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Figure 3-3 Modelled Domain



3.5.2 Modelled receptors

The assessment considers the impact on human and ecological sensitive receptors.

Human receptors

In terms of locations that are sensitive to pollutants emitted from exhaust emissions, these include places where members of the public are likely to be regularly present over the period of time prescribed in the AQ5 (as given in Table 4-1). For instance, on a footpath where exposure will be transient (for the duration of passage along that path) comparison with a short-term standard (i.e. 15-minute mean or 1-hour mean) may be relevant. At a school or adjacent to a private dwelling, where exposure may be for longer periods, comparison with a long-term standard (such as 24-hour mean or annual mean) may be more appropriate. Box 1.1 of LAQM.TG(22)¹ provides examples of the locations where the Air Quality Objectives (AQO) should/should not apply.

Thirty receptors representative of locations of relevant public exposure were identified at which pollution concentrations were predicted and reflect the receptors used in the DCO application. These are given in

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Table 3-2 and Figure 3-4.

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Table 3-2 Human receptor locations used in the assessment

Receptor ID	Coordinates (based on OS Grid reference, m)		Description
	X	Y	
R1	644900	264415	Abbey Cottage
R2	645894	265825	Abbey Farm
R3	644452	263699	Abbey Road, Leiston
R4	646111	265045	Ash Wood Cottages
R5	645930	262455	Barley Rise
R6	645990	263625	Common Cottages
R7	645815	262550	Crown Lodge
R8	645258	266157	Eastbridge
R9	645924	262133	Grimseys Lane
R10	645532	262366	Heath View
R11	646290	263450	Keepers Cottage
R12	645513	262525	King George's Avenue
R13	644454	264203	Leiston Abbey
R14	645627	263180	Lovers Lane/Sandy Lane Junction
R15	645065	264190	Old Abbey Farm/Care Home
R16	645655	265741	Plantation Cottages
R17	644973	265166	Potters Farm
R18	644632	265194	Potters Street
R19	647013	262932	Rosery Cottages
R20	645420	265240	Roundhouse
R21	645653	262380	Sizewell Sports and Social Club
R22	647480	262850	Sizewell Village
R23	645817	263292	The Studio
R24	644994	262988	Valley Road North
R25	644908	262909	Valley Road South
R26	647155	262420	Home Farm
R27	647210	264570	Footpath
R28	647600	264000	Beach
R29	645030	264080	Old Abbey Farm
R30	646290	262350	Halfway cottages
Note			All human receptors were modelled at a height of 1.5m

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Figure 3-4 Human receptors



Ecological receptors

The EA's 'Air emissions risk assessment for your environmental permit' guidance² (part of the 'Risk assessments for specific activities: environmental permits') requires detailed dispersion modelling to be carried out based on local sensitive receptors. As the combustion activity may result in a thermal input exceeding 50 MW, following the EA AER guidance, it is considered to be a 'large' site. With regard to ecological receptors the guidance states:

"You must consider the impact of your site on protected conservation areas....

...Check if there are any of the following within 10 km of your site (within 15 km if you operate a large electric power station or refinery):

Special protection areas (SPAs);

Special areas of conservation (SACs); and

Ramsar sites (protected wetlands).

Check if there are any of the following within 2 km of your site:

Sites of special scientific interest (SSSIs); and

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Local nature sites (ancient woods, local wildlife sites and national and local nature reserves), LNR”.

Table 3-3 and Figure 3-5 present the relevant ecological sites for this assessment. Receptors E1 to E6 were modelled using a grid of 100m resolution to ensure the maximum concentrations are identified.

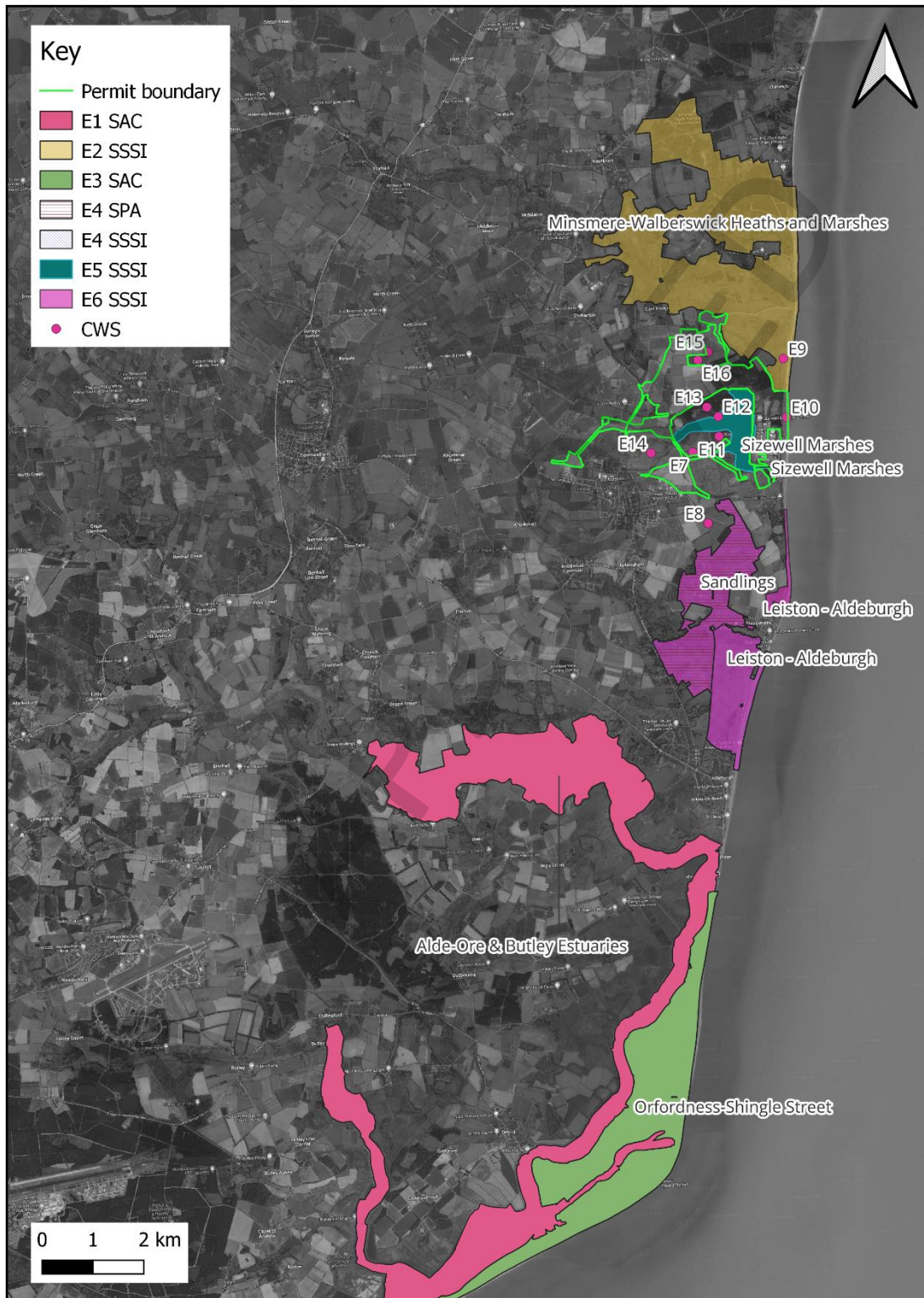
Table 3-3 Ecological Receptors Included in this Assessment

Receptor ID	Description	Designation	Distance to nearest source (km)(c)
E1	Alde-Ore and Butley Estuaries	SPA/ SAC/ Ramsar	5.39
E2	Minsmere-Walberswick Heaths and Marshes	SAC/ SPA/ Ramsar/ SSSI	0.39
E3	Orfordness-Shingle Street	SAC	8.05
E4	Sandlings	SPA	0.77
E5	Sizewell Marshes	SSSI	0.40
E6	Leiston – Aldeburgh	SSSI	2.62
E7	Leiston Common Country Wildlife Site	CWS	0.22
E8	Aldringham to Aldeburgh Disused Railway	CWS	0.70
E9	Dower House	CWS	0.60
E10	Suffolk Shingles Beaches	CWS	0.00
E11	Reckham Pits	CWS	0.69
E12	Sizewell Levels and Associated Areas	CWS	0.37
E13	Southern Minsmere Levels – Dunwich Forest & Kenton Hill	CWS	0.10
E14	Aldhurst Farm habitat creation scheme(a)	CWS	0.32
E15	Marsh harrier/reptile habitat within EDF Energy estate(b)	CWS	0.06
E16	Ash Wood priority habitat	CWS	0.12
<p>Notes</p> <p>(a) Created as part of compensation scheme for the loss of land at Sizewell Marshes</p> <p>(b) Permanent marsh barrier habitat exists on land at the northern edge of the EDF Energy Estate and is being further improved</p> <p>(c) Distance to nearest source is inclusive of volume sources</p> <p>All ecological receptors were modelled at 0m, i.e., ground-level</p>			

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Figure 3-5 The Location of the Ecological Receptors Included in this Assessment

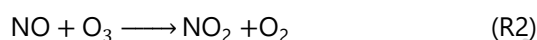
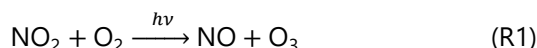


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3.6 Conversion of NO_x to NO₂

Emissions of NO_x from combustion processes are predominantly in the form of nitric oxide (NO). Excess oxygen in the combustion gases and further atmospheric reactions cause the oxidation of NO to nitrogen dioxide (NO₂). NO_x chemistry in the lower troposphere is strongly interlinked in a complex chain of reactions involving volatile organic compounds (VOCs) and ozone (O₃). Two of the key reactions interlinking NO and NO₂ are detailed below:



where *hν* is used to represent a photon of light energy (i.e. sunlight).

Taken together, reactions R1 and R2 produce no net change in O₃ concentrations, and NO and NO₂ adjust to establish a near steady state reaction (photo-equilibrium). However, the presence of VOCs and CO in the atmosphere offer an alternative production route of NO₂ for photolysis, allowing O₃ concentrations to increase during the day with a subsequent decrease in the NO₂:NO_x ratio.

However, at night, the photolysis of NO₂ ceases, allowing reaction R2 to promote the production of NO₂, at the expense of O₃, with a corresponding increase in the NO₂:NO_x ratio.

Near to an emission source of NO, the result is a net increase in the rate of reaction R2, suppressing O₃ concentrations immediately downwind of the source, and increasing further downwind as the concentrations of NO begin to stabilise to typical background levels (Gillani and Pliem 1996).

Given the complex nature of NO_x chemistry, the EA's Air Quality Modelling and Assessment Unit (AQMAU) have adopted a pragmatic, risk-based approach in determining the conversion rate of NO to NO₂ which dispersion model practitioners can use in their detailed assessments (EA, no date). AQMAU guidance advises that the source term should be modelled as NO_x (as NO₂) and then suggests a tiered approach when considering ambient NO₂:NO_x ratios:

- **Screening scenario:** 50% and 100% of the modelled NO_x process contributions should be used for short-term and long-term average concentration, respectively. That is, 50% of the predicted NO_x concentrations should be assumed to be NO₂ for short-term assessments and 100% of the predicted NO_x concentrations should be assumed to be NO₂ for long-term assessments;
- **Worst case scenario:** 35% and 70% of the modelled NO_x process contributions should be used for short-term and long-term average concentration, respectively. That is, 35% of the predicted NO_x concentrations should be assumed to be NO₂ for short-term assessments and 70% of the predicted NO_x concentrations should be assumed to be NO₂ for long-term assessments; and
- **Case specific scenario:** Operators are asked to justify their use of percentages lower than 35% for short-term and 70% for long-term assessments in their application reports.

In line with the AQMAU guidance, this assessment will apply the 'worst case scenario' approach in determining the conversion rate of NO to NO₂ as a robust assumption for emissions of NO_x.

3.7 Special treatment

Specialised model treatments, for short-term (puff) releases, coastal models, fluctuations or photochemistry were not used in this assessment.

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3.8 Air quality monitoring and background concentrations

3.8.1 Site specific monitoring

As part of the DCO, an updated 3-month baseline survey of dust, NO₂, NO_x, PM₁₀ and PM_{2.5} levels was undertaken³. The survey commenced in October 2023 and followed the approach outlined in the Code of Construction Practice (CoCP)⁴. The aim of the survey was to determine baseline conditions prior to commencement of construction on the MDS and ADs within the permit boundary.

3.8.2 Local monitoring data

East Suffolk Council operates one continuous monitoring station within their administrative area, located in the AQMA at Woodbridge, 24km southwest of the site. Given its distance from the site and the location of the station within the AQMA, concentrations recorded at the continuous monitor are not considered representative of ambient conditions at the site and relevant receptors and the data is therefore not considered in this assessment.

In addition, ESC operated 80 NO₂ diffusion tube sites during 2022. The closest tubes are located at roadside locations in Leiston, which is approximately 2km to the southwest of the site. The NO₂ concentration recorded in Leiston was 10.0 – 19.3 µg m⁻³ in 2022, which is within the relevant air quality standard/objective (AQS/O).

The data has been extracted from the air quality Annual Status Report 2023 for East Suffolk⁵.

3.8.3 Defra mapped background concentrations

Defra maintains a nationwide model (the pollution climate mapping (PCM) model) of existing and future background air quality concentrations at a 1km grid square resolution. The data sets include annual average concentration estimates for NO_x, NO₂, PM₁₀, PM_{2.5}, CO and SO₂. The PCM model is semi-empirical in nature: it uses data from the National Atmospheric Emissions Inventory (NAEI) to model the concentrations of pollutants at the centroid of each 1km grid square but then calibrates these concentrations in relation to actual monitoring data before projecting forwards.

Annual mean background data from the PCM model is detailed in Table 3-4. Concentrations of NO_x, NO₂, PM₁₀, PM_{2.5} were extracted from the 2023 and 2028 maps and concentrations of SO₂ and CO have been extracted from the 2001 maps. The maximum and minimum concentration within the study area, for the grid squares encompassing the site’s redline boundary and relevant sensitive receptors, is presented. NH₃ background concentrations were taken from the Air Pollution Information System (APIS) portal using a mid-year of 2020 (2019 – 2021), which is the latest set of data available.

Table 3-4 Mapped annual mean background concentrations for 2023

	NO _x (µg m ⁻³)	NO ₂ (µg m ⁻³)	CO (µg m ⁻³)	PM ₁₀ (µg m ⁻³)	PM _{2.5} (µg m ⁻³)	SO ₂ (µg m ⁻³)	NH ₃ (µg m ⁻³)
max	43.2	26.4	210.0	17.5	10.2	23.6	1.6
min	7.0	5.6	199.0	11.0	7.3	2.1	1.3

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Table 3-5 Mapped annual mean background concentrations for 2028

	NO _x (µg m ⁻³)	NO ₂ (µg m ⁻³)	CO (µg m ⁻³)	PM ₁₀ (µg m ⁻³)	PM _{2.5} (µg m ⁻³)	SO ₂ (µg m ⁻³)	NH ₃ (µg m ⁻³)
max	41.9	25.8	210.0	17.1	9.9	23.6	1.6
min	6.3	4.9	199.0	0.7	7.1	2.1	1.3

3.8.4 Background concentrations used in the assessment

Annual mean background concentrations of NO_x, NO₂, CO, PM₁₀, PM_{2.5} and SO₂ have been based on Defra’s background map values, presented in Table 3-4 and Table 3-5Table 2-1, for all pollutants. Concentrations are comfortably below the relevant objectives and, as expected, annual mean background concentrations of NO₂ are below the concentrations recorded at roadside locations in Leiston. The annual average process contribution is added to the annual average background concentration to give a total concentration at each receptor location. This total concentration can then be compared against the relevant AQS/O and the likelihood of an exceedance determined.

Modelled background concentrations and nitrogen/acid deposition for the ecological receptors were extracted from the Air Pollution Information System portal⁶.

It is not technically rigorous to add predicted short-term or percentile concentrations to ambient background concentrations since peak contributions from different sources would not necessarily coincide at the same time or at the same location. Without hourly ambient background monitoring data available it is difficult to make an assessment against the achievement or otherwise of the short-term assessment criteria. For the current assessment, conservative short-term ambient levels (1-hr and 8-hr mean) will be derived by applying a factor of two to the annual mean background data as per the recommendation in EA Guidance².

3.9 Risk Assessment

This AERA follows the guidance methodology stated in the EA guidance *Air emissions risk assessment for your environmental permit*. For each substance released into the air, detailed dispersion modelling was undertaken. The PC and PEC for each substance were compared with the relevant environmental standards and summarised in Section 5.

The impacts of emissions to air are assessed against the Air Quality Standards Regulations 2010 Limit Values and Target Values; UK Air Quality Strategy Objectives; Environmental Assessment Levels; non-statutory Critical Loads. Further details of the environmental standards used for this AERA are provided in Section 4.

3.10 Sensitivity analysis and model uncertainty

3.10.1 Sensitivity analysis

Wherever possible, this AERA has used information provided by SZC. Data gaps have been addressed using realistic worst-case assumptions, which will exaggerate the impact of the emissions on the surrounding area, including emissions, operational hours, and ambient concentrations. In addition, sensitivity test scenarios have been run to analyse the impact of specific variables, including the use of AERMOD model code (as outlined in Appendix E) and the use of Wattisham meteorological data.

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3.10.2 Model uncertainty

Process emissions were modelled under expected operation using the standard steady state algorithms in ADMS to determine the impact on sensitive receptors. In order to model atmospheric dispersion using standard Gaussian methods, the following assumptions, considered standard approach for a model of this type, have been made and limitations accepted:

- Conservation of mass - the entire mass of emitted pollutant remains in the atmosphere and no allowance is made for loss due to chemical reactions or deposition processes (although the standard Gaussian model can be modified to include such processes, as is the case with ADMS). Portions of the plume reaching the ground are assumed to be dispersed back away from the ground by turbulent eddies (eddy reflection);
- Steady state emissions - emission rates are assumed to be constant and continuous over the time averaging period of interest; and
- Steady state meteorology - no variations in wind speed, direction or turbulent profiles occur during transport from the source to the receptor. This assumption is reasonable within a few kilometres of a source but may not be valid for receptor distances in the order of tens of kilometres. For example, for a receptor 50 km from a source and with a wind speed of 5 m/s it will take nearly three hours for the plume to travel this distance during which time many different processes may change (e.g., the sun may rise or set, and clouds may form or dissipate affecting the turbulent profiles). For this reason, Gaussian models are practically limited to predicting concentrations within ~20 km of a source.

This AERA has incorporated several reasonable worst-case assumptions, as described above, which will result in an overestimation of the predicted ground level concentrations from the process. As a result of these reasonable worst-case assumptions, the predicted results should be considered the upper limit of model potential impacts for any scenario. Actual ground level concentrations are expected to be lower than those reported in this AERA and, in some cases, significantly lower.

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4 ASSESSMENT CRITERIA

4.1 Relevant legislation and guidance

European Union (EU) legislation which applied directly or indirectly to the UK before 11.00 p.m. on 31 December 2020 has been retained in UK law as a form of domestic legislation known as 'retained EU legislation'. This is set out in sections 2 and 3 of the European Union (Withdrawal) Act 2018 (c. 16)⁷. Section 4 of the 2018 Act ensures that any remaining EU rights and obligations, including directly effective rights within EU treaties, continue to be recognised and available in domestic law after the UK's exit from the EU.

4.1.1 EU legislation

Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe

Directive 2008/50/EC (the 'Directive'), which came into force in June 2008, consolidates existing EU-wide air quality legislation (with the exception of Directive 2004/107/EC) and provides a new regulatory framework for PM_{2.5}.

The Directive sets limits, or target levels, for selected pollutants that are to be achieved by specific dates and details procedures EU Member States should take in assessing ambient air quality. The limit and target levels relate to concentrations in ambient air. At Article 2(1), the Directive defines ambient air as:

"...outdoor air in the troposphere, excluding workplaces as defined by Directive 89/654/EEC where provisions concerning health and safety at work apply and to which members of the public do not have regular access."

In accordance with Article 2(1), Annex III, Part A, paragraph 2 details locations where compliance with the limit values does not need to be assessed:

"Compliance with the limit values directed at the protection of human health shall not be assessed at the following locations:

- a) any locations situated within areas where members of the public do not have access and there is no fixed habitation;*
- b) in accordance with Article 2(1), on factory premises or at industrial installations to which all relevant provisions concerning health and safety at work apply; and*
- c) on the carriageway of roads; and on the central reservation of roads except where there is normally pedestrian access to the central reservation."*

4.1.2 UK legislation

The Air Quality Standards Regulations 2010

The Air Quality Standards Regulations 2010 (the 'Regulations') came into force on the 11 June 2010 and transpose Directive 2008/50/EC into UK legislation. The Directive's limit values are transposed into the Regulations as 'Air Quality Standards' (AQS) with attainment dates in line with the Directive.

These standards are legally binding concentrations of pollutants in the atmosphere which can broadly be taken to achieve a certain level of environmental quality. The standards are based on the assessment of the effects of each pollutant on human health including the effects of sensitive groups or on ecosystems.

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Similar to Directive 2008/50/EC, the Regulations define ambient air as;

"...outdoor air in the troposphere, excluding workplaces where members of the public do not have regular access."

with direction provided in Schedule 1, Part 1, Paragraph 2 as to where compliance with the AQS' does not need to be assessed:

"Compliance with the limit values directed at the protection of human health does not need to be assessed at the following locations:

- a) any location situated within areas where members of the public do not have access and there is no fixed habitation;
- b) on factory premises or at industrial locations to which all relevant provisions concerning health and safety at work apply; and
- c) on the carriageway of roads and on the central reservation of roads except where there is normally pedestrian access to the central reservation."

The Air Quality Strategy for England, Scotland, Wales and Northern Ireland

The 2007 Air Quality Strategy for England, Scotland Wales and Northern Ireland provides a framework for improving air quality at a national and local level and supersedes the previous strategy published in 2000.

Central to the Air Quality Strategy is health-based criteria for certain air pollutants; these criteria are based on medical and scientific reports on how and at what concentration each pollutant affects human health. The objectives derived from these criteria are policy targets often expressed as a maximum ambient concentration not to be exceeded, without exception or with a permitted number of exceedances, within a specified timescale. At paragraph 22 of the 2007 Air Quality Strategy, the point is made that the objectives are:

"...a statement of policy intentions or policy targets. As such, there is no legal requirement to meet these objectives except where they mirror any equivalent legally binding limit values..."

The AQOs, based on a selection of the objectives in the Air Quality Strategy, were incorporated into UK legislation through the Air Quality Regulations 2000, as amended.

Paragraph 4(2) of The Air Quality (England) Regulations 2000 states:

"The achievement or likely achievement of an air quality objective prescribed by paragraph (1) shall be determined by reference to the quality of air at locations –

- a) which are situated outside of buildings or other natural or man-made structures above or below ground; and*
- b) where members of the public are regularly present."*

Consequently, compliance with the AQOs should focus on areas where members of the general public are present over the entire duration of the concentration averaging period specific to the relevant objective.

The Environment Act 2021

The Environment Act 2021 presents the new environmental programme. It aims to improve air and water quality, tackle waste, increase recycling, halt the decline of species and improve the natural environment. The Act establishes legally binding duty to the government to bring two new targets in secondary legislation in October 2022. These include reducing the annual mean levels of PM_{2.5} and reducing public exposure to PM_{2.5} (as outlined above).

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

The regulations set out the new PM_{2.5} AQO that is to be met by 2040.

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The Environment Act 1995

Part IV of the Environment Act 1995 requires that local authorities periodically review air quality within their individual areas. This process of local air quality management (LAQM) is an integral part of delivering the government's AQOs.

To carry out an air quality review and assessment under the LAQM process, the government recommends a three-stage approach. This phased review process uses initial simple screening methods and progresses through to more detailed assessment methods of modelling and monitoring in areas identified to be at potential risk of exceeding the objectives in the Regulations.

Reviews and assessments of local air quality aim to identify areas where national policies to reduce vehicle and industrial emissions are unlikely to result in air quality meeting the government's air quality objectives by the required dates.

For the purposes of determining the focus of review and assessment, local authorities should have regard to those locations where members of the public are likely to be regularly present and are likely to be exposed over the averaging period of the objective.

Where the assessment indicates that some or all of the objectives may be potentially exceeded, the local authority has a duty to declare an AQMA. The declaration of an AQMA requires the local authority to implement an Air Quality Action Plan (AQAP) to reduce air pollution concentrations so that the required AQOs are met. As stated previously, there are no AQMAs within 10 km of the site.

4.1.3 Other Guideline Values

In the absence of statutory standards for the other prescribed substances that may be found in the emissions, there are several sources of applicable air quality guidelines.

Air Quality Guidelines for Europe, the World Health Organisation (WHO)

The aim of the WHO Air Quality Guidelines for Europe (WHO, 2000) is to provide a basis for protecting public health from adverse effects of air pollutants and to eliminate or reduce exposure to those pollutants that are known or likely to be hazardous to human health or well-being. These guidelines are intended to provide guidance and information to international, national and local authorities making risk management decisions, particularly in setting air quality standards.

Environmental Assessment Levels

The EA's *air emissions risk assessment for your environmental permit* guidance provides methods for quantifying the environmental impacts of emissions to all media. It contains long and short-term Environmental Assessment Levels (EALs) and Environmental Quality Standards (EQS) for releases to air derived from published UK and international sources. For the pollutants considered in this study, these EALs and EQS are equivalent to the AQS and AQOs set out in the Air Quality Strategy for England, Scotland Wales and Northern Ireland.

The guidance includes an additional EAL of relevance to this assessment, namely a limit of $75\mu\text{g}/\text{m}^3$ on daily mean NO_x at ecological receptors. This is based on guidance from the World Health Organization (WHO, 2000), which says:

“Experimental evidence exists that the CLE [critical level] decreases from around $200\mu\text{g}/\text{m}^3$ to $75\mu\text{g}/\text{m}^3$ when in combination with O_3 or SO_2 at or above their critical levels. In the knowledge that short-term episodes of elevated NO_x concentrations are generally combined with elevated concentrations of O_3 or SO_2 , $75\mu\text{g}/\text{m}^3$ is proposed for the 24 h mean.”

For local nature reserves, ancient woodlands and local wildlife sites the EA states:

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“If your emissions meet both of the following criteria they’re insignificant – you don’t need to assess them any further:

- *The short-term PC is less than 100% of the short-term environmental standard; and*
- *The long-term PC is less than 100% of the long-term environmental standard.*

You don’t need to calculate PEC for local nature sites. If your PC exceeds the screening criteria you need to do detailed modelling.”

4.2 Criteria appropriate to the assessment

4.2.1 Air Quality Standards, Objectives, Guidelines and Critical Levels

Error! Reference source not found. sets out the AQS and AQOs, published by Defra, and EALs, published by the EA, that are relevant to this AERA.

Table 4-1 Air Quality Standards, Objectives and Environmental Assessment Levels

Pollutant	AQS/AQO/EAL/Target value/WHO assessment level	Averaging period	Value (µg/m ³)
NO ₂ : Human receptors	AQS	Annual mean	40
	AQS	1-hour mean, not to be exceeded more than 18 times a year (equivalent of 99.79 th percentile)	200
NO _x : Ecological receptors	AQS	Annual mean	30
	Target value	Daily mean	75*
	WHO assessment level	Daily mean	200**
SO ₂ : Human receptors	EAL	15-minute, not to be exceeded more than 35 times per year (equivalent of 99.9 th percentile)	266
	AQS	1-hour, not to be exceeded more than 24 times per year (equivalent of 99.73 rd %ile)	350
	AQS	24-hour, not to be exceeded more than 3 times per year (equivalent of 99.18 th %ile)	125
SO ₂ : Ecological receptors	AQS	Annual mean	10***-20
CO	AQS	8-hour mean	10,000
	EAL	1-hour mean	30,000
PM ₁₀	AQS	Annual mean	40
	AQS	24-hour, not to be exceeded more than 35 times per year	50

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Pollutant	AQS/AQO/EAL/Target value/WHO assessment level	Averaging period	Value ($\mu\text{g}/\text{m}^3$)
		(equivalent of 90.4 th percentile)	
PM _{2.5}	AQS	Annual mean	20
NH ₃ : Human receptors	EAL	Annual mean	180
	EAL	1-hour mean	2,500
NH ₃ : Ecological receptors	AQS	Annual mean	1 ^{***} -3
Notes: * Adopted where O ₃ and SO ₂ are present above their critical levels. ** Adopted where O ₃ and SO ₂ are not present above their critical levels. *** Apply when lichens are present			

4.2.2 Critical loads relevant to the assessment

APIS contains information on applicable critical loads for various habitats and species.

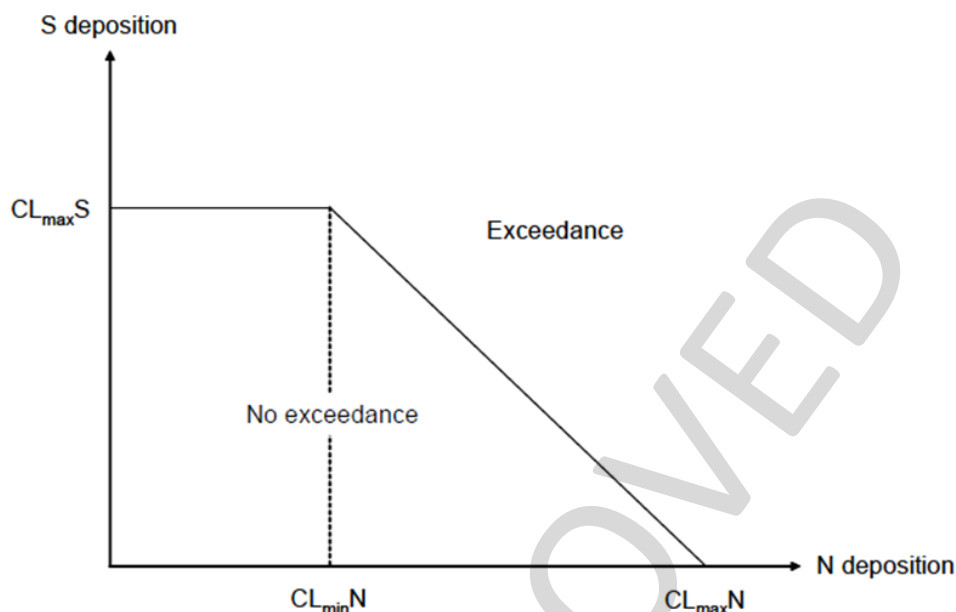
Eutrophication critical loads are given as a range and have units of kg N/ha/y. Generally, the lower end of the range should be used as a conservative assessment. The critical loads for acidification are more complicated, in that both the nitrogen and sulphur deposition fluxes must be considered at the same time. Therefore, a critical load function is specified for acidification, via the use of three critical load parameters:

- CL_{maxS} – the maximum critical load of sulphur, above which the deposition of sulphur alone would be considered to lead to an exceedance;
- CL_{minN} – a measure of the ability of a system to "consume" deposited nitrogen (e.g., via immobilisation and uptake of the deposited nitrogen); and
- CL_{maxN} – the maximum critical load of acidifying nitrogen, above which the deposition of nitrogen alone would be considered to lead to an exceedance.

These three quantities define the critical load function shown in Figure 4-1. The critical loads applied to this AERA are presented in the results tables.

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Figure 4-1 Schematic Critical Load Function for Acidity



Source: Environment Agency (2011)

4.2.3 Public exposure

Guidance from the UK Government and Devolved Administrations makes clear that exceedances of the health-based objectives should be assessed at outdoor locations where members of the general public are regularly present over the averaging time of the objective, and it excludes workplace exposure. Table 4-2 provides an indication of those locations that may or may not be relevant for each averaging period.

Table 4-2 Examples of where the Air Quality Objectives should apply for human receptors

Averaging period	Objectives should apply at:	Objectives should generally not apply at:
Annual mean	All locations where members of the public might be regularly exposed. Building facades of residential properties, schools, hospitals, care homes etc.	Building facades of offices or other places of work where members of the public do not have regular access. Hotels, unless people live there as their permanent residence. Gardens of residential properties.
24-hour mean and 8-hour mean	All locations where the annual mean objective would apply, together with hotels. Gardens of residential properties [†] .	Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term.
1-hour mean	All locations where the annual mean and 24 and 8-hour mean objectives would apply. Kerbside sites (e.g., pavements of busy shopping streets). Those parts of car parks, bus stations and railway stations etc. which are not fully enclosed, where the public might reasonably be expected to spend one hour or more. Any outdoor locations at which the public may be expected to spend one hour or longer.	Kerbside sites where the public would not be expected to have regular access.

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Averaging period	Objectives should apply at:	Objectives should generally not apply at:
15-minute mean	All locations where members of the public might reasonably be exposed for a period of 15-minutes or longer	
Note: † For gardens, such locations should represent parts of the garden where relevant public exposure is likely, for example where there is a seating or play areas. It is unlikely that relevant public exposure would occur at the extremities of the garden boundary, or in front gardens, although local judgement should always be applied.		

4.3 Significance criteria

The EA air emission risk assessment guidance sets out a series of criteria that can be used to screen out insignificant impacts. It should be noted that exceedances of the criteria does not equate to a significant impact.

The EA air emission risk assessment guidance provides criteria for screening out-source contributions in the context of environmental permit applications. This guidance suggests applicants first perform a screening assessment and, if the results of that do not meet the screening-out criteria, then perform a detailed modelling assessment.

This guidance also introduces the terms ‘process contribution’ (PC), meaning the concentration or deposition rate resulting from the development activities only, excluding other sources, and ‘predicted environmental concentration’ (PEC), meaning the total modelled concentration, equal to the PC plus the background contribution from all other sources. These terms are commonly used in air quality assessments, even where the term ‘process’ is not strictly accurate, and so are used in this assessment with ‘process’ referring to the Proposed Development. The term PEC is also used to describe total deposition rates.

For Human receptors and for Special Protection Areas (SPA), Special Areas of Conservation (SAC), Ramsar sites and Sites of Special Scientific Interest (SSSI), there is no need for further assessment if the screening calculation finds that:

Both the following are met:

- the short-term PC is less than 10% of the short-term AQO/S; and
- the long-term PC is less than 1% of the long-term AQO/S;

Or:

- the long-term PEC is less than 70% of the long-term AQO/S; and
- the short-term PC is less than 20% of the short term environmental standards minus twice the long term background concentration

For local nature sites (ancient woodland, local wildlife sites and national and local nature reserves, county wildlife sites), emissions are insignificant if:

- The short-term PC is less than 100% of the short-term AQO/S; and
- The long-term PC is less than 100% of the long-term AQO/S.

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5 IMPACT ASSESSMENT

The following sections present a summary of the results for realistic worst-case scenario (scenario 1) representing a reasonable worst-case scenario for construction activities.

5.1 Impacts on human receptors

Table 5-1 presents a summary of impacts at human receptors with the full results presented in Appendix D. There are no exceedances predicted for all pollutants and averaging periods considered in this AERA for the reasonable worst-case scenario.

Table 5-1 Summary of Impacts at Human Receptors

Pollutant	AQS/EAL ($\mu\text{g m}^{-3}$)	Receptor	Background ($\mu\text{g m}^{-3}$)	PC IED ($\mu\text{g m}^{-3}$)	PC Total ($\mu\text{g m}^{-3}$)	PEC	%PC IED of AQO/S	%PC Total of AQS	%PEC Total of AQS
NO ₂ Annual mean	40	R27	5.35	2.97	4.69	10.04	7.4%	11.7%	25.1%
NO ₂ Hourly mean	200	R28	10.71	28.01	36.29	47.00	14.0%	18.1%	23.5%
SO ₂ 15-min mean	266	R28	7.92	41.67	41.67	49.59	15.7%	15.7%	18.6%
SO ₂ Hourly mean	350	R28	7.92	34.22	34.22	42.14	9.8%	9.8%	12.0%
SO ₂ Daily mean	125	R27	3.96	15.54	15.54	19.50	12.4%	12.4%	15.6%
PM ₁₀ Annual mean	40	R27	12.22	0.21	0.27	12.48	0.5%	0.7%	31.2%
PM ₁₀ Daily mean	50	R27	12.22	0.66	0.81	13.03	1.3%	1.6%	26.1%
PM _{2.5} Annual mean	20	R27	7.58	0.21	0.26	7.84	0.5%	0.7%	19.6%
CO 1-hr mean	30,000	R27	418.00	770.67	1117.34	1535.34	2.6%	3.7%	5.1%
CO-8 hr	10,000	R28	418.00	414.66	528.39	946.39	4.1%	5.3%	9.5%
NH ₃ Annual	180	R28	1.30	0.34	0.36	1.66	0.2%	0.2%	0.9%
NH ₃ 1-hr	2500	R27	2.60	7.55	10.00	12.60	0.3%	0.4%	0.5%

5.2 Impacts on ecological receptors

Appendix D presents the full results (scenario 1) of the assessment of potential impacts on ecological receptors. In summary, impacts on local designations screen out as insignificant for all parameters. Regarding the national and international sites, the results are presented in Table 5-2. Please note that for deposition results two sets

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of outputs are presented. The IED results represent the location of maximum from the IED sources (i.e. generators) and TOTAL represents the location of maximum impacts from all modelled sources. Isoleths for nitrogen deposition and NH₃ are presented in Appendix F.

The results indicate there are no exceedances of annual and daily mean NO_x, and annual mean SO₂ critical levels at all national and international sites. Impacts can therefore be screened out as insignificant according to the EA screening criteria. Impacts from annual mean NH₃ emissions screen out as insignificant for receptors E1 and E3 as the PC Total is <1% of the relevant critical level/AQS. There are exceedances of the annual mean NH₃ critical level at receptors E2, E4, E5 and E6, and the PC Total is >1%.

Nitrogen deposition screens out as insignificant at receptor E1, E3 and E6 as the PC Total is <1 % of the relevant critical load. Where impacts on nitrogen deposition do not screen as insignificant, these impacts do not extend over the whole site and are limited to areas bordering the permit boundary. Acid deposition screens out as insignificant at all receptors. Isoleths for nitrogen deposition and NH₃ are presented in Appendix F.

No further analysis of the results pertaining to ecological impacts is presented in this AERA. Detailed ecological assessments of effects are provided in the Habitats Regulations Assessment (HRA) and Countryside Rights of Way (CROW) Act assessment provided in Appendix K of the Supporting Information Document (SID). These include analysis from an expert in biodiversity and are submitted as part of the permit application. In addition, a mitigation strategy (Appendix L of the SID) has been drafted to address the identified impacts above.

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Table 5-2 Summary of impacts at national and international sites (Impacts that do not screen out as either insignificant/not requiring further assessment are shown in bold)

Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
E1: Alde-Ore & Butley Estuaries										
NO _x Annual mean (µg m ⁻³)	30	6.51	0.05	0.01	0.00	0.06	6.57	0.2%	0.2%	21.9%
NO _x Daily mean (µg m ⁻³)	75	6.51	0.88	0.32	0.00	1.20	7.71	1.2%	1.6%	10.3%
SO ₂ Annual mean (µg m ⁻³)	20	2.16	0.02	0.00	0.00	0.02	2.19	0.1%	0.1%	10.9%
NH ₃ Annual mean (µg m ⁻³)	1	1.37	0.00	0.00	0.00	0.00	1.37	0.2%	0.3%	136.9%
Nitrogen deposition (IED) (kgN/ha/yr)	10	13.30	0.02	0.00	0.00	0.02	13.32	0.2%	0.2%	133.2%
Nitrogen deposition (Total) (kgN/ha/yr)	10	13.30	0.02	0.00	0.00	0.02	13.32	0.2%	0.2%	133.2%
Acid deposition (keq/ha/yr) (IED)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (keq/ha/yr) (Total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E2: Minsmere-Walberswick Heaths and Marshes										
NO _x Annual mean (µg m ⁻³)	30	6.75	4.27	2.08	0.05	6.40	13.15	14.2%	21.3%	43.8%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Daily mean (µg m ⁻³)	75	6.75	15.27	7.78	0.00	23.05	29.80	20.4%	30.7%	39.7%
SO ₂ Annual mean (µg m ⁻³)	20	3.96	2.30	0.00	0.00	2.30	6.26	11.5%	11.5%	31.3%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.23	0.07	0.00	0.30	1.57	23.3%	30.5%	156.9%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.37	1.64	0.58	0.01	2.23	14.59	32.8%	44.5%	291.9%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.37	1.54	1.18	0.00	2.72	15.09	30.9%	54.5%	301.8%
Acid deposition (keq/ha/yr) (IED)	0.892/1.392 /0.5	0.88N/0.09S	0.117N/0.27 OS			0.159N/0.27 OS	1.039N/0.36 OS	No exceedance	No exceedance	100.6
Acid deposition (keq/ha/yr) (Total)	0.892/1.392 /0.5	0.88N/0.09S	0.110N/0.24 OS			0.194N/0.24 OS	1.077N/0.33 OS	No exceedance	No exceedance	101.2
E3: Orfordness-Shingle Street										
NO _x Annual mean (µg m ⁻³)	30	6.33	0.04	0.01	0.00	0.05	6.38	0.1%	0.2%	21.3%
NO _x Daily mean (µg m ⁻³)	75	6.33	0.53	0.16	0.00	0.69	7.02	0.7%	0.9%	9.4%
SO ₂ Annual mean (µg m ⁻³)	20	2.37	0.02	0.00	0.00	0.02	2.39	0.1%	0.1%	12.0%
NH ₃ Annual mean (µg m ⁻³)	1	1.13	0.00	0.00	0.00	0.00	1.13	0.2%	0.2%	113.3%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (IED) (kgN/ha/yr)	5	11.32	0.01	0.00	0.00	0.02	11.34	0.3%	0.3%	226.8%
Nitrogen deposition (Total) (kgN/ha/yr)	5	11.32	0.01	0.00	0.00	0.02	11.34	0.3%	0.3%	226.8%
Acid deposition (keq/ha/yr) (IED)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (keq/ha/yr) (Total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E4: Sandlings										
NO _x Annual mean (µg m ⁻³)	30	6.79	0.32	0.08	0.00	0.40	7.19	1.1%	1.3%	24.0%
NO _x Daily mean (µg m ⁻³)	75	6.79	1.74	0.68	0.00	2.41	9.20	2.3%	3.2%	12.3%
SO ₂ Annual mean (µg m ⁻³)	20	2.71	0.13	0.00	0.00	0.13	2.84	0.7%	0.7%	14.2%
NH ₃ Annual mean (µg m ⁻³)	1	1.35	0.01	0.00	0.00	0.02	1.36	1.3%	1.6%	136.1%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.42	0.10	0.03	0.00	0.13	12.54	2.0%	2.5%	250.9%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.42	0.10	0.03	0.00	0.13	12.54	2.0%	2.5%	250.9%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Acid deposition (keq/ha/yr) (IED)	0.892/1.382 /0.49	0.88N/0.09S	0.007N/0.01 5S			0.008N/0.01 5S	0.888N/0.10 5S	No exceedance	No exceedance	21.5
Acid deposition (keq/ha/yr) (Total)	0.892/1.382 /0.49	0.88N/0.09S	0.007N/0.01 5S			0.008N/0.01 5S	0.895N/0.10 5S	No exceedance	No exceedance	72.5
E5: Sizewell Marshes										
NO _x Annual mean (µg m ⁻³)	30	6.62	2.28	1.01	0.03	3.32	9.94	7.6%	11.1%	33.1%
NO _x Daily mean (µg m ⁻³)	75	6.62	11.92	2.56	0.00	14.48	21.10	15.9%	19.3%	28.1%
SO ₂ Annual mean (µg m ⁻³)	20	2.73	1.23	0.00	0.00	1.23	3.96	6.1%	6.1%	19.8%
NH ₃ Annual mean (µg m ⁻³)	1	1.36	0.13	0.03	0.00	0.15	1.51	12.5%	15.3%	151.5%
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.71	0.88	0.22	0.00	1.09	13.81	5.8%	7.3%	92.1%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.71	0.85	0.29	0.00	1.14	13.85	5.7%	7.6%	92.4%
Acid deposition (keq/ha/yr) (IED)	0.366/4.506 /4.14	0.90N/0.09S	0.062N/0.13 2S			0.078N/0.13 2S	0.978N/0.22 2S	No exceedance	No exceedance	26.6
Acid deposition (keq/ha/yr) (Total)	0.366/4.506 /4.14	0.90N/0.09S	0.060N/0.14 5S			0.081N/0.14 5S	0.989N/0.23 5S	No exceedance	No exceedance	27.2
E6: Leiston – Aldeburgh										

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Annual mean (µg m ⁻³)	30	6.79	0.32	0.00	0.00	0.33	7.11	1.1%	1.1%	23.7%
NO _x Daily mean (µg m ⁻³)	75	6.70	1.83	0.66	0.00	2.50	9.20	2.4%	3.3%	12.3%
SO ₂ Annual mean (µg m ⁻³)	20	2.71	0.13	0.00	0.00	0.13	2.84	0.7%	0.7%	14.2%
NH ₃ Annual mean (µg m ⁻³)	1	1.35	0.01	0.00	0.00	0.02	1.36	1.3%	1.6%	136.1%
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.42	0.10	0.03	0.00	0.13	12.55	0.7%	0.9%	83.6%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.42	0.10	0.03	0.00	0.13	12.55	0.7%	0.9%	83.6%
Acid deposition (keq/ha/yr) (IED)	0.438/4.578 /4.14	0.88N/0.09S	0.007N/0.015S			0.009N/0.015S	0.889N/0.105S	No exceedance	No exceedance	21.7
Acid deposition (keq/ha/yr) (Total)	0.438/4.578 /4.14	0.88N/0.09S	0.007N/0.015S			0.009N/0.015S	0.896N/0.105S	No exceedance	No exceedance	21.9

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APPENDIX C: AIR EMISSION RISK ASSESSMENT

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APPENDIX C: AIR EMISSION RISK ASSESSMENT

6 CONCLUSIONS

The AERA uses detailed dispersion modelling to predict the impact of combustion emissions from mobile diesel generators and non-road mobile machinery (NRMM) and to quantify their impact on local human and ecological receptors. The AERA is based on assumptions about the size and number of plant and their running hours based on current understanding. The construction period during which diesel-powered generators will be operated is anticipated to last until early 2027; from which time, the site will be predominately powered via adoption of a 132-kilovolt on-site substation.

The air concentrations have been predicted using the ADMS 6 dispersion model, with results presented in tabular form and as contours of ground level concentrations on a background map of the area. This AERA follows the guidance methodology stated in the EA guidance Air emissions risk assessment for your environmental permit. The AERA considers short and long-term effects in relation to the Air Quality Standards (AQS) set in legislation and in UK and international guidance. The pollutants covered by the AERA are oxides of nitrogen (NO_x and NO₂), ammonia (NH₃), carbon monoxide (CO), sulphur dioxide (SO₂) and particulate matter (PM₁₀ and PM_{2.5}) and the deposition of nutrient nitrogen.

The main assessment presents the reasonable worst-case scenario:

- A total of capacity of 82.4 MWth of diesel generators operating on site, including the use of static package substation generators capable of hybrid use, mobile crane and lighting generators and static AD generators that fall within the permit boundary or are in the vicinity of the identified sensitive receptors. The generators are expected to operate for 5400 hours per year, to reflect working hours and bank holiday closures.

Additional scenarios were modelled considering different MWth of capacity of generators on site, including scenarios with no hybrid use as well as scenarios covering the early works generators for 2024 and 2025. These scenarios do not form part of the main report that presented the most likely scenario. The additional scenarios are presented Appendix C and Appendix D.

In summary, the findings of the assessment are as follows:

At human receptors:

- There are no exceedances predicted for all pollutants and averaging periods considered in this AERA. The predicted increase in ambient air pollutant concentrations at human receptors screens out as insignificant based on the Environmental Agency criteria for assessing air emissions for an environmental permit application.

At ecological receptors:

- For local designated sites impacts screen out as insignificant for all parameters assessed.
- For national and international sites, there are no exceedances of annual and daily mean NO_x, and annual mean SO₂ critical levels. The predicted increase in concentration screens out as insignificant according to the EA screening criteria. Impacts from annual NH₃ emissions screen out as insignificant for receptors E1 (Alde-Ore & Butley Estuaries) and E3 (Orfordness-Shingle Street). Impacts on annual mean NH₃ do not screen as insignificant at receptors E2 (Minsmere-Walberswick Heaths and Marshes), E4(Sandlings), E5 (Sizewell Marshes) and E6 (Leiston – Aldeburgh).
- For national and international sites nitrogen deposition screens out as insignificant at receptors E1, E3 and E6. Acid deposition screens out as insignificant at all sensitive habitats.
- Analysis of the results pertaining to ecological impacts, including determination of the significance of any effects resulting from air quality impacts, is detailed in the HRA for the Scheme.

APPENDIX A EMISSION INVENTORY AND MODEL FILES

Provided electronically.

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APPENDIX C: AIR EMISSION RISK ASSESSMENT

APPENDIX B MODELLING CHECKLIST

Item	✓/*	Reason for Omission
Location map	✓	
Site plan	✓	
List of pollutants modelled and relevant air quality guidelines	✓	
Details of modelled scenarios	✓	
Details of relevant ambient concentrations used	✓	
Model description and justification	✓	
Special model treatments used	✓	
Table of emission parameters used	✓	
Details of modelled domain and receptors	✓	
Details of meteorological data used, including origin, and justification	✓	
Details of terrain treatment	✓	
Details of buildings treatment	✓	
Details of modelling wet/dry deposition	✓	
Sensitivity analysis	✓	
Assessment of impacts	✓	
Model input files	✓	

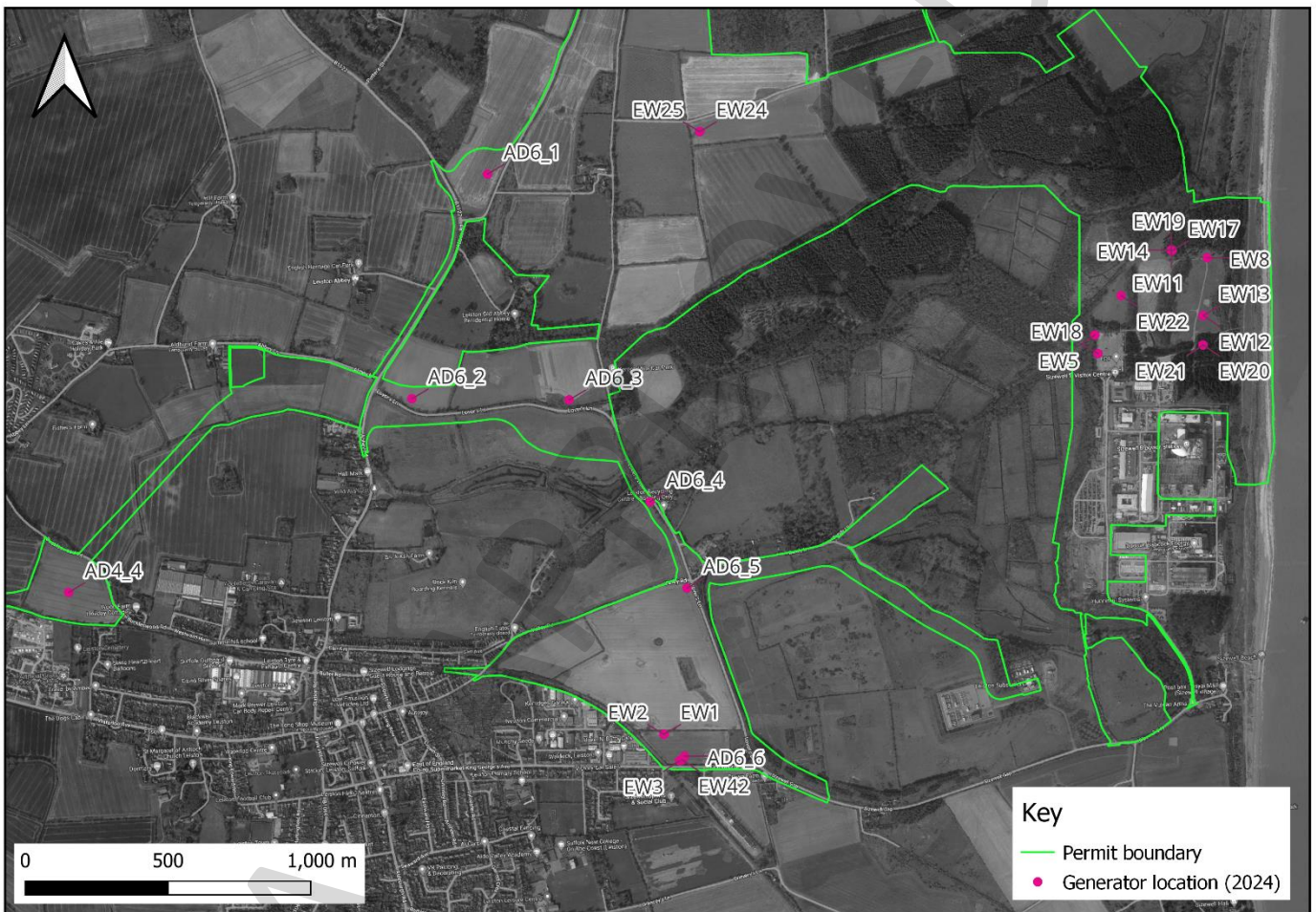
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APPENDIX C EARLY WORKS MODEL AND RESULTS

C.1 Early works generator locations

The AERA also undertook detailed modelling for the anticipated generator needs for the early works period. The inventories for these models have been provided electronically as part of this permit submission. **Figure C-1** and **Figure C-2** present the locations of the early works generators and any relevant AD generators.

Figure C-1 Early works generators 2024



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Figure C-2 Early works generators 2025



C.2 Impacts on human receptors

C.2.1 NO₂ impacts

Predicted 1-hour mean (99.79th %ile) NO₂ PCs for 2024 and 2025 at the modelled receptor locations are summarised in **Table C-1** and **Table C-2**.

Predicted annual mean NO₂ PCs and PECs at the modelled receptor locations are summarised in **Table C-3** and **Table C-4**. There are no exceedances of the 1-hour and annual mean NO₂ AQS. The annual mean AQS objective does not apply to receptors R27 and R28 that represent a footpath and beach, respectively. In addition, receptors R27 and R28 are not going to be accessible locations during construction.

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Table C-1 1- hour NO₂ impacts (99.9th Percentile) for 2024

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	200						
R1	10.59	3.31	3.43	14.02	1.7%	1.7%	7.0%
R2	10.42	3.64	3.65	14.07	1.8%	1.8%	7.0%
R3	10.85	3.19	3.23	14.08	1.6%	1.6%	7.0%
R4	10.34	4.35	4.42	14.76	2.2%	2.2%	7.4%
R5	11.45	9.36	9.44	20.89	4.7%	4.7%	10.4%
R6	10.82	4.80	4.83	15.65	2.4%	2.4%	7.8%
R7	11.45	15.35	15.46	26.90	7.7%	7.7%	13.5%
R8	10.34	2.96	2.98	13.32	1.5%	1.5%	6.7%
R9	11.45	4.09	4.11	15.56	2.0%	2.1%	7.8%
R10	11.45	7.64	7.66	19.11	3.8%	3.8%	9.6%
R11	10.80	5.70	5.72	16.53	2.9%	2.9%	8.3%
R12	11.45	13.10	13.18	24.63	6.5%	6.6%	12.3%
R13	10.59	2.52	2.55	13.13	1.3%	1.3%	6.6%
R14	10.82	13.78	14.19	25.01	6.9%	7.1%	12.5%
R15	10.51	2.94	3.00	13.51	1.5%	1.5%	6.8%
R16	10.42	3.30	3.32	13.74	1.6%	1.7%	6.9%
R17	10.53	3.24	3.27	13.80	1.6%	1.6%	6.9%
R18	10.53	3.16	3.19	13.72	1.6%	1.6%	6.9%
R19	10.63	4.55	4.57	15.20	2.3%	2.3%	7.6%
R20	10.42	3.29	3.33	13.75	1.6%	1.7%	6.9%
R21	11.45	18.89	18.91	30.36	9.4%	9.5%	15.2%
R22	10.63	9.62	9.64	20.27	4.8%	4.8%	10.1%
R23	10.82	4.40	4.44	15.26	2.2%	2.2%	7.6%
R24	12.21	3.16	3.18	15.39	1.6%	1.6%	7.7%
R25	12.21	3.10	3.11	15.32	1.5%	1.6%	7.7%
R26	10.63	5.40	5.42	16.05	2.7%	2.7%	8.0%
R27	10.71	12.16	12.23	22.94	6.1%	6.1%	11.5%
R28	10.71	61.45	61.46	72.17	30.7%	30.7%	36.1%
R29	10.51	2.84	2.89	13.40	1.4%	1.4%	6.7%
R30	10.76	3.76	3.84	14.60	1.9%	1.9%	7.3%

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Table C-2 1- hour NO₂ impacts (99.9th Percentile) for 2025

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS							
R1	10.59	7.20	7.33	17.91	3.6%	3.7%	9.0%
R2	10.42	9.10	9.12	19.54	4.6%	4.6%	9.8%
R3	10.85	6.18	6.22	17.08	3.1%	3.1%	8.5%
R4	10.34	10.12	10.18	20.52	5.1%	5.1%	10.3%
R5	11.45	5.64	5.72	17.16	2.8%	2.9%	8.6%
R6	10.82	7.61	7.64	18.46	3.8%	3.8%	9.2%
R7	11.45	6.09	6.20	17.65	3.0%	3.1%	8.8%
R8	10.34	6.71	6.73	17.07	3.4%	3.4%	8.5%
R9	11.45	5.39	5.41	16.86	2.7%	2.7%	8.4%
R10	11.45	5.64	5.66	17.11	2.8%	2.8%	8.6%
R11	10.80	7.14	7.16	17.96	3.6%	3.6%	9.0%
R12	11.45	7.01	7.09	18.54	3.5%	3.5%	9.3%
R13	10.59	6.10	6.13	16.72	3.1%	3.1%	8.4%
R14	10.82	12.31	12.72	23.54	6.2%	6.4%	11.8%
R15	10.51	6.34	6.40	16.91	3.2%	3.2%	8.5%
R16	10.42	8.22	8.23	18.66	4.1%	4.1%	9.3%
R17	10.53	9.09	9.12	19.65	4.5%	4.6%	9.8%
R18	10.53	8.39	8.42	18.95	4.2%	4.2%	9.5%
R19	10.63	6.85	6.88	17.50	3.4%	3.4%	8.8%
R20	10.42	10.78	10.83	21.25	5.4%	5.4%	10.6%
R21	11.45	6.21	6.24	17.68	3.1%	3.1%	8.8%
R22	10.63	15.73	15.76	26.39	7.9%	7.9%	13.2%
R23	10.82	6.25	6.30	17.12	3.1%	3.2%	8.6%
R24	12.21	5.64	5.65	17.86	2.8%	2.8%	8.9%
R25	12.21	5.50	5.52	17.73	2.8%	2.8%	8.9%
R26	10.63	8.59	8.61	19.24	4.3%	4.3%	9.6%
R27	10.71	39.18	39.25	49.95	19.6%	19.6%	25.0%
R28	10.71	61.47	61.48	72.19	30.7%	30.7%	36.1%
R29	10.51	6.40	6.46	16.97	3.2%	3.2%	8.5%
R30	10.76	5.43	5.52	16.27	2.7%	2.8%	8.1%

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Table C-3 Annual NO₂ impacts for 2024

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	40						
R1	5.29	0.19	0.54	5.83	0.5%	1.3%	14.6%
R2	5.21	0.12	0.16	5.37	0.3%	0.4%	13.4%
R3	5.43	0.12	0.23	5.66	0.3%	0.6%	14.2%
R4	5.17	0.23	0.41	5.58	0.6%	1.0%	13.9%
R5	5.72	0.70	0.92	6.65	1.8%	2.3%	16.6%
R6	5.41	0.32	0.40	5.81	0.8%	1.0%	14.5%
R7	5.72	1.49	1.80	7.53	3.7%	4.5%	18.8%
R8	5.17	0.09	0.13	5.30	0.2%	0.3%	13.2%
R9	5.72	0.22	0.27	6.00	0.6%	0.7%	15.0%
R10	5.72	0.55	0.61	6.33	1.4%	1.5%	15.8%
R11	5.40	0.35	0.41	5.81	0.9%	1.0%	14.5%
R12	5.72	1.39	1.63	7.35	3.5%	4.1%	18.4%
R13	5.29	0.09	0.17	5.47	0.2%	0.4%	13.7%
R14	5.41	1.41	2.57	7.97	3.5%	6.4%	19.9%
R15	5.26	0.16	0.33	5.59	0.4%	0.8%	14.0%
R16	5.21	0.12	0.17	5.38	0.3%	0.4%	13.4%
R17	5.26	0.12	0.20	5.46	0.3%	0.5%	13.7%
R18	5.26	0.09	0.19	5.46	0.2%	0.5%	13.6%
R19	5.31	0.22	0.28	5.59	0.5%	0.7%	14.0%
R20	5.21	0.14	0.27	5.48	0.4%	0.7%	13.7%
R21	5.72	0.87	0.94	6.66	2.2%	2.3%	16.7%
R22	5.31	0.32	0.40	5.71	0.8%	1.0%	14.3%
R23	5.41	0.51	0.64	6.05	1.3%	1.6%	15.1%
R24	6.10	0.14	0.19	6.29	0.3%	0.5%	15.7%
R25	6.10	0.13	0.18	6.28	0.3%	0.4%	15.7%
R26	5.31	0.18	0.24	5.55	0.4%	0.6%	13.9%
R27	5.35	0.89	1.08	6.44	2.2%	2.7%	16.1%
R28	5.35	6.56	6.59	11.95	16.4%	16.5%	29.9%
R29	5.26	0.17	0.32	5.57	0.4%	0.8%	13.9%
R30	5.38	0.23	0.47	5.85	0.6%	1.2%	14.6%

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Table C-4 Annual NO₂ impacts for 2025

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	40						
R1	5.29	0.47	0.82	6.12	1.2%	2.1%	15.3%
R2	5.21	0.47	0.51	5.72	1.2%	1.3%	14.3%
R3	5.43	0.28	0.39	5.82	0.7%	1.0%	14.6%
R4	5.17	1.26	1.44	6.61	3.2%	3.6%	16.5%
R5	5.72	0.41	0.63	6.36	1.0%	1.6%	15.9%
R6	5.41	0.73	0.81	6.22	1.8%	2.0%	15.5%
R7	5.72	0.53	0.84	6.56	1.3%	2.1%	16.4%
R8	5.17	0.27	0.31	5.48	0.7%	0.8%	13.7%
R9	5.72	0.30	0.35	6.07	0.8%	0.9%	15.2%
R10	5.72	0.43	0.49	6.22	1.1%	1.2%	15.5%
R11	5.40	0.66	0.72	6.12	1.7%	1.8%	15.3%
R12	5.72	0.69	0.93	6.66	1.7%	2.3%	16.6%
R13	5.29	0.27	0.35	5.64	0.7%	0.9%	14.1%
R14	5.41	1.57	2.73	8.14	3.9%	6.8%	20.4%
R15	5.26	0.57	0.74	5.99	1.4%	1.8%	15.0%
R16	5.21	0.47	0.52	5.73	1.2%	1.3%	14.3%
R17	5.26	0.37	0.45	5.72	0.9%	1.1%	14.3%
R18	5.26	0.27	0.37	5.63	0.7%	0.9%	14.1%
R19	5.31	0.47	0.53	5.85	1.2%	1.3%	14.6%
R20	5.21	1.11	1.24	6.45	2.8%	3.1%	16.1%
R21	5.72	0.48	0.55	6.27	1.2%	1.4%	15.7%
R22	5.31	0.59	0.67	5.99	1.5%	1.7%	15.0%
R23	5.41	0.72	0.85	6.26	1.8%	2.1%	15.6%
R24	6.10	0.30	0.35	6.46	0.8%	0.9%	16.1%
R25	6.10	0.28	0.33	6.44	0.7%	0.8%	16.1%
R26	5.31	0.38	0.44	5.76	1.0%	1.1%	14.4%
R27	5.35	4.48	4.67	10.02	11.2%	11.7%	25.0%
R28	5.35	7.94	7.97	13.32	19.8%	19.9%	33.3%
R29	5.26	0.55	0.70	5.96	1.4%	1.7%	14.9%
R30	5.38	0.32	0.56	5.94	0.8%	1.4%	14.8%

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C.2.2 SO₂ Impacts

Table C-5 and **Table C-6** presents the 15-min SO₂ impacts at the modelled receptors; the PECs are below the 266µg/m³ EAL for all receptors. **Table C-7** and **Table C-8** presents the 1-hour SO₂ impacts at the modelled receptors; the PECs are below the 350µg/m³ AQS objective for all receptors. **Table C-9** and **Table C-10** presents the daily SO₂ impacts at the modelled receptors; the PECs are below the 125µg/m³ standard for all receptors.

Table C-5 15-min SO₂ impacts for 2024

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	266						
R1	5	7.67	7.67	12.17	2.9%	2.9%	4.6%
R2	5	2.06	2.06	6.56	0.8%	0.8%	2.5%
R3	5	2.19	2.19	7.37	0.8%	0.8%	2.8%
R4	5	6.13	6.13	10.91	2.3%	2.3%	4.1%
R5	6	4.17	4.17	9.85	1.6%	1.6%	3.7%
R6	5	2.50	2.50	7.48	0.9%	0.9%	2.8%
R7	6	5.20	5.20	10.88	2.0%	2.0%	4.1%
R8	4	1.52	1.52	5.86	0.6%	0.6%	2.2%
R9	6	1.78	1.78	7.46	0.7%	0.7%	2.8%
R10	6	2.39	2.39	8.07	0.9%	0.9%	3.0%
R11	6	2.95	2.95	8.99	1.1%	1.1%	3.4%
R12	6	4.51	4.51	10.19	1.7%	1.7%	3.8%
R13	5	2.89	2.89	7.39	1.1%	1.1%	2.8%
R14	5	2.39	2.39	7.37	0.9%	0.9%	2.8%
R15	5	5.74	5.74	10.48	2.2%	2.2%	3.9%
R16	5	2.13	2.13	6.63	0.8%	0.8%	2.5%
R17	4	4.01	4.01	8.35	1.5%	1.5%	3.1%
R18	4	3.18	3.18	7.52	1.2%	1.2%	2.8%
R19	6	2.01	2.01	8.27	0.8%	0.8%	3.1%
R20	5	3.54	3.54	8.04	1.3%	1.3%	3.0%
R21	6	7.16	7.16	12.84	2.7%	2.7%	4.8%
R22	6	4.71	4.71	10.97	1.8%	1.8%	4.1%
R23	5	2.09	2.09	7.07	0.8%	0.8%	2.7%
R24	6	1.61	1.61	8.03	0.6%	0.6%	3.0%
R25	6	1.71	1.71	8.13	0.6%	0.6%	3.1%
R26	6	2.42	2.42	8.68	0.9%	0.9%	3.3%
R27	8	5.38	5.38	13.30	2.0%	2.0%	5.0%
R28	8	25.62	25.62	33.54	9.6%	9.6%	12.6%
R29	5	4.47	4.47	9.21	1.7%	1.7%	3.5%

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Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
R30	5	1.91	1.91	7.33	0.7%	0.7%	2.8%

Table C-6 15-min SO₂ impacts for 2025

Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	266						
R1	5	7.67	7.67	12.17	2.9%	2.9%	4.6%
R2	5	2.37	2.37	6.87	0.9%	0.9%	2.6%
R3	5	2.21	2.21	7.39	0.8%	0.8%	2.8%
R4	5	6.63	6.63	11.41	2.5%	2.5%	4.3%
R5	6	2.24	2.24	7.92	0.8%	0.8%	3.0%
R6	5	2.50	2.50	7.48	0.9%	0.9%	2.8%
R7	6	2.27	2.27	7.95	0.9%	0.9%	3.0%
R8	4	1.61	1.61	5.95	0.6%	0.6%	2.2%
R9	6	1.80	1.80	7.48	0.7%	0.7%	2.8%
R10	6	1.77	1.77	7.45	0.7%	0.7%	2.8%
R11	6	2.95	2.95	8.99	1.1%	1.1%	3.4%
R12	6	2.46	2.46	8.14	0.9%	0.9%	3.1%
R13	5	3.03	3.03	7.53	1.1%	1.1%	2.8%
R14	5	2.87	2.87	7.85	1.1%	1.1%	3.0%
R15	5	5.74	5.74	10.48	2.2%	2.2%	3.9%
R16	5	2.39	2.39	6.89	0.9%	0.9%	2.6%
R17	4	4.01	4.01	8.35	1.5%	1.5%	3.1%
R18	4	3.43	3.43	7.77	1.3%	1.3%	2.9%
R19	6	2.04	2.04	8.30	0.8%	0.8%	3.1%
R20	5	3.55	3.55	8.05	1.3%	1.3%	3.0%
R21	6	4.08	4.08	9.76	1.5%	1.5%	3.7%
R22	6	5.22	5.22	11.48	2.0%	2.0%	4.3%
R23	5	2.52	2.52	7.50	0.9%	0.9%	2.8%
R24	6	1.67	1.67	8.09	0.6%	0.6%	3.0%
R25	6	1.73	1.73	8.15	0.6%	0.6%	3.1%
R26	6	2.49	2.49	8.75	0.9%	0.9%	3.3%
R27	8	8.62	8.62	16.54	3.2%	3.2%	6.2%
R28	8	25.65	25.65	33.57	9.6%	9.6%	12.6%
R29	5	4.47	4.47	9.21	1.7%	1.7%	3.5%
R30	5	1.70	1.70	7.12	0.6%	0.6%	2.7%

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Table C-7 1-hour SO₂ impacts for 2024

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	350						
R1	5	6.23	6.23	10.73	1.8%	1.8%	3.1%
R2	5	1.18	1.18	5.68	0.3%	0.3%	1.6%
R3	5	1.33	1.33	6.51	0.4%	0.4%	1.9%
R4	5	4.14	4.14	8.92	1.2%	1.2%	2.5%
R5	6	2.66	2.66	8.34	0.8%	0.8%	2.4%
R6	5	1.47	1.47	6.45	0.4%	0.4%	1.8%
R7	6	3.69	3.69	9.37	1.1%	1.1%	2.7%
R8	4	0.87	0.87	5.21	0.2%	0.2%	1.5%
R9	6	1.05	1.05	6.73	0.3%	0.3%	1.9%
R10	6	1.97	1.97	7.65	0.6%	0.6%	2.2%
R11	6	1.77	1.77	7.81	0.5%	0.5%	2.2%
R12	6	3.46	3.46	9.14	1.0%	1.0%	2.6%
R13	5	1.71	1.71	6.21	0.5%	0.5%	1.8%
R14	5	1.91	1.91	6.89	0.5%	0.5%	2.0%
R15	5	3.30	3.30	8.04	0.9%	0.9%	2.3%
R16	5	1.25	1.25	5.75	0.4%	0.4%	1.6%
R17	4	2.44	2.44	6.78	0.7%	0.7%	1.9%
R18	4	1.80	1.80	6.14	0.5%	0.5%	1.8%
R19	6	1.33	1.33	7.59	0.4%	0.4%	2.2%
R20	5	2.27	2.27	6.77	0.6%	0.6%	1.9%
R21	6	5.13	5.13	10.81	1.5%	1.5%	3.1%
R22	6	2.62	2.62	8.88	0.7%	0.7%	2.5%
R23	5	1.30	1.30	6.28	0.4%	0.4%	1.8%
R24	6	0.94	0.94	7.36	0.3%	0.3%	2.1%
R25	6	0.94	0.94	7.36	0.3%	0.3%	2.1%
R26	6	1.30	1.30	7.56	0.4%	0.4%	2.2%
R27	8	4.00	4.00	11.92	1.1%	1.1%	3.4%
R28	8	21.82	21.82	29.74	6.2%	6.2%	8.5%
R29	5	2.41	2.41	7.15	0.7%	0.7%	2.0%
R30	5	1.16	1.16	6.58	0.3%	0.3%	1.9%

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Table C-8 1-hour SO₂ impacts for 2025

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	350						
R1	5	6.23	6.23	10.73	1.8%	1.8%	3.1%
R2	5	1.49	1.49	5.99	0.4%	0.4%	1.7%
R3	5	1.34	1.34	6.52	0.4%	0.4%	1.9%
R4	5	4.64	4.64	9.42	1.3%	1.3%	2.7%
R5	6	1.40	1.40	7.08	0.4%	0.4%	2.0%
R6	5	1.58	1.58	6.56	0.5%	0.5%	1.9%
R7	6	1.75	1.75	7.43	0.5%	0.5%	2.1%
R8	4	0.97	0.97	5.31	0.3%	0.3%	1.5%
R9	6	1.00	1.00	6.68	0.3%	0.3%	1.9%
R10	6	1.39	1.39	7.07	0.4%	0.4%	2.0%
R11	6	1.77	1.77	7.81	0.5%	0.5%	2.2%
R12	6	1.69	1.69	7.37	0.5%	0.5%	2.1%
R13	5	1.89	1.89	6.39	0.5%	0.5%	1.8%
R14	5	1.77	1.77	6.75	0.5%	0.5%	1.9%
R15	5	3.30	3.30	8.04	0.9%	0.9%	2.3%
R16	5	1.51	1.51	6.01	0.4%	0.4%	1.7%
R17	4	2.45	2.45	6.79	0.7%	0.7%	1.9%
R18	4	1.95	1.95	6.29	0.6%	0.6%	1.8%
R19	6	1.34	1.34	7.60	0.4%	0.4%	2.2%
R20	5	2.43	2.43	6.93	0.7%	0.7%	2.0%
R21	6	3.02	3.02	8.70	0.9%	0.9%	2.5%
R22	6	2.83	2.83	9.09	0.8%	0.8%	2.6%
R23	5	1.62	1.62	6.60	0.5%	0.5%	1.9%
R24	6	1.02	1.02	7.44	0.3%	0.3%	2.1%
R25	6	0.98	0.98	7.40	0.3%	0.3%	2.1%
R26	6	1.40	1.40	7.66	0.4%	0.4%	2.2%
R27	8	6.17	6.17	14.09	1.8%	1.8%	4.0%
R28	8	21.84	21.84	29.76	6.2%	6.2%	8.5%
R29	5	2.42	2.42	7.16	0.7%	0.7%	2.0%
R30	5	1.07	1.07	6.49	0.3%	0.3%	1.9%

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Table C.9 Daily SO₂ impacts for 2024

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	125						
R1	2	3.12	3.12	5.37	2.5%	2.5%	4.3%
R2	2	0.44	0.44	2.69	0.4%	0.4%	2.2%
R3	3	0.43	0.43	3.02	0.3%	0.3%	2.4%
R4	2	1.57	1.57	3.96	1.3%	1.3%	3.2%
R5	3	0.95	0.95	3.79	0.8%	0.8%	3.0%
R6	2	0.51	0.51	3.00	0.4%	0.4%	2.4%
R7	3	1.66	1.66	4.50	1.3%	1.3%	3.6%
R8	2	0.30	0.30	2.47	0.2%	0.2%	2.0%
R9	3	0.41	0.41	3.25	0.3%	0.3%	2.6%
R10	3	0.86	0.86	3.70	0.7%	0.7%	3.0%
R11	3	0.64	0.64	3.66	0.5%	0.5%	2.9%
R12	3	1.58	1.58	4.42	1.3%	1.3%	3.5%
R13	2	0.59	0.59	2.84	0.5%	0.5%	2.3%
R14	2	0.82	0.82	3.31	0.7%	0.7%	2.6%
R15	2	1.11	1.11	3.48	0.9%	0.9%	2.8%
R16	2	0.48	0.48	2.73	0.4%	0.4%	2.2%
R17	2	0.84	0.84	3.01	0.7%	0.7%	2.4%
R18	2	0.54	0.54	2.71	0.4%	0.4%	2.2%
R19	3	0.46	0.46	3.59	0.4%	0.4%	2.9%
R20	2	0.70	0.70	2.95	0.6%	0.6%	2.4%
R21	3	1.79	1.79	4.63	1.4%	1.4%	3.7%
R22	3	0.74	0.74	3.87	0.6%	0.6%	3.1%
R23	2	0.50	0.50	2.99	0.4%	0.4%	2.4%
R24	3	0.36	0.36	3.57	0.3%	0.3%	2.9%
R25	3	0.36	0.36	3.57	0.3%	0.3%	2.9%
R26	3	0.40	0.40	3.53	0.3%	0.3%	2.8%
R27	4	1.81	1.81	5.77	1.4%	1.4%	4.6%
R28	4	11.62	11.62	15.58	9.3%	9.3%	12.5%
R29	2	0.80	0.80	3.17	0.6%	0.6%	2.5%
R30	3	0.38	0.38	3.09	0.3%	0.3%	2.5%

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Table C-10 Daily SO₂ impacts for 2025

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	125						
R1	2	3.13	3.13	5.38	2.5%	2.5%	4.3%
R2	2	0.60	0.60	2.85	0.5%	0.5%	2.3%
R3	3	0.48	0.48	3.07	0.4%	0.4%	2.5%
R4	2	1.76	1.76	4.15	1.4%	1.4%	3.3%
R5	3	0.50	0.50	3.34	0.4%	0.4%	2.7%
R6	2	0.60	0.60	3.09	0.5%	0.5%	2.5%
R7	3	0.80	0.80	3.64	0.6%	0.6%	2.9%
R8	2	0.41	0.41	2.58	0.3%	0.3%	2.1%
R9	3	0.37	0.37	3.21	0.3%	0.3%	2.6%
R10	3	0.63	0.63	3.47	0.5%	0.5%	2.8%
R11	3	0.70	0.70	3.72	0.6%	0.6%	3.0%
R12	3	0.89	0.89	3.73	0.7%	0.7%	3.0%
R13	2	0.69	0.69	2.94	0.6%	0.6%	2.4%
R14	2	0.73	0.73	3.22	0.6%	0.6%	2.6%
R15	2	1.11	1.11	3.48	0.9%	0.9%	2.8%
R16	2	0.60	0.60	2.85	0.5%	0.5%	2.3%
R17	2	0.85	0.85	3.02	0.7%	0.7%	2.4%
R18	2	0.66	0.66	2.83	0.5%	0.5%	2.3%
R19	3	0.50	0.50	3.63	0.4%	0.4%	2.9%
R20	2	1.12	1.12	3.37	0.9%	0.9%	2.7%
R21	3	0.94	0.94	3.78	0.7%	0.7%	3.0%
R22	3	0.77	0.77	3.90	0.6%	0.6%	3.1%
R23	2	0.60	0.60	3.09	0.5%	0.5%	2.5%
R24	3	0.43	0.43	3.64	0.3%	0.3%	2.9%
R25	3	0.42	0.42	3.63	0.3%	0.3%	2.9%
R26	3	0.43	0.43	3.56	0.3%	0.3%	2.9%
R27	4	2.92	2.92	6.88	2.3%	2.3%	5.5%
R28	4	11.65	11.65	15.61	9.3%	9.3%	12.5%
R29	2	0.85	0.85	3.22	0.7%	0.7%	2.6%
R30	3	0.39	0.39	3.10	0.3%	0.3%	2.5%

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C.2.3 PM₁₀ Impacts

Table C-11 and Table C-12 presents the annual mean PM₁₀ impacts at the modelled receptors; the PECs are below the standard at all locations. Table C-13 and Table C-14 presents the 24-hour PM₁₀ impacts at the modelled receptors; the PECs are below the standard at all locations.

Table C-11 Annual PM₁₀ impacts for 2024

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	40						
R1	13.58	0.01	0.11	13.69	0.0%	0.3%	34.2%
R2	13.67	0.00	0.01	13.69	0.0%	0.0%	34.2%
R3	13.71	0.01	0.04	13.74	0.0%	0.1%	34.4%
R4	13.02	0.01	0.03	13.05	0.0%	0.1%	32.6%
R5	13.44	0.04	0.08	13.52	0.1%	0.2%	33.8%
R6	13.97	0.02	0.03	14.00	0.0%	0.1%	35.0%
R7	13.44	0.09	0.15	13.59	0.2%	0.4%	34.0%
R8	12.22	0.00	0.01	12.23	0.0%	0.0%	30.6%
R9	13.44	0.01	0.02	13.46	0.0%	0.1%	33.7%
R10	13.44	0.03	0.04	13.48	0.1%	0.1%	33.7%
R11	13.31	0.01	0.03	13.34	0.0%	0.1%	33.3%
R12	13.44	0.09	0.14	13.58	0.2%	0.3%	33.9%
R13	13.58	0.00	0.03	13.61	0.0%	0.1%	34.0%
R14	13.97	0.10	0.32	14.29	0.3%	0.8%	35.7%
R15	12.95	0.01	0.05	13.00	0.0%	0.1%	32.5%
R16	13.67	0.00	0.01	13.69	0.0%	0.0%	34.2%
R17	13.63	0.00	0.02	13.65	0.0%	0.0%	34.1%
R18	13.63	0.00	0.02	13.66	0.0%	0.1%	34.1%
R19	12.49	0.01	0.02	12.51	0.0%	0.0%	31.3%
R20	13.67	0.01	0.02	13.70	0.0%	0.1%	34.2%
R21	13.44	0.05	0.07	13.51	0.1%	0.2%	33.8%
R22	12.49	0.01	0.02	12.52	0.0%	0.1%	31.3%
R23	13.97	0.03	0.06	14.03	0.1%	0.1%	35.1%
R24	12.80	0.01	0.02	12.82	0.0%	0.0%	32.0%
R25	12.80	0.01	0.02	12.82	0.0%	0.0%	32.0%
R26	12.49	0.01	0.02	12.51	0.0%	0.0%	31.3%
R27	12.22	0.03	0.05	12.27	0.1%	0.1%	30.7%
R28	12.22	0.14	0.14	12.36	0.3%	0.4%	30.9%
R29	12.95	0.01	0.05	13.00	0.0%	0.1%	32.5%
R30	12.94	0.01	0.06	13.00	0.0%	0.1%	32.5%

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Table C.12 Annual PM₁₀ impacts for 2025

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	40						
R1	13.58	0.01	0.12	13.70	0.0%	0.3%	34.2%
R2	13.67	0.01	0.02	13.69	0.0%	0.0%	34.2%
R3	13.71	0.01	0.04	13.75	0.0%	0.1%	34.4%
R4	13.02	0.04	0.07	13.08	0.1%	0.2%	32.7%
R5	13.44	0.01	0.05	13.50	0.0%	0.1%	33.7%
R6	13.97	0.03	0.04	14.02	0.1%	0.1%	35.0%
R7	13.44	0.03	0.09	13.53	0.1%	0.2%	33.8%
R8	12.22	0.01	0.01	12.23	0.0%	0.0%	30.6%
R9	13.44	0.01	0.02	13.46	0.0%	0.0%	33.6%
R10	13.44	0.01	0.03	13.47	0.0%	0.1%	33.7%
R11	13.31	0.02	0.03	13.34	0.0%	0.1%	33.4%
R12	13.44	0.04	0.08	13.53	0.1%	0.2%	33.8%
R13	13.58	0.01	0.03	13.61	0.0%	0.1%	34.0%
R14	13.97	0.10	0.32	14.30	0.3%	0.8%	35.7%
R15	12.95	0.02	0.06	13.01	0.1%	0.2%	32.5%
R16	13.67	0.01	0.02	13.69	0.0%	0.0%	34.2%
R17	13.63	0.01	0.02	13.66	0.0%	0.1%	34.1%
R18	13.63	0.01	0.03	13.66	0.0%	0.1%	34.1%
R19	12.49	0.01	0.02	12.51	0.0%	0.1%	31.3%
R20	13.67	0.01	0.03	13.71	0.0%	0.1%	34.3%
R21	13.44	0.02	0.03	13.47	0.0%	0.1%	33.7%
R22	12.49	0.01	0.03	12.52	0.0%	0.1%	31.3%
R23	13.97	0.04	0.06	14.03	0.1%	0.2%	35.1%
R24	12.80	0.01	0.02	12.82	0.0%	0.1%	32.1%
R25	12.80	0.01	0.02	12.82	0.0%	0.0%	32.0%
R26	12.49	0.01	0.02	12.51	0.0%	0.0%	31.3%
R27	12.22	0.10	0.12	12.33	0.2%	0.3%	30.8%
R28	12.22	0.16	0.16	12.38	0.4%	0.4%	30.9%
R29	12.95	0.02	0.07	13.01	0.1%	0.2%	32.5%
R30	12.94	0.01	0.05	13.00	0.0%	0.1%	32.5%

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Table C.13 24-hour PM₁₀ impacts for 2024

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	50						
R1	13.58	0.04	0.70	14.27	0.1%	1.4%	28.5%
R2	13.67	0.02	0.09	13.77	0.0%	0.2%	27.5%
R3	13.71	0.03	0.56	14.26	0.1%	1.1%	28.5%
R4	13.02	0.03	0.23	13.25	0.1%	0.5%	26.5%
R5	13.44	0.20	0.50	13.94	0.4%	1.0%	27.9%
R6	13.97	0.05	0.18	14.15	0.1%	0.4%	28.3%
R7	13.44	0.36	0.65	14.09	0.7%	1.3%	28.2%
R8	12.22	0.02	0.07	12.28	0.0%	0.1%	24.6%
R9	13.44	0.06	0.19	13.63	0.1%	0.4%	27.3%
R10	13.44	0.21	0.34	13.78	0.4%	0.7%	27.6%
R11	13.31	0.04	0.18	13.49	0.1%	0.4%	27.0%
R12	13.44	0.44	0.71	14.15	0.9%	1.4%	28.3%
R13	13.58	0.02	0.29	13.87	0.0%	0.6%	27.7%
R14	13.97	0.44	1.39	15.37	0.9%	2.8%	30.7%
R15	12.95	0.03	0.39	13.33	0.1%	0.8%	26.7%
R16	13.67	0.02	0.09	13.76	0.0%	0.2%	27.5%
R17	13.63	0.02	0.16	13.79	0.0%	0.3%	27.6%
R18	13.63	0.02	0.19	13.83	0.0%	0.4%	27.7%
R19	12.49	0.03	0.10	12.60	0.1%	0.2%	25.2%
R20	13.67	0.03	0.17	13.84	0.1%	0.3%	27.7%
R21	13.44	0.33	0.47	13.91	0.7%	0.9%	27.8%
R22	12.49	0.04	0.20	12.69	0.1%	0.4%	25.4%
R23	13.97	0.10	0.33	14.31	0.2%	0.7%	28.6%
R24	12.80	0.03	0.15	12.95	0.1%	0.3%	25.9%
R25	12.80	0.03	0.14	12.94	0.1%	0.3%	25.9%
R26	12.49	0.03	0.12	12.61	0.1%	0.2%	25.2%
R27	12.22	0.15	0.32	12.53	0.3%	0.6%	25.1%
R28	12.22	0.62	0.65	12.87	1.2%	1.3%	25.7%
R29	12.95	0.03	0.40	13.35	0.1%	0.8%	26.7%
R1	13.58	0.04	0.70	14.27	0.1%	1.4%	28.5%

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Table C.14 24-hour PM₁₀ impacts for 2025

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	50						
R1	13.58	0.06	0.72	14.30	0.1%	1.4%	28.6%
R2	13.67	0.05	0.12	13.80	0.1%	0.2%	27.6%
R3	13.71	0.05	0.58	14.29	0.1%	1.2%	28.6%
R4	13.02	0.17	0.36	13.38	0.3%	0.7%	26.8%
R5	13.44	0.06	0.36	13.80	0.1%	0.7%	27.6%
R6	13.97	0.10	0.24	14.21	0.2%	0.5%	28.4%
R7	13.44	0.10	0.39	13.83	0.2%	0.8%	27.7%
R8	12.22	0.04	0.09	12.30	0.1%	0.2%	24.6%
R9	13.44	0.04	0.17	13.62	0.1%	0.3%	27.2%
R10	13.44	0.09	0.23	13.67	0.2%	0.5%	27.3%
R11	13.31	0.08	0.22	13.53	0.2%	0.4%	27.1%
R12	13.44	0.20	0.47	13.91	0.4%	0.9%	27.8%
R13	13.58	0.04	0.32	13.90	0.1%	0.6%	27.8%
R14	13.97	0.42	1.36	15.34	0.8%	2.7%	30.7%
R15	12.95	0.09	0.44	13.39	0.2%	0.9%	26.8%
R16	13.67	0.05	0.12	13.80	0.1%	0.2%	27.6%
R17	13.63	0.05	0.19	13.82	0.1%	0.4%	27.6%
R18	13.63	0.04	0.22	13.85	0.1%	0.4%	27.7%
R19	12.49	0.06	0.13	12.62	0.1%	0.3%	25.2%
R20	13.67	0.06	0.21	13.88	0.1%	0.4%	27.8%
R21	13.44	0.11	0.25	13.69	0.2%	0.5%	27.4%
R22	12.49	0.07	0.23	12.72	0.1%	0.5%	25.4%
R23	13.97	0.11	0.34	14.32	0.2%	0.7%	28.6%
R24	12.80	0.05	0.17	12.97	0.1%	0.3%	25.9%
R25	12.80	0.04	0.15	12.95	0.1%	0.3%	25.9%
R26	12.49	0.05	0.15	12.64	0.1%	0.3%	25.3%
R27	12.22	0.41	0.58	12.80	0.8%	1.2%	25.6%
R28	12.22	0.68	0.71	12.93	1.4%	1.4%	25.9%
R29	12.95	0.10	0.47	13.42	0.2%	0.9%	26.8%
R1	13.58	0.06	0.72	14.30	0.1%	1.4%	28.6%

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C.2.4 PM_{2.5} Impacts

Table C-15 & Table C-16 presents the annual mean PM_{2.5} impacts at the modelled receptors; the PECs are below the standard at all locations.

Table C-15 Annual PM_{2.5} impacts for 2024

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	20						
R1	7.92	0.01	0.01	7.93	0.0%	0.0%	19.8%
R2	7.92	0.00	0.00	7.93	0.0%	0.0%	19.8%
R3	8.03	0.01	0.01	8.04	0.0%	0.0%	20.1%
R4	7.75	0.01	0.01	7.76	0.0%	0.0%	19.4%
R5	8.06	0.04	0.04	8.10	0.1%	0.1%	20.3%
R6	8.08	0.02	0.02	8.09	0.0%	0.0%	20.2%
R7	8.06	0.09	0.09	8.16	0.2%	0.2%	20.4%
R8	7.57	0.00	0.00	7.57	0.0%	0.0%	18.9%
R9	8.06	0.01	0.01	8.07	0.0%	0.0%	20.2%
R10	8.06	0.03	0.03	8.09	0.1%	0.1%	20.2%
R11	7.88	0.01	0.01	7.89	0.0%	0.0%	19.7%
R12	8.06	0.09	0.09	8.15	0.2%	0.2%	20.4%
R13	7.92	0.00	0.00	7.93	0.0%	0.0%	19.8%
R14	8.08	0.10	0.10	8.18	0.3%	0.3%	20.4%
R15	7.75	0.01	0.01	7.76	0.0%	0.0%	19.4%
R16	7.92	0.00	0.00	7.93	0.0%	0.0%	19.8%
R17	7.94	0.00	0.00	7.95	0.0%	0.0%	19.9%
R18	7.94	0.00	0.00	7.94	0.0%	0.0%	19.9%
R19	7.64	0.01	0.01	7.65	0.0%	0.0%	19.1%
R20	7.92	0.01	0.01	7.93	0.0%	0.0%	19.8%
R21	8.06	0.05	0.05	8.11	0.1%	0.1%	20.3%
R22	7.64	0.01	0.01	7.65	0.0%	0.0%	19.1%
R23	8.08	0.03	0.03	8.11	0.1%	0.1%	20.3%
R24	8.31	0.01	0.01	8.32	0.0%	0.0%	20.8%
R25	8.31	0.01	0.01	8.32	0.0%	0.0%	20.8%
R26	7.64	0.01	0.01	7.64	0.0%	0.0%	19.1%
R27	7.58	0.03	0.03	7.60	0.1%	0.1%	19.0%
R28	7.58	0.14	0.14	7.71	0.3%	0.3%	19.3%
R29	7.75	0.01	0.01	7.76	0.0%	0.0%	19.4%
R30	7.78	0.01	0.01	7.79	0.0%	0.0%	19.5%

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Table C-16 Annual PM_{2.5} impacts for 2025

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	20						
R1	7.92	0.01	0.01	7.94	0.0%	0.0%	19.8%
R2	7.92	0.01	0.01	7.94	0.0%	0.0%	19.8%
R3	8.03	0.01	0.01	8.04	0.0%	0.0%	20.1%
R4	7.75	0.04	0.04	7.79	0.1%	0.1%	19.5%
R5	8.06	0.01	0.01	8.08	0.0%	0.0%	20.2%
R6	8.08	0.03	0.03	8.11	0.1%	0.1%	20.3%
R7	8.06	0.03	0.03	8.09	0.1%	0.1%	20.2%
R8	7.57	0.01	0.01	7.57	0.0%	0.0%	18.9%
R9	8.06	0.01	0.01	8.07	0.0%	0.0%	20.2%
R10	8.06	0.01	0.01	8.08	0.0%	0.0%	20.2%
R11	7.88	0.02	0.02	7.90	0.0%	0.0%	19.7%
R12	8.06	0.04	0.04	8.10	0.1%	0.1%	20.2%
R13	7.92	0.01	0.01	7.93	0.0%	0.0%	19.8%
R14	8.08	0.10	0.10	8.18	0.3%	0.3%	20.5%
R15	7.75	0.02	0.02	7.77	0.1%	0.1%	19.4%
R16	7.92	0.01	0.01	7.93	0.0%	0.0%	19.8%
R17	7.94	0.01	0.01	7.95	0.0%	0.0%	19.9%
R18	7.94	0.01	0.01	7.95	0.0%	0.0%	19.9%
R19	7.64	0.01	0.01	7.65	0.0%	0.0%	19.1%
R20	7.92	0.01	0.01	7.94	0.0%	0.0%	19.8%
R21	8.06	0.02	0.02	8.08	0.0%	0.0%	20.2%
R22	7.64	0.01	0.01	7.65	0.0%	0.0%	19.1%
R23	8.08	0.04	0.04	8.11	0.1%	0.1%	20.3%
R24	8.31	0.01	0.01	8.32	0.0%	0.0%	20.8%
R25	8.31	0.01	0.01	8.32	0.0%	0.0%	20.8%
R26	7.64	0.01	0.01	7.65	0.0%	0.0%	19.1%
R27	7.58	0.10	0.10	7.67	0.2%	0.2%	19.2%
R28	7.58	0.16	0.16	7.73	0.4%	0.4%	19.3%
R29	7.75	0.02	0.02	7.77	0.1%	0.1%	19.4%
R30	7.78	0.01	0.01	7.79	0.0%	0.0%	19.5%

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APPENDIX C: AIR EMISSION RISK ASSESSMENT

C.2.5 CO Impacts

Table C-17 and Table C-18 presents the 1-hour CO impacts at the modelled receptors; the PECs are below the EAL at all locations. Table C-19 and Table C-20 presents the 8-hour CO impacts at the modelled receptors; the PECs are below standard at all locations.

Table C-17 1-hour CO impacts for 2024

Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	30 000						
R1	420.00	44.98	44.98	464.98	0.1%	0.1%	1.5%
R2	408.00	18.35	18.35	426.35	0.1%	0.1%	1.4%
R3	420.00	18.61	18.61	438.61	0.1%	0.1%	1.5%
R4	402.00	47.63	47.63	449.63	0.2%	0.2%	1.5%
R5	414.00	218.09	218.09	632.09	0.7%	0.7%	2.1%
R6	416.00	25.99	25.99	441.99	0.1%	0.1%	1.5%
R7	414.00	368.79	368.79	782.79	1.2%	1.2%	2.6%
R8	408.00	16.04	16.04	424.04	0.1%	0.1%	1.4%
R9	414.00	65.05	65.05	479.05	0.2%	0.2%	1.6%
R10	414.00	148.57	148.57	562.57	0.5%	0.5%	1.9%
R11	410.00	29.70	29.70	439.70	0.1%	0.1%	1.5%
R12	414.00	300.13	300.13	714.13	1.0%	1.0%	2.4%
R13	420.00	17.42	17.42	437.42	0.1%	0.1%	1.5%
R14	416.00	71.61	71.61	487.61	0.2%	0.2%	1.6%
R15	416.00	30.47	30.47	446.47	0.1%	0.1%	1.5%
R16	408.00	18.53	18.53	426.53	0.1%	0.1%	1.4%
R17	412.00	23.68	23.68	435.68	0.1%	0.1%	1.5%
R18	412.00	21.16	21.16	433.16	0.1%	0.1%	1.4%
R19	412.00	30.58	30.58	442.58	0.1%	0.1%	1.5%
R20	408.00	21.57	21.57	429.57	0.1%	0.1%	1.4%
R21	414.00	323.91	323.91	737.91	1.1%	1.1%	2.5%
R22	414.00	56.14	56.14	470.14	0.2%	0.2%	1.6%
R23	416.00	35.63	35.63	451.63	0.1%	0.1%	1.5%
R24	418.00	31.84	31.84	449.84	0.1%	0.1%	1.5%
R25	418.00	30.32	30.32	448.32	0.1%	0.1%	1.5%
R26	418.00	32.11	32.11	450.11	0.1%	0.1%	1.5%
R27	418.00	85.27	85.27	503.27	0.3%	0.3%	1.7%
R28	418.00	259.90	259.90	677.90	0.9%	0.9%	2.3%
R29	416.00	22.79	22.79	438.79	0.1%	0.1%	1.5%
R30	406.00	63.72	63.72	469.72	0.2%	0.2%	1.6%

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Table C-18 1-hour CO impacts for 2025

Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	30 000						
R1	420.00	44.98	44.98	464.98	0.1%	0.1%	1.5%
R2	408.00	44.27	44.27	452.27	0.1%	0.1%	1.5%
R3	420.00	29.86	29.86	449.86	0.1%	0.1%	1.5%
R4	402.00	55.34	55.34	457.34	0.2%	0.2%	1.5%
R5	414.00	25.08	25.08	439.08	0.1%	0.1%	1.5%
R6	416.00	31.45	31.45	447.45	0.1%	0.1%	1.5%
R7	414.00	25.69	25.69	439.69	0.1%	0.1%	1.5%
R8	408.00	33.46	33.46	441.46	0.1%	0.1%	1.5%
R9	414.00	25.68	25.68	439.68	0.1%	0.1%	1.5%
R10	414.00	26.60	26.60	440.60	0.1%	0.1%	1.5%
R11	410.00	33.86	33.86	443.86	0.1%	0.1%	1.5%
R12	414.00	27.64	27.64	441.64	0.1%	0.1%	1.5%
R13	420.00	31.76	31.76	451.76	0.1%	0.1%	1.5%
R14	416.00	42.52	42.52	458.52	0.1%	0.1%	1.5%
R15	416.00	31.92	31.92	447.92	0.1%	0.1%	1.5%
R16	408.00	36.20	36.20	444.20	0.1%	0.1%	1.5%
R17	412.00	43.34	43.34	455.34	0.1%	0.1%	1.5%
R18	412.00	42.15	42.15	454.15	0.1%	0.1%	1.5%
R19	412.00	41.52	41.52	453.52	0.1%	0.1%	1.5%
R20	408.00	47.44	47.44	455.44	0.2%	0.2%	1.5%
R21	414.00	26.26	26.26	440.26	0.1%	0.1%	1.5%
R22	414.00	84.26	84.26	498.26	0.3%	0.3%	1.7%
R23	416.00	28.76	28.76	444.76	0.1%	0.1%	1.5%
R24	418.00	25.69	25.69	443.69	0.1%	0.1%	1.5%
R25	418.00	26.59	26.59	444.59	0.1%	0.1%	1.5%
R26	418.00	48.69	48.69	466.69	0.2%	0.2%	1.6%
R27	418.00	148.89	148.89	566.89	0.5%	0.5%	1.9%
R28	418.00	260.10	260.10	678.10	0.9%	0.9%	2.3%
R29	416.00	29.35	29.35	445.35	0.1%	0.1%	1.5%
R30	406.00	27.58	27.58	433.58	0.1%	0.1%	1.4%

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Table C-19 8-hour CO impacts for 2024

Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	10 000						
R1	420.00	31.10	31.10	451.10	0.3%	0.3%	4.5%
R2	408.00	11.17	11.17	419.17	0.1%	0.1%	4.2%
R3	420.00	11.59	11.59	431.59	0.1%	0.1%	4.3%
R4	402.00	30.51	30.51	432.51	0.3%	0.3%	4.3%
R5	414.00	142.12	142.12	556.12	1.4%	1.4%	5.6%
R6	416.00	16.58	16.58	432.58	0.2%	0.2%	4.3%
R7	414.00	192.31	192.31	606.31	1.9%	1.9%	6.1%
R8	408.00	7.97	7.97	415.97	0.1%	0.1%	4.2%
R9	414.00	54.32	54.32	468.32	0.5%	0.5%	4.7%
R10	414.00	106.86	106.86	520.86	1.1%	1.1%	5.2%
R11	410.00	24.58	24.58	434.58	0.2%	0.2%	4.3%
R12	414.00	205.85	205.85	619.85	2.1%	2.1%	6.2%
R13	420.00	10.17	10.17	430.17	0.1%	0.1%	4.3%
R14	416.00	54.95	54.95	470.95	0.5%	0.5%	4.7%
R15	416.00	19.58	19.58	435.58	0.2%	0.2%	4.4%
R16	408.00	11.67	11.67	419.67	0.1%	0.1%	4.2%
R17	412.00	12.77	12.77	424.77	0.1%	0.1%	4.2%
R18	412.00	11.36	11.36	423.36	0.1%	0.1%	4.2%
R19	412.00	12.92	12.92	424.92	0.1%	0.1%	4.2%
R20	408.00	13.51	13.51	421.51	0.1%	0.1%	4.2%
R21	414.00	239.57	239.57	653.57	2.4%	2.4%	6.5%
R22	414.00	30.40	30.40	444.40	0.3%	0.3%	4.4%
R23	416.00	23.81	23.81	439.81	0.2%	0.2%	4.4%
R24	418.00	22.87	22.87	440.87	0.2%	0.2%	4.4%
R25	418.00	19.51	19.51	437.51	0.2%	0.2%	4.4%
R26	418.00	18.34	18.34	436.34	0.2%	0.2%	4.4%
R27	418.00	49.81	49.81	467.81	0.5%	0.5%	4.7%
R28	418.00	165.30	165.30	583.30	1.7%	1.7%	5.8%
R29	416.00	12.63	12.63	428.63	0.1%	0.1%	4.3%
R30	406.00	43.08	43.08	449.08	0.4%	0.4%	4.5%

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Table C-20 8-hour CO impacts for 2025

Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	10 000						
R1	420.00	31.10	31.10	451.10	0.3%	0.3%	4.5%
R2	408.00	25.53	25.53	433.53	0.3%	0.3%	4.3%
R3	420.00	17.45	17.45	437.45	0.2%	0.2%	4.4%
R4	402.00	35.65	35.65	437.65	0.4%	0.4%	4.4%
R5	414.00	16.82	16.82	430.82	0.2%	0.2%	4.3%
R6	416.00	26.75	26.75	442.75	0.3%	0.3%	4.4%
R7	414.00	16.53	16.53	430.53	0.2%	0.2%	4.3%
R8	408.00	16.60	16.60	424.60	0.2%	0.2%	4.2%
R9	414.00	13.78	13.78	427.78	0.1%	0.1%	4.3%
R10	414.00	15.55	15.55	429.55	0.2%	0.2%	4.3%
R11	410.00	29.29	29.29	439.29	0.3%	0.3%	4.4%
R12	414.00	18.07	18.07	432.07	0.2%	0.2%	4.3%
R13	420.00	16.91	16.91	436.91	0.2%	0.2%	4.4%
R14	416.00	34.72	34.72	450.72	0.3%	0.3%	4.5%
R15	416.00	19.63	19.63	435.63	0.2%	0.2%	4.4%
R16	408.00	19.87	19.87	427.87	0.2%	0.2%	4.3%
R17	412.00	22.71	22.71	434.71	0.2%	0.2%	4.3%
R18	412.00	23.32	23.32	435.32	0.2%	0.2%	4.4%
R19	412.00	23.04	23.04	435.04	0.2%	0.2%	4.4%
R20	408.00	30.09	30.09	438.09	0.3%	0.3%	4.4%
R21	414.00	16.05	16.05	430.05	0.2%	0.2%	4.3%
R22	414.00	51.42	51.42	465.42	0.5%	0.5%	4.7%
R23	416.00	24.75	24.75	440.75	0.2%	0.2%	4.4%
R24	418.00	18.89	18.89	436.89	0.2%	0.2%	4.4%
R25	418.00	18.07	18.07	436.07	0.2%	0.2%	4.4%
R26	418.00	30.37	30.37	448.37	0.3%	0.3%	4.5%
R27	418.00	99.14	99.14	517.14	1.0%	1.0%	5.2%
R28	418.00	165.32	165.32	583.32	1.7%	1.7%	5.8%
R29	416.00	17.52	17.52	433.52	0.2%	0.2%	4.3%
R30	406.00	15.72	15.72	421.72	0.2%	0.2%	4.2%

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C.2.6 NH₃ Impacts

Table C-21 and Table C-22 presents the annual mean NH₃ impacts at the modelled receptors; the PECs are below the standard at all locations. Table C-23 and Table C-24 presents the 1-hour NH₃ impacts at the modelled receptors; the PECs are below the standard at all locations.

Table C-21 Annual NH₃ impacts for 2024

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	180						
R1	1.60	0.01	0.07	1.67	0.0%	2.3%	55.6%
R2	1.50	0.00	0.01	1.51	0.0%	0.4%	50.4%
R3	1.50	0.00	0.02	1.52	0.0%	0.7%	50.7%
R4	1.40	0.01	0.04	1.44	0.0%	1.5%	48.1%
R5	1.40	0.05	0.08	1.48	0.0%	2.6%	49.3%
R6	1.40	0.01	0.02	1.42	0.0%	0.7%	47.3%
R7	1.40	0.10	0.15	1.55	0.1%	4.9%	51.6%
R8	1.50	0.00	0.01	1.51	0.0%	0.3%	50.3%
R9	1.40	0.01	0.02	1.42	0.0%	0.6%	47.3%
R10	1.40	0.03	0.04	1.44	0.0%	0.0%	0.8%
R11	1.40	0.01	0.02	1.42	0.0%	0.7%	0.8%
R12	1.40	0.07	0.11	1.51	0.0%	0.1%	0.8%
R13	1.60	0.00	0.02	1.62	0.0%	0.5%	0.9%
R14	1.40	0.01	0.18	1.58	0.0%	0.1%	0.9%
R15	1.50	0.01	0.03	1.53	0.0%	1.1%	0.9%
R16	1.50	0.00	0.01	1.51	0.0%	0.0%	0.8%
R17	1.60	0.01	0.02	1.62	0.0%	0.6%	0.9%
R18	1.60	0.00	0.02	1.62	0.0%	0.0%	0.9%
R19	1.30	0.01	0.02	1.32	0.0%	0.5%	0.7%
R20	1.50	0.01	0.03	1.53	0.0%	0.0%	0.8%
R21	1.40	0.06	0.07	1.47	0.0%	2.4%	0.8%
R22	1.30	0.01	0.02	1.32	0.0%	0.0%	0.7%
R23	1.40	0.01	0.03	1.43	0.0%	1.0%	0.8%
R24	1.50	0.01	0.01	1.51	0.0%	0.0%	0.8%
R25	1.50	0.00	0.01	1.51	0.0%	0.4%	0.8%
R26	1.30	0.01	0.01	1.31	0.0%	0.0%	0.7%
R27	1.30	0.02	0.05	1.35	0.0%	1.6%	0.7%
R28	1.30	0.11	0.12	1.42	0.1%	0.1%	0.8%
R29	1.50	0.01	0.03	1.53	0.0%	1.0%	0.8%
R30	1.30	0.01	0.05	1.35	0.0%	0.0%	0.7%

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Table C-22 Annual NH₃ impacts for 2025

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	180						
R1	1.60	0.02	0.07	1.67	0.0%	2.4%	55.7%
R2	1.50	0.01	0.01	1.51	0.0%	0.5%	50.5%
R3	1.50	0.01	0.02	1.52	0.0%	0.7%	50.7%
R4	1.40	0.02	0.05	1.45	0.0%	1.7%	48.4%
R5	1.40	0.01	0.04	1.44	0.0%	1.2%	47.9%
R6	1.40	0.01	0.02	1.42	0.0%	0.7%	47.4%
R7	1.40	0.01	0.05	1.45	0.0%	1.7%	48.4%
R8	1.50	0.00	0.01	1.51	0.0%	0.3%	50.3%
R9	1.40	0.00	0.01	1.41	0.0%	0.4%	47.0%
R10	1.40	0.00	0.01	1.41	0.0%	0.0%	0.8%
R11	1.40	0.01	0.02	1.42	0.0%	0.6%	0.8%
R12	1.40	0.00	0.04	1.44	0.0%	0.0%	0.8%
R13	1.60	0.01	0.02	1.62	0.0%	0.6%	0.9%
R14	1.40	0.01	0.18	1.58	0.0%	0.1%	0.9%
R15	1.50	0.01	0.03	1.53	0.0%	1.2%	0.9%
R16	1.50	0.01	0.01	1.51	0.0%	0.0%	0.8%
R17	1.60	0.01	0.02	1.62	0.0%	0.6%	0.9%
R18	1.60	0.01	0.02	1.62	0.0%	0.0%	0.9%
R19	1.30	0.01	0.02	1.32	0.0%	0.5%	0.7%
R20	1.50	0.01	0.03	1.53	0.0%	0.0%	0.8%
R21	1.40	0.00	0.02	1.42	0.0%	0.5%	0.8%
R22	1.30	0.01	0.02	1.32	0.0%	0.0%	0.7%
R23	1.40	0.01	0.03	1.43	0.0%	0.9%	0.8%
R24	1.50	0.00	0.01	1.51	0.0%	0.0%	0.8%
R25	1.50	0.00	0.01	1.51	0.0%	0.4%	0.8%
R26	1.30	0.01	0.01	1.31	0.0%	0.0%	0.7%
R27	1.30	0.07	0.10	1.40	0.0%	3.2%	0.8%
R28	1.30	0.13	0.14	1.44	0.1%	0.1%	0.8%
R29	1.50	0.01	0.03	1.53	0.0%	1.0%	0.8%
R30	1.30	0.00	0.04	1.34	0.0%	0.0%	0.7%

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Table C-23 1 hour NH₃ impacts for 2024

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	2 500						
R1	3.20	0.46	0.57	3.77	0.0%	0.0%	0.2%
R2	3.00	0.16	0.17	3.17	0.0%	0.0%	0.1%
R3	3.00	0.16	0.20	3.20	0.0%	0.0%	0.1%
R4	2.80	0.42	0.48	3.28	0.0%	0.0%	0.1%
R5	2.80	2.06	2.13	4.93	0.1%	0.1%	0.2%
R6	2.80	0.23	0.26	3.06	0.0%	0.0%	0.1%
R7	2.80	3.37	3.47	6.27	0.1%	0.1%	0.3%
R8	3.00	0.14	0.15	3.15	0.0%	0.0%	0.1%
R9	2.80	0.61	0.63	3.43	0.0%	0.0%	0.1%
R10	2.80	1.43	1.45	4.25	0.1%	0.1%	0.2%
R11	2.80	0.26	0.28	3.08	0.0%	0.0%	0.1%
R12	2.80	2.91	2.99	5.79	0.1%	0.1%	0.2%
R13	3.20	0.15	0.18	3.38	0.0%	0.0%	0.1%
R14	2.80	0.39	0.74	3.54	0.0%	0.0%	0.1%
R15	3.00	0.31	0.37	3.37	0.0%	0.0%	0.1%
R16	3.00	0.16	0.18	3.18	0.0%	0.0%	0.1%
R17	3.20	0.21	0.23	3.43	0.0%	0.0%	0.1%
R18	3.20	0.19	0.21	3.41	0.0%	0.0%	0.1%
R19	2.60	0.26	0.28	2.88	0.0%	0.0%	0.1%
R20	3.00	0.19	0.23	3.23	0.0%	0.0%	0.1%
R21	2.80	3.05	3.07	5.87	0.1%	0.1%	0.2%
R22	2.60	0.50	0.52	3.12	0.0%	0.0%	0.1%
R23	2.80	0.34	0.37	3.17	0.0%	0.0%	0.1%
R24	3.00	0.28	0.30	3.30	0.0%	0.0%	0.1%
R25	3.00	0.28	0.30	3.30	0.0%	0.0%	0.1%
R26	2.60	0.28	0.29	2.89	0.0%	0.0%	0.1%
R27	2.60	0.44	0.50	3.10	0.0%	0.0%	0.1%
R28	2.60	2.59	2.60	5.20	0.1%	0.1%	0.2%
R29	3.00	0.23	0.28	3.28	0.0%	0.0%	0.1%
R30	2.60	0.60	0.67	3.27	0.0%	0.0%	0.1%

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Table C-24 1 hour NH₃ impacts for 2025

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	2 500						
R1	3.20	0.46	0.57	3.77	0.0%	0.0%	0.2%
R2	3.00	0.42	0.43	3.43	0.0%	0.0%	0.1%
R3	3.00	0.24	0.28	3.28	0.0%	0.0%	0.1%
R4	2.80	0.43	0.49	3.29	0.0%	0.0%	0.1%
R5	2.80	0.22	0.29	3.09	0.0%	0.0%	0.1%
R6	2.80	0.28	0.30	3.10	0.0%	0.0%	0.1%
R7	2.80	0.24	0.33	3.13	0.0%	0.0%	0.1%
R8	3.00	0.32	0.33	3.33	0.0%	0.0%	0.1%
R9	2.80	0.24	0.25	3.05	0.0%	0.0%	0.1%
R10	2.80	0.24	0.26	3.06	0.0%	0.0%	0.1%
R11	2.80	0.30	0.32	3.12	0.0%	0.0%	0.1%
R12	2.80	0.24	0.31	3.11	0.0%	0.0%	0.1%
R13	3.20	0.29	0.32	3.52	0.0%	0.0%	0.1%
R14	2.80	0.25	0.60	3.40	0.0%	0.0%	0.1%
R15	3.00	0.31	0.37	3.37	0.0%	0.0%	0.1%
R16	3.00	0.34	0.36	3.36	0.0%	0.0%	0.1%
R17	3.20	0.40	0.42	3.62	0.0%	0.0%	0.1%
R18	3.20	0.39	0.42	3.62	0.0%	0.0%	0.1%
R19	2.60	0.37	0.39	2.99	0.0%	0.0%	0.1%
R20	3.00	0.40	0.44	3.44	0.0%	0.0%	0.1%
R21	2.80	0.24	0.27	3.07	0.0%	0.0%	0.1%
R22	2.60	0.74	0.76	3.36	0.0%	0.0%	0.1%
R23	2.80	0.27	0.30	3.10	0.0%	0.0%	0.1%
R24	3.00	0.24	0.25	3.25	0.0%	0.0%	0.1%
R25	3.00	0.25	0.26	3.26	0.0%	0.0%	0.1%
R26	2.60	0.44	0.46	3.06	0.0%	0.0%	0.1%
R27	2.60	1.53	1.59	4.19	0.1%	0.1%	0.2%
R28	2.60	2.59	2.60	5.20	0.1%	0.1%	0.2%
R29	3.00	0.27	0.32	3.32	0.0%	0.0%	0.1%
R30	2.60	0.25	0.32	2.92	0.0%	0.0%	0.1%

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C.3 Impacts on ecological receptors

Potential impacts on national, international and local sites are presented in **Table C-25**. All impacts screen out as insignificant.

EA guidance states that no PEC should be calculated for local designated sites. Predicted annual mean NO_x concentrations at the national and international sites (E1-E6) are below the AQS for both 2024 and 2025. With regard to local designated sites (E7-E16), annual mean NO_x impacts are insignificant as the PC is less than 100% of the AQS, in line with the EA guidance.

Predicted concentrations of daily mean NO_x at the national and international sites (E1-E6) are below the AQS objective. Impacts at all local designated sites E9, E10, E15 and E16 (E7-E16) are insignificant as the PC is less than 100% of the AQS objective, in line with the EA guidance. The highest modelled PC at the local designated sites was E12 (17.24 µg/m³ and 41.64 µg/m³ in 2024 and 2025, respectively). However, as these are both below 100% of the AQS objective (75 µg/m³), no further assessment was required. Whilst there are exceedances at receptors E10, E12 and E13, these receptors are located within the site boundary and higher modelled concentrations were expected. They have been included in the AERA to ensure consistency with the receptors assessed in the DCO application. Considering their designation (CWS), these receptors have been assessed for impacts but are not considered relevant to further assessment within the Habitats Regulation Assessment (HRA) and associated CRoW Act assessment provided in Appendix K of the SID.

Predicted concentrations of annual mean SO₂ at the national and international designated sites are below the AQS. Impacts at local designated sites are insignificant as the PC is below the AQS.

The national and international designated sites (E1-E6) results are presented for the different habitats present. Analysis of the results have been undertaken by a biodiversity expert and presented in a HRA and the associated CRoW Act assessment. This AERA has assessed impacts for nitrogen deposition against the CLd aligning with the air quality modelling study (2022)⁸ undertaken for the sHRA for the DCO application.

Nitrogen deposition is predicted to be below the CLd for the majority of the national and international sites for both 2024 and 2025. Nitrogen deposition PC at the local designated sites is below 100% of the CL and therefore can be screened out as insignificant. There are no exceedances of acid deposition at any of the modelled sensitive ecological receptors. Acid deposition at the local designated sites is insignificant as the PC is below 100% of the CLd.

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Table C-25 Summary of impacts at national and local sites for 2024

Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
E1 - Alde-Ore & Butley Estuaries										
NO _x Annual mean (µg m ⁻³)	30	6.46	0.05	0.00	0.01	0.05	6.52	0.2%	0.2%	21.7%
NO _x Daily mean (µg m ⁻³)	75	6.73	0.87	0.00	0.20	1.06	7.79	1.2%	1.4%	10.4%
SO ₂ Annual mean (µg m ⁻³)	20	2.22	0.01	0.00	0.00	0.01	2.23	0.0%	0.0%	11.1%
NH ₃ Annual mean (µg m ⁻³)	1	1.38	0.00	0.00	0.00	0.00	1.38	0.1%	0.1%	138.4%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.76	0.01	0.00	0.00	0.01	12.77	0.1%	0.1%	127.7%
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.76	0.01	0.00	0.00	0.01	12.77	0.1%	0.1%	127.7%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E2 - Minsmere-Walberswick Heaths and Marshes										

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Annual mean (µg m ⁻³)	30	6.75	4.27	0.00	0.08	4.36	11.11	14.2%	14.5%	37.0%
NO _x Daily mean (µg m ⁻³)	75	6.75	22.81	0.00	0.51	23.32	30.08	30.4%	31.1%	40.1%
SO ₂ Annual mean (µg m ⁻³)	20	3.96	0.36	0.00	0.00	0.36	4.32	1.8%	1.8%	21.6%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.04	0.00	0.04	0.08	1.34	4.3%	7.8%	134.2%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.37	0.65	0.50	0.01	0.69	13.06	13.0%	13.9%	261.2%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.37	0.65	1.18	0.00	0.69	13.06	13.0%	13.9%	261.2%
Acid deposition (IED) (keq/ha/yr)	0.892/1.392 /0.5	0.88N/0.09S	0.046N/0.042S			0.049N/0.042S	0.929N/0.132S	No exceedance	No exceedance	76.3
Acid deposition (Total) (keq/ha/yr)	0.892/1.392 /0.5	0.88N/0.09S	0.046N/0.042S			0.049N/0.042S	0.929N/0.132S	No exceedance	No exceedance	76.3
E3 - Orfordness-Shingle Street										
NO _x Annual mean (µg m ⁻³)	30	6.33	0.04	0.00	0.00	0.04	6.37	0.1%	0.1%	21.2%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Daily mean (µg m ⁻³)	75	6.33	0.60	0.00	0.12	0.73	7.06	0.8%	1.0%	9.4%
SO ₂ Annual mean (µg m ⁻³)	20	2.37	0.01	0.00	0.00	0.01	2.38	0.0%	0.0%	11.9%
NH ₃ Annual mean (µg m ⁻³)	1	1.13	0.00	0.00	0.00	0.00	1.13	0.1%	0.1%	113.2%
Nitrogen deposition (IED) (kgN/ha/yr)	5	11.32	0.01	0.00	0.00	0.02	11.34	0.2%	0.5%	226.9%
Nitrogen deposition (Total) (kgN/ha/yr)	5	11.32	0.01	0.00	0.00	0.02	11.34	0.2%	0.5%	226.9%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E4 - Sandlings										
NO _x Annual mean (µg m ⁻³)	30	6.79	0.30	0.00	0.14	0.44	7.23	1.0%	1.5%	24.1%
NO _x Daily mean (µg m ⁻³)	75	6.79	2.05	0.00	0.96	3.02	9.81	2.7%	4.0%	13.1%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
SO ₂ Annual mean (µg m ⁻³)	20	2.71	0.04	0.00	0.00	0.04	2.75	0.2%	0.2%	13.7%
NH ₃ Annual mean (µg m ⁻³)	1	1.35	0.01	0.00	0.03	0.04	1.38	1.2%	3.9%	138.4%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.42	0.16	0.03	0.00	0.16	12.58	3.1%	3.3%	251.6%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.42	0.16	0.03	0.00	0.24	12.66	3.1%	4.9%	253.3%
Acid deposition (ied)(keq/ha/yr)	0.892/1.382 /0.49	0.88N/0.09S	0.006N/0.004S			0.011N/0.004S	0.891N/0.094S	No exceedance	No exceedance	21.5
Acid deposition (Total) (keq/ha/yr)	0.892/1.382 /0.49	0.88N/0.09S	0.005N/0.004S			0.017N/0.004S	0.897N/0.094S	No exceedance	No exceedance	72.5
E5 - Sizewell Marshes										
NO _x Annual mean (µg m ⁻³)	30	6.62	1.46	0.00	0.09	1.55	8.17	4.9%	5.2%	27.2%
NO _x Daily mean (µg m ⁻³)	75	6.62	12.00	0.00	0.45	12.46	19.08	16.0%	16.6%	25.4%
SO ₂ Annual mean (µg m ⁻³)	20	2.73	0.19	0.00	0.00	0.19	2.92	1.0%	1.0%	14.6%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NH ₃ Annual mean (µg m ⁻³)	1	1.36	0.04	0.00	0.10	0.14	1.50	3.8%	13.8%	150.0%
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.71	0.34	0.29	0.00	0.39	13.11	2.3%	2.6%	87.4%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.71	0.08	0.29	0.00	0.70	13.61	0.5%	4.6%	90.7%
Acid deposition (IED) (keq/ha/yr)	0.366/4.506 /4.14	0.90N/0.09S	0.024N/0.022S			0.078N/0.132S	0.978N/0.222S	No exceedance	No exceedance	26.6
Acid deposition (Total) (keq/ha/yr)	0.366/4.506 /4.14	0.90N/0.09S	0.005N/0.007S			0.081N/0.145S	0.989N/0.235S	No exceedance	No exceedance	27.2
E6 - Leiston - Aldeburgh										
NO _x Annual mean (µg m ⁻³)	30	6.79	0.30	0.00	0.14	0.44	7.23	1.0%	1.5%	24.1%
NO _x Daily mean (µg m ⁻³)	75	6.70	3.27	0.00	0.54	3.81	10.51	4.4%	5.1%	14.0%
SO ₂ Annual mean (µg m ⁻³)	20	2.71	0.04	0.00	0.00	0.04	2.75	0.2%	0.2%	13.7%
NH ₃ Annual mean (µg m ⁻³)	1	1.35	0.01	0.00	0.03	0.04	1.38	1.2%	3.9%	138.4%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.42	0.09	0.03	0.00	0.16	12.58	0.6%	1.1%	83.9%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.42	0.08	0.03	0.00	0.24	12.66	0.5%	1.6%	84.4%
Acid deposition (IED) (keq/ha/yr)	0.438/4.578 /4.14	0.88N/0.09S	0.006N/0.004S			0.011N/0.004S	0.891N/0.094S	No exceedance	No exceedance	21.5
Acid deposition (keq/ha/yr) (Total)	0.438/4.578 /4.14	0.88N/0.09S	0.005N/0.004S			0.017N/0.004S	0.897N/0.094S	No exceedance	No exceedance	21.7
E7 - Leiston Common Country County Wildlife Site										
NO _x Annual mean (µg m ⁻³)	30	6.83	0.73	0.00	0.25	0.98	7.81	2.4%	3.3%	26.0%
NO _x Daily mean (µg m ⁻³)	75	6.82	3.40	0.00	0.92	4.32	11.14	4.5%	5.8%	14.9%
SO ₂ Annual mean (µg m ⁻³)	20	2.49	0.07	0.00	0.00	0.07	2.56	0.3%	0.3%	12.8%
NH ₃ Annual mean (µg m ⁻³)	1	1.44	0.01	0.00	0.02	0.03	1.47	1.0%	3.0%	146.8%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.91	0.12	0.09	0.00	0.25	13.16	2.5%	5.0%	263.2%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.91	0.12	0.09	0.00	0.25	13.16	2.5%	5.0%	263.2%
Acid deposition (IED)(keq/ha/yr)	0.892/1.382 /0.49	0.92N/0.09S	0.008N/0.008S			0.017N/0.008S	0.937N/0.098S	No exceedance	No exceedance	75.0
Acid deposition (Total) (keq/ha/yr)	0.892/1.382 /0.49	0.92N/0.09S	0.008N/0.008S			0.017N/0.008S	0.937N/0.098S	No exceedance	No exceedance	75.0
E8 - Aldringham to Aldeburgh Disused Railway CWS										
NO _x Annual mean (µg m ⁻³)	30	6.55	0.21	0.00	0.06	0.27	6.82	0.7%	0.9%	22.7%
NO _x Daily mean (µg m ⁻³)	75	6.55	1.63	0.00	0.94	2.57	9.12	2.2%	3.4%	12.2%
SO ₂ Annual mean (µg m ⁻³)	20	2.47	0.03	0.00	0.00	0.03	2.50	0.2%	0.2%	12.5%
NH ₃ Annual mean (µg m ⁻³)	1	1.33	0.01	0.00	0.00	0.01	1.34	0.7%	1.2%	134.3%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.26	0.06	0.02	0.00	0.09	12.35	1.2%	1.8%	247.0%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.26	0.06	0.02	0.00	0.09	12.35	1.2%	1.8%	247.0%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Acid deposition (IED) (keq/ha/yr)	0.892/1.382 /0.49	0.87N/0.09S	0.004N/0.003S			0.006N/0.003S	0.876N/0.093S	No exceedance	No exceedance	19.1
Acid deposition (Total) (keq/ha/yr)	0.892/1.382 /0.49	0.87N/0.09S	0.004N/0.003S			0.006N/0.003S	0.876N/0.093S	No exceedance	No exceedance	19.1
E9 - Dower House CWS										
NO _x Annual mean (µg m ⁻³)	30	6.46	1.00	0.00	0.08	1.08	7.55	3.3%	3.6%	25.2%
NO _x Daily mean (µg m ⁻³)	75	6.46	10.75	0.00	0.99	11.74	18.21	14.3%	15.7%	24.3%
SO ₂ Annual mean (µg m ⁻³)	20	2.49	0.11	0.00	0.00	0.11	2.60	0.6%	0.6%	13.0%
NH ₃ Annual mean (µg m ⁻³)	1	1.24	0.01	0.00	0.01	0.02	1.26	1.2%	2.0%	126.4%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.52	0.17	0.16	0.00	0.21	12.72	1.7%	2.1%	127.2%
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.52	0.17	0.16	0.00	0.21	12.72	1.7%	2.1%	127.2%
Acid deposition (IED) (keq/ha/yr)	0.357/8.73/8.373	0.89N/0.09S	0.011N/0.013S			0.014N/0.013S	0.904N/0.103S	No exceedance	No exceedance	1.2

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Acid deposition (Total) (keq/ha/yr)	0.357/8.73/8.373	0.89N/0.09S	0.011N/0.013S			0.014N/0.013S	0.904N/0.103S	No exceedance	No exceedance	1.2
E10 - Suffolk Shingles Beaches CWS										
NO _x Annual mean (µg m ⁻³)	30	8.66	7.62	0.00	0.06	7.68	16.34	25.4%	25.6%	54.5%
NO _x Daily mean (µg m ⁻³)	75	8.66	46.11	0.00	0.30	46.42	55.08	61.5%	61.9%	73.4%
SO ₂ Annual mean (µg m ⁻³)	20	23.60	0.98	0.00	0.00	0.98	24.58	4.9%	4.9%	122.9%
NH ₃ Annual mean (µg m ⁻³)	1	1.24	0.09	0.00	0.01	0.10	1.34	9.2%	9.7%	134.1%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.22	1.25	0.17	0.00	1.28	13.50	12.5%	12.8%	135.0%
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.22	1.25	0.17	0.00	1.28	13.50	12.5%	12.8%	135.0%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
E11 - Reckham Pits CWS										
NO _x Annual mean (µg m ⁻³)	30	6.82	0.49	0.00	0.11	0.61	7.42	1.6%	2.0%	24.7%
NO _x Daily mean (µg m ⁻³)	75	6.82	3.89	0.00	0.96	4.85	11.67	5.2%	6.5%	15.6%
SO ₂ Annual mean (µg m ⁻³)	20	3.02	0.07	0.00	0.00	0.07	3.09	0.4%	0.4%	15.5%
NH ₃ Annual mean (µg m ⁻³)	1	1.36	0.01	0.00	0.01	0.02	1.38	1.0%	2.0%	137.8%
Nitrogen deposition (IED) (kgN/ha/yr)	10	22.16	0.18	0.12	0.00	0.28	22.43	1.8%	2.8%	224.3%
Nitrogen deposition (Total) (kgN/ha/yr)	10	22.16	0.18	0.12	0.00	0.28	22.43	1.8%	2.8%	224.3%
Acid deposition (IED) (keq/ha/yr)	0.285/4.495 /4.21	0.012N/0.016S	0.012N/0.016S			0.019N/0.016S	1.599N/0.106S	No exceedance	No exceedance	38.0
Acid deposition (Total) (keq/ha/yr)	0.285/4.495 /4.21	0.012N/0.016S	0.012N/0.016S			0.019N/0.016S	1.599N/0.106S	No exceedance	No exceedance	38.0
E12 - Sizewell Levels and Associated Areas										
NO _x Annual mean (µg m ⁻³)	30	6.75	2.11	0.00	0.28	2.39	9.14	7.0%	8.0%	30.5%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Daily mean (µg m ⁻³)	75	6.75	14.26	0.00	2.98	17.24	23.99	19.0%	23.0%	32.0%
SO ₂ Annual mean (µg m ⁻³)	20	3.96	0.22	0.00	0.00	0.22	4.18	1.1%	1.1%	20.9%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.02	0.00	0.02	0.05	1.31	2.1%	4.6%	131.0%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.37	0.32	0.58	0.02	0.48	12.84	3.2%	4.8%	128.4%
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.37	0.32	0.58	0.02	0.48	12.84	3.2%	4.8%	128.4%
Acid deposition (IED) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.023N/0.026S			0.033N/0.026S	0.913N/0.116S	No exceedance	No exceedance	38.0
Acid deposition (Total) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.023N/0.026S			0.033N/0.026S	0.913N/0.116S	No exceedance	No exceedance	38.0
E13 - Southern Minsmere Levels – Dunwich Forest & Kenton Hill CWS										
NO _x Annual mean (µg m ⁻³)	30	6.75	0.61	0.00	0.29	0.90	7.65	2.0%	3.0%	25.5%
NO _x Daily mean (µg m ⁻³)	75	6.75	6.44	0.00	2.01	8.46	15.21	8.6%	11.3%	20.3%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
SO ₂ Annual mean (µg m ⁻³)	20	3.96	0.09	0.00	0.00	0.09	4.05	0.5%	0.5%	20.3%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.01	0.00	0.03	0.03	1.30	0.9%	3.5%	129.9%
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.37	0.11	0.35	0.01	0.27	12.63	0.7%	1.8%	84.2%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.37	0.11	0.35	0.01	0.27	12.63	0.7%	1.8%	84.2%
Acid deposition (IED) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.007N/0.010S			0.019N/0.010S	0.899N/0.100S	No exceedance	No exceedance	79.2
Acid deposition (Total) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.007N/0.010S			0.019N/0.010S	0.899N/0.100S	No exceedance	No exceedance	79.2
E14 - Aldhurst Farm habitat creation scheme										
NO _x Annual mean (µg m ⁻³)	30	6.85	0.20	0.00	0.12	0.31	7.16	0.7%	1.0%	23.9%
NO _x Daily mean (µg m ⁻³)	75	6.85	1.94	0.00	1.11	3.05	9.90	2.6%	4.1%	13.2%
SO ₂ Annual mean (µg m ⁻³)	20	2.59	0.04	0.00	0.00	0.04	2.63	0.2%	0.2%	13.2%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NH ₃ Annual mean (µg m ⁻³)	1	1.50	0.00	0.00	0.01	0.01	1.51	0.5%	1.4%	151.4%
Nitrogen deposition (IED) (kgN/ha/yr)	15	13.30	0.04	0.03	0.00	0.10	13.40	0.3%	0.7%	89.4%
Nitrogen deposition (Total) (kgN/ha/yr)	15	13.30	0.04	0.03	0.00	0.10	13.40	0.3%	0.7%	89.4%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E15 - Marsh harrier/reptile habitat within EDF Energy estate										
NO _x Annual mean (µg m ⁻³)	30	6.51	0.27	0.00	0.18	0.45	6.96	0.9%	1.5%	23.2%
NO _x Daily mean (µg m ⁻³)	75	6.51	2.65	0.00	1.63	4.29	10.80	3.5%	5.7%	14.4%
SO ₂ Annual mean (µg m ⁻³)	20	2.39	0.12	0.00	0.00	0.12	2.51	0.6%	0.6%	12.5%
NH ₃ Annual mean (µg m ⁻³)	1	1.40	0.01	0.00	0.02	0.03	1.43	1.0%	2.6%	142.6%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.90	0.08	0.09	0.01	0.18	13.08	1.6%	3.5%	261.5%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.90	0.08	0.09	0.01	0.18	13.08	1.6%	3.5%	261.5%
Acid deposition (IED) (keq/ha/yr)	0.892/1.392 /0.5	0.92N/0.09S	0.005N/0.013S			0.012N/0.013S	0.932N/0.103S	No exceedance	No exceedance	74.5
Acid deposition (Total) (keq/ha/yr)	0.892/1.392 /0.5	0.92N/0.09S	0.005N/0.013S			0.012N/0.013S	0.932N/0.103S	No exceedance	No exceedance	74.5
E16 - Ash Wood priority habitat										
NO _x Annual mean (µg m ⁻³)	30	6.56	0.31	0.00	0.27	0.58	7.14	1.0%	1.9%	23.8%
NO _x Daily mean (µg m ⁻³)	75	6.56	2.70	0.00	2.05	4.75	11.32	3.6%	6.3%	15.1%
SO ₂ Annual mean (µg m ⁻³)	20	2.25	0.17	0.00	0.00	0.17	2.42	0.9%	0.9%	12.1%
NH ₃ Annual mean (µg m ⁻³)	1	1.50	0.01	0.00	0.02	0.04	1.54	1.5%	3.8%	153.8%
Nitrogen deposition (IED) (kgN/ha/yr)	10	13.60	0.11	0.09	0.01	0.25	13.85	1.1%	2.5%	138.5%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (Total) (kgN/ha/yr)	10	13.60	0.11	0.09	0.01	0.25	13.85	1.1%	2.5%	138.5%
Acid deposition (IED) (keq/ha/yr) (Total)	0.142/1.273 /1.131	0.97N/0.09S	0.007N/0.020S			0.017N/0.020S	0.987N/0.110S	No exceedance	No exceedance	86.3
Acid deposition (Total) (keq/ha/yr)	0.142/1.273 /1.131	0.97N/0.09S	0.007N/0.020S			0.017N/0.020S	0.987N/0.110S	No exceedance	No exceedance	86.3

A - APPROVED

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Table C-24 Summary of impacts at national and local sites for 2025

Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
E1 - Alde-Ore & Butley Estuaries										
NO _x Annual mean (µg m ⁻³)	30	6.51	0.11	0.00	0.00	0.12	6.63	0.4%	0.4%	22.1%
NO _x Daily mean (µg m ⁻³)	75	6.51	1.74	0.00	0.13	1.86	8.37	2.3%	2.5%	11.2%
SO ₂ Annual mean (µg m ⁻³)	20	2.22	0.01	0.00	0.00	0.01	2.23	0.0%	0.0%	11.1%
NH ₃ Annual mean (µg m ⁻³)	1	1.33	0.00	0.00	0.00	0.00	1.33	0.1%	0.2%	133.3%
Nitrogen deposition (IED) (kgN/ha/yr)	10	13.30	0.02	0.00	0.00	0.02	13.32	0.2%	0.2%	133.2%
Nitrogen deposition (Total) (kgN/ha/yr)	10	13.30	0.02	0.00	0.00	0.02	12.60	0.2%	0.2%	126.0%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E2 - Minsmere-Walberswick Heaths and Marshes										
NO _x Annual mean (µg m ⁻³)	30	6.75	9.26	0.00	0.08	9.34	16.10	30.9%	31.1%	53.7%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Daily mean (µg m ⁻³)	75	6.75	34.69	0.00	0.51	35.20	41.95	46.3%	46.9%	55.9%
SO ₂ Annual mean (µg m ⁻³)	20	3.96	0.50	0.00	0.00	0.50	4.46	2.5%	2.5%	22.3%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.09	0.00	0.04	0.12	1.39	8.6%	12.2%	138.6%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.37	1.38	0.50	0.01	1.42	13.79	27.6%	28.5%	275.8%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.37	1.38	1.18	0.00	1.42	13.79	27.6%	28.5%	275.8%
Acid deposition (IED) (keq/ha/yr)	0.892/1.392/0.5	0.88N/0.09S	0.098N/0.059S			0.101N/0.059S	0.981N/0.149S	No exceedance	No exceedance	81.2
Acid deposition (Total) (keq/ha/yr)	0.892/1.392/0.5	0.88N/0.09S	0.098N/0.059S			0.101N/0.059S	0.981N/0.149S	No exceedance	No exceedance	81.2
E3 - Orfordness-Shingle Street										
NO _x Annual mean (µg m ⁻³)	30	6.33	0.10	0.00	0.00	0.10	6.43	0.3%	0.3%	21.4%
NO _x Daily mean (µg m ⁻³)	75	6.33	1.44	0.00	0.12	1.57	7.90	1.9%	2.1%	10.5%
SO ₂ Annual mean (µg m ⁻³)	20	2.37	0.01	0.00	0.00	0.01	2.38	0.0%	0.0%	11.9%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NH ₃ Annual mean (µg m ⁻³)	1	1.13	0.00	0.00	0.00	0.00	1.13	0.1%	0.1%	113.2%
Nitrogen deposition (IED) (kgN/ha/yr)	5	11.32	0.02	0.00	0.00	0.02	11.34	0.3%	0.5%	226.9%
Nitrogen deposition (Total) (kgN/ha/yr)	5	11.32	0.02	0.00	0.00	0.02	11.34	0.3%	0.5%	226.9%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E4 - Sandlings										
NO _x Annual mean (µg m ⁻³)	30	6.79	0.44	0.00	0.34	0.78	7.57	1.5%	2.6%	25.2%
NO _x Daily mean (µg m ⁻³)	75	6.79	3.81	0.00	2.30	6.12	12.90	5.1%	8.2%	17.2%
SO ₂ Annual mean (µg m ⁻³)	20	2.71	0.04	0.00	0.00	0.04	2.75	0.2%	0.2%	13.7%
NH ₃ Annual mean (µg m ⁻³)	1	1.35	0.00	0.00	0.03	0.03	1.38	0.5%	3.1%	137.6%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.42	0.16	0.03	0.00	0.24	12.65	3.1%	4.7%	253.1%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.42	0.16	0.03	0.00	0.24	12.65	3.1%	4.7%	253.1%
Acid deposition (ied)(keq/ha/yr)	0.892/1.382/0.49	0.88N/0.09S	0.004N/0.004S			0.016N/0.004S	0.896N/0.094S	No exceedance	No exceedance	71.7
Acid deposition (Total) (keq/ha/yr)	0.892/1.382/0.49	0.88N/0.09S	0.004N/0.004S			0.016N/0.004S	0.896N/0.094S	No exceedance	No exceedance	71.7
E5 - Sizewell Marshes										
NO _x Annual mean (µg m ⁻³)	30	6.62	3.48	0.00	0.15	3.63	10.25	11.6%	12.1%	34.2%
NO _x Daily mean (µg m ⁻³)	75	6.62	19.37	0.00	0.60	19.97	26.59	25.8%	26.6%	35.5%
SO ₂ Annual mean (µg m ⁻³)	20	2.73	0.21	0.00	0.00	0.21	2.94	1.1%	1.1%	14.7%
NH ₃ Annual mean (µg m ⁻³)	1	1.36	0.05	0.00	0.10	0.15	1.51	5.0%	15.0%	151.2%
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.71	0.54	0.29	0.00	0.59	13.31	3.6%	4.0%	88.7%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.71	0.14	0.29	0.00	0.76	13.67	0.9%	5.1%	91.1%
Acid deposition (IED) (keq/ha/yr)	0.366/4.506/4.14	0.90N/0.09S	0.038N/0.024S			0.042N/0.024S	0.942N/0.114S	No exceedance	No exceedance	23.5

APPENDIX C: AIR EMISSION RISK ASSESSMENT

Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Acid deposition (Total) (keq/ha/yr)	0.366/4.506/4.14	0.90N/0.09S	0.010N/0.010S			0.054N/0.010S	0.954N/0.100S	No exceedance	No exceedance	23.4
E6 - Leiston - Aldeburgh										
NO _x Annual mean (µg m ⁻³)	30	6.70	0.54	0.00	0.03	0.57	7.27	1.8%	1.9%	24.2%
NO _x Daily mean (µg m ⁻³)	75	6.70	6.00	0.00	0.54	6.54	13.24	8.0%	8.7%	17.7%
SO ₂ Annual mean (µg m ⁻³)	20	3.13	0.04	0.00	0.00	0.04	3.17	0.2%	0.2%	15.8%
NH ₃ Annual mean (µg m ⁻³)	1	1.27	0.01	0.00	0.03	0.03	1.30	0.6%	3.3%	130.0%
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.08	0.09	0.03	0.00	0.10	12.17	0.6%	0.7%	81.2%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.08	0.07	0.03	0.00	0.24	12.65	0.5%	1.6%	84.4%
Acid deposition (IED) (keq/ha/yr)	0.438/4.578/4.14	0.88N/0.09S	0.006N/0.004S			0.007N/0.004S	0.887N/0.094S	No exceedance	No exceedance	21.4
Acid deposition (Total) (keq/ha/yr)	0.438/4.578/4.14	0.88N/0.09S	0.004N/0.004S			0.016N/0.004S	0.896N/0.094S	No exceedance	No exceedance	21.6
E7 - Leiston Common Country County Wildlife Site										
NO _x Annual mean (µg m ⁻³)	30	6.82	1.06	0.00	0.13	1.19	8.01	3.5%	4.0%	26.7%

APPENDIX C: AIR EMISSION RISK ASSESSMENT

Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Daily mean (µg m ⁻³)	75	6.82	5.59	0.00	0.92	6.51	13.33	7.5%	8.7%	17.8%
SO ₂ Annual mean (µg m ⁻³)	20	3.02	0.09	0.00	0.00	0.09	3.11	0.4%	0.4%	15.5%
NH ₃ Annual mean (µg m ⁻³)	1	1.36	0.01	0.00	0.02	0.03	1.39	1.0%	3.0%	138.8%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.57	0.16	0.09	0.00	0.23	12.79	3.1%	4.5%	255.8%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.57	0.14	0.09	0.00	0.27	13.18	2.8%	5.3%	263.5%
Acid deposition (IED)(keq/ha/yr)	0.892/1.382/0.49	0.92N/0.09S	0.011N/0.010S			0.016N/0.010S	0.936N/0.100S	No exceedance	No exceedance	75.0
Acid deposition (Total) (keq/ha/yr)	0.892/1.382/0.49	0.92N/0.09S	0.010N/0.009S			0.019N/0.009S	0.939N/0.099S	No exceedance	No exceedance	75.1
E8 - Aldringham to Aldeburgh Disused Railway CWS										
NO _x Annual mean (µg m ⁻³)	30	6.55	0.36	0.00	0.06	0.42	6.97	1.2%	1.4%	23.2%
NO _x Daily mean (µg m ⁻³)	75	6.55	3.17	0.00	0.94	4.10	10.65	4.2%	5.5%	14.2%
SO ₂ Annual mean (µg m ⁻³)	20	2.47	0.03	0.00	0.00	0.03	2.50	0.2%	0.2%	12.5%

APPENDIX C: AIR EMISSION RISK ASSESSMENT

Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NH ₃ Annual mean (µg m ⁻³)	1	1.33	0.00	0.00	0.00	0.01	1.34	0.4%	0.9%	134.0%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.26	0.06	0.02	0.00	0.09	12.35	1.1%	1.7%	247.0%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.26	0.06	0.02	0.00	0.09	12.35	1.1%	1.7%	247.0%
Acid deposition (IED) (keq/ha/yr)	0.892/1.382/0.49	0.87N/0.09S	0.003N/0.003S			0.006N/0.003S	0.876N/0.093S	No exceedance	No exceedance	19.1
Acid deposition (Total) (keq/ha/yr)	0.892/1.382/0.49	0.87N/0.09S	0.003N/0.003S			0.006N/0.003S	0.876N/0.093S	No exceedance	No exceedance	19.1
E9 - Dower House CWS										
NO _x Annual mean (µg m ⁻³)	30	6.46	4.02	0.00	0.08	4.10	10.57	13.4%	13.7%	35.2%
NO _x Daily mean (µg m ⁻³)	75	6.46	19.21	0.00	0.99	20.20	26.67	25.6%	26.9%	35.6%
SO ₂ Annual mean (µg m ⁻³)	20	2.49	0.15	0.00	0.00	0.15	2.64	0.7%	0.7%	13.2%
NH ₃ Annual mean (µg m ⁻³)	1	1.24	0.04	0.00	0.01	0.05	1.29	4.1%	4.8%	129.2%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.52	0.62	0.16	0.00	0.66	13.18	6.2%	6.6%	131.8%

APPENDIX C: AIR EMISSION RISK ASSESSMENT

Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.52	0.62	0.16	0.00	0.66	13.18	6.2%	6.6%	131.8%
Acid deposition (IED) (keq/ha/yr)	0.357/8.73/8.373	0.89N/0.09S	0.044N/0.017S			0.047N/0.017S	0.937N/0.107S	No exceedance	No exceedance	1.3
Acid deposition (Total) (keq/ha/yr)	0.357/8.73/8.373	0.89N/0.09S	0.044N/0.017S			0.047N/0.017S	0.937N/0.107S	No exceedance	No exceedance	1.3
E10 - Suffolk Shingles Beaches CWS										
NO _x Annual mean (µg m ⁻³)	30	8.66	9.58	0.00	0.06	9.63	18.29	31.9%	32.1%	61.0%
NO _x Daily mean (µg m ⁻³)	75	8.66	46.33	0.00	0.30	46.63	55.29	61.8%	62.2%	73.7%
SO ₂ Annual mean (µg m ⁻³)	20	23.60	1.02	0.00	0.00	1.02	24.62	5.1%	5.1%	123.1%
NH ₃ Annual mean (µg m ⁻³)	1	1.24	0.11	0.00	0.01	0.11	1.36	10.9%	11.4%	135.8%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.22	1.53	0.17	0.00	1.56	13.78	15.3%	15.6%	137.8%
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.22	1.53	0.17	0.00	1.56	13.78	15.3%	15.6%	137.8%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E11 - Reckham Pits CWS										
NO _x Annual mean (µg m ⁻³)	30	6.82	1.05	0.00	0.11	1.17	7.98	3.5%	3.9%	26.6%
NO _x Daily mean (µg m ⁻³)	75	6.82	6.39	0.00	0.92	7.30	14.12	8.5%	9.7%	18.8%
SO ₂ Annual mean (µg m ⁻³)	20	3.02	0.08	0.00	0.00	0.08	3.10	0.4%	0.4%	15.5%
NH ₃ Annual mean (µg m ⁻³)	1	1.36	0.01	0.00	0.01	0.02	1.38	1.1%	2.1%	137.9%
Nitrogen deposition (IED) (kgN/ha/yr)	10	22.16	0.28	0.12	0.00	0.37	22.53	2.8%	3.7%	225.3%
Nitrogen deposition (Total) (kgN/ha/yr)	10	22.16	0.28	0.12	0.00	0.37	22.53	2.8%	3.7%	225.3%
Acid deposition (IED) (keq/ha/yr)	0.285/4.495/4.21	0.012N/0.016S	0.019N/0.019S			0.026N/0.019S	1.606N/0.109S	No exceedance	No exceedance	38.2
Acid deposition (Total) (keq/ha/yr)	0.285/4.495/4.21	0.012N/0.016S	0.019N/0.019S			0.026N/0.019S	1.606N/0.109S	No exceedance	No exceedance	38.2
E12 - Sizewell Levels and Associated Areas										

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APPENDIX C: AIR EMISSION RISK ASSESSMENT

Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Annual mean (µg m ⁻³)	30	6.75	7.50	0.00	0.28	7.78	14.53	25.0%	25.9%	48.4%
NO _x Daily mean (µg m ⁻³)	75	6.75	38.66	0.00	2.98	41.64	48.39	51.5%	55.5%	64.5%
SO ₂ Annual mean (µg m ⁻³)	20	3.96	0.43	0.00	0.00	0.43	4.39	2.2%	2.2%	22.0%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.07	0.00	0.02	0.09	1.36	6.9%	9.4%	135.8%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.37	1.11	0.58	0.02	1.27	13.63	11.1%	12.7%	136.3%
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.37	1.11	0.58	0.02	1.27	13.63	11.1%	12.7%	136.3%
Acid deposition (IED) (keq/ha/yr)	0.142/1.262/1.12	0.88N/0.09S	0.079N/0.051S			0.090N/0.051S	0.970N/0.141S	No exceedance	No exceedance	38.2
Acid deposition (Total) (keq/ha/yr)	0.142/1.262/1.12	0.88N/0.09S	0.079N/0.051S			0.090N/0.051S	0.970N/0.141S	No exceedance	No exceedance	38.2
E13 - Southern Minsmere Levels – Dunwich Forest & Kenton Hill CWS										
NO _x Annual mean (µg m ⁻³)	30	6.75	6.21	0.00	0.29	6.50	13.25	20.7%	21.7%	44.2%
NO _x Daily mean (µg m ⁻³)	75	6.75	36.74	0.00	2.01	38.75	45.50	49.0%	51.7%	60.7%

APPENDIX C: AIR EMISSION RISK ASSESSMENT

Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
SO ₂ Annual mean (µg m ⁻³)	20	3.96	0.14	0.00	0.00	0.14	4.10	0.7%	0.7%	20.5%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.07	0.00	0.03	0.09	1.35	6.5%	9.1%	135.5%
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.37	0.96	0.35	0.01	1.12	13.49	6.4%	7.5%	89.9%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.37	0.96	0.35	0.01	1.12	13.49	6.4%	7.5%	89.9%
Acid deposition (IED) (keq/ha/yr)	0.142/1.262/1.12	0.88N/0.09S	0.068N/0.016S			0.079N/0.016S	0.959N/0.106S	No exceedance	No exceedance	84.5
Acid deposition (Total) (keq/ha/yr)	0.142/1.262/1.12	0.88N/0.09S	0.068N/0.016S			0.079N/0.016S	0.959N/0.106S	No exceedance	No exceedance	84.5
E14 - Aldhurst Farm habitat creation scheme										
NO _x Annual mean (µg m ⁻³)	30	6.85	0.48	0.00	0.12	0.60	7.45	1.6%	2.0%	24.8%
NO _x Daily mean (µg m ⁻³)	75	6.85	5.04	0.00	1.11	6.15	13.00	6.7%	8.2%	17.3%
SO ₂ Annual mean (µg m ⁻³)	20	2.59	0.05	0.00	0.00	0.05	2.64	0.2%	0.2%	13.2%

APPENDIX C: AIR EMISSION RISK ASSESSMENT

Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NH ₃ Annual mean (µg m ⁻³)	1	1.50	0.01	0.00	0.01	0.02	1.52	0.6%	1.5%	151.5%
Nitrogen deposition (IED) (kgN/ha/yr)	15	13.30	0.08	0.03	0.00	0.14	13.44	0.5%	0.9%	89.6%
Nitrogen deposition (Total) (kgN/ha/yr)	15	13.30	0.08	0.03	0.00	0.14	13.44	0.5%	0.9%	89.6%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E15 - Marsh harrier/reptile habitat within EDF Energy estate										
NO _x Annual mean (µg m ⁻³)	30	6.51	1.22	0.00	0.18	1.40	7.91	4.1%	4.7%	26.4%
NO _x Daily mean (µg m ⁻³)	75	6.51	8.76	0.00	1.63	10.40	16.91	11.7%	13.9%	22.5%
SO ₂ Annual mean (µg m ⁻³)	20	2.39	0.16	0.00	0.00	0.16	2.55	0.8%	0.8%	12.7%
NH ₃ Annual mean (µg m ⁻³)	1	1.40	0.02	0.00	0.02	0.03	1.43	1.5%	3.1%	143.1%

APPENDIX C: AIR EMISSION RISK ASSESSMENT

Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.90	0.20	0.09	0.01	0.30	13.20	4.0%	6.0%	264.0%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.90	0.20	0.09	0.01	0.30	13.20	4.0%	6.0%	264.0%
Acid deposition (IED) (keq/ha/yr)	0.892/1.392/0.5	0.92N/0.09S	0.014N/0.018S			0.021N/0.018S	0.941N/0.108S	No exceedance	No exceedance	75.4
Acid deposition (Total) (keq/ha/yr)	0.892/1.392/0.5	0.92N/0.09S	0.014N/0.018S			0.021N/0.018S	0.941N/0.108S	No exceedance	No exceedance	75.4
E16 - Ash Wood priority habitat										
NO _x Annual mean (µg m ⁻³)	30	6.56	1.38	0.00	0.27	1.65	8.21	4.6%	5.5%	27.4%
NO _x Daily mean (µg m ⁻³)	75	6.56	8.04	0.00	2.05	10.09	16.65	10.7%	13.5%	22.2%
SO ₂ Annual mean (µg m ⁻³)	20	2.25	0.23	0.00	0.00	0.23	2.48	1.2%	1.2%	12.4%
NH ₃ Annual mean (µg m ⁻³)	1	1.50	0.02	0.00	0.02	0.04	1.54	1.9%	4.2%	154.2%
Nitrogen deposition (IED) (kgN/ha/yr)	10	13.60	0.24	0.09	0.01	0.38	13.98	2.4%	3.8%	139.8%
Nitrogen deposition (Total) (kgN/ha/yr)	10	13.60	0.24	0.09	0.01	0.38	13.98	2.4%	3.8%	139.8%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Acid deposition (IED) (keq/ha/yr) (Total)	0.142/1.273/1.131	0.97N/0.09S	0.017N/0.027S			0.027N/0.027S	0.997N/0.117S	No exceedance	No exceedance	87.6
Acid deposition (Total) (keq/ha/yr)	0.142/1.273/1.131	0.97N/0.09S	0.017N/0.027S			0.027N/0.027S	0.997N/0.117S	No exceedance	No exceedance	87.6

A - APPROVED

APPENDIX C: AIR EMISSION RISK ASSESSMENT

APPENDIX D PEAK CONSTRUCTION MODELS

D.1 Modelled scenarios

The AERA has considered the following scenarios:

- Scenario 1: A total of capacity of 82.4MWth of diesel generators operating on site, including the use of static package substation generators (50MWth) capable of hybrid use, mobile crane and lighting generators and static Associated Development generators that fall within the permit boundary or are in the vicinity of the identified sensitive receptors. The generators are expected to operate for 5400 hours per year, to reflect working hours and bank holiday closures and annual emissions were adjusted accordingly. Daily concentrations were adjusted to reflect a 12-hour swift. The use of hybrids was reflected using a .fac file, where the hybrid package substations were assumed not operate in the evenings. This scenario has excluded the five standby package substation generators (2.8MWth).
- Scenario 2: A total of capacity of 84.2MWth of diesel generators operating on site, including the use of static package substation generators (50MWth), mobile crane and lighting generators and static Associated Development generators that fall within the permit boundary or are in the vicinity of the identified sensitive receptors. The generators are expected to operate for 5400 hours per year, to reflect working hours and bank holiday closures and annual emissions were adjusted accordingly. Daily concentrations were adjusted to reflect a 12-hour swift. The scenario assumed no use of hybrid mode. This scenario has included the five standby package substation generators (2.8MWth).
- Scenario 3: A total of capacity of 120.5MWth of diesel generators operating on site, including the use of static package substation generators (100MWth) capable of hybrid use, mobile crane and lighting generators and static Associated Development generators that fall within the permit boundary or are in the vicinity of the identified sensitive receptors. The generators are expected to operate for 5400 hours per year, to reflect working hours and bank holiday closures. The generators are expected to operate for 5400 hours per year, to reflect working hours and bank holiday closures and annual emissions were adjusted accordingly. Daily concentrations were adjusted to reflect a 12-hour swift. The use of hybrids was reflected using a fac file, where the hybrid package substations were assumed not operate in the evenings. This scenario has excluded the five standby package substation generators (2.8MWth).
- Scenario 4: A total of capacity of 123.3MWth of diesel generators operating on site, including the use of static package substation generators (100MWth), mobile crane and lighting generators and static Associated Development generators that fall within the permit boundary or are in the vicinity of the identified sensitive receptors. The generators are expected to operate for 5400 hours per year, to reflect working hours and bank holiday closures and annual emissions were adjusted accordingly. Daily concentrations were adjusted to reflect a 12-hour swift. The scenario assumed no use of hybrid mode. This scenario has included the five standby package substation generators (2.8MWth).

Details of the modelled scenarios were included in the model inventory calculations spreadsheet provided to the EA AQMAU for sign off.

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D.2 Scenario 1 full results

D.2.1 Impacts on human receptors

Predicted 1-hour mean (99.79th %ile) NO₂ PCs and PECs at the modelled receptor locations are summarised in **Table D.1**. The PEC does not exceed the AQS at R15, R27 and R28 any of the modelled sensitive human receptors. The highest predicted concentration of the 1-hour mean NO₂ was modelled at receptor R28 (23.5% PEC total of the relevant AQS).

Table D-1 1- hour NO₂ impacts (99.9th Percentile) for Scenario 1

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	200						
R1	10.59	5.94	14.61	25.20	3.0%	7.3%	12.6%
R2	10.42	3.83	5.81	16.24	1.9%	2.9%	8.1%
R3	10.85	3.50	6.36	17.21	1.8%	3.2%	8.6%
R4	10.34	6.43	12.03	22.38	3.2%	6.0%	11.2%
R5	11.45	4.63	6.99	18.43	2.3%	3.5%	9.2%
R6	10.82	4.23	11.75	22.57	2.1%	5.9%	11.3%
R7	11.45	6.32	9.21	20.66	3.2%	4.6%	10.3%
R8	10.34	2.80	4.37	14.71	1.4%	2.2%	7.4%
R9	11.45	2.89	4.42	15.87	1.4%	2.2%	7.9%
R10	11.45	3.97	5.86	17.30	2.0%	2.9%	8.7%
R11	10.80	3.75	7.93	18.73	1.9%	4.0%	9.4%
R12	11.45	6.48	9.44	20.89	3.2%	4.7%	10.4%
R13	10.59	3.83	7.37	17.96	1.9%	3.7%	9.0%
R14	10.82	9.41	14.18	24.99	4.7%	7.1%	12.5%
R15	10.51	4.63	16.94	27.45	2.3%	8.5%	13.7%
R16	10.42	3.64	5.68	16.10	1.8%	2.8%	8.1%
R17	10.53	3.51	6.48	17.01	1.8%	3.2%	8.5%
R18	10.53	3.45	5.93	16.46	1.7%	3.0%	8.2%
R19	10.63	4.40	6.59	17.22	2.2%	3.3%	8.6%
R20	10.42	4.09	7.40	17.82	2.0%	3.7%	8.9%
R21	11.45	5.07	7.10	18.55	2.5%	3.5%	9.3%
R22	10.63	6.14	8.45	19.08	3.1%	4.2%	9.5%
R23	10.82	3.86	8.05	18.86	1.9%	4.0%	9.4%
R24	12.21	2.60	4.60	16.81	1.3%	2.3%	8.4%
R25	12.21	3.17	4.91	17.12	1.6%	2.5%	8.6%
R26	10.63	3.83	5.55	16.18	1.9%	2.8%	8.1%
R27	10.71	15.99	27.68	38.39	8.0%	13.8%	19.2%
R28	10.71	28.01	36.29	47.00	14.0%	18.1%	23.5%

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Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
R29	10.51	4.39	14.86	25.37	2.2%	7.4%	12.7%
R30	10.76	3.08	5.41	16.17	1.5%	2.7%	8.1%

Predicted annual mean NO₂ PCs and PECs at the modelled receptor locations are summarised in **Table D.2**. There are no exceedances of any of the modelled sensitive human receptors.annual mean NO₂ AQS at R4, R14, R15 and R20.

Table D-2 Annual NO₂ impacts for Scenario 1

Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	40						
R1	5.29	0.60	0.98	6.27	1.5%	2.4%	15.7%
R2	5.21	0.27	0.37	5.58	0.7%	0.9%	13.9%
R3	5.43	0.29	0.40	5.83	0.7%	1.0%	14.6%
R4	5.17	0.84	1.19	6.37	2.1%	3.0%	15.9%
R5	5.72	0.42	0.50	6.23	1.1%	1.3%	15.6%
R6	5.41	0.56	0.85	6.26	1.4%	2.1%	15.6%
R7	5.72	0.76	0.89	6.61	1.9%	2.2%	16.5%
R8	5.17	0.16	0.21	5.38	0.4%	0.5%	13.5%
R9	5.72	0.21	0.26	5.99	0.5%	0.7%	15.0%
R10	5.72	0.36	0.43	6.15	0.9%	1.1%	15.4%
R11	5.40	0.48	0.67	6.07	1.2%	1.7%	15.2%
R12	5.72	0.71	0.81	6.53	1.8%	2.0%	16.3%
R13	5.29	0.22	0.30	5.60	0.5%	0.8%	14.0%
R14	5.41	1.71	1.97	7.37	4.3%	4.9%	18.4%
R15	5.26	0.68	1.65	6.90	1.7%	4.1%	17.3%
R16	5.21	0.26	0.35	5.56	0.6%	0.9%	13.9%
R17	5.26	0.25	0.35	5.61	0.6%	0.9%	14.0%
R18	5.26	0.17	0.24	5.50	0.4%	0.6%	13.8%
R19	5.31	0.29	0.38	5.70	0.7%	1.0%	14.2%
R20	5.21	0.36	0.52	5.73	0.9%	1.3%	14.3%
R21	5.72	0.38	0.45	6.18	0.9%	1.1%	15.4%
R22	5.31	0.30	0.39	5.71	0.8%	1.0%	14.3%
R23	5.41	0.73	0.92	6.33	1.8%	2.3%	15.8%
R24	6.10	0.40	0.48	6.59	1.0%	1.2%	16.5%
R25	6.10	0.32	0.39	6.49	0.8%	1.0%	16.2%

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Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
R26	5.31	0.20	0.27	5.58	0.5%	0.7%	14.0%
R27	5.35	2.97	4.69	10.04	7.4%	11.7%	25.1%
R28	5.35	3.79	4.24	9.59	9.5%	10.6%	24.0%
R29	5.26	0.53	1.11	6.36	1.3%	2.8%	15.9%
R30	5.38	0.25	0.31	5.69	0.6%	0.8%	14.2%

Table D.3 to Table D.5 present impacts from emissions of SO₂. There are no predicted exceedances of the SO₂ AQS objectives and EAL at any of the modelled sensitive human receptors.

Table D-3 15-minute SO₂ impacts for Scenario 1

Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	266						
R1	5	12.51	12.51	17.01	4.7%	4.7%	6.4%
R2	5	9.01	9.01	13.51	3.4%	3.4%	5.1%
R3	5	7.12	7.12	12.30	2.7%	2.7%	4.6%
R4	5	12.61	12.61	17.39	4.7%	4.7%	6.5%
R5	6	8.13	8.13	13.81	3.1%	3.1%	5.2%
R6	5	6.93	6.93	11.91	2.6%	2.6%	4.5%
R7	6	10.04	10.04	15.72	3.8%	3.8%	5.9%
R8	4	6.34	6.34	10.68	2.4%	2.4%	4.0%
R9	6	6.07	6.07	11.75	2.3%	2.3%	4.4%
R10	6	8.45	8.45	14.13	3.2%	3.2%	5.3%
R11	6	6.93	6.93	12.97	2.6%	2.6%	4.9%
R12	6	12.08	12.08	17.76	4.5%	4.5%	6.7%
R13	5	10.34	10.34	14.84	3.9%	3.9%	5.6%
R14	5	16.88	16.88	21.86	6.3%	6.3%	8.2%
R15	5	8.30	8.30	13.04	3.1%	3.1%	4.9%
R16	5	7.71	7.71	12.21	2.9%	2.9%	4.6%
R17	4	7.51	7.51	11.85	2.8%	2.8%	4.5%
R18	4	7.25	7.25	11.59	2.7%	2.7%	4.4%
R19	6	8.13	8.13	14.39	3.1%	3.1%	5.4%
R20	5	8.80	8.80	13.30	3.3%	3.3%	5.0%
R21	6	9.98	9.98	15.66	3.8%	3.8%	5.9%
R22	6	11.10	11.10	17.36	4.2%	4.2%	6.5%
R23	5	7.27	7.27	12.25	2.7%	2.7%	4.6%
R24	6	4.71	4.71	11.13	1.8%	1.8%	4.2%

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Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
R25	6	4.76	4.76	11.18	1.8%	1.8%	4.2%
R26	6	7.50	7.50	13.76	2.8%	2.8%	5.2%
R27	8	31.69	31.69	39.61	11.9%	11.9%	14.9%
R28	8	41.67	41.67	49.59	15.7%	15.7%	18.6%
R29	5	8.30	8.30	13.04	3.1%	3.1%	4.9%
R30	5	6.30	6.30	11.72	2.4%	2.4%	4.4%

Table D-4 1-hour SO₂ impacts for Scenario 1

Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	350						
R1	5	8.55	8.55	13.05	2.4%	2.4%	3.7%
R2	5	5.65	5.65	10.15	1.6%	1.6%	2.9%
R3	5	4.69	4.69	9.87	1.3%	1.3%	2.8%
R4	5	9.84	9.84	14.62	2.8%	2.8%	4.2%
R5	6	6.28	6.28	11.96	1.8%	1.8%	3.4%
R6	5	5.02	5.02	10.00	1.4%	1.4%	2.9%
R7	6	8.99	8.99	14.67	2.6%	2.6%	4.2%
R8	4	4.17	4.17	8.51	1.2%	1.2%	2.4%
R9	6	3.88	3.88	9.56	1.1%	1.1%	2.7%
R10	6	6.35	6.35	12.03	1.8%	1.8%	3.4%
R11	6	4.56	4.56	10.60	1.3%	1.3%	3.0%
R12	6	11.01	11.01	16.69	3.1%	3.1%	4.8%
R13	5	5.96	5.96	10.46	1.7%	1.7%	3.0%
R14	5	15.55	15.55	20.53	4.4%	4.4%	5.9%
R15	5	6.57	6.57	11.31	1.9%	1.9%	3.2%
R16	5	5.16	5.16	9.66	1.5%	1.5%	2.8%
R17	4	5.21	5.21	9.55	1.5%	1.5%	2.7%
R18	4	4.75	4.75	9.09	1.4%	1.4%	2.6%
R19	6	5.93	5.93	12.19	1.7%	1.7%	3.5%
R20	5	5.94	5.94	10.44	1.7%	1.7%	3.0%
R21	6	7.86	7.86	13.54	2.2%	2.2%	3.9%
R22	6	8.60	8.60	14.86	2.5%	2.5%	4.2%
R23	5	4.61	4.61	9.59	1.3%	1.3%	2.7%
R24	6	3.60	3.60	10.02	1.0%	1.0%	2.9%

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Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
R25	6	3.30	3.30	9.72	0.9%	0.9%	2.8%
R26	6	5.43	5.43	11.69	1.6%	1.6%	3.3%
R27	8	23.68	23.68	31.60	6.8%	6.8%	9.0%
R28	8	34.22	34.22	42.14	9.8%	9.8%	12.0%
R29	5	6.21	6.21	10.95	1.8%	1.8%	3.1%
R30	5	3.93	3.93	9.35	1.1%	1.1%	2.7%

Table D-5 Daily SO₂ impacts for Scenario 1

Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	125						
R1	2	3.68	3.68	5.93	2.9%	2.9%	4.7%
R2	2	1.88	1.88	4.13	1.5%	1.5%	3.3%
R3	3	1.91	1.91	4.50	1.5%	1.5%	3.6%
R4	2	4.00	4.00	6.39	3.2%	3.2%	5.1%
R5	3	2.37	2.37	5.21	1.9%	1.9%	4.2%
R6	2	2.29	2.29	4.78	1.8%	1.8%	3.8%
R7	3	3.57	3.57	6.41	2.9%	2.9%	5.1%
R8	2	1.39	1.39	3.56	1.1%	1.1%	2.8%
R9	3	1.46	1.46	4.30	1.2%	1.2%	3.4%
R10	3	2.32	2.32	5.16	1.9%	1.9%	4.1%
R11	3	1.81	1.81	4.83	1.4%	1.4%	3.9%
R12	3	4.80	4.80	7.64	3.8%	3.8%	6.1%
R13	2	2.01	2.01	4.26	1.6%	1.6%	3.4%
R14	2	6.68	6.68	9.17	5.3%	5.3%	7.3%
R15	2	2.98	2.98	5.35	2.4%	2.4%	4.3%
R16	2	1.96	1.96	4.21	1.6%	1.6%	3.4%
R17	2	2.09	2.09	4.26	1.7%	1.7%	3.4%
R18	2	1.90	1.90	4.07	1.5%	1.5%	3.3%
R19	3	2.08	2.08	5.21	1.7%	1.7%	4.2%
R20	2	2.31	2.31	4.56	1.9%	1.9%	3.7%
R21	3	3.00	3.00	5.84	2.4%	2.4%	4.7%
R22	3	3.42	3.42	6.55	2.7%	2.7%	5.2%

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Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
R23	2	1.67	1.67	4.16	1.3%	1.3%	3.3%
R24	3	1.66	1.66	4.87	1.3%	1.3%	3.9%
R25	3	1.67	1.67	4.88	1.3%	1.3%	3.9%
R26	3	1.76	1.76	4.89	1.4%	1.4%	3.9%
R27	4	15.54	15.54	19.50	12.4%	12.4%	15.6%
R28	4	14.51	14.51	18.47	11.6%	11.6%	14.8%
R29	2	2.98	2.98	5.35	2.4%	2.4%	4.3%
R30	3	1.27	1.27	3.98	1.0%	1.0%	3.2%

Table D.6 and Table D.7 present impacts from emissions of PM₁₀. There are no predicted exceedances of the PM₁₀ long and short term AQS objectives at all any of the modelled sensitive human receptors. The highest predicted annual PM₁₀ concentration was modelled at R14 (35.3% PEC total of the relevant AQS).

Table D-6 Annual PM₁₀ impacts for Scenario 1

Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	40						
R1	13.58	0.04	0.06	13.64	0.1%	0.2%	34.1%
R2	13.67	0.02	0.02	13.70	0.0%	0.1%	34.2%
R3	13.71	0.02	0.03	13.73	0.1%	0.1%	34.3%
R4	13.02	0.06	0.08	13.10	0.2%	0.2%	32.7%
R5	13.44	0.03	0.03	13.47	0.1%	0.1%	33.7%
R6	13.97	0.04	0.06	14.03	0.1%	0.1%	35.1%
R7	13.44	0.06	0.06	13.50	0.1%	0.2%	33.8%
R8	12.22	0.01	0.01	12.23	0.0%	0.0%	30.6%
R9	13.44	0.01	0.02	13.46	0.0%	0.0%	33.6%
R10	13.44	0.02	0.03	13.47	0.1%	0.1%	33.7%
R11	13.31	0.03	0.04	13.36	0.1%	0.1%	33.4%
R12	13.44	0.05	0.06	13.50	0.1%	0.1%	33.7%
R13	13.58	0.02	0.02	13.60	0.0%	0.0%	34.0%
R14	13.97	0.13	0.14	14.11	0.3%	0.4%	35.3%
R15	12.95	0.05	0.10	13.05	0.1%	0.3%	32.6%
R16	13.67	0.02	0.02	13.70	0.0%	0.1%	34.2%
R17	13.63	0.02	0.02	13.65	0.0%	0.1%	34.1%
R18	13.63	0.01	0.02	13.65	0.0%	0.0%	34.1%
R19	12.49	0.02	0.02	12.52	0.0%	0.1%	31.3%
R20	13.67	0.03	0.04	13.71	0.1%	0.1%	34.3%

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Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
R21	13.44	0.03	0.03	13.47	0.1%	0.1%	33.7%
R22	12.49	0.02	0.02	12.52	0.1%	0.1%	31.3%
R23	13.97	0.05	0.06	14.04	0.1%	0.2%	35.1%
R24	12.80	0.03	0.03	12.83	0.1%	0.1%	32.1%
R25	12.80	0.02	0.03	12.83	0.1%	0.1%	32.1%
R26	12.49	0.01	0.02	12.51	0.0%	0.0%	31.3%
R27	12.22	0.21	0.27	12.48	0.5%	0.7%	31.2%
R28	12.22	0.24	0.25	12.47	0.6%	0.6%	31.2%
R29	12.95	0.04	0.07	13.02	0.1%	0.2%	32.5%
R30	12.94	0.02	0.02	12.96	0.0%	0.1%	32.4%

Table D-7 24-hour PM₁₀ impacts for Scenario 1

Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	50						
R1	13.58	0.18	0.28	13.86	0.4%	0.6%	27.7%
R2	13.67	0.09	0.11	13.78	0.2%	0.2%	27.6%
R3	13.71	0.11	0.13	13.84	0.2%	0.3%	27.7%
R4	13.02	0.22	0.28	13.29	0.4%	0.6%	26.6%
R5	13.44	0.14	0.16	13.60	0.3%	0.3%	27.2%
R6	13.97	0.12	0.19	14.16	0.2%	0.4%	28.3%
R7	13.44	0.24	0.27	13.71	0.5%	0.5%	27.4%
R8	12.22	0.06	0.07	12.29	0.1%	0.1%	24.6%
R9	13.44	0.08	0.10	13.54	0.2%	0.2%	27.1%
R10	13.44	0.14	0.16	13.60	0.3%	0.3%	27.2%
R11	13.31	0.11	0.15	13.46	0.2%	0.3%	26.9%
R12	13.44	0.32	0.34	13.78	0.6%	0.7%	27.6%
R13	13.58	0.08	0.10	13.68	0.2%	0.2%	27.4%
R14	13.97	0.45	0.49	14.46	0.9%	1.0%	28.9%
R15	12.95	0.20	0.42	13.36	0.4%	0.8%	26.7%
R16	13.67	0.09	0.11	13.78	0.2%	0.2%	27.6%
R17	13.63	0.09	0.12	13.75	0.2%	0.2%	27.5%
R18	13.63	0.07	0.09	13.72	0.1%	0.2%	27.4%

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R19	12.49	0.09	0.11	12.60	0.2%	0.2%	25.2%
R20	13.67	0.11	0.15	13.82	0.2%	0.3%	27.6%
R21	13.44	0.15	0.17	13.62	0.3%	0.3%	27.2%
R22	12.49	0.10	0.12	12.61	0.2%	0.2%	25.2%
R23	13.97	0.14	0.18	14.15	0.3%	0.4%	28.3%
R24	12.80	0.11	0.12	12.93	0.2%	0.2%	25.9%
R25	12.80	0.11	0.13	12.93	0.2%	0.3%	25.9%
R26	12.49	0.07	0.08	12.58	0.1%	0.2%	25.2%
R27	12.22	0.66	0.81	13.03	1.3%	1.6%	26.1%
R28	12.22	0.74	0.81	13.02	1.5%	1.6%	26.0%
R29	12.95	0.18	0.34	13.29	0.4%	0.7%	26.6%
R30	12.94	0.08	0.09	13.04	0.2%	0.2%	26.1%

Table D.8 presents impacts from emissions of PM_{2.5}. There are no predicted exceedances of the PM_{2.5} AQS objectives at all any of the modelled sensitive human receptors.

Table D-8 Annual PM_{2.5} impacts for Scenario 1

Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	20						
R1	7.92	0.04	0.06	7.98	0.1%	0.2%	20.0%
R2	7.92	0.02	0.02	7.95	0.0%	0.1%	19.9%
R3	8.03	0.02	0.03	8.06	0.1%	0.1%	20.1%
R4	7.75	0.06	0.08	7.83	0.2%	0.2%	19.6%
R5	8.06	0.03	0.03	8.10	0.1%	0.1%	20.2%
R6	8.08	0.04	0.06	8.13	0.1%	0.1%	20.3%
R7	8.06	0.06	0.06	8.12	0.1%	0.2%	20.3%
R8	7.57	0.01	0.01	7.58	0.0%	0.0%	19.0%
R9	8.06	0.01	0.02	8.08	0.0%	0.0%	20.2%
R10	8.06	0.02	0.03	8.09	0.1%	0.1%	20.2%
R11	7.88	0.03	0.04	7.92	0.1%	0.1%	19.8%
R12	8.06	0.05	0.06	8.12	0.1%	0.1%	20.3%
R13	7.92	0.02	0.02	7.94	0.0%	0.0%	19.9%
R14	8.08	0.13	0.14	8.22	0.3%	0.4%	20.5%
R15	7.75	0.05	0.10	7.85	0.1%	0.3%	19.6%
R16	7.92	0.02	0.02	7.95	0.0%	0.1%	19.9%

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R17	7.94	0.02	0.02	7.96	0.0%	0.1%	19.9%
R18	7.94	0.01	0.02	7.96	0.0%	0.0%	19.9%
R19	7.64	0.02	0.02	7.66	0.0%	0.1%	19.2%
R20	7.92	0.03	0.03	7.96	0.1%	0.1%	19.9%
R21	8.06	0.03	0.03	8.09	0.1%	0.1%	20.2%
R22	7.64	0.02	0.02	7.66	0.1%	0.1%	19.2%
R23	8.08	0.05	0.06	8.14	0.1%	0.2%	20.4%
R24	8.31	0.03	0.03	8.34	0.1%	0.1%	20.9%
R25	8.31	0.02	0.03	8.34	0.1%	0.1%	20.8%
R26	7.64	0.01	0.02	7.66	0.0%	0.0%	19.1%
R27	7.58	0.21	0.26	7.84	0.5%	0.7%	19.6%
R28	7.58	0.24	0.25	7.83	0.6%	0.6%	19.6%
R29	7.75	0.04	0.07	7.82	0.1%	0.2%	19.6%
R30	7.78	0.02	0.02	7.80	0.0%	0.0%	19.5%

Table D.9 and Table D.10 present impacts from emissions of CO. There are no predicted exceedances of the CO AQS and EAL at all receptors.

Table D-9 1-hour CO impacts for Scenario 1

Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	30 000						
R1	420.00	157.55	661.52	1081.52	0.5%	2.2%	3.6%
R2	408.00	99.85	178.74	586.74	0.3%	0.6%	2.0%
R3	420.00	86.64	236.73	656.73	0.3%	0.8%	2.2%
R4	402.00	169.41	415.52	817.52	0.6%	1.4%	2.7%
R5	414.00	84.32	166.27	580.27	0.3%	0.6%	1.9%
R6	416.00	125.03	500.39	916.39	0.4%	1.7%	3.1%
R7	414.00	90.44	208.77	622.77	0.3%	0.7%	2.1%
R8	408.00	82.14	149.98	557.98	0.3%	0.5%	1.9%
R9	414.00	71.68	142.78	556.78	0.2%	0.5%	1.9%
R10	414.00	104.05	187.07	601.07	0.3%	0.6%	2.0%
R11	410.00	164.78	387.77	797.77	0.5%	1.3%	2.7%
R12	414.00	112.02	223.79	637.79	0.4%	0.7%	2.1%
R13	420.00	100.81	303.54	723.54	0.3%	1.0%	2.4%
R14	416.00	147.17	343.06	759.06	0.5%	1.1%	2.5%
R15	416.00	98.45	803.38	1219.38	0.3%	2.7%	4.1%
R16	408.00	94.69	188.95	596.95	0.3%	0.6%	2.0%
R17	412.00	90.34	252.53	664.53	0.3%	0.8%	2.2%

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Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
R18	412.00	93.29	217.16	629.16	0.3%	0.7%	2.1%
R19	412.00	141.76	226.20	638.20	0.5%	0.8%	2.1%
R20	408.00	93.79	256.52	664.52	0.3%	0.9%	2.2%
R21	414.00	123.56	223.63	637.63	0.4%	0.7%	2.1%
R22	414.00	176.10	240.81	654.81	0.6%	0.8%	2.2%
R23	416.00	106.34	336.92	752.92	0.4%	1.1%	2.5%
R24	418.00	60.74	169.08	587.08	0.2%	0.6%	2.0%
R25	418.00	58.71	159.59	577.59	0.2%	0.5%	1.9%
R26	418.00	107.14	158.80	576.80	0.4%	0.5%	1.9%
R27	418.00	770.67	1117.34	1535.34	2.6%	3.7%	5.1%
R28	418.00	783.58	1032.84	1450.84	2.6%	3.4%	4.8%
R29	416.00	85.48	725.73	1141.73	0.3%	2.4%	3.8%
R30	406.00	73.77	132.85	538.85	0.2%	0.4%	1.8%

Table D-10 8-hour CO impacts for Scenario 1

Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	10 000						
R1	420.00	87.63	270.27	690.27	0.9%	2.7%	6.9%
R2	408.00	52.15	82.44	490.44	0.5%	0.8%	4.9%
R3	420.00	45.06	83.77	503.77	0.5%	0.8%	5.0%
R4	402.00	71.15	165.20	567.20	0.7%	1.7%	5.7%
R5	414.00	49.36	82.04	496.04	0.5%	0.8%	5.0%
R6	416.00	39.60	170.23	586.23	0.4%	1.7%	5.9%
R7	414.00	71.82	114.42	528.42	0.7%	1.1%	5.3%
R8	408.00	35.82	58.37	466.37	0.4%	0.6%	4.7%
R9	414.00	36.90	63.61	477.61	0.4%	0.6%	4.8%
R10	414.00	46.56	80.32	494.32	0.5%	0.8%	4.9%
R11	410.00	43.61	124.31	534.31	0.4%	1.2%	5.3%
R12	414.00	86.52	131.51	545.51	0.9%	1.3%	5.5%
R13	420.00	45.61	113.98	533.98	0.5%	1.1%	5.3%
R14	416.00	118.87	178.75	594.75	1.2%	1.8%	5.9%
R15	416.00	59.05	321.53	737.53	0.6%	3.2%	7.4%

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Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
R16	408.00	47.77	78.47	486.47	0.5%	0.8%	4.9%
R17	412.00	41.06	101.89	513.89	0.4%	1.0%	5.1%
R18	412.00	37.41	77.23	489.23	0.4%	0.8%	4.9%
R19	412.00	60.37	92.16	504.16	0.6%	0.9%	5.0%
R20	408.00	42.22	94.78	502.78	0.4%	0.9%	5.0%
R21	414.00	56.49	93.27	507.27	0.6%	0.9%	5.1%
R22	414.00	79.95	105.88	519.88	0.8%	1.1%	5.2%
R23	416.00	35.32	126.01	542.01	0.4%	1.3%	5.4%
R24	418.00	28.23	61.24	479.24	0.3%	0.6%	4.8%
R25	418.00	30.29	60.81	478.81	0.3%	0.6%	4.8%
R26	418.00	44.05	69.45	487.45	0.4%	0.7%	4.9%
R27	418.00	211.59	363.40	781.40	2.1%	3.6%	7.8%
R28	418.00	414.66	528.39	946.39	4.1%	5.3%	9.5%
R29	416.00	57.97	256.18	672.18	0.6%	2.6%	6.7%
R30	406.00	29.97	57.96	463.96	0.3%	0.6%	4.6%

Table D-11 and Table D-12 presents the annual mean NH₃ impacts and the 1-hour NH₃ impacts at the modelled receptors; the PECs are below the standard at all modelled sensitive human locations.

Table D-11 Annual NH₃ impacts for Scenario 1

Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	180						
R1	1.60	0.05	0.05	1.65	0.0%	1.8%	55.2%
R2	1.50	0.02	0.02	1.52	0.0%	0.8%	50.8%
R3	1.50	0.01	0.02	1.52	0.0%	0.6%	50.6%
R4	1.40	0.06	0.07	1.47	0.0%	2.5%	49.1%
R5	1.40	0.02	0.03	1.43	0.0%	0.9%	47.6%
R6	1.40	0.03	0.04	1.44	0.0%	1.2%	47.9%
R7	1.40	0.04	0.05	1.45	0.0%	1.8%	48.4%
R8	1.50	0.01	0.01	1.51	0.0%	0.5%	50.5%
R9	1.40	0.01	0.01	1.41	0.0%	0.5%	47.2%
R10	1.40	0.02	0.02	1.42	0.0%	0.0%	0.8%
R11	1.40	0.03	0.04	1.44	0.0%	1.2%	0.8%
R12	1.40	0.04	0.05	1.45	0.0%	0.0%	0.8%
R13	1.60	0.01	0.02	1.62	0.0%	0.5%	0.9%
R14	1.40	0.08	0.11	1.51	0.0%	0.1%	0.8%

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Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
R15	1.50	0.04	0.04	1.54	0.0%	1.4%	0.9%
R16	1.50	0.02	0.02	1.52	0.0%	0.0%	0.8%
R17	1.60	0.02	0.02	1.62	0.0%	0.7%	0.9%
R18	1.60	0.01	0.01	1.61	0.0%	0.0%	0.9%
R19	1.30	0.02	0.02	1.32	0.0%	0.8%	0.7%
R20	1.50	0.03	0.03	1.53	0.0%	0.0%	0.9%
R21	1.40	0.02	0.03	1.43	0.0%	0.8%	0.8%
R22	1.30	0.02	0.03	1.33	0.0%	0.0%	0.7%
R23	1.40	0.03	0.04	1.44	0.0%	1.5%	0.8%
R24	1.50	0.02	0.02	1.52	0.0%	0.0%	0.8%
R25	1.50	0.01	0.02	1.52	0.0%	0.6%	0.8%
R26	1.30	0.01	0.02	1.32	0.0%	0.0%	0.7%
R27	1.30	0.23	0.31	1.61	0.1%	10.3%	0.9%
R28	1.30	0.34	0.36	1.66	0.2%	0.2%	0.9%
R29	1.50	0.03	0.03	1.53	0.0%	1.1%	0.9%
R30	1.30	0.01	0.02	1.32	0.0%	0.0%	0.7%

Table D-12 1 hour NH₃ impacts for Scenario 1

Receptor	Background (µg/m³)	PC IED (µg/m³)	PC Total (µg/m³)	PEC (µg/m³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
AQS	2 500						
R1	3.20	1.62	2.07	5.27	0.1%	0.1%	0.2%
R2	3.00	1.01	1.58	4.58	0.0%	0.1%	0.2%
R3	3.00	0.89	1.21	4.21	0.0%	0.0%	0.2%
R4	2.80	1.57	3.37	6.17	0.1%	0.1%	0.2%
R5	2.80	0.83	1.53	4.33	0.0%	0.1%	0.2%
R6	2.80	1.22	1.54	4.34	0.0%	0.1%	0.2%
R7	2.80	0.94	2.01	4.81	0.0%	0.1%	0.2%
R8	3.00	0.86	1.23	4.23	0.0%	0.0%	0.2%
R9	2.80	0.73	1.02	3.82	0.0%	0.0%	0.2%
R10	2.80	1.09	1.50	4.30	0.0%	0.1%	0.2%
R11	2.80	1.61	1.94	4.74	0.1%	0.1%	0.2%
R12	2.80	1.18	1.88	4.68	0.0%	0.1%	0.2%
R13	3.20	1.07	1.40	4.60	0.0%	0.1%	0.2%
R14	2.80	1.55	3.08	5.88	0.1%	0.1%	0.2%

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Receptor	Background (µg/m ³)	PC IED (µg/m ³)	PC Total (µg/m ³)	PEC (µg/m ³)	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
R15	3.00	0.98	1.45	4.45	0.0%	0.1%	0.2%
R16	3.00	0.99	1.54	4.54	0.0%	0.1%	0.2%
R17	3.20	0.94	1.42	4.62	0.0%	0.1%	0.2%
R18	3.20	0.97	1.34	4.54	0.0%	0.1%	0.2%
R19	2.60	1.39	1.75	4.35	0.1%	0.1%	0.2%
R20	3.00	0.92	1.58	4.58	0.0%	0.1%	0.2%
R21	2.80	1.29	1.78	4.58	0.1%	0.1%	0.2%
R22	2.60	1.72	2.12	4.72	0.1%	0.1%	0.2%
R23	2.80	1.04	1.84	4.64	0.0%	0.1%	0.2%
R24	3.00	0.57	1.09	4.09	0.0%	0.0%	0.2%
R25	3.00	0.57	0.97	3.97	0.0%	0.0%	0.2%
R26	2.60	1.05	1.33	3.93	0.0%	0.1%	0.2%
R27	2.60	7.55	10.00	12.60	0.3%	0.4%	0.5%
R28	2.60	7.72	9.48	12.08	0.3%	0.4%	0.5%
R29	3.00	0.89	1.34	4.34	0.0%	0.1%	0.2%
R30	2.60	0.72	1.09	3.69	0.0%	0.0%	0.1%

D.2.2 Impacts on ecological receptors

Table D-13 shows the potential impacts on local sites for Scenario 1.

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Table D-13 Summary of impacts at local and national sites for Scenario 1

Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
E1 - Alde-Ore & Butley Estuaries										
NO _x Annual mean (µg m ⁻³)	30	6.51	0.05	0.01	0.00	0.06	6.57	0.2%	0.2%	21.9%
NO _x Daily mean (µg m ⁻³)	75	6.51	0.88	0.32	0.00	1.20	7.71	1.2%	1.6%	10.3%
SO ₂ Annual mean (µg m ⁻³)	20	2.16	0.02	0.00	0.00	0.02	2.19	0.1%	0.1%	10.9%
NH ₃ Annual mean (µg m ⁻³)	1	1.37	0.00	0.00	0.00	0.00	1.37	0.2%	0.3%	136.9%
Nitrogen deposition (IED) (kgN/ha/yr)	10	13.30	0.02	0.00	0.00	0.02	13.32	0.2%	0.2%	133.2%
Nitrogen deposition (Total) (kgN/ha/yr)	10	13.30	0.02	0.00	0.00	0.02	13.32	0.2%	0.2%	133.2%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E2 - Minsmere-Walberswick Heaths and Marshes										

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Annual mean (µg m ⁻³)	30	6.75	4.27	2.08	0.05	6.40	13.15	14.2%	21.3%	43.8%
NO _x Daily mean (µg m ⁻³)	75	6.75	15.27	7.78	0.00	23.05	29.80	20.4%	30.7%	39.7%
SO ₂ Annual mean (µg m ⁻³)	20	3.96	2.30	0.00	0.00	2.30	6.26	11.5%	11.5%	31.3%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.23	0.07	0.00	0.30	1.57	23.3%	30.5%	156.9%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.37	1.64	0.58	0.01	2.23	14.59	32.8%	44.5%	291.9%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.37	1.54	1.18	0.00	2.72	15.09	30.9%	54.5%	301.8%
Acid deposition (IED) (keq/ha/yr)	0.892/1.392 /0.5	0.88N/0.09S	0.117N/0.27 OS			0.159N/0.27 OS	1.039N/0.36 OS	No exceedance	No exceedance	100.6
Acid deposition (Total) (keq/ha/yr)	0.892/1.392 /0.5	0.88N/0.09S	0.110N/0.24 OS			0.194N/0.24 OS	1.077N/0.33 OS	No exceedance	No exceedance	101.2
E3 - Orfordness-Shingle Street										
NO _x Annual mean (µg m ⁻³)	30	6.33	0.04	0.01	0.00	0.05	6.38	0.1%	0.2%	21.3%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Daily mean (µg m ⁻³)	75	6.33	0.53	0.16	0.00	0.69	7.02	0.7%	0.9%	9.4%
SO ₂ Annual mean (µg m ⁻³)	20	2.37	0.02	0.00	0.00	0.02	2.39	0.1%	0.1%	12.0%
NH ₃ Annual mean (µg m ⁻³)	1	1.13	0.00	0.00	0.00	0.00	1.13	0.2%	0.2%	113.3%
Nitrogen deposition (IED) (kgN/ha/yr)	5	11.32	0.01	0.00	0.00	0.02	11.34	0.3%	0.3%	226.8%
Nitrogen deposition (Total) (kgN/ha/yr)	5	11.32	0.01	0.00	0.00	0.02	11.34	0.3%	0.3%	226.8%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E4 - Sandlings										
NO _x Annual mean (µg m ⁻³)	30	6.79	0.32	0.08	0.00	0.40	7.19	1.1%	1.3%	24.0%
NO _x Daily mean (µg m ⁻³)	75	6.79	1.74	0.68	0.00	2.41	9.20	2.3%	3.2%	12.3%

APPENDIX C: AIR EMISSION RISK ASSESSMENT

Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
SO ₂ Annual mean (µg m ⁻³)	20	2.71	0.13	0.00	0.00	0.13	2.84	0.7%	0.7%	14.2%
NH ₃ Annual mean (µg m ⁻³)	1	1.35	0.01	0.00	0.00	0.02	1.36	1.3%	1.6%	136.1%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.42	0.10	0.03	0.00	0.13	12.54	2.0%	2.5%	250.9%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.42	0.10	0.03	0.00	0.13	12.54	2.0%	2.5%	250.9%
Acid deposition (ied)(keq/ha/yr)	0.892/1.382 /0.49	0.88N/0.09S	0.007N/0.015S			0.008N/0.015S	0.888N/0.105S	No exceedance	No exceedance	21.5
Acid deposition (Total) (keq/ha/yr)	0.892/1.382 /0.49	0.88N/0.09S	0.007N/0.015S			0.008N/0.015S	0.895N/0.105S	No exceedance	No exceedance	72.5
E5 - Sizewell Marshes										
NO _x Annual mean (µg m ⁻³)	30	6.62	2.28	1.01	0.03	3.32	9.94	7.6%	11.1%	33.1%
NO _x Daily mean (µg m ⁻³)	75	6.62	11.92	2.56	0.00	14.48	21.10	15.9%	19.3%	28.1%
SO ₂ Annual mean (µg m ⁻³)	20	2.73	1.23	0.00	0.00	1.23	3.96	6.1%	6.1%	19.8%

APPENDIX C: AIR EMISSION RISK ASSESSMENT

Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NH ₃ Annual mean (µg m ⁻³)	1	1.36	0.13	0.03	0.00	0.15	1.51	12.5%	15.3%	151.5%
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.71	0.88	0.22	0.00	1.09	13.81	5.8%	7.3%	92.1%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.71	0.85	0.29	0.00	1.14	13.85	5.7%	7.6%	92.4%
Acid deposition (IED) (keq/ha/yr)	0.366/4.506 /4.14	0.90N/0.09S	0.062N/0.13 2S			0.078N/0.13 2S	0.978N/0.22 2S	No exceedance	No exceedance	26.6
Acid deposition (Total) (keq/ha/yr)	0.366/4.506 /4.14	0.90N/0.09S	0.060N/0.14 5S			0.081N/0.14 5S	0.989N/0.23 5S	No exceedance	No exceedance	27.2
E6 - Leiston - Aldeburgh										
NO _x Annual mean (µg m ⁻³)	30	6.79	0.32	0.00	0.00	0.33	7.11	1.1%	1.1%	23.7%
NO _x Daily mean (µg m ⁻³)	75	6.70	1.83	0.66	0.00	2.50	9.20	2.4%	3.3%	12.3%
SO ₂ Annual mean (µg m ⁻³)	20	2.71	0.13	0.00	0.00	0.13	2.84	0.7%	0.7%	14.2%
NH ₃ Annual mean (µg m ⁻³)	1	1.35	0.01	0.00	0.00	0.02	1.36	1.3%	1.6%	136.1%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.42	0.10	0.03	0.00	0.13	12.55	0.7%	0.9%	83.6%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.42	0.10	0.03	0.00	0.13	12.55	0.7%	0.9%	83.6%
Acid deposition (IED) (keq/ha/yr)	0.438/4.578 /4.14	0.88N/0.09S	0.007N/0.015S			0.009N/0.015S	0.889N/0.105S	No exceedance	No exceedance	21.7
Acid deposition (keq/ha/yr) (Total)	0.438/4.578 /4.14	0.88N/0.09S	0.007N/0.015S			0.009N/0.015S	0.896N/0.105S	No exceedance	No exceedance	21.9
E7 - Leiston Common Country County Wildlife Site										
NO _x Annual mean (µg m ⁻³)	30	6.83	1.06	0.26	0.00	1.33	8.16	3.5%	4.4%	27.2%
NO _x Daily mean (µg m ⁻³)	75	6.83	2.99	1.72	0.00	4.72	11.54	4.0%	6.3%	15.4%
SO ₂ Annual mean (µg m ⁻³)	20	2.49	0.37	0.00	0.00	0.37	2.86	1.8%	1.8%	14.3%
NH ₃ Annual mean (µg m ⁻³)	1	1.44	0.03	0.01	0.00	0.05	1.48	3.3%	4.5%	148.3%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.91	0.28	0.09	0.00	0.37	13.28	5.5%	7.4%	265.5%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.91	0.28	0.09	0.00	0.37	13.28	5.5%	7.4%	265.5%
Acid deposition (IED)(keq/ha/yr)	0.142/1.273 /1.131	0.97N/0.09S	0.019N/0.04 3S			0.026N/0.04 3S	0.946N/0.13 3S	No exceedance	No exceedance	78.1
Acid deposition (Total) (keq/ha/yr)	0.142/1.273 /1.131	0.97N/0.09S	0.019N/0.04 3S			0.026N/0.04 3S	0.948N/0.13 3S	No exceedance	No exceedance	78.3
E8 - Aldringham to Aldeburgh Disused Railway CWS										
NO _x Annual mean (µg m ⁻³)	30	6.55	0.23	0.06	0.00	0.29	6.84	0.8%	1.0%	22.8%
NO _x Daily mean (µg m ⁻³)	75	6.55	1.67	0.54	0.00	2.21	8.76	2.2%	2.9%	11.7%
SO ₂ Annual mean (µg m ⁻³)	20	2.47	0.10	0.00	0.00	0.10	2.57	0.5%	0.5%	12.8%
NH ₃ Annual mean (µg m ⁻³)	1	1.33	0.01	0.00	0.00	0.01	1.34	1.0%	1.2%	134.3%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.26	0.07	0.02	0.00	0.09	12.35	1.5%	1.8%	247.1%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.26	0.07	0.02	0.00	0.09	12.35	1.5%	1.8%	247.1%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Acid deposition (IED) (keq/ha/yr)	0.892/1.382 /0.49	0.87N/0.09S	0.005N/0.01 1S			0.006N/0.01 1S	0.876N/0.10 1S	No exceedance	No exceedance	20.7
Acid deposition (Total) (keq/ha/yr)	0.892/1.382 /0.49	0.87N/0.09S	0.005N/0.01 1S			0.006N/0.01 1S	0.882N/0.10 1S	No exceedance	No exceedance	20.7
E9 - Dower House CWS										
NO _x Annual mean (µg m ⁻³)	30	6.46	1.85	0.56	0.01	2.43	8.89	6.2%	8.1%	29.6%
NO _x Daily mean (µg m ⁻³)	75	6.46	7.91	2.83	0.00	10.74	17.20	10.6%	14.3%	22.9%
SO ₂ Annual mean (µg m ⁻³)	20	2.49	1.03	0.00	0.00	1.03	3.52	5.2%	5.2%	17.6%
NH ₃ Annual mean (µg m ⁻³)	1	1.24	0.10	0.02	0.00	0.12	1.36	10.1%	12.0%	136.4%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.52	0.71	0.16	0.00	0.87	13.38	7.1%	8.7%	133.8%
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.52	0.71	0.16	0.00	0.87	13.38	7.1%	8.7%	133.8%
Acid deposition (IED) (keq/ha/yr)	0.357/8.73/ 8.373	0.89N/0.09S	0.050N/0.12 2S			0.061N/0.12 2S	0.951N/0.21 2S	No exceedance	No exceedance	2.5

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Acid deposition (Total) (keq/ha/yr)	0.357/8.73/8.373	0.89N/0.09S	0.050N/0.122S			0.061N/0.122S	0.955N/0.212S	No exceedance	No exceedance	2.5
E10 - Suffolk Shingles Beaches CWS										
NO _x Annual mean (µg m ⁻³)	30	8.66	4.31	0.61	0.00	4.93	13.59	14.4%	16.4%	45.3%
NO _x Daily mean (µg m ⁻³)	75	8.66	17.59	2.49	0.00	20.08	28.74	23.5%	26.8%	38.3%
SO ₂ Annual mean (µg m ⁻³)	20	23.60	2.12	0.00	0.00	2.12	25.72	10.6%	10.6%	128.6%
NH ₃ Annual mean (µg m ⁻³)	1	1.24	0.27	0.02	0.00	0.29	1.53	26.9%	28.9%	153.3%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.22	1.83	0.17	0.00	2.00	14.22	18.3%	20.0%	142.2%
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.22	1.83	0.17	0.00	2.00	14.22	18.3%	20.0%	142.2%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

APPENDIX C: AIR EMISSION RISK ASSESSMENT

Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
E11 - Reckham Pits CWS										
NO _x Annual mean (µg m ⁻³)	30	6.82	0.72	0.31	0.01	1.03	7.85	2.4%	3.4%	26.2%
NO _x Daily mean (µg m ⁻³)	75	6.82	2.30	2.19	0.00	4.49	11.31	3.1%	6.0%	15.1%
SO ₂ Annual mean (µg m ⁻³)	20	3.02	0.31	0.00	0.00	0.31	3.33	1.5%	1.5%	16.6%
NH ₃ Annual mean (µg m ⁻³)	1	1.36	0.03	0.01	0.00	0.04	1.40	3.0%	3.7%	139.5%
Nitrogen deposition (IED) (kgN/ha/yr)	10	22.16	0.37	0.12	0.00	0.49	22.65	3.7%	4.9%	226.5%
Nitrogen deposition (Total) (kgN/ha/yr)	10	22.16	0.37	0.12	0.00	0.49	22.65	3.7%	4.9%	226.5%
Acid deposition (IED) (keq/ha/yr)	0.285/4.495 /4.21	1.58N/0.09S	0.026N/0.07 OS			0.035N/0.07 OS	1.615N/0.16 OS	No exceedance	No exceedance	39.5
Acid deposition (Total) (keq/ha/yr)	0.285/4.495 /4.21	1.58N/0.09S	0.026N/0.07 OS			0.035N/0.07 OS	1.617N/0.16 OS	No exceedance	No exceedance	39.6
E12 - Sizewell Levels and Associated Areas										
NO _x Annual mean (µg m ⁻³)	30	6.75	4.56	2.09	0.09	6.74	13.50	15.2%	22.5%	45.0%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Daily mean (µg m ⁻³)	75	6.75	16.96	8.76	0.00	25.72	32.47	22.6%	34.3%	43.3%
SO ₂ Annual mean (µg m ⁻³)	20	3.96	2.47	0.00	0.00	2.47	6.43	12.3%	12.3%	32.1%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.25	0.07	0.00	0.32	1.59	24.9%	32.2%	158.6%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.37	1.75	0.58	0.02	2.35	14.72	17.5%	23.5%	147.2%
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.37	1.75	0.58	0.02	2.35	14.72	17.5%	23.5%	147.2%
Acid deposition (IED) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.125N/0.29 1S			0.167N/0.29 1S	1.047N/0.38 1S	No exceedance	No exceedance	113.3
Acid deposition (Total) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.125N/0.29 1S			0.167N/0.29 1S	1.051N/0.38 1S	No exceedance	No exceedance	113.6
E13 - Southern Minsmere Levels – Dunwich Forest & Kenton Hill CWS										
NO _x Annual mean (µg m ⁻³)	30	6.75	3.73	1.16	0.07	4.96	11.72	12.4%	16.5%	39.1%
NO _x Daily mean (µg m ⁻³)	75	6.75	10.53	4.08	0.00	14.61	21.36	14.0%	19.5%	28.5%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
SO ₂ Annual mean (µg m ⁻³)	20	3.96	2.12	0.00	0.00	2.12	6.08	10.6%	10.6%	30.4%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.20	0.04	0.00	0.24	1.51	19.5%	24.1%	150.5%
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.37	1.39	0.35	0.01	1.75	14.12	9.3%	11.7%	94.1%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.37	1.39	0.35	0.01	1.75	14.12	9.3%	11.7%	94.1%
Acid deposition (IED) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.099N/0.25 OS			0.125N/0.25 OS	1.005N/0.34 OS	No exceedance	No exceedance	106.6
Acid deposition (Total) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.099N/0.25 OS			0.125N/0.25 OS	1.008N/0.34 OS	No exceedance	No exceedance	106.9
E14 - Aldhurst Farm habitat creation scheme										
NO _x Annual mean (µg m ⁻³)	30	6.85	0.39	0.13	0.00	0.53	7.38	1.3%	1.8%	24.6%
NO _x Daily mean (µg m ⁻³)	75	6.85	1.89	1.17	0.00	3.05	9.90	2.5%	4.1%	13.2%
SO ₂ Annual mean (µg m ⁻³)	20	2.59	0.15	0.00	0.00	0.15	2.74	0.8%	0.8%	13.7%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NH ₃ Annual mean (µg m ⁻³)	1	1.50	0.02	0.00	0.00	0.02	1.52	1.5%	1.9%	151.9%
Nitrogen deposition (IED) (kgN/ha/yr)	15	13.30	0.12	0.03	0.00	0.15	13.45	0.8%	1.0%	89.7%
Nitrogen deposition (Total) (kgN/ha/yr)	15	13.30	0.12	0.03	0.00	0.15	13.45	0.8%	1.0%	89.7%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E15 - Marsh harrier/reptile habitat within EDF Energy estate										
NO _x Annual mean (µg m ⁻³)	30	6.51	0.82	0.33	0.03	1.17	7.69	2.7%	3.9%	25.6%
NO _x Daily mean (µg m ⁻³)	75	6.51	3.60	2.21	0.00	5.81	12.32	4.8%	7.7%	16.4%
SO ₂ Annual mean (µg m ⁻³)	20	2.39	0.41	0.00	0.00	0.41	2.80	2.1%	2.1%	14.0%
NH ₃ Annual mean (µg m ⁻³)	1	1.40	0.04	0.01	0.00	0.05	1.45	4.0%	5.1%	145.1%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.90	0.29	0.09	0.01	0.38	13.28	5.8%	7.6%	265.6%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.90	0.29	0.09	0.01	0.38	13.28	5.8%	7.6%	265.6%
Acid deposition (IED) (keq/ha/yr)	0.892/1.392 /0.5	0.92N/0.09S	0.020N/0.048S			0.027N/0.048S	0.947N/0.138S	No exceedance	No exceedance	78.0
Acid deposition (Total) (keq/ha/yr)	0.892/1.392 /0.5	0.92N/0.09S	0.020N/0.048S			0.027N/0.048S	0.948N/0.138S	No exceedance	No exceedance	78.1
E16 - Ash Wood priority habitat										
NO _x Annual mean (µg m ⁻³)	30	6.56	0.91	0.37	0.06	1.33	7.90	3.0%	4.4%	26.3%
NO _x Daily mean (µg m ⁻³)	75	6.56	3.54	2.27	0.00	5.81	12.38	4.7%	7.8%	16.5%
SO ₂ Annual mean (µg m ⁻³)	20	2.25	0.46	0.00	0.00	0.46	2.71	2.3%	2.3%	13.5%
NH ₃ Annual mean (µg m ⁻³)	1	1.50	0.04	0.01	0.00	0.06	1.56	4.4%	5.6%	155.6%
Nitrogen deposition (IED) (kgN/ha/yr)	10	13.60	0.32	0.09	0.01	0.42	14.02	3.2%	4.2%	140.2%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (Total) (kgN/ha/yr)	10	13.60	0.32	0.09	0.01	0.42	14.02	3.2%	4.2%	140.2%
Acid deposition (IED) (keq/ha/yr) (Total)	0.142/1.273 /1.131	0.97N/0.09S	0.022N/0.05 4S			0.030N/0.05 4S	1.000N/0.14 4S	No exceedance	No exceedance	89.9
Acid deposition (Total) (keq/ha/yr)	0.142/1.273 /1.131	0.97N/0.09S	0.022N/0.05 4S			0.030N/0.05 4S	1.001N/0.14 4S	No exceedance	No exceedance	90.0

A - APPROVED

APPENDIX C: AIR QUALITY MODELLING REPORT

D.3 Scenario 2 summary results

D.3.1 Impacts on human receptors

Table D-14 presents a summary of impacts at human receptors. Full results can be provided upon request. There are no exceedances predicted for all pollutants and averaging periods considered in this AERA for the reasonable worst-case scenario.

Table D-14 Summary of Impacts at Human Receptors for Scenario 2

Pollutant	AQS/EAL ($\mu\text{g m}^{-3}$)	Receptor	Background ($\mu\text{g m}^{-3}$)	PC IED ($\mu\text{g m}^{-3}$)	PC Total ($\mu\text{g m}^{-3}$)	PEC	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
NO ₂ Annual mean	40	R28	5.35	5.09	5.54	10.89	12.7%	13.8%	27.2%
NO ₂ Hourly mean	200	R28	10.71	29.52	37.80	48.50	14.8%	18.9%	24.3%
SO ₂ 15-min mean	266	R28	7.92	51.44	51.44	59.36	19.3%	19.3%	22.3%
SO ₂ Hourly mean	350	R28	7.92	41.92	41.92	49.84	12.0%	12.0%	14.2%
SO ₂ Daily mean	125	R28	3.96	21.92	21.92	25.88	17.5%	17.5%	20.7%
PM ₁₀ Annual mean	40	R28	12.22	0.33	0.35	12.56	0.8%	0.9%	31.4%
PM ₁₀ Daily mean	50	R28	12.22	1.14	1.20	13.42	2.3%	2.4%	26.8%
PM _{2.5} Annual mean	20	R28	7.58	0.33	0.35	7.92	0.8%	0.9%	19.8%
CO 1-hr mean	30,000	R27	418.00	770.69	1117.36	1535.36	2.6%	3.7%	5.1%
CO-8 hr	10,000	R28	418.00	446.80	560.53	978.53	4.5%	5.6%	9.8%
NH ₃ Annual	180	R28	1.30	0.45	0.47	1.77	0.2%	0.3%	1.0%
NH ₃ 1-hr	2500	R27	2.60	7.56	10.00	12.60	0.3%	0.4%	0.5%

D.3.2 Impacts on ecological receptors

Table D-14 shows the potential impacts on local sites for Scenario 2.

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Table D-14 Summary of impacts at local sites for Scenario 2

Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
E1 - Alde-Ore & Butley Estuaries										
NO _x Annual mean (µg m ⁻³)	30	6.76	0.07	0.01	0.00	0.08	6.85	0.2%	0.3%	22.8%
NO _x Daily mean (µg m ⁻³)	75	6.46	1.42	0.30	0.00	1.72	8.19	1.9%	2.3%	10.9%
SO ₂ Annual mean (µg m ⁻³)	20	2.34	0.04	0.00	0.00	0.04	2.38	0.2%	0.2%	11.9%
NH ₃ Annual mean (µg m ⁻³)	1	1.16	0.00	0.00	0.00	0.00	1.16	0.4%	0.4%	116.3%
Nitrogen deposition (IED) (kgN/ha/yr)	10	11.32	0.03	0.00	0.00	0.03	11.35	0.3%	0.3%	113.5%
Nitrogen deposition (Total) (kgN/ha/yr)	10	11.32	0.03	0.00	0.00	0.03	11.35	0.3%	0.3%	113.5%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E2 - Minsmere-Walberswick Heaths and Marshes										

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Annual mean (µg m ⁻³)	30	6.75	5.90	4.28	0.01	10.19	16.95	19.7%	34.0%	56.5%
NO _x Daily mean (µg m ⁻³)	75	6.75	18.69	7.78	0.00	26.47	33.23	24.9%	35.3%	44.3%
SO ₂ Annual mean (µg m ⁻³)	20	3.96	3.16	0.00	0.00	3.16	7.12	15.8%	15.8%	35.6%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.32	0.14	0.00	0.46	1.72	31.6%	46.1%	172.5%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.37	2.24	1.18	0.00	3.42	15.78	44.7%	68.3%	315.7%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.37	2.24	1.18	0.00	3.42	15.78	44.7%	68.3%	315.7%
Acid deposition (IED) (keq/ha/yr)	0.892/1.392 /0.5	0.88N/0.09S	0.159N/0.37 3S			0.243N/0.37 3S	1.123N/0.46 3S	No exceedance	No exceedance	114.0%
Acid deposition (Total) (keq/ha/yr)	0.892/1.392 /0.5	0.88N/0.09S	0.159N/0.37 3S			0.243N/0.37 3S	1.127N/0.46 3S	No exceedance	No exceedance	114.3%
E3 - Orfordness-Shingle Street										
NO _x Annual mean (µg m ⁻³)	30	6.33	0.06	0.01	0.00	0.07	6.40	0.2%	0.2%	21.3%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Daily mean (µg m ⁻³)	75	6.33	0.81	0.16	0.00	0.97	7.30	1.1%	1.3%	9.7%
SO ₂ Annual mean (µg m ⁻³)	20	2.37	0.03	0.00	0.00	0.03	2.41	0.2%	0.2%	12.0%
NH ₃ Annual mean (µg m ⁻³)	1	1.13	0.00	0.00	0.00	0.00	1.13	0.3%	0.4%	113.5%
Nitrogen deposition (IED) (kgN/ha/yr)	5	11.32	0.02	0.00	0.00	0.03	11.35	0.5%	0.5%	226.9%
Nitrogen deposition (Total) (kgN/ha/yr)	5	11.32	0.02	0.00	0.00	0.03	11.35	0.5%	0.5%	226.9%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E4 - Sandlings										
NO _x Annual mean (µg m ⁻³)	30	6.79	0.50	0.08	0.00	0.58	7.37	1.7%	1.9%	24.6%
NO _x Daily mean (µg m ⁻³)	75	6.79	2.78	0.68	0.00	3.45	10.24	3.7%	4.6%	13.7%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
SO ₂ Annual mean (µg m ⁻³)	20	2.71	0.24	0.00	0.00	0.24	2.95	1.2%	1.2%	14.8%
NH ₃ Annual mean (µg m ⁻³)	1	1.35	0.02	0.00	0.00	0.03	1.37	2.3%	2.6%	137.1%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.42	0.17	0.03	0.00	0.19	12.61	3.4%	3.9%	252.2%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.42	0.17	0.03	0.00	0.19	12.61	3.4%	3.9%	252.2%
Acid deposition (ied)(keq/ha/yr)	0.892/1.382 /0.49	0.88N/0.09S	0.011N/0.028S			0.013N/0.028S	0.893N/0.118S	No exceedance	No exceedance	73.3%
Acid deposition (Total) (keq/ha/yr)	0.892/1.382 /0.49	0.88N/0.09S	0.011N/0.028S			0.013N/0.028S	0.900N/0.118S	No exceedance	No exceedance	73.8%
E5 - Sizewell Marshes										
NO _x Annual mean (µg m ⁻³)	30	6.62	2.90	0.91	0.02	3.83	10.44	9.7%	12.8%	34.8%
NO _x Daily mean (µg m ⁻³)	75	6.62	12.55	2.56	0.00	15.11	21.73	16.7%	20.1%	29.0%
SO ₂ Annual mean (µg m ⁻³)	20	2.73	1.59	0.00	0.00	1.59	4.32	7.9%	7.9%	21.6%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NH ₃ Annual mean (µg m ⁻³)	1	1.36	0.16	0.03	0.00	0.19	1.55	16.0%	19.2%	155.4%
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.71	1.12	0.25	0.00	1.38	14.09	7.5%	9.2%	94.0%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.71	1.12	0.25	0.00	1.38	14.09	7.5%	9.2%	94.0%
Acid deposition (IED) (keq/ha/yr)	0.366/4.506 /4.14	0.90N/0.09S	0.080N/0.187S			0.098N/0.187S	0.998N/0.277S	No exceedance	No exceedance	28.3%
Acid deposition (Total) (keq/ha/yr)	0.366/4.506 /4.14	0.90N/0.09S	0.080N/0.187S			0.098N/0.187S	1.006N/0.277S	No exceedance	No exceedance	28.5%
E6 - Leiston - Aldeburgh										
NO _x Annual mean (µg m ⁻³)	30	6.79	0.50	0.00	0.00	0.50	7.29	1.7%	1.7%	24.3%
NO _x Daily mean (µg m ⁻³)	75	6.79	2.78	0.68	0.00	3.45	10.24	3.7%	4.6%	13.7%
SO ₂ Annual mean (µg m ⁻³)	20	2.71	0.24	0.00	0.00	0.24	2.95	1.2%	1.2%	14.8%
NH ₃ Annual mean (µg m ⁻³)	1	1.35	0.02	0.00	0.00	0.03	1.37	2.3%	2.6%	137.1%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.42	0.17	0.03	0.00	0.20	12.61	1.1%	1.3%	84.1%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.42	0.17	0.03	0.00	0.20	12.61	1.1%	1.3%	84.1%
Acid deposition (IED) (keq/ha/yr)	0.438/4.578 /4.14	0.88N/0.09S	0.012N/0.028S			0.014N/0.028S	0.894N/0.118S	No exceedance	No exceedance	22.1%
Acid deposition (keq/ha/yr) (Total)	0.438/4.578 /4.14	0.88N/0.09S	0.012N/0.028S			0.014N/0.028S	0.901N/0.118S	No exceedance	No exceedance	22.3%
E7 - Leiston Common Country Wildlife Site										
NO _x Annual mean (µg m ⁻³)	30	6.83	1.48	0.26	0.00	1.74	8.57	4.9%	5.8%	28.6%
NO _x Daily mean (µg m ⁻³)	75	6.83	3.97	1.72	0.00	5.70	12.52	5.3%	7.6%	16.7%
SO ₂ Annual mean (µg m ⁻³)	20	2.49	0.63	0.00	0.00	0.63	3.12	3.1%	3.1%	15.6%
NH ₃ Annual mean (µg m ⁻³)	1	1.44	0.06	0.01	0.00	0.07	1.51	5.6%	6.8%	150.6%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.91	0.44	0.09	0.00	0.53	13.44	8.8%	10.6%	268.8%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.91	0.44	0.09	0.00	0.53	13.44	8.8%	10.6%	268.8%
Acid deposition (IED)(keq/ha/yr)	0.142/1.273 /1.131	0.97N/0.09S	0.031N/0.07 4S			0.037N/0.07 4S	0.957N/0.16 4S	No exceedance	No exceedance	81.2%
Acid deposition (Total) (keq/ha/yr)	0.142/1.273 /1.131	0.97N/0.09S	0.031N/0.07 4S			0.037N/0.07 4S	0.959N/0.16 4S	No exceedance	No exceedance	81.4%
E8 - Aldringham to Aldeburgh Disused Railway CWS										
NO _x Annual mean (µg m ⁻³)	30	6.55	0.35	0.06	0.00	0.42	6.97	1.2%	1.4%	23.2%
NO _x Daily mean (µg m ⁻³)	75	6.55	2.61	0.53	0.00	3.14	9.69	3.5%	4.2%	12.9%
SO ₂ Annual mean (µg m ⁻³)	20	2.47	0.17	0.00	0.00	0.17	2.64	0.9%	0.9%	13.2%
NH ₃ Annual mean (µg m ⁻³)	1	1.33	0.02	0.00	0.00	0.02	1.35	1.7%	1.9%	135.0%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.26	0.12	0.02	0.00	0.14	12.40	2.4%	2.8%	248.1%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.26	0.12	0.02	0.00	0.14	12.40	2.4%	2.8%	248.1%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Acid deposition (IED) (keq/ha/yr)	0.892/1.382 /0.49	0.87N/0.09S	0.008N/0.02 OS			0.010N/0.02 OS	0.880N/0.11 OS	No exceedance	No exceedance	22.6%
Acid deposition (Total) (keq/ha/yr)	0.892/1.382 /0.49	0.87N/0.09S	0.008N/0.02 OS			0.010N/0.02 OS	0.885N/0.11 OS	No exceedance	No exceedance	22.6%
E9 - Dower House CWS										
NO _x Annual mean (µg m ⁻³)	30	6.46	2.63	0.56	0.01	3.21	9.67	8.8%	10.7%	32.2%
NO _x Daily mean (µg m ⁻³)	75	6.46	11.11	2.83	0.00	13.94	20.40	14.8%	18.6%	27.2%
SO ₂ Annual mean (µg m ⁻³)	20	2.49	1.53	0.00	0.00	1.53	4.02	7.6%	7.6%	20.1%
NH ₃ Annual mean (µg m ⁻³)	1	1.24	0.14	0.02	0.00	0.16	1.41	14.4%	16.3%	140.7%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.52	1.01	0.16	0.00	1.17	13.69	10.1%	11.7%	136.9%
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.52	1.01	0.16	0.00	1.17	13.69	10.1%	11.7%	136.9%
Acid deposition (IED) (keq/ha/yr)	0.357/8.73/ 8.373	0.89N/0.09S	0.072N/0.18 OS			0.083N/0.18 OS	0.973N/0.27 OS	No exceedance	No exceedance	3.2%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Acid deposition (Total) (keq/ha/yr)	0.357/8.73/8.373	0.89N/0.09S	0.072N/0.180S			0.083N/0.180S	0.977N/0.270S	No exceedance	No exceedance	3.2%
E10 - Suffolk Shingles Beaches CWS										
NO _x Annual mean (µg m ⁻³)	30	8.66	6.16	0.61	0.00	6.77	15.43	20.5%	22.6%	51.4%
NO _x Daily mean (µg m ⁻³)	75	8.66	24.70	2.49	0.00	27.19	35.85	32.9%	36.3%	47.8%
SO ₂ Annual mean (µg m ⁻³)	20	23.60	3.29	0.00	0.00	3.29	26.89	16.5%	16.5%	134.5%
NH ₃ Annual mean (µg m ⁻³)	1	1.24	0.37	0.02	0.00	0.39	1.64	37.2%	39.2%	163.6%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.22	2.55	0.17	0.00	2.72	14.94	25.5%	27.2%	149.4%
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.22	2.55	0.17	0.00	2.72	14.94	25.5%	27.2%	149.4%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
E11 - Reckham Pits CWS										
NO _x Annual mean (µg m ⁻³)	30	6.82	1.04	0.31	0.01	1.35	8.17	3.5%	4.5%	27.2%
NO _x Daily mean (µg m ⁻³)	75	6.82	2.92	2.19	0.00	5.11	11.92	3.9%	6.8%	15.9%
SO ₂ Annual mean (µg m ⁻³)	20	3.02	0.50	0.00	0.00	0.50	3.52	2.5%	2.5%	17.6%
NH ₃ Annual mean (µg m ⁻³)	1	1.36	0.05	0.01	0.00	0.06	1.41	4.8%	5.5%	141.3%
Nitrogen deposition (IED) (kgN/ha/yr)	10	22.16	0.58	0.12	0.00	0.70	22.85	5.8%	7.0%	228.5%
Nitrogen deposition (Total) (kgN/ha/yr)	10	22.16	0.58	0.12	0.00	0.70	22.85	5.8%	7.0%	228.5%
Acid deposition (IED) (keq/ha/yr)	0.285/4.495 /4.21	1.58N/0.09S	0.041N/0.11 8S			0.049N/0.11 8S	1.629N/0.20 8S	No exceedance	No exceedance	40.9%
Acid deposition (Total) (keq/ha/yr)	0.285/4.495 /4.21	1.58N/0.09S	0.041N/0.11 8S			0.049N/0.11 8S	1.632N/0.20 8S	No exceedance	No exceedance	41.0%
E12 - Sizewell Levels and Associated Areas										
NO _x Annual mean (µg m ⁻³)	30	6.75	5.91	2.09	0.09	8.09	14.84	19.7%	27.0%	49.5%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Daily mean (µg m ⁻³)	75	6.75	20.85	8.76	0.00	29.61	36.36	27.8%	39.5%	48.5%
SO ₂ Annual mean (µg m ⁻³)	20	3.96	3.32	0.00	0.00	3.32	7.28	16.6%	16.6%	36.4%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.32	0.07	0.00	0.40	1.66	32.5%	39.8%	166.2%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.37	2.28	0.58	0.02	2.88	15.25	22.8%	28.8%	152.5%
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.37	2.28	0.58	0.02	2.88	15.25	22.8%	28.8%	152.5%
Acid deposition (IED) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.162N/0.39 3S			0.205N/0.39 3S	1.085N/0.48 3S	No exceedance	No exceedance	124.3
Acid deposition (Total) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.162N/0.39 3S			0.205N/0.39 3S	1.089N/0.48 3S	No exceedance	No exceedance	124.6
E13 - Southern Minsmere Levels – Dunwich Forest & Kenton Hill CWS										
NO _x Annual mean (µg m ⁻³)	30	6.75	4.87	1.16	0.07	6.11	12.86	16.2%	20.4%	42.9%
NO _x Daily mean (µg m ⁻³)	75	6.75	12.60	4.08	0.00	16.68	23.44	16.8%	22.2%	31.2%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
SO ₂ Annual mean (µg m ⁻³)	20	3.96	2.84	0.00	0.00	2.84	6.80	14.2%	14.2%	34.0%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.26	0.04	0.00	0.31	1.57	25.9%	30.5%	156.9%
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.37	1.84	0.35	0.01	2.20	14.57	12.3%	14.7%	97.1%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.37	1.84	0.35	0.01	2.20	14.57	12.3%	14.7%	97.1%
Acid deposition (IED) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.131N/0.33 6S			0.157N/0.33 6S	1.037N/0.42 6S	No exceedance	No exceedance	116.0
Acid deposition (Total) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.131N/0.33 6S			0.157N/0.33 6S	1.040N/0.42 6S	No exceedance	No exceedance	116.2
E14 - Aldhurst Farm habitat creation scheme										
NO _x Annual mean (µg m ⁻³)	30	6.85	0.49	0.13	0.00	0.63	7.48	1.6%	2.1%	24.9%
NO _x Daily mean (µg m ⁻³)	75	6.85	2.48	1.17	0.00	3.65	10.50	3.3%	4.9%	14.0%
SO ₂ Annual mean (µg m ⁻³)	20	2.59	0.21	0.00	0.00	0.21	2.80	1.1%	1.1%	14.0%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NH ₃ Annual mean (µg m ⁻³)	1	1.50	0.02	0.00	0.00	0.02	1.52	2.1%	2.4%	152.4%
Nitrogen deposition (IED) (kgN/ha/yr)	15	13.30	0.16	0.03	0.00	0.19	13.49	1.0%	1.3%	89.9%
Nitrogen deposition (Total) (kgN/ha/yr)	15	13.30	0.16	0.03	0.00	0.19	13.49	1.0%	1.3%	89.9%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E15 - Marsh harrier/reptile habitat within EDF Energy estate										
NO _x Annual mean (µg m ⁻³)	30	6.51	1.08	0.33	0.03	1.44	7.95	3.6%	4.8%	26.5%
NO _x Daily mean (µg m ⁻³)	75	6.51	4.42	2.21	0.00	6.64	13.15	5.9%	8.8%	17.5%
SO ₂ Annual mean (µg m ⁻³)	20	2.39	0.59	0.00	0.00	0.59	2.98	2.9%	2.9%	14.9%
NH ₃ Annual mean (µg m ⁻³)	1	1.40	0.05	0.01	0.00	0.07	1.47	5.5%	6.6%	146.6%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.90	0.39	0.09	0.01	0.49	13.39	7.9%	9.7%	267.7%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.90	0.39	0.09	0.01	0.49	13.39	7.9%	9.7%	267.7%
Acid deposition (IED) (keq/ha/yr)	0.892/1.392 /0.5	0.92N/0.09S	0.028N/0.06 9S			0.034N/0.06 9S	0.954N/0.15 9S	No exceedance	No exceedance	80.0
Acid deposition (Total) (keq/ha/yr)	0.892/1.392 /0.5	0.92N/0.09S	0.028N/0.06 9S			0.034N/0.06 9S	0.956N/0.15 9S	No exceedance	No exceedance	80.1
E16 - Ash Wood priority habitat										
NO _x Annual mean (µg m ⁻³)	30	6.56	1.15	0.37	0.06	1.58	8.14	3.8%	5.3%	27.1%
NO _x Daily mean (µg m ⁻³)	75	6.56	4.42	2.27	0.00	6.69	13.25	5.9%	8.9%	17.7%
SO ₂ Annual mean (µg m ⁻³)	20	2.25	0.61	0.00	0.00	0.61	2.86	3.1%	3.1%	14.3%
NH ₃ Annual mean (µg m ⁻³)	1	1.50	0.06	0.01	0.00	0.07	1.57	5.8%	7.0%	157.0%
Nitrogen deposition (IED) (kgN/ha/yr)	10	13.60	0.42	0.09	0.01	0.52	14.12	4.2%	5.2%	141.2%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (Total) (kgN/ha/yr)	10	13.60	0.42	0.09	0.01	0.52	14.12	4.2%	5.2%	141.2%
Acid deposition (IED) (keq/ha/yr) (Total)	0.142/1.273 /1.131	0.97N/0.09S	0.029N/0.07 2S			0.037N/0.07 2S	1.007N/0.16 2S	No exceedance	No exceedance	91.9
Acid deposition (Total) (keq/ha/yr)	0.142/1.273 /1.131	0.97N/0.09S	0.029N/0.07 2S			0.037N/0.07 2S	1.008N/0.16 2S	No exceedance	No exceedance	92.0

A - APPROVED

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D.4 Scenario 3 summary results

D.4.1 Impacts on human receptors

Table D-16 presents a summary of impacts at human receptors. Full results can be provided upon request. There are no exceedances predicted for all pollutants and averaging periods considered in this AERA for the reasonable worst-case scenario.

Table D-16 Summary of Impacts at Human Receptors for Scenario 3

Pollutant	AQS/EAL (µg m ⁻³)	Receptor	Background (µg m ⁻³)	PC IED (µg m ⁻³)	PC Total (µg m ⁻³)	PEC	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
NO ₂ Annual mean	40	R27	5.35	4.65	6.37	11.72	11.6%	15.9%	29.3%
NO ₂ Hourly mean	200	R27	10.71	25.41	37.10	47.81	12.7%	18.6%	23.9%
SO ₂ 15-min mean	266	R27	7.92	53.96	53.96	61.88	20.3%	20.3%	23.3%
SO ₂ Hourly mean	350	R27	7.92	44.68	44.68	52.60	12.8%	12.8%	15.0%
SO ₂ Daily mean	125	R27	3.96	29.57	29.57	33.53	23.7%	23.7%	26.8%
PM ₁₀ Annual mean	40	R27	12.22	0.34	0.39	12.61	0.8%	1.0%	31.5%
PM ₁₀ Daily mean	50	R27	12.22	1.14	1.29	13.50	2.3%	2.6%	27.0%
PM _{2.5} Annual mean	20	R27	7.58	0.34	0.39	7.96	0.8%	1.0%	19.9%
CO 1-hr mean	30,000	R15	416.00	240.97	945.91	1361.91	0.8%	3.2%	4.5%
CO-8 hr	10,000	R27	418.00	371.65	523.45	941.45	3.7%	5.2%	9.4%
NH ₃ Annual	180	R27	1.30	0.36	0.45	1.75	0.2%	14.8%	1.0%
NH ₃ 1-hr	2500	R27	2.60	6.03	8.47	11.07	0.2%	0.3%	0.4%

D.4.2 Impacts on ecological receptors

Sizewell C | 101254803 / 001 | P1 - For Implementation | 12-Apr-2024 | NOT PROTECTIVELY MARKED

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Table D-16 Summary of impacts at local sites for Scenario 3

Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
E1 - Alde-Ore & Butley Estuaries										
NO _x Annual mean (µg m ⁻³)	30	6.51	0.08	0.01	0.00	0.09	6.60	0.3%	0.3%	22.0%
NO _x Daily mean (µg m ⁻³)	75	6.51	1.46	0.31	0.00	1.77	8.28	1.9%	2.4%	11.0%
SO ₂ Annual mean (µg m ⁻³)	20	2.16	0.05	0.00	0.00	0.05	2.21	0.2%	0.2%	11.1%
NH ₃ Annual mean (µg m ⁻³)	1	1.37	0.00	0.00	0.00	0.00	1.37	0.4%	0.5%	137.1%
Nitrogen deposition (IED) (kgN/ha/yr)	10	13.30	0.03	0.00	0.00	0.03	13.34	0.3%	0.3%	133.4%
Nitrogen deposition (Total) (kgN/ha/yr)	10	13.30	0.03	0.00	0.00	0.03	13.34	0.3%	0.3%	133.4%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E2 - Minsmere-Walberswick Heaths and Marshes										

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Annual mean (µg m ⁻³)	30	6.75	6.89	1.82	0.06	8.77	15.52	23.0%	29.2%	51.7%
NO _x Daily mean (µg m ⁻³)	75	6.75	30.11	7.78	0.00	37.88	44.64	40.1%	50.5%	59.5%
SO ₂ Annual mean (µg m ⁻³)	20	3.96	4.10	0.00	0.00	4.10	8.06	20.5%	20.5%	40.3%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.38	0.06	0.00	0.44	1.71	38.1%	44.4%	170.8%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.37	2.67	0.50	0.01	3.19	15.56	53.5%	63.8%	311.2%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.37	2.24	1.18	0.00	3.42	15.79	44.8%	68.4%	315.8%
Acid deposition (IED) (keq/ha/yr)	0.892/1.392 /0.5	0.88N/0.09S	0.191N/0.48 4S			0.227N/0.48 4S	1.107N/0.57 4S	No exceedance	No exceedance	120.9%
Acid deposition (Total) (keq/ha/yr)	0.892/1.392 /0.5	0.88N/0.09S	0.160N/0.38 5S			0.244N/0.38 5S	1.127N/0.47 5S	No exceedance	No exceedance	115.2%
E3 - Orfordness-Shingle Street										
NO _x Annual mean (µg m ⁻³)	30	6.33	0.05	0.01	0.00	0.07	6.40	0.2%	0.2%	21.3%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Daily mean (µg m ⁻³)	75	6.33	0.84	0.16	0.00	1.00	7.33	1.1%	1.3%	9.8%
SO ₂ Annual mean (µg m ⁻³)	20	2.37	0.03	0.00	0.00	0.03	2.40	0.2%	0.2%	12.0%
NH ₃ Annual mean (µg m ⁻³)	1	1.13	0.00	0.00	0.00	0.00	1.13	0.3%	0.3%	113.4%
Nitrogen deposition (IED) (kgN/ha/yr)	5	11.32	0.02	0.00	0.00	0.02	11.34	0.4%	0.5%	226.9%
Nitrogen deposition (Total) (kgN/ha/yr)	5	11.32	0.02	0.00	0.00	0.02	11.34	0.4%	0.5%	226.9%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E4 - Sandlings										
NO _x Annual mean (µg m ⁻³)	30	6.79	0.45	0.08	0.00	0.54	7.32	1.5%	1.8%	24.4%
NO _x Daily mean (µg m ⁻³)	75	6.79	2.65	0.68	0.00	3.33	10.11	3.5%	4.4%	13.5%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
SO ₂ Annual mean (µg m ⁻³)	20	2.71	0.26	0.00	0.00	0.26	2.97	1.3%	1.3%	14.8%
NH ₃ Annual mean (µg m ⁻³)	1	1.35	0.02	0.00	0.00	0.02	1.37	2.2%	2.5%	137.0%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.42	0.16	0.03	0.00	0.18	12.60	3.1%	3.7%	252.0%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.42	0.16	0.03	0.00	0.18	12.60	3.1%	3.7%	252.0%
Acid deposition (ied)(keq/ha/yr)	0.892/1.382 /0.49	0.88N/0.09S	0.011N/0.03 OS			0.013N/0.03 OS	0.893N/0.12 OS	No exceedance	No exceedance	73.3%
Acid deposition (Total) (keq/ha/yr)	0.892/1.382 /0.49	0.88N/0.09S	0.011N/0.03 OS			0.013N/0.03 OS	0.900N/0.12 OS	No exceedance	No exceedance	73.8%
E5 - Sizewell Marshes										
NO _x Annual mean (µg m ⁻³)	30	6.62	3.76	1.01	0.03	4.80	11.41	12.5%	16.0%	38.0%
NO _x Daily mean (µg m ⁻³)	75	6.62	19.55	4.46	0.00	24.01	30.63	26.1%	32.0%	40.8%
SO ₂ Annual mean (µg m ⁻³)	20	2.73	2.24	0.00	0.00	2.24	4.97	11.2%	11.2%	24.9%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NH ₃ Annual mean (µg m ⁻³)	1	1.36	0.20	0.04	0.00	0.24	1.60	20.4%	24.0%	160.2%
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.71	1.44	0.29	0.00	1.73	14.44	9.6%	11.5%	96.3%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.71	1.44	0.29	0.00	1.73	14.44	9.6%	11.5%	96.3%
Acid deposition (IED) (keq/ha/yr)	0.366/4.506 /4.14	0.90N/0.09S	0.102N/0.26 5S			0.123N/0.26 5S	1.023N/0.35 5S	No exceedance	No exceedance	30.6%
Acid deposition (Total) (keq/ha/yr)	0.366/4.506 /4.14	0.90N/0.09S	0.102N/0.26 5S			0.123N/0.26 5S	1.031N/0.35 5S	No exceedance	No exceedance	30.8%
E6 - Leiston - Aldeburgh										
NO _x Annual mean (µg m ⁻³)	30	6.79	0.46	0.00	0.00	0.46	7.25	1.5%	1.5%	24.2%
NO _x Daily mean (µg m ⁻³)	75	6.79	2.65	0.68	0.00	3.33	10.11	3.5%	4.4%	13.5%
SO ₂ Annual mean (µg m ⁻³)	20	2.71	0.26	0.00	0.00	0.26	2.97	1.3%	1.3%	14.8%
NH ₃ Annual mean (µg m ⁻³)	1	1.35	0.02	0.00	0.00	0.03	1.37	2.2%	2.5%	137.0%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.42	0.16	0.03	0.00	0.19	12.60	1.1%	1.2%	84.0%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.42	0.16	0.03	0.00	0.19	12.60	1.1%	1.2%	84.0%
Acid deposition (IED) (keq/ha/yr)	0.438/4.578 /4.14	0.88N/0.09S	0.011N/0.03 OS			0.013N/0.03 OS	0.893N/0.12 OS	No exceedance	No exceedance	22.1%
Acid deposition (keq/ha/yr) (Total)	0.438/4.578 /4.14	0.88N/0.09S	0.011N/0.03 OS			0.013N/0.03 OS	0.900N/0.12 OS	No exceedance	No exceedance	22.3%
E7 - Leiston Common Country Wildlife Site										
NO _x Annual mean (µg m ⁻³)	30	6.83	1.46	0.26	0.00	1.73	8.55	4.9%	5.8%	28.5%
NO _x Daily mean (µg m ⁻³)	75	6.82	4.36	3.03	0.00	7.38	14.20	5.8%	9.8%	18.9%
SO ₂ Annual mean (µg m ⁻³)	20	2.49	0.76	0.00	0.00	0.76	3.25	3.8%	3.8%	16.3%
NH ₃ Annual mean (µg m ⁻³)	1	1.44	0.06	0.01	0.00	0.07	1.51	6.2%	7.4%	151.2%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.91	0.47	0.09	0.00	0.56	13.47	9.4%	11.2%	269.4%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.91	0.47	0.09	0.00	0.56	13.47	9.4%	11.2%	269.4%
Acid deposition (IED)(keq/ha/yr)	0.142/1.273 /1.131	0.97N/0.09S	0.033N/0.09 OS			0.039N/0.09 OS	0.959N/0.18 OS	No exceedance	No exceedance	82.5%
Acid deposition (Total) (keq/ha/yr)	0.142/1.273 /1.131	0.97N/0.09S	0.033N/0.09 OS			0.039N/0.09 OS	0.962N/0.18 OS	No exceedance	No exceedance	82.6%
E8 - Aldringham to Aldeburgh Disused Railway CWS										
NO _x Annual mean (µg m ⁻³)	30	6.55	0.33	0.06	0.00	0.40	6.95	1.1%	1.3%	23.2%
NO _x Daily mean (µg m ⁻³)	75	6.55	2.62	0.54	0.00	3.16	9.71	3.5%	4.2%	12.9%
SO ₂ Annual mean (µg m ⁻³)	20	2.47	0.19	0.00	0.00	0.19	2.66	0.9%	0.9%	13.3%
NH ₃ Annual mean (µg m ⁻³)	1	1.33	0.02	0.00	0.00	0.02	1.35	1.6%	1.9%	135.0%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.26	0.12	0.02	0.00	0.14	12.40	2.4%	2.7%	248.0%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.26	0.12	0.02	0.00	0.14	12.40	2.4%	2.7%	248.0%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Acid deposition (IED) (keq/ha/yr)	0.892/1.382 /0.49	0.87N/0.09S	0.008N/0.02 2S			0.009N/0.02 2S	0.879N/0.11 2S	No exceedance	No exceedance	22.9%
Acid deposition (Total) (keq/ha/yr)	0.892/1.382 /0.49	0.87N/0.09S	0.008N/0.02 2S			0.009N/0.02 2S	0.885N/0.11 2S	No exceedance	No exceedance	22.9%
E9 - Dower House CWS										
NO _x Annual mean (µg m ⁻³)	30	6.46	2.93	0.56	0.01	3.51	9.98	9.8%	11.7%	33.3%
NO _x Daily mean (µg m ⁻³)	75	6.46	12.26	2.83	0.00	15.08	21.55	16.3%	20.1%	28.7%
SO ₂ Annual mean (µg m ⁻³)	20	2.49	1.77	0.00	0.00	1.77	4.26	8.9%	8.9%	21.3%
NH ₃ Annual mean (µg m ⁻³)	1	1.24	0.16	0.02	0.00	0.18	1.43	16.2%	18.1%	142.5%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.52	1.14	0.16	0.00	1.29	13.81	11.4%	12.9%	138.1%
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.52	1.14	0.16	0.00	1.29	13.81	11.4%	12.9%	138.1%
Acid deposition (IED) (keq/ha/yr)	0.357/8.73/ 8.373	0.89N/0.09S	0.081N/0.20 9S			0.092N/0.20 9S	0.982N/0.29 9S	No exceedance	No exceedance	3.6%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Acid deposition (Total) (keq/ha/yr)	0.357/8.73/8.373	0.89N/0.09S	0.081N/0.209S			0.092N/0.209S	0.986N/0.299S	No exceedance	No exceedance	3.6%
E10 - Suffolk Shingles Beaches CWS										
NO _x Annual mean (µg m ⁻³)	30	8.66	5.03	0.61	0.00	5.64	14.30	16.8%	18.8%	47.7%
NO _x Daily mean (µg m ⁻³)	75	8.66	23.45	2.49	0.00	25.94	34.60	31.3%	34.6%	46.1%
SO ₂ Annual mean (µg m ⁻³)	20	23.60	2.68	0.00	0.00	2.68	26.28	13.4%	13.4%	131.4%
NH ₃ Annual mean (µg m ⁻³)	1	1.24	0.31	0.02	0.00	0.33	1.57	30.6%	32.6%	157.0%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.22	2.09	0.17	0.00	2.26	14.48	20.9%	22.6%	144.8%
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.22	2.09	0.17	0.00	2.26	14.48	20.9%	22.6%	144.8%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
E11 - Reckham Pits CWS										
NO _x Annual mean (µg m ⁻³)	30	6.82	1.03	0.31	0.01	1.34	8.16	3.4%	4.5%	27.2%
NO _x Daily mean (µg m ⁻³)	75	6.82	3.54	2.31	0.00	5.86	12.67	4.7%	7.8%	16.9%
SO ₂ Annual mean (µg m ⁻³)	20	3.02	0.58	0.00	0.00	0.58	3.60	2.9%	2.9%	18.0%
NH ₃ Annual mean (µg m ⁻³)	1	1.36	0.05	0.01	0.00	0.06	1.42	5.1%	5.8%	141.6%
Nitrogen deposition (IED) (kgN/ha/yr)	10	22.16	0.60	0.12	0.00	0.72	22.88	6.0%	7.2%	228.8%
Nitrogen deposition (Total) (kgN/ha/yr)	10	22.16	0.60	0.12	0.00	0.72	22.88	6.0%	7.2%	228.8%
Acid deposition (IED) (keq/ha/yr)	0.285/4.495 /4.21	1.58N/0.09S	0.042N/0.13 7S			0.051N/0.13 7S	1.631N/0.22 7S	No exceedance	No exceedance	41.3%
Acid deposition (Total) (keq/ha/yr)	0.285/4.495 /4.21	1.58N/0.09S	0.042N/0.13 7S			0.051N/0.13 7S	1.633N/0.22 7S	No exceedance	No exceedance	41.4%
E12 - Sizewell Levels and Associated Areas										
NO _x Annual mean (µg m ⁻³)	30	6.75	7.36	2.09	0.09	9.54	16.29	24.5%	31.8%	54.3%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Daily mean (µg m ⁻³)	75	6.75	31.48	8.76	0.00	40.24	46.99	42.0%	53.7%	62.7%
SO ₂ Annual mean (µg m ⁻³)	20	3.96	4.35	0.00	0.00	4.35	8.31	21.8%	21.8%	41.6%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.41	0.07	0.00	0.48	1.74	40.7%	48.0%	174.4%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.37	2.85	0.58	0.02	3.45	15.82	28.5%	34.5%	158.2%
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.37	2.85	0.58	0.02	3.45	15.82	28.5%	34.5%	158.2%
Acid deposition (IED) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.203N/0.51 4S			0.246N/0.51 4S	1.126N/0.60 4S	No exceedance	No exceedance	137.2%
Acid deposition (Total) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.203N/0.51 4S			0.246N/0.51 4S	1.129N/0.60 4S	No exceedance	No exceedance	137.5%
E13 - Southern Minsmere Levels – Dunwich Forest & Kenton Hill CWS										
NO _x Annual mean (µg m ⁻³)	30	6.75	6.73	1.16	0.07	7.96	14.72	22.4%	26.5%	49.1%
NO _x Daily mean (µg m ⁻³)	75	6.75	18.15	4.08	0.00	22.23	28.98	24.2%	29.6%	38.6%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
SO ₂ Annual mean (µg m ⁻³)	20	3.96	4.10	0.00	0.00	4.10	8.06	20.5%	20.5%	40.3%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.37	0.04	0.00	0.41	1.68	36.6%	41.2%	167.6%
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.37	2.58	0.35	0.01	2.94	15.31	17.2%	19.6%	102.1%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.37	2.58	0.35	0.01	2.94	15.31	17.2%	19.6%	102.1%
Acid deposition (IED) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.184N/0.48 5S			0.210N/0.48 5S	1.090N/0.57 5S	No exceedance	No exceedance	132.0%
Acid deposition (Total) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.184N/0.48 5S			0.210N/0.48 5S	1.093N/0.57 5S	No exceedance	No exceedance	132.2%
E14 - Aldhurst Farm habitat creation scheme										
NO _x Annual mean (µg m ⁻³)	30	6.85	0.60	0.13	0.00	0.74	7.59	2.0%	2.5%	25.3%
NO _x Daily mean (µg m ⁻³)	75	6.85	3.58	1.17	0.00	4.75	11.60	4.8%	6.3%	15.5%
SO ₂ Annual mean (µg m ⁻³)	20	2.59	0.41	0.00	0.00	0.41	3.00	2.1%	2.1%	15.0%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NH ₃ Annual mean (µg m ⁻³)	1	1.50	0.03	0.00	0.00	0.03	1.53	2.8%	3.2%	153.2%
Nitrogen deposition (IED) (kgN/ha/yr)	15	13.30	0.20	0.03	0.00	0.24	13.54	1.4%	1.6%	90.3%
Nitrogen deposition (Total) (kgN/ha/yr)	15	13.30	0.20	0.03	0.00	0.24	13.54	1.4%	1.6%	90.3%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E15 - Marsh harrier/reptile habitat within EDF Energy estate										
NO _x Annual mean (µg m ⁻³)	30	6.51	1.40	0.33	0.03	1.76	8.27	4.7%	5.9%	27.6%
NO _x Daily mean (µg m ⁻³)	75	6.51	5.78	2.21	0.00	8.00	14.51	7.7%	10.7%	19.3%
SO ₂ Annual mean (µg m ⁻³)	20	2.39	0.83	0.00	0.00	0.83	3.22	4.2%	4.2%	16.1%
NH ₃ Annual mean (µg m ⁻³)	1	1.40	0.07	0.01	0.00	0.09	1.49	7.4%	8.5%	148.5%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.90	0.52	0.09	0.01	0.62	13.52	10.5%	12.3%	270.3%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.90	0.52	0.09	0.01	0.62	13.52	10.5%	12.3%	270.3%
Acid deposition (IED) (keq/ha/yr)	0.892/1.392 /0.5	0.92N/0.09S	0.037N/0.098S			0.044N/0.098S	0.964N/0.188S	No exceedance	No exceedance	82.8%
Acid deposition (Total) (keq/ha/yr)	0.892/1.392 /0.5	0.92N/0.09S	0.037N/0.098S			0.044N/0.098S	0.965N/0.188S	No exceedance	No exceedance	82.9%
E16 - Ash Wood priority habitat										
NO _x Annual mean (µg m ⁻³)	30	6.56	1.57	0.37	0.06	2.00	8.57	5.2%	6.7%	28.6%
NO _x Daily mean (µg m ⁻³)	75	6.56	5.59	2.27	0.00	7.86	14.43	7.5%	10.5%	19.2%
SO ₂ Annual mean (µg m ⁻³)	20	2.25	0.93	0.00	0.00	0.93	3.18	4.7%	4.7%	15.9%
NH ₃ Annual mean (µg m ⁻³)	1	1.50	0.08	0.01	0.00	0.10	1.60	8.3%	9.5%	159.5%
Nitrogen deposition (IED) (kgN/ha/yr)	10	13.60	0.59	0.09	0.01	0.69	14.29	5.9%	6.9%	142.9%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (Total) (kgN/ha/yr)	10	13.60	0.59	0.09	0.01	0.69	14.29	5.9%	6.9%	142.9%
Acid deposition (IED) (keq/ha/yr) (Total)	0.142/1.273 /1.131	0.97N/0.09S	0.042N/0.11 OS			0.049N/0.11 OS	1.019N/0.20 OS	No exceedance	No exceedance	95.8%
Acid deposition (Total) (keq/ha/yr)	0.142/1.273 /1.131	0.97N/0.09S	0.042N/0.11 OS			0.049N/0.11 OS	1.020N/0.20 OS	No exceedance	No exceedance	95.9%

A - APPROVED

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D.5 Scenario 4 summary results

D.5.1 Impacts on human receptors

Table D-17 presents a summary of impacts at human receptors. Full results can be provided upon request. There are no exceedances predicted for all pollutants and averaging periods considered in this AERA for the reasonable worst-case scenario.

Table D-17 Summary of Impacts at Human Receptors for Scenario 4

Pollutant	AQS/EAL (µg m ⁻³)	Receptor	Background (µg m ⁻³)	PC IED (µg m ⁻³)	PC Total (µg m ⁻³)	PEC	%PC IED of AQS	%PC Total of AQS	%PEC Total of AQS
NO ₂ Annual mean	40	R27	5.35	6.42	8.13	13.49	16.0%	20.3%	33.7%
NO ₂ Hourly mean	200	R28	10.71	38.50	46.78	57.49	19.2%	23.4%	28.7%
SO ₂ 15-min mean	266	R28	7.92	79.16	79.16	87.08	29.8%	29.8%	32.7%
SO ₂ Hourly mean	350	R28	7.92	64.90	64.90	72.82	18.5%	18.5%	20.8%
SO ₂ Daily mean	125	R28	3.96	36.11	36.11	40.07	28.9%	28.9%	32.1%
PM ₁₀ Annual mean	40	R27	12.22	0.47	0.53	12.74	1.2%	1.3%	31.9%
PM ₁₀ Daily mean	50	R28	12.22	1.67	1.73	13.95	3.3%	3.5%	27.9%
PM _{2.5} Annual mean	20	R27	7.58	0.47	0.52	8.10	1.2%	1.3%	20.2%
CO 1-hr mean	30,000	R27	418.00	649.63	996.30	1414.30	2.2%	3.3%	4.7%
CO-8 hr	10,000	R28	418.00	544.86	658.58	1076.58	5.4%	6.6%	10.8%
NH ₃ Annual	180	R28	1.30	0.59	0.61	1.91	0.3%	0.3%	1.1%
NH ₃ 1-hr	2500	R28	2.60	7.80	9.56	12.16	0.3%	0.4%	0.5%

D.5.2 Impacts on ecological receptors

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Table D-18 Summary of impacts at local sites for Scenario 4

Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
E1 - Alde-Ore & Butley Estuaries										
NO _x Annual mean (µg m ⁻³)	30	6.51	0.12	0.01	0.00	0.13	6.64	0.4%	0.4%	22.1%
NO _x Daily mean (µg m ⁻³)	75	6.46	2.43	0.30	0.00	2.73	9.20	3.2%	3.6%	12.3%
SO ₂ Annual mean (µg m ⁻³)	20	2.16	0.07	0.00	0.00	0.07	2.24	0.4%	0.4%	11.2%
NH ₃ Annual mean (µg m ⁻³)	1	1.37	0.01	0.00	0.00	0.01	1.37	0.6%	0.7%	137.3%
Nitrogen deposition (IED) (kgN/ha/yr)	10	13.30	0.05	0.00	0.00	0.05	13.35	0.5%	0.5%	133.5%
Nitrogen deposition (Total) (kgN/ha/yr)	10	13.30	0.05	0.00	0.00	0.05	13.35	0.5%	0.5%	133.5%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E2 - Minsmere-Walberswick Heaths and Marshes										

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Annual mean (µg m ⁻³)	30	6.75	9.62	2.08	0.05	11.75	18.51	32.1%	39.2%	61.7%
NO _x Daily mean (µg m ⁻³)	75	6.75	37.09	7.78	0.00	44.86	51.62	49.4%	59.8%	68.8%
SO ₂ Annual mean (µg m ⁻³)	20	3.96	5.80	0.00	0.00	5.80	9.76	29.0%	29.0%	48.8%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.53	0.07	0.00	0.61	1.87	53.3%	60.5%	186.9%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.37	3.74	0.58	0.01	4.33	16.69	74.8%	86.5%	333.9%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.37	3.68	1.18	0.00	4.86	17.23	73.6%	97.2%	344.6%
Acid deposition (IED) (keq/ha/yr)	0.892/1.392 /0.5	0.88N/0.09S	0.267N/0.68 5S			0.309N/0.68 5S	1.189N/0.77 5S	Exceedance	Exceedance	141.2%
Acid deposition (Total) (keq/ha/yr)	0.892/1.392 /0.5	0.88N/0.09S	0.262N/0.66 2S			0.347N/0.66 2S	1.230N/0.75 2S	Exceedance	Exceedance	142.4%
E3 - Orfordness-Shingle Street										
NO _x Annual mean (µg m ⁻³)	30	6.33	0.09	0.01	0.00	0.11	6.44	0.3%	0.4%	21.5%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Daily mean (µg m ⁻³)	75	6.33	1.17	0.16	0.00	1.33	7.67	1.6%	1.8%	10.2%
SO ₂ Annual mean (µg m ⁻³)	20	2.37	0.06	0.00	0.00	0.06	2.43	0.3%	0.3%	12.1%
NH ₃ Annual mean (µg m ⁻³)	1	1.13	0.01	0.00	0.00	0.01	1.14	0.5%	0.5%	113.6%
Nitrogen deposition (IED) (kgN/ha/yr)	5	11.32	0.04	0.00	0.00	0.04	11.36	0.7%	0.8%	227.2%
Nitrogen deposition (Total) (kgN/ha/yr)	5	11.32	0.04	0.00	0.00	0.04	11.36	0.7%	0.8%	227.2%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E4 - Sandlings										
NO _x Annual mean (µg m ⁻³)	30	6.79	0.84	0.08	0.00	0.92	7.71	2.8%	3.1%	25.7%
NO _x Daily mean (µg m ⁻³)	75	6.79	4.87	0.68	0.00	5.55	12.33	6.5%	7.4%	16.4%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
SO ₂ Annual mean (µg m ⁻³)	20	2.71	0.50	0.00	0.00	0.50	3.21	2.5%	2.5%	16.0%
NH ₃ Annual mean (µg m ⁻³)	1	1.35	0.04	0.00	0.00	0.05	1.39	4.3%	4.6%	139.1%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.42	0.31	0.03	0.00	0.33	12.75	6.1%	6.6%	255.0%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.42	0.31	0.03	0.00	0.33	12.75	6.1%	6.6%	255.0%
Acid deposition (ied)(keq/ha/yr)	0.892/1.382 /0.49	0.88N/0.09S	0.021N/0.05 9S			0.023N/0.05 9S	0.903N/0.14 9S	No exceedance	No exceedance	76.2%
Acid deposition (Total) (keq/ha/yr)	0.892/1.382 /0.49	0.88N/0.09S	0.021N/0.05 9S			0.023N/0.05 9S	0.910N/0.14 9S	No exceedance	No exceedance	76.7%
E5 - Sizewell Marshes										
NO _x Annual mean (µg m ⁻³)	30	6.62	4.94	1.01	0.03	5.98	12.59	16.5%	19.9%	42.0%
NO _x Daily mean (µg m ⁻³)	75	6.62	19.55	4.46	0.00	24.02	30.63	26.1%	32.0%	40.8%
SO ₂ Annual mean (µg m ⁻³)	20	2.73	2.99	0.00	0.00	2.99	5.72	15.0%	15.0%	28.6%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NH ₃ Annual mean (µg m ⁻³)	1	1.36	0.27	0.04	0.00	0.31	1.67	27.0%	30.7%	166.9%
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.71	1.90	0.29	0.00	2.19	14.91	12.7%	14.6%	99.4%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.71	1.90	0.29	0.00	2.19	14.91	12.7%	14.6%	99.4%
Acid deposition (IED) (keq/ha/yr)	0.366/4.506 /4.14	0.90N/0.09S	0.135N/0.35 4S			0.156N/0.35 4S	1.056N/0.44 4S	No exceedance	No exceedance	33.3%
Acid deposition (Total) (keq/ha/yr)	0.366/4.506 /4.14	0.90N/0.09S	0.135N/0.35 4S			0.156N/0.35 4S	1.064N/0.44 4S	No exceedance	No exceedance	33.5%
E6 - Leiston - Aldeburgh										
NO _x Annual mean (µg m ⁻³)	30	6.79	0.84	0.08	0.00	0.92	7.71	2.8%	3.1%	25.7%
NO _x Daily mean (µg m ⁻³)	75	6.79	4.87	0.68	0.00	5.55	12.33	6.5%	7.4%	16.4%
SO ₂ Annual mean (µg m ⁻³)	20	2.71	0.50	0.00	0.00	0.50	3.21	2.5%	2.5%	16.0%
NH ₃ Annual mean (µg m ⁻³)	1	1.35	0.04	0.00	0.00	0.05	1.39	4.3%	4.6%	139.1%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.42	0.31	0.03	0.00	0.33	12.75	2.0%	2.2%	85.0%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.42	0.31	0.03	0.00	0.33	12.75	2.0%	2.2%	85.0%
Acid deposition (IED) (keq/ha/yr)	0.438/4.578 /4.14	0.88N/0.09S	0.021N/0.05 9S			0.023N/0.05 9S	0.903N/0.14 9S	No exceedance	No exceedance	23.0%
Acid deposition (keq/ha/yr) (Total)	0.438/4.578 /4.14	0.88N/0.09S	0.021N/0.05 9S			0.023N/0.05 9S	0.910N/0.14 9S	No exceedance	No exceedance	23.2%
E7 - Leiston Common Country County Wildlife Site										
NO _x Annual mean (µg m ⁻³)	30	6.83	2.36	0.26	0.00	2.63	9.46	7.9%	8.8%	31.5%
NO _x Daily mean (µg m ⁻³)	75	6.83	5.65	1.72	0.00	7.37	14.20	7.5%	9.8%	18.9%
SO ₂ Annual mean (µg m ⁻³)	20	2.49	1.34	0.00	0.00	1.34	3.83	6.7%	6.7%	19.1%
NH ₃ Annual mean (µg m ⁻³)	1	1.44	0.11	0.01	0.00	0.12	1.56	11.2%	12.5%	156.3%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.91	0.82	0.09	0.00	0.91	13.82	16.4%	18.3%	276.5%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.91	0.82	0.09	0.00	0.91	13.82	16.4%	18.3%	276.5%
Acid deposition (IED)(keq/ha/yr)	0.142/1.273 /1.131	0.97N/0.09S	0.058N/0.15 8S			0.065N/0.15 8S	0.985N/0.24 8S	No exceedance	No exceedance	89.2%
Acid deposition (Total) (keq/ha/yr)	0.142/1.273 /1.131	0.97N/0.09S	0.058N/0.15 8S			0.065N/0.15 8S	0.987N/0.24 8S	No exceedance	No exceedance	89.4%
E8 - Aldringham to Aldeburgh Disused Railway CWS										
NO _x Annual mean (µg m ⁻³)	30	6.55	0.60	0.06	0.00	0.67	7.22	2.0%	2.2%	24.1%
NO _x Daily mean (µg m ⁻³)	75	6.55	4.36	0.53	0.00	4.89	11.44	5.8%	6.5%	15.3%
SO ₂ Annual mean (µg m ⁻³)	20	2.47	0.36	0.00	0.00	0.36	2.83	1.8%	1.8%	14.1%
NH ₃ Annual mean (µg m ⁻³)	1	1.33	0.03	0.00	0.00	0.03	1.36	3.1%	3.4%	136.5%
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.26	0.22	0.02	0.00	0.24	12.50	4.5%	4.8%	250.1%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.26	0.22	0.02	0.00	0.24	12.50	4.5%	4.8%	250.1%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Acid deposition (IED) (keq/ha/yr)	0.892/1.382 /0.49	0.87N/0.09S	0.015N/0.04 2S			0.017N/0.04 2S	0.887N/0.13 2S	No exceedance	No exceedance	27.0%
Acid deposition (Total) (keq/ha/yr)	0.892/1.382 /0.49	0.87N/0.09S	0.015N/0.04 2S			0.017N/0.04 2S	0.893N/0.13 2S	No exceedance	No exceedance	74.2%
E9 - Dower House CWS										
NO _x Annual mean (µg m ⁻³)	30	6.46	4.40	0.56	0.01	4.98	11.44	14.7%	16.6%	38.1%
NO _x Daily mean (µg m ⁻³)	75	6.46	17.59	2.83	0.00	20.42	26.88	23.5%	27.2%	35.8%
SO ₂ Annual mean (µg m ⁻³)	20	2.49	2.70	0.00	0.00	2.70	5.19	13.5%	13.5%	26.0%
NH ₃ Annual mean (µg m ⁻³)	1	1.24	0.24	0.02	0.00	0.26	1.51	24.4%	26.3%	150.7%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.52	1.71	0.16	0.00	1.87	14.38	17.1%	18.7%	143.8%
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.52	1.71	0.16	0.00	1.87	14.38	17.1%	18.7%	143.8%
Acid deposition (IED) (keq/ha/yr)	0.357/8.73/ 8.373	0.89N/0.09S	0.122N/0.31 9S			0.133N/0.31 9S	1.023N/0.40 9S	No exceedance	No exceedance	4.9%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Acid deposition (Total) (keq/ha/yr)	0.357/8.73/8.373	0.89N/0.09S	0.122N/0.319S			0.133N/0.319S	1.027N/0.409S	No exceedance	No exceedance	4.9%
E10 - Suffolk Shingles Beaches CWS										
NO _x Annual mean (µg m ⁻³)	30	8.66	8.92	0.61	0.00	9.53	18.19	29.7%	31.8%	60.6%
NO _x Daily mean (µg m ⁻³)	75	8.66	40.38	2.49	0.00	42.87	51.53	53.8%	57.2%	68.7%
SO ₂ Annual mean (µg m ⁻³)	20	23.60	5.15	0.00	0.00	5.15	28.75	25.8%	25.8%	143.8%
NH ₃ Annual mean (µg m ⁻³)	1	1.24	0.52	0.02	0.00	0.54	1.79	52.3%	54.4%	178.8%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.22	3.62	0.17	0.00	3.78	16.01	36.2%	37.8%	160.1%
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.22	3.62	0.17	0.00	3.78	16.01	36.2%	37.8%	160.1%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
E11 - Reckham Pits CWS										
NO _x Annual mean (µg m ⁻³)	30	6.82	1.71	0.31	0.01	2.02	8.84	5.7%	6.7%	29.5%
NO _x Daily mean (µg m ⁻³)	75	6.82	5.30	2.31	0.00	7.61	14.43	7.1%	10.2%	19.2%
SO ₂ Annual mean (µg m ⁻³)	20	3.02	1.01	0.00	0.00	1.01	4.03	5.0%	5.0%	20.1%
NH ₃ Annual mean (µg m ⁻³)	1	1.36	0.09	0.01	0.00	0.10	1.45	8.8%	9.5%	145.3%
Nitrogen deposition (IED) (kgN/ha/yr)	10	22.16	1.03	0.12	0.00	1.15	23.31	10.3%	11.5%	233.1%
Nitrogen deposition (Total) (kgN/ha/yr)	10	22.16	1.03	0.12	0.00	1.15	23.31	10.3%	11.5%	233.1%
Acid deposition (IED) (keq/ha/yr)	0.285/4.495 /4.21	1.58N/0.09S	0.073N/0.23 8S			0.081N/0.23 8S	1.661N/0.32 8S	No exceedance	No exceedance	44.3%
Acid deposition (Total) (keq/ha/yr)	0.285/4.495 /4.21	1.58N/0.09S	0.073N/0.23 8S			0.081N/0.23 8S	1.664N/0.32 8S	No exceedance	No exceedance	44.4%
E12 - Sizewell Levels and Associated Areas										
NO _x Annual mean (µg m ⁻³)	30	6.75	10.23	2.09	0.09	12.41	19.16	34.1%	41.4%	63.9%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NO _x Daily mean (µg m ⁻³)	75	6.75	38.69	8.76	0.00	47.45	54.20	51.6%	63.3%	72.3%
SO ₂ Annual mean (µg m ⁻³)	20	3.96	6.18	0.00	0.00	6.18	10.14	30.9%	30.9%	50.7%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.57	0.07	0.00	0.64	1.90	56.7%	64.0%	190.4%
Nitrogen deposition (IED) (kgN/ha/yr)	10	12.37	3.98	0.58	0.02	4.57	16.94	39.8%	45.7%	169.4%
Nitrogen deposition (Total) (kgN/ha/yr)	10	12.37	3.98	0.58	0.02	4.57	16.94	39.8%	45.7%	169.4%
Acid deposition (IED) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.284N/0.73 OS			0.326N/0.73 OS	1.206N/0.82 OS	No exceedance	No exceedance	160.7%
Acid deposition (Total) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.284N/0.73 OS			0.326N/0.73 OS	1.210N/0.82 OS	No exceedance	No exceedance	160.9%
E13 - Southern Minsmere Levels – Dunwich Forest & Kenton Hill CWS										
NO _x Annual mean (µg m ⁻³)	30	6.75	9.17	1.16	0.07	10.40	17.16	30.6%	34.7%	57.2%
NO _x Daily mean (µg m ⁻³)	75	6.75	21.97	4.08	0.00	26.06	32.81	29.3%	34.7%	43.7%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
SO ₂ Annual mean (µg m ⁻³)	20	3.96	5.65	0.00	0.00	5.65	9.61	28.3%	28.3%	48.1%
NH ₃ Annual mean (µg m ⁻³)	1	1.26	0.50	0.04	0.00	0.55	1.81	50.3%	54.9%	181.3%
Nitrogen deposition (IED) (kgN/ha/yr)	15	12.37	3.54	0.35	0.01	3.90	16.27	23.6%	26.0%	108.4%
Nitrogen deposition (Total) (kgN/ha/yr)	15	12.37	3.54	0.35	0.01	3.90	16.27	23.6%	26.0%	108.4%
Acid deposition (IED) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.252N/0.668S			0.278N/0.668S	1.158N/0.758S	No exceedance	No exceedance	151.9%
Acid deposition (Total) (keq/ha/yr)	0.142/1.262 /1.12	0.88N/0.09S	0.252N/0.668S			0.278N/0.668S	1.161N/0.758S	No exceedance	No exceedance	152.2%
E14 - Aldhurst Farm habitat creation scheme										
NO _x Annual mean (µg m ⁻³)	30	6.85	0.84	0.13	0.00	0.98	7.83	2.8%	3.3%	26.1%
NO _x Daily mean (µg m ⁻³)	75	6.85	4.76	1.17	0.00	5.93	12.78	6.3%	7.9%	17.0%
SO ₂ Annual mean (µg m ⁻³)	20	2.59	0.57	0.00	0.00	0.57	3.16	2.8%	2.8%	15.8%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
NH ₃ Annual mean (µg m ⁻³)	1	1.50	0.04	0.00	0.00	0.05	1.55	4.1%	4.5%	154.5%
Nitrogen deposition (IED) (kgN/ha/yr)	15	13.30	0.30	0.03	0.00	0.33	13.63	2.0%	2.2%	90.9%
Nitrogen deposition (Total) (kgN/ha/yr)	15	13.30	0.30	0.03	0.00	0.33	13.63	2.0%	2.2%	90.9%
Acid deposition (IED) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acid deposition (Total) (keq/ha/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E15 - Marsh harrier/reptile habitat within EDF Energy estate										
NO _x Annual mean (µg m ⁻³)	30	6.51	2.01	0.33	0.03	2.37	8.88	6.7%	7.9%	29.6%
NO _x Daily mean (µg m ⁻³)	75	6.51	8.16	2.21	0.00	10.37	16.88	10.9%	13.8%	22.5%
SO ₂ Annual mean (µg m ⁻³)	20	2.39	1.22	0.00	0.00	1.22	3.61	6.1%	6.1%	18.0%
NH ₃ Annual mean (µg m ⁻³)	1	1.40	0.11	0.01	0.00	0.12	1.52	10.8%	11.9%	151.9%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (IED) (kgN/ha/yr)	5	12.90	0.76	0.09	0.01	0.86	13.76	15.3%	17.1%	275.1%
Nitrogen deposition (Total) (kgN/ha/yr)	5	12.90	0.76	0.09	0.01	0.86	13.76	15.3%	17.1%	275.1%
Acid deposition (IED) (keq/ha/yr)	0.892/1.392 /0.5	0.92N/0.09S	0.054N/0.14 4S			0.061N/0.14 4S	0.981N/0.23 4S	No exceedance	No exceedance	87.3%
Acid deposition (Total) (keq/ha/yr)	0.892/1.392 /0.5	0.92N/0.09S	0.054N/0.14 4S			0.061N/0.14 4S	0.982N/0.23 4S	No exceedance	No exceedance	87.4%
E16 - Ash Wood priority habitat										
NO _x Annual mean (µg m ⁻³)	30	6.56	2.14	0.37	0.06	2.57	9.14	7.1%	8.6%	30.5%
NO _x Daily mean (µg m ⁻³)	75	6.56	8.59	2.27	0.00	10.86	17.43	11.5%	14.5%	23.2%
SO ₂ Annual mean (µg m ⁻³)	20	2.25	1.30	0.00	0.00	1.30	3.55	6.5%	6.5%	17.7%
NH ₃ Annual mean (µg m ⁻³)	1	1.50	0.12	0.01	0.00	0.13	1.63	11.5%	12.7%	162.7%
Nitrogen deposition (IED) (kgN/ha/yr)	10	13.60	0.81	0.09	0.01	0.92	14.52	8.1%	9.2%	145.2%

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Pollutant	AQS/Critical load	Background	PC IED	PC NRMM	PC Traffic	Total PC	PEC	PC IED as % of AQS/CL	Total PC as % of AQS/CL	PEC as % of AQS/CL
Nitrogen deposition (Total) (kgN/ha/yr)	10	13.60	0.81	0.09	0.01	0.92	14.52	8.1%	9.2%	145.2%
Acid deposition (IED) (keq/ha/yr) (Total)	0.142/1.273 /1.131	0.97N/0.09S	0.058N/0.15 3S			0.065N/0.15 3S	1.035N/0.24 3S	No exceedance	No exceedance	100.5%
Acid deposition (Total) (keq/ha/yr)	0.142/1.273 /1.131	0.97N/0.09S	0.058N/0.15 3S			0.065N/0.15 3S	1.036N/0.24 3S	No exceedance	No exceedance	100.6%

A - APPROVED

APPENDIX E SENSITIVITY TESTS

Table E.1 presents a comparison of ADMS 6 and AERMOD dispersion code. The critical output for this AERA is impacts an annual mean NO₂ and NO_x. The Table illustrates that annual mean ADMS 6 outputs are more conservative compared to AERMOD, whereas the 99.79th percentile 1-hour mean outputs are less conservative.

Table E.1 Model sensitivity analysis – ADMS 6 vs AERMOD

Scenario	Normalised ground level NO ₂ concentration due to process emissions	
	Annual mean	99.79 th percentile 1-hour Mean
ADMS 6	1.00	1.00
AERMOD	0.97	1.14

Table E.2 presents a meteorological data sensitivity analysis where five years of met data from Wattisham was used. The annual mean NO₂ impacts are higher using the Wattisham meteorological data and significantly higher when comparing hourly mean NO₂ concentrations. As discussed briefly in the main report, the Wattisham meteorological station is not suitable for use in this AERA as its 45 km from the site and not representative of coastal conditions, where higher wind speeds are expected that aid dispersion.

Table E.2 Model sensitivity analysis – NWP vs Wattisham Meteorological Data

Scenario	Normalised ground level NO ₂ concentration due to process emissions	
	Annual mean	99.79 th percentile 1-hour Mean
NWP	1.00	1.00
Wattisham	1.22	2.86

Table E.3 presents a sensitivity analysis for using volume sources compared to area sources. The annual mean NO₂ impacts and the hourly mean NO₂ concentrations are higher using the non-point sources modelled as an area. It was determined that the non-points sources would be modelled as a volume source, with these being the more conservative approach.

Table E.3 Model sensitivity analysis – Volume vs Area

Scenario	Normalised ground level NO ₂ concentration due to process emissions	
	Annual mean	99.79 th percentile 1-hour Mean
Volume	1.00	1.00
Area	1.43	1.20

Table E.4 presents a stack height assessment sensitivity analysis where the generators were modelled at a height of 3m and a height of 6m. As expected, the predicted pollutant concentrations for the models with a 6m stack height for both annual mean NO₂ and 99.79th percentile 1-hour mean NO₂ are lower than that modelled with a 3m stack height. The main assessment uses a height of 3m for a more conservative approach.

Table E.4 Model sensitivity analysis – Stack Height 3m vs 6m

Scenario	Normalised ground level NO ₂ concentration due to process emissions	
	Annual mean	99.79 th percentile 1-hour Mean
Stack Height 3m	1.00	1.00
Stack Height 6m	0.98	0.77

Table E.5 presents a surface roughness sensitivity analysis where the model was run without the surface roughness file included. A surface roughness file was included in this AERA to ensure that the spatial variation

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of surface roughness was considered. The table below shows that the model with the surface roughness file included provides a more conservative approach.

Table E.5 Model sensitivity analysis – Surface Roughness

Scenario	Normalised ground level NO ₂ concentration due to process emissions	
	Annual mean	99.79 th percentile 1-hour Mean
With SR	1.00	1.00
Without SR	0.93	0.78

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APPENDIX F ISOPLETH PLOTS

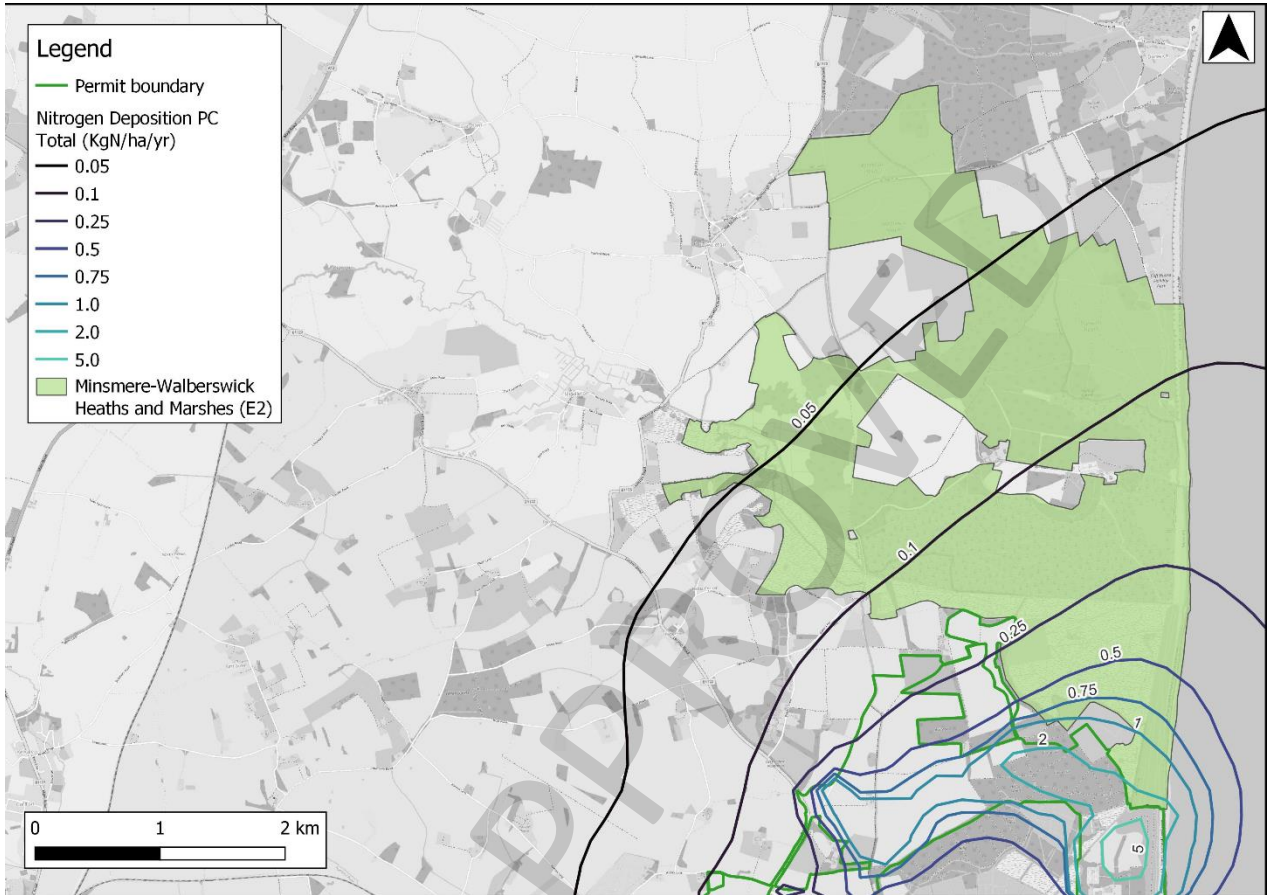


Figure F-1 Nitrogen Deposition for PC Total at E2 for Peak Construction

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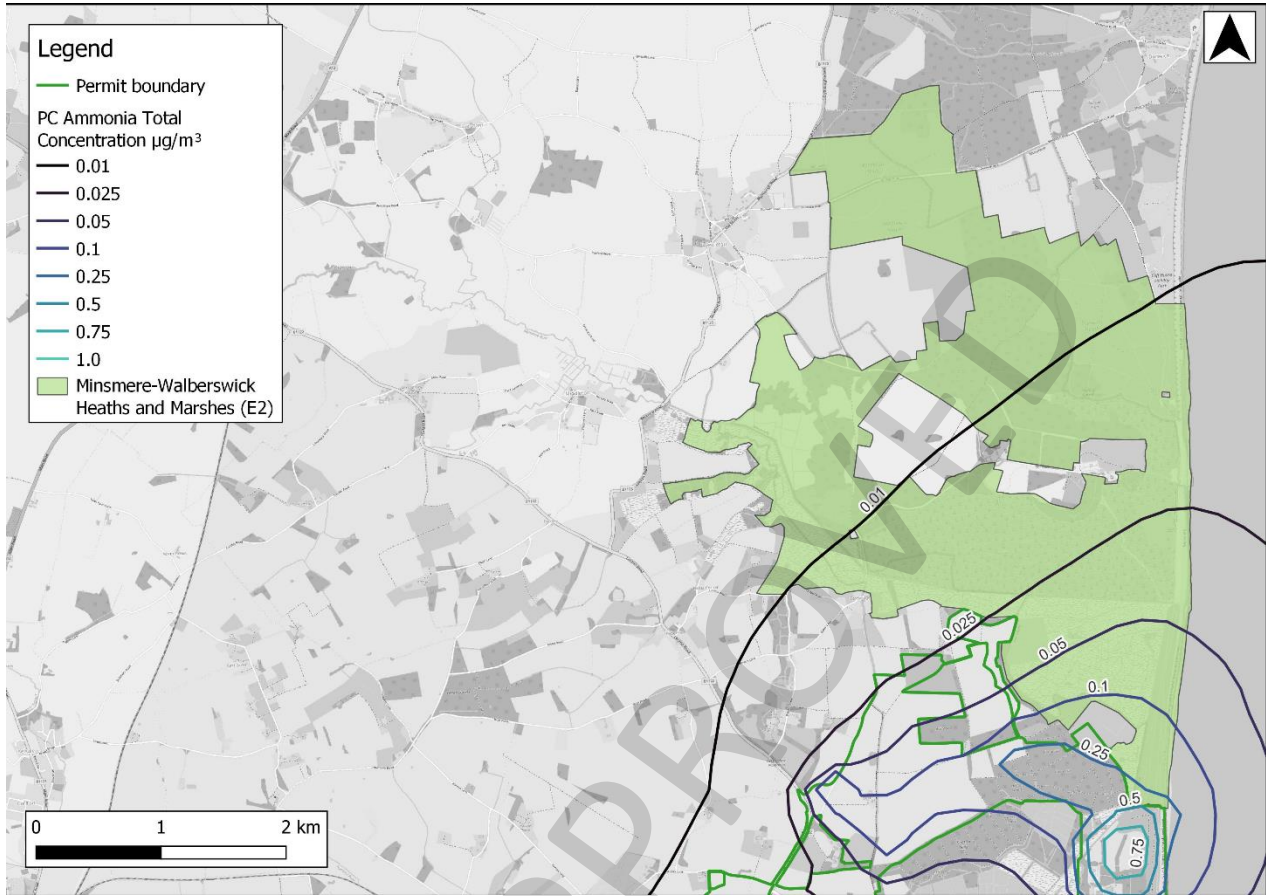


Figure F-2 Ammonia Concentration at for PC Total at E2 for Peak Construction

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Figure F-3 Nitrogen Deposition for PC Total at E4 for Peak Construction

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Figure F-4 Ammonia Concentration at for PC Total at E4 for Peak Construction

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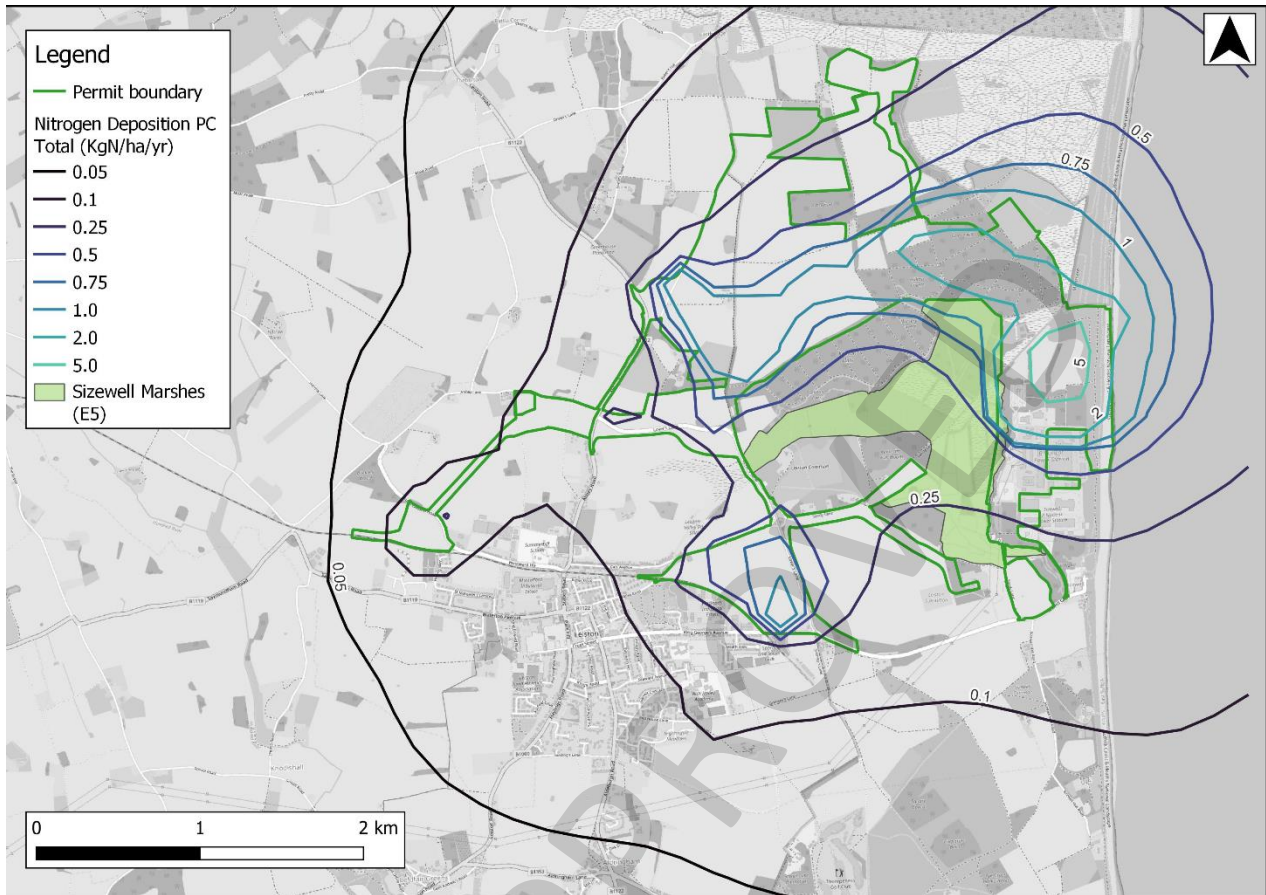


Figure F-5 Nitrogen Deposition for PC Total at E5 for Peak Construction

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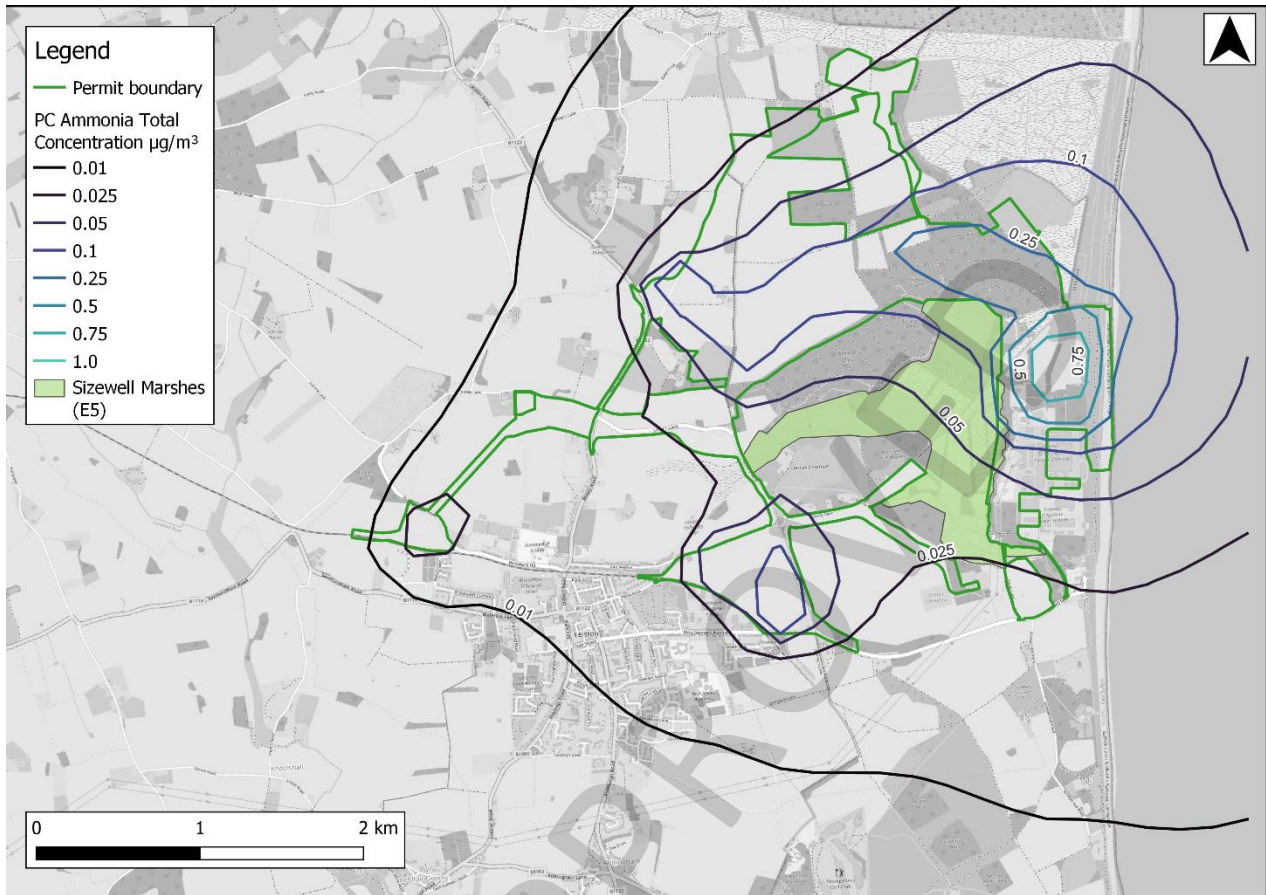


Figure F-6 Ammonia Concentration at for PC Total at E5 for Peak Construction

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Figure F-7 Nitrogen Deposition for PC Total at E6 for Peak Construction

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Figure F-8 Ammonia Concentration at for PC Total at E6 for Peak Construction

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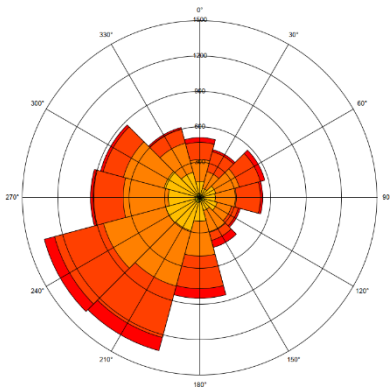
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APPENDIX G WIND ROSES

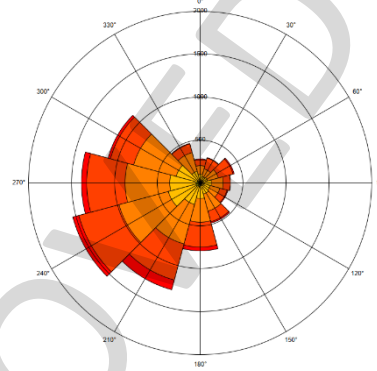
The wind roses shown in **Figure G-1** are based on NWP meteorological data for 2016 to 2020 and **Figure G-2** presents the 2016 to 2020 wind rose used in the roads model and sensitivity tests.

Figure G-1 Windroses for Numerical Weather Prediction (NWP) data (2016 – 2020)

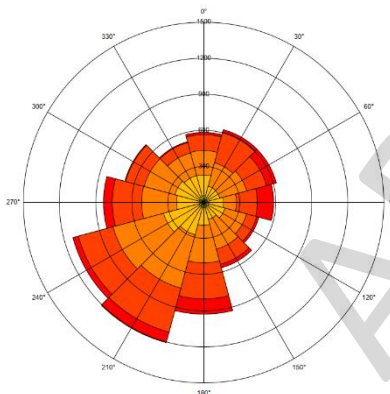
2016



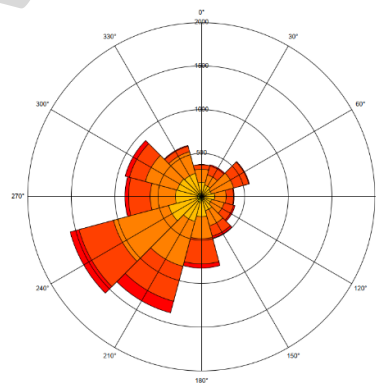
2017



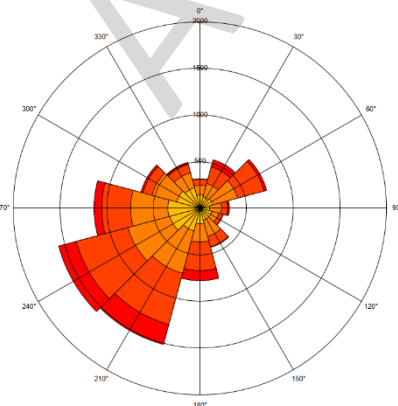
2018



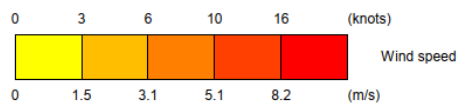
2019



2020



Legend

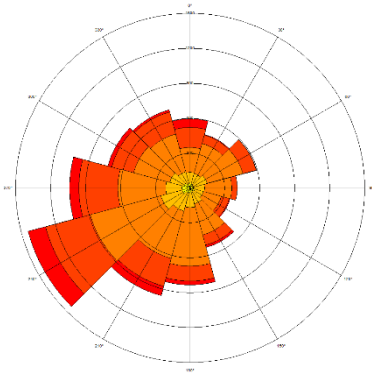


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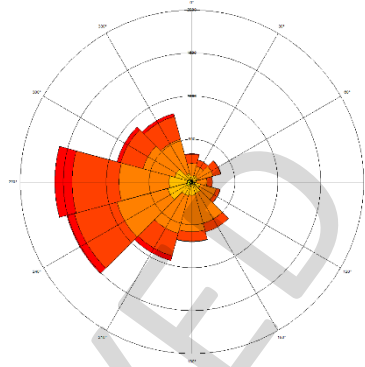
APPENDIX C: AIR EMISSION RISK ASSESSMENT

Figure G-2 Wind Roses for Wattisham Meteorological Station (2016 – 2020)

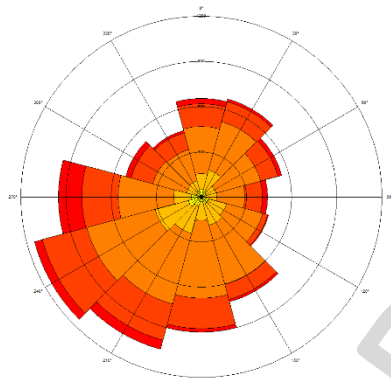
2016



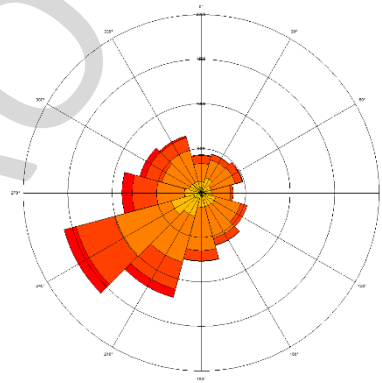
2017



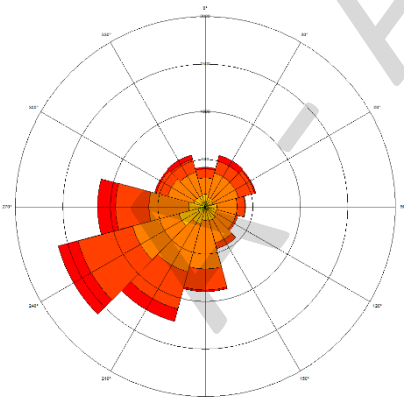
2018



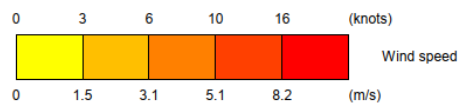
2019



2020



Legend



Sizewell C | 101254803 / 001 | P1 - For Implementation | 12-Apr-2024 | NOT PROTECTIVELY MARKED