



# **Preliminary Environmental Information Report Volume 2**

## **Appendix 7.2 Air Quality Baseline Data**

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**LionLink:**

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# 7 Air Quality Baseline Data

7.1.1 This appendix supports and should be read in conjunction with **Chapter 7 Air Quality** of the Preliminary Environmental Information Report (PEIR) for LionLink (referred to as the 'Proposed Scheme'). This appendix presents the air quality baseline data in relation to the Proposed Onshore Scheme. Existing or baseline ambient air quality refers to the concentration of relevant substances that are already present in the environment. These are present from various sources, such as industrial processes, commercial and domestic activities, traffic, and natural sources.

## 7.2 Sources of air pollution

7.2.1 There are three Part A processes with emissions to air listed on the Environment Agency website (Ref 1) within 2km of the Proposed Onshore Scheme, as shown in **Table 7.1**.

**Table 7.1: Part A processes within 2km of the Draft Order Limits**

Name	Postcode	Permit ID	Process type	Distance from Draft Order Limits
Crown Chicken Limited	IP17 3ND	EPR/MP3433UX	Intensive Farming	100m west
Fairs, Fairs	IP17 3QZ	EPR/PP3431XK	Intensive Farming	1.9km west
Mr Ian Rix	IP17 1NG	EPR/LP3639NN	Intensive Farming	10m south

## 7.3 Monitoring results

### Diffusion tube monitoring

7.3.1 The details of the diffusion tube locations have been taken from East Suffolk Council (ESC) most recently published Annual Status Report (ASR) (Ref 2). Locations are shown in **Table 7.2**. The nitrogen dioxide (NO<sub>2</sub>) results for recent years are shown in **Table 7.3**. Monitoring locations are provided in **Figure 7.1 Air Quality Monitoring Locations**. Please see **Figure 2.1 Zoning Plan** for the Proposed Onshore Scheme sections which are referred within the following sections.

**Table 7.2: Details of diffusion tube monitoring within 2km of the Draft Order Limits**

Site ID	Description	Nearest Proposed Onshore Scheme section	Type of site	Ordnance Survey (OS) grid reference (m)	
				X	Y
BLY 1	Menagwins, Chapel Road	C	Roadside	645183	275218
THEB 1	BT Telegraph Pole, Leiston Road (opp. Lion Inn PH)	B	Kerbside	643797	265815
MID 1	Downpipe on 2 The Moor	B	Roadside	641611	267791
SAX 1	30 Church Street	A	Roadside	638683	263014
LEI 3	White Horse Hotel, Station Rd	A	Roadside	644325	262634

**Table 7.3: Local diffusion tube for Nitrogen Dioxide (NO<sub>2</sub>) monitoring within 2km of the Draft Order Limits**

Site ID	Nearest Proposed Scheme section	NO <sub>2</sub> concentration (µg/m <sup>3</sup> )				
		2019	2020	2021	2022	2023
BLY 1	C	28.2	21.1	23.3	23.5	20.4
THEB 1	B	N/A	14.8	16.1	15.2	14.4
MID 1	B	N/A	8.7	8.4	7.8	7.4
SAX 1	A	27.8	20.7	25.1	22.5	21.8
LEI 3	A	21.8	17.8	19.3	18.4	18.1

## 7.4 Defra background concentrations

7.4.1 Background concentrations refer to the existing levels of pollution in the atmosphere, produced by a variety of stationary and non-stationary sources, such as roads and industrial processes. The Department for Environment, Food and Rural Affairs (Defra) website (Ref 3) includes estimated background pollutant concentrations for nitrogen oxide ( $\text{NO}_x$ ),  $\text{NO}_2$ , particulate matter ( $\text{PM}_{10}$  and  $\text{PM}_{2.5}$ ) for each 1km x 1km Ordnance Survey (OS) Grid square in the UK, shown in **Table 7.4**.

7.4.2 Background concentrations have been collected for the following years:

- 2023 for baseline year;
- 2030 for peak construction; and
- 2032 for operation.

Table 7.4: Defra background concentrations

1x1km Grid square (m)			Concentration ( $\mu\text{g}/\text{m}^3$ )											
X	Y	2023	NO <sub>x</sub>			NO <sub>2</sub>			PM <sub>10</sub>			PM <sub>2.5</sub>		
			2023	2030	2032	2023	2030	2032	2023	2030	2032	2023	2030	2032
641500	259500	7.9	6.7	5.1	6.2	5.3	4.1	13.6	13.2	10.2	8.2	7.9	5.0	
642500	259500	7.8	6.7	5.1	6.1	5.3	4.1	14.6	14.2	11.2	8.4	8.1	5.1	
639500	260500	7.6	6.6	5.1	6.0	5.2	4.1	14.7	14.4	11.4	8.5	8.2	5.2	
640500	260500	7.6	6.6	5.1	6.0	5.2	4.1	15.1	14.8	11.8	8.5	8.3	5.2	
641500	260500	7.6	6.6	5.1	6.0	5.2	4.1	14.4	14.0	11.0	8.3	8.1	5.1	
642500	260500	7.5	6.5	5.1	5.9	5.2	4.1	14.2	13.9	10.9	8.3	8.0	5.1	
638500	261500	8.0	6.8	5.2	6.3	5.4	4.2	15.2	14.8	11.8	8.7	8.4	5.3	
639500	261500	7.7	6.6	5.1	6.1	5.3	4.1	14.5	14.1	11.1	8.4	8.2	5.2	
640500	261500	7.6	6.6	5.1	6.0	5.2	4.1	14.3	14.0	11.0	8.3	8.0	5.1	
641500	261500	7.5	6.5	5.1	5.9	5.2	4.1	14.1	13.8	10.8	8.2	8.0	5.1	
642500	261500	7.5	6.5	5.1	5.9	5.2	4.1	14.3	14.0	11.0	8.3	8.1	5.1	
638500	262500	8.0	6.9	5.3	6.3	5.5	4.2	15.2	14.8	11.9	8.7	8.4	5.4	
639500	262500	7.7	6.7	5.1	6.0	5.3	4.1	15.0	14.7	11.7	8.6	8.3	5.3	
640500	262500	7.6	6.6	5.1	6.0	5.2	4.1	14.1	13.7	10.8	8.2	8.0	5.1	
641500	262500	7.6	6.6	5.1	6.0	5.2	4.1	14.4	14.0	11.1	8.3	8.1	5.1	
639500	263500	7.9	6.8	5.2	6.2	5.4	4.2	15.0	14.7	11.7	8.6	8.3	5.3	
640500	263500	7.7	6.7	5.2	6.1	5.3	4.1	15.4	15.1	12.1	8.6	8.3	5.2	
641500	263500	7.6	6.6	5.1	6.0	5.3	4.1	14.7	14.4	11.4	8.4	8.2	5.1	
641500	264500	7.6	6.6	5.1	6.0	5.2	4.1	15.2	14.9	11.9	8.5	8.3	5.2	
642500	264500	7.5	6.6	5.1	5.9	5.2	4.1	14.7	14.4	11.4	8.4	8.2	5.1	
642500	265500	7.5	6.5	5.1	5.9	5.2	4.1	14.2	13.9	10.9	8.3	8.0	5.1	
643500	265500	7.5	6.5	5.1	5.9	5.2	4.1	14.3	14.0	11.0	8.3	8.1	5.1	
641500	266500	7.5	6.5	5.1	5.9	5.2	4.1	14.2	13.8	10.9	8.3	8.0	5.1	
642500	266500	7.5	6.5	5.1	5.9	5.2	4.1	13.7	13.4	10.4	8.2	7.9	5.0	

1x1km Grid square (m)		Concentration (µg/m³)											
X	Y	NO <sub>x</sub>			NO <sub>2</sub>			PM <sub>10</sub>			PM <sub>2.5</sub>		
		2023	2030	2032	2023	2030	2032	2023	2030	2032	2023	2030	2032
643500	266500	7.5	6.5	5.1	5.9	5.2	4.1	13.4	13.1	10.1	8.1	7.8	5.0
641500	267500	7.6	6.6	5.1	6.0	5.2	4.1	14.6	14.3	11.3	8.4	8.1	5.1
642500	267500	7.6	6.5	5.1	6.0	5.2	4.1	14.5	14.2	11.2	8.4	8.1	5.1
641500	268500	7.6	6.6	5.1	6.0	5.2	4.1	13.9	13.6	10.6	8.2	7.9	5.0
642500	268500	7.5	6.5	5.1	5.9	5.2	4.1	13.4	13.0	10.1	8.0	7.8	5.0
643500	268500	7.4	6.5	5.1	5.9	5.1	4.1	14.5	14.2	11.3	8.3	8.1	5.1
642500	269500	7.6	6.6	5.1	6.0	5.2	4.1	13.4	13.1	10.1	8.1	7.8	5.0
643500	269500	7.5	6.5	5.1	5.9	5.2	4.1	14.6	14.3	11.3	8.3	8.1	5.1
641500	270500	8.0	6.9	5.2	6.3	5.4	4.2	14.5	14.1	11.1	8.4	8.1	5.1
642500	270500	7.7	6.6	5.1	6.0	5.3	4.1	14.5	14.2	11.2	8.3	8.1	5.1
643500	270500	7.7	6.7	5.2	6.1	5.3	4.2	14.9	14.6	11.6	8.4	8.1	5.1
641500	271500	8.1	6.9	5.2	6.4	5.5	4.2	15.4	15.0	12.0	8.6	8.3	5.2
642500	271500	7.7	6.6	5.1	6.1	5.3	4.1	15.0	14.7	11.7	8.4	8.2	5.1
643500	271500	7.5	6.5	5.1	5.9	5.2	4.1	14.9	14.5	11.6	8.4	8.1	5.1
644500	271500	7.4	6.5	5.1	5.9	5.1	4.1	13.9	13.6	10.6	8.2	7.9	5.0
643500	272500	7.5	6.5	5.1	5.9	5.2	4.1	14.5	14.2	11.2	8.3	8.0	5.1
644500	272500	7.5	6.5	5.1	5.9	5.1	4.1	13.8	13.4	10.5	8.1	7.9	5.0
644500	273500	7.5	6.5	5.2	6.0	5.2	4.2	14.1	13.7	10.8	8.2	8.0	5.1
645500	273500	7.5	6.5	5.2	5.9	5.2	4.2	12.9	12.6	9.7	7.9	7.7	5.0
644500	274500	8.0	6.8	5.3	6.3	5.4	4.2	14.9	14.6	11.6	8.5	8.2	5.2
645500	274500	7.7	6.6	5.2	6.0	5.2	4.2	13.9	13.5	10.6	8.2	7.9	5.1
646500	274500	7.5	6.5	5.2	5.9	5.2	4.2	12.7	12.4	9.5	7.9	7.6	5.0
647500	274500	7.4	6.5	5.1	5.9	5.1	4.1	12.5	12.2	9.3	7.8	7.6	4.9
648500	274500	7.4	6.4	5.2	5.9	5.1	4.2	13.1	12.8	10.0	8.0	7.7	5.0
649500	274500	7.5	6.5	5.3	5.9	5.1	4.2	11.9	11.6	8.8	7.7	7.5	5.0
650500	274500	7.3	6.3	5.1	5.7	5.0	4.1	11.6	11.3	8.4	7.6	7.3	4.8

# Topic Glossary

Acronym/phrase/abbreviation	Definition
$\mu\text{g}/\text{m}^3$	Micrograms per cubic metre
Air quality standard	The 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.
Annual mean	The average (mean) of the concentrations measured for each pollutant for one year.
ASR	Annual Status Report
Baseline conditions	The existing environmental conditions against which any future changes can be measured or predicted.
Defra	Department for Environment, Food and Rural Affairs
Diffusion tube	A passive pollution monitoring device that monitors concentrations of $\text{NO}_2$ only.
EA	Environment Agency
ESC	East Suffolk Council
Industrial	An area where industrial sources make an important contribution to the total pollution burden.
Kerbside	A site sampling within one metre of the kerb of a busy road.
NO	Nitric Oxide
$\text{NO}_2$	Nitrogen Dioxide
NOx	Nitrogen Oxide
OS	Ordnance Survey
Part A processes	A category of industrial activity regulated under the Environmental Permitting Regulations (England and Wales), covering operations with the highest potential for environmental impact. Part A processes are typically large-scale and may affect air, water, and land. They require a permit from the Environment Agency and must comply with Best Available Techniques (BAT) to minimise pollution.
PEIR	Preliminary Environmental Information Report
$\text{PM}_{10}$	Particulate Matter (10 micrometres or less in diameter)
$\text{PM}_{2.5}$	Particulate Matter (2.5 micrometres or less in diameter)
Roadside	A site sampling typically within one to five metres of the kerb of a busy road.
Study Area	A Study Area of 2 km from the Draft Order Limits has been utilised to assess the baseline conditions for Air Quality.

# References

Ref 1 Environment Agency Permitting regulations – Installations, 2025. Available from: <https://environment.data.gov.uk/public-register/view/search-industrial-installations> (Accessed July 2025).

Ref 2 East Suffolk Council Annual Status Report 2024. Available from: <https://www.eastsuffolk.gov.uk/assets/Environment/Environmental-Protection/Air-Quality/East-Suffolk-Council-ASR-2024.pdf> (Accessed July 2025).

Ref 3 Defra Background Concentrations, 2021. Available from: <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021> (Accessed July 2025).

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