

Norfolk Boreas Offshore Wind Farm

Appendix 26.4

Cumulative Construction Impact Assessment Results

Environmental Statement

Volume 3

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Glossary of Acronyms

AADT	Annual Average Daily Traffic
HGV	Heavy Goods Vehicle
NO ₂	Nitrogen Dioxide
PM ₁₀	Particulate Matter with an aerodynamic diameter of less than 10 µm
PM _{2.5}	Particulate Matter with an aerodynamic diameter of less than 2.5 µm
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

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1 Cumulative Construction Impact Assessment Results

1.1 Scenario 2

1.1.1 Human Receptors

1. The 24-hour Annual Average Daily Traffic (AADT) flows and Heavy Goods Vehicle (HGV) percentages used in the air quality assessment for the Scenario 2 cumulative assessment are detailed in Appendix 26.2.
2. Predicted NO₂, PM₁₀ and PM_{2.5} concentrations for the 2024 year of peak construction ‘with project’ scenario are detailed in Table 1.1 to Table 1.3. Concentrations for the ‘without project’ assessment and the predicted change in NO₂, PM₁₀ and PM_{2.5} concentrations, as a result of the proposed project, are also shown for comparison purposes.

Table 1.1 Scenario 2, cumulative annual mean NO₂ results at sensitive human receptor locations

Scenario 2 – 2024 annual mean NO ₂ concentrations (µg.m ⁻³)						
Local Authority	Receptor ID	Without Norfolk Boreas Scenario 2 and Hornsea Three	With Norfolk Boreas Scenario 2 and Hornsea Three	Change	Change as % of objective	Impact descriptor
Breckland	R3	17.16	17.91	0.75	2	Negligible
	R4	20.10	21.16	1.06	3	Negligible
	R9	12.29	12.72	0.43	1	Negligible
	R10	8.60	8.82	0.22	1	Negligible
	R11	9.39	9.80	0.41	1	Negligible
	R12	9.16	9.49	0.33	1	Negligible
	R15	9.98	10.21	0.23	1	Negligible
	R16	19.48	20.58	1.10	3	Negligible
	R22	15.69	16.08	0.39	1	Negligible
	R80	8.21	8.37	0.16	0	Negligible
	R81	8.76	8.99	0.23	1	Negligible
	R82	9.22	9.50	0.28	1	Negligible
	R83	10.62	10.87	0.25	1	Negligible
R87	9.80	10.09	0.29	1	Negligible	
Broadland	R17	10.28	11.18	0.90	2	Negligible
	R18	9.37	9.80	0.43	1	Negligible
	R19	13.43	13.86	0.43	1	Negligible
	R20	16.99	18.20	1.21	3	Negligible
	R21	11.93	12.35	0.42	1	Negligible
	R35	26.20	26.77	0.57	1	Negligible
	R36	27.86	28.50	0.64	2	Negligible
	R42	14.64	15.13	0.49	1	Negligible
	R43	12.11	12.42	0.31	1	Negligible
	R49	16.60	17.63	1.03	3	Negligible
R69	14.55	14.99	0.44	1	Negligible	

Scenario 2 – 2024 annual mean NO ₂ concentrations (µg.m ⁻³)						
Local Authority	Receptor ID	Without Norfolk Boreas Scenario 2 and Hornsea Three	With Norfolk Boreas Scenario 2 and Hornsea Three	Change	Change as % of objective	Impact descriptor
	R70	22.83	23.80	0.97	2	Negligible
	R71	34.06	35.25	1.19	3	Slight adverse
	R75	12.93	13.91	0.98	2	Negligible
	R76	17.61	19.46	1.85	5	Negligible
	R77	12.86	13.50	0.64	2	Negligible
	R79	11.19	11.93	0.74	2	Negligible
	R85	12.97	13.64	0.67	2	Negligible
	R86	19.76	21.65	1.89	5	Negligible
	R88	8.92	9.21	0.29	1	Negligible
Great Yarmouth	R33	19.74	20.51	0.77	2	Negligible
	R34	25.38	26.14	0.76	2	Negligible
	R37	17.37	17.78	0.41	1	Negligible
	R38	21.87	22.27	0.40	1	Negligible
	R39	22.79	23.37	0.58	1	Negligible
	R40	11.88	12.03	0.15	0	Negligible
	R41	14.14	14.41	0.27	1	Negligible
	R67	17.62	18.29	0.67	2	Negligible
	R68	14.93	15.75	0.82	2	Negligible
R72	26.25	27.32	1.07	3	Negligible	
King's Lynn	R1	24.92	25.57	0.65	2	Negligible
	R2	16.86	17.25	0.39	1	Negligible
North Norfolk	R5	11.98	12.65	0.67	2	Negligible
	R6	12.19	12.89	0.70	2	Negligible
	R7	14.32	15.80	1.48	4	Negligible
	R8	12.14	13.17	1.03	3	Negligible
	R13	12.68	13.25	0.57	1	Negligible
	R14	14.73	16.12	1.39	3	Negligible
	R44	13.70	14.90	1.20	3	Negligible
	R45	14.42	15.78	1.36	3	Negligible
	R46	10.51	11.34	0.83	2	Negligible
	R47	13.03	14.53	1.50	4	Negligible
	R48	13.77	14.89	1.12	3	Negligible
	R50	13.62	14.61	0.99	2	Negligible
	R51	8.65	8.77	0.12	0	Negligible
	R52	13.54	14.43	0.89	2	Negligible
	R53	12.34	13.04	0.70	2	Negligible
	R54	11.86	12.15	0.29	1	Negligible
	R55	10.64	10.81	0.17	0	Negligible
	R56	9.61	9.89	0.28	1	Negligible
	R57	10.40	10.90	0.50	1	Negligible
	R58	13.76	14.47	0.71	2	Negligible
R59	10.38	10.97	0.59	1	Negligible	
R60	12.44	12.77	0.33	1	Negligible	
R61	11.83	12.07	0.24	1	Negligible	
R62	14.30	14.80	0.50	1	Negligible	

Scenario 2 – 2024 annual mean NO ₂ concentrations (µg.m ⁻³)						
Local Authority	Receptor ID	Without Norfolk Boreas Scenario 2 and Hornsea Three	With Norfolk Boreas Scenario 2 and Hornsea Three	Change	Change as % of objective	Impact descriptor
	R63	13.49	14.08	0.59	1	Negligible
	R64	11.25	11.52	0.27	1	Negligible
	R65	14.37	14.71	0.34	1	Negligible
	R66	14.68	15.02	0.34	1	Negligible
	R73	12.09	13.01	0.92	2	Negligible
	R74	9.24	9.64	0.40	1	Negligible
	R78	10.06	10.52	0.46	1	Negligible
	R84	12.76	13.31	0.55	1	Negligible
South Norfolk	R23	14.73	15.06	0.33	1	Negligible
	R24	16.04	16.14	0.10	0	Negligible
	R25	17.35	17.50	0.15	0	Negligible
	R26	14.02	14.47	0.45	1	Negligible
	R27	17.80	18.62	0.82	2	Negligible
	R89	22.16	22.36	0.20	0	Negligible
Waveney	R28	13.30	13.68	0.38	1	Negligible
	R29	15.73	16.30	0.57	1	Negligible
	R30	18.56	19.98	1.42	4	Negligible
	R31	13.58	14.20	0.62	2	Negligible
	R32	21.28	22.44	1.16	3	Negligible

Table 1.2 Scenario 2, cumulative annual mean PM₁₀ results at sensitive human receptor locations

Scenario 2 – 2024 annual mean PM ₁₀ concentrations (µg.m ⁻³)						
Local Authority	Receptor ID	Without Norfolk Boreas Scenario 2 and Hornsea Three	With Norfolk Boreas Scenario 2 and Hornsea Three	Change	Change as % of objective	Impact descriptor
Breckland	R3	14.23	14.32	0.08	0	Negligible
	R4	15.68	15.80	0.12	0	Negligible
	R9	15.61	15.66	0.04	0	Negligible
	R10	12.99	13.01	0.02	0	Negligible
	R11	13.53	13.57	0.04	0	Negligible
	R12	14.61	14.63	0.02	0	Negligible
	R15	15.15	15.18	0.02	0	Negligible
	R16	16.16	16.29	0.13	0	Negligible
	R22	13.18	13.22	0.04	0	Negligible
	R80	13.77	13.79	0.02	0	Negligible
	R81	14.50	14.52	0.02	0	Negligible
	R82	15.82	15.85	0.03	0	Negligible
	R83	15.27	15.29	0.03	0	Negligible
	R87	15.00	15.02	0.03	0	Negligible
Broadland	R17	13.85	13.93	0.08	0	Negligible

Scenario 2 – 2024 annual mean PM ₁₀ concentrations (µg.m ⁻³)						
Local Authority	Receptor ID	Without Norfolk Boreas Scenario 2 and Hornsea Three	With Norfolk Boreas Scenario 2 and Hornsea Three	Change	Change as % of objective	Impact descriptor
	R18	13.61	13.65	0.04	0	Negligible
	R19	14.44	14.49	0.05	0	Negligible
	R20	15.21	15.34	0.14	0	Negligible
	R21	15.46	15.50	0.05	0	Negligible
	R35	14.66	14.73	0.07	0	Negligible
	R36	17.22	17.30	0.08	0	Negligible
	R42	14.19	14.24	0.05	0	Negligible
	R43	13.23	13.27	0.03	0	Negligible
	R49	15.03	15.12	0.09	0	Negligible
	R69	15.17	15.22	0.05	0	Negligible
	R70	14.98	15.10	0.11	0	Negligible
	R71	17.19	17.35	0.16	0	Negligible
	R75	13.79	13.89	0.09	0	Negligible
	R76	15.50	15.69	0.19	0	Negligible
	R77	14.51	14.58	0.06	0	Negligible
	R79	14.80	14.87	0.07	0	Negligible
	R85	15.22	15.28	0.06	0	Negligible
	R86	15.59	15.78	0.19	0	Negligible
R88	16.46	16.48	0.03	0	Negligible	
Great Yarmouth	R33	15.90	15.97	0.07	0	Negligible
	R34	15.36	15.45	0.09	0	Negligible
	R37	13.92	13.96	0.05	0	Negligible
	R38	18.29	18.32	0.03	0	Negligible
	R39	13.84	13.89	0.05	0	Negligible
	R40	13.11	13.12	0.02	0	Negligible
	R41	13.42	13.45	0.03	0	Negligible
	R67	15.49	15.54	0.05	0	Negligible
	R68	14.49	14.55	0.06	0	Negligible
R72	14.40	14.49	0.09	0	Negligible	
King's Lynn	R1	15.86	15.94	0.08	0	Negligible
	R2	14.50	14.55	0.05	0	Negligible
North Norfolk	R5	15.04	15.11	0.07	0	Negligible
	R6	14.86	14.93	0.07	0	Negligible
	R7	15.34	15.45	0.11	0	Negligible
	R8	14.22	14.30	0.08	0	Negligible
	R13	14.91	14.95	0.04	0	Negligible
	R14	15.42	15.53	0.11	0	Negligible
	R44	18.00	18.10	0.09	0	Negligible
	R45	14.60	14.71	0.11	0	Negligible
	R46	13.61	13.68	0.07	0	Negligible
	R47	15.86	15.99	0.13	0	Negligible
	R48	14.40	14.47	0.07	0	Negligible
	R50	15.06	15.11	0.05	0	Negligible
R51	13.23	13.24	0.01	0	Negligible	
R52	16.17	16.23	0.07	0	Negligible	

Scenario 2 – 2024 annual mean PM ₁₀ concentrations (µg.m ⁻³)						
Local Authority	Receptor ID	Without Norfolk Boreas Scenario 2 and Hornsea Three	With Norfolk Boreas Scenario 2 and Hornsea Three	Change	Change as % of objective	Impact descriptor
	R53	14.84	14.89	0.05	0	Negligible
	R54	13.86	13.89	0.03	0	Negligible
	R55	13.80	13.81	0.01	0	Negligible
	R56	13.76	13.78	0.02	0	Negligible
	R57	14.41	14.44	0.04	0	Negligible
	R58	14.68	14.73	0.05	0	Negligible
	R59	14.78	14.84	0.06	0	Negligible
	R60	13.74	13.78	0.03	0	Negligible
	R61	13.86	13.89	0.03	0	Negligible
	R62	14.17	14.23	0.05	0	Negligible
	R63	15.17	15.22	0.05	0	Negligible
	R64	14.74	14.76	0.02	0	Negligible
	R65	13.48	13.51	0.03	0	Negligible
	R66	12.43	12.46	0.03	0	Negligible
	R73	13.75	13.83	0.08	0	Negligible
	R74	13.53	13.56	0.04	0	Negligible
	R78	15.30	15.34	0.04	0	Negligible
	R84	15.12	15.17	0.05	0	Negligible
South Norfolk	R23	13.85	13.88	0.03	0	Negligible
	R24	14.08	14.09	0.01	0	Negligible
	R25	14.50	14.52	0.02	0	Negligible
	R26	14.77	14.82	0.04	0	Negligible
	R27	16.19	16.27	0.08	0	Negligible
	R89	14.09	14.11	0.02	0	Negligible
Waveney	R28	14.46	14.49	0.03	0	Negligible
	R29	13.94	13.99	0.04	0	Negligible
	R30	14.60	14.71	0.11	0	Negligible
	R31	14.20	14.24	0.05	0	Negligible
	R32	15.25	15.36	0.11	0	Negligible

Table 1.3 Scenario 2 annual mean PM_{2.5} results at sensitive human receptor locations

Scenario 2 – 2024 annual mean PM _{2.5} concentrations (µg.m ⁻³)						
Local Authority	Receptor ID	Without Norfolk Boreas Scenario 2 and Hornsea Three	With Norfolk Boreas Scenario 2 and Hornsea Three	Change	Change as % of objective	Impact descriptor
Breckland	R3	9.24	9.29	0.05	0	Negligible
	R4	9.97	10.04	0.07	0	Negligible
	R9	9.81	9.84	0.03	0	Negligible
	R10	8.60	8.61	0.01	0	Negligible
	R11	8.88	8.90	0.03	0	Negligible

Scenario 2 – 2024 annual mean PM _{2.5} concentrations (µg.m ⁻³)						
Local Authority	Receptor ID	Without Norfolk Boreas Scenario 2 and Hornsea Three	With Norfolk Boreas Scenario 2 and Hornsea Three	Change	Change as % of objective	Impact descriptor
	R12	9.48	9.49	0.02	0	Negligible
	R15	10.08	10.09	0.01	0	Negligible
	R16	10.67	10.75	0.08	0	Negligible
	R22	8.82	8.84	0.02	0	Negligible
	R80	8.99	9.00	0.01	0	Negligible
	R81	9.54	9.55	0.02	0	Negligible
	R82	10.16	10.18	0.02	0	Negligible
	R83	9.75	9.76	0.02	0	Negligible
	R87	10.51	10.53	0.02	0	Negligible
Broadland	R17	8.85	8.90	0.05	0	Negligible
	R18	8.89	8.92	0.02	0	Negligible
	R19	9.29	9.32	0.03	0	Negligible
	R20	9.94	10.02	0.08	0	Negligible
	R21	9.92	9.95	0.03	0	Negligible
	R35	10.04	10.08	0.04	0	Negligible
	R36	12.36	12.40	0.05	0	Negligible
	R42	9.42	9.45	0.03	0	Negligible
	R43	8.86	8.88	0.02	0	Negligible
	R49	9.50	9.55	0.05	0	Negligible
	R69	9.97	10.00	0.03	0	Negligible
	R70	9.96	10.03	0.07	0	Negligible
	R71	11.39	11.48	0.09	0	Negligible
	R75	8.38	8.43	0.06	0	Negligible
	R76	10.14	10.25	0.12	0	Negligible
	R77	9.34	9.38	0.04	0	Negligible
	R79	9.86	9.90	0.04	0	Negligible
	R85	10.00	10.04	0.04	0	Negligible
R86	10.95	11.07	0.12	0	Negligible	
R88	12.22	12.24	0.02	0	Negligible	
Great Yarmouth	R33	10.26	10.30	0.04	0	Negligible
	R34	9.78	9.83	0.05	0	Negligible
	R37	9.03	9.06	0.03	0	Negligible
	R38	13.65	13.67	0.02	0	Negligible
	R39	9.43	9.46	0.03	0	Negligible
	R40	8.80	8.81	0.01	0	Negligible
	R41	9.12	9.14	0.02	0	Negligible
	R67	10.16	10.19	0.03	0	Negligible
	R68	9.39	9.43	0.04	0	Negligible
R72	9.53	9.58	0.05	0	Negligible	
King's Lynn	R1	9.93	9.98	0.05	0	Negligible
	R2	9.34	9.37	0.03	0	Negligible
North Norfolk	R5	9.58	9.63	0.04	0	Negligible
	R6	9.44	9.49	0.04	0	Negligible
	R7	9.95	10.02	0.07	0	Negligible
	R8	9.26	9.31	0.05	0	Negligible

Scenario 2 – 2024 annual mean PM _{2.5} concentrations (µg.m ⁻³)						
Local Authority	Receptor ID	Without Norfolk Boreas Scenario 2 and Hornsea Three	With Norfolk Boreas Scenario 2 and Hornsea Three	Change	Change as % of objective	Impact descriptor
	R13	9.55	9.58	0.03	0	Negligible
	R14	10.00	10.06	0.07	0	Negligible
	R44	13.49	13.54	0.06	0	Negligible
	R45	9.58	9.64	0.07	0	Negligible
	R46	8.90	8.94	0.04	0	Negligible
	R47	10.41	10.49	0.08	0	Negligible
	R48	9.17	9.21	0.04	0	Negligible
	R50	9.53	9.56	0.03	0	Negligible
	R51	8.59	8.60	0.01	0	Negligible
	R52	9.94	9.98	0.04	0	Negligible
	R53	9.39	9.42	0.03	0	Negligible
	R54	8.98	9.00	0.02	0	Negligible
	R55	8.94	8.95	0.01	0	Negligible
	R56	9.09	9.11	0.01	0	Negligible
	R57	9.50	9.53	0.02	0	Negligible
	R58	9.66	9.69	0.03	0	Negligible
	R59	9.59	9.62	0.03	0	Negligible
	R60	9.02	9.04	0.02	0	Negligible
	R61	9.09	9.10	0.01	0	Negligible
	R62	9.27	9.30	0.03	0	Negligible
	R63	10.74	10.76	0.03	0	Negligible
	R64	9.81	9.83	0.01	0	Negligible
	R65	8.98	9.00	0.02	0	Negligible
	R66	8.43	8.45	0.02	0	Negligible
	R73	8.03	8.08	0.05	0	Negligible
	R74	8.21	8.23	0.02	0	Negligible
	R78	10.22	10.25	0.03	0	Negligible
	R84	9.66	9.69	0.03	0	Negligible
South Norfolk	R23	9.10	9.12	0.02	0	Negligible
	R24	9.23	9.23	0.01	0	Negligible
	R25	9.46	9.47	0.01	0	Negligible
	R26	9.80	9.82	0.03	0	Negligible
	R27	10.48	10.53	0.05	0	Negligible
	R89	9.79	9.81	0.01	0	Negligible
Waveney	R28	9.37	9.38	0.02	0	Negligible
	R29	9.02	9.04	0.02	0	Negligible
	R30	9.64	9.71	0.07	0	Negligible
	R31	9.22	9.25	0.03	0	Negligible
	R32	10.02	10.08	0.07	0	Negligible

1.1.2 Ecological receptors

3. The results of the assessment of nutrient nitrogen deposition on designated ecological sites (as shown in Figure 26.5) for the Scenario 2 cumulative assessment are detailed in Table 1.4.

Table 1.4 Scenario 2 cumulative nutrient nitrogen deposition results

Designated ecological site	Transect ID	Nutrient nitrogen deposition (kgN.ha.y ⁻¹)		Change (kgN.ha.y ⁻¹)	Change as % of lowest Critical Load
		Without Norfolk Boreas Scenario 2 and Hornsea Three	With Norfolk Boreas Scenario 2 and Hornsea Three		
Felbrigg Woods SSSI	T1-1	0.55	0.73	0.18	2
	T1-2	0.18	0.23	0.05	0
	T1-3	0.11	0.14	0.03	0
	T1-4	0.09	0.11	0.02	0
	T1-5	0.07	0.09	0.02	0
	T1-6	0.07	0.08	0.01	0
Broadland SPA	T2-1	0.06	0.07	0.01	0
	T2-2	0.05	0.06	0.00	0
	T2-3	0.05	0.06	0.00	0
The Broads SAC	T3-1	0.35	0.39	0.05	0
	T3-2	0.09	0.10	0.01	0
	T3-3	0.07	0.07	0.01	0
	T3-4	0.06	0.06	0.01	0
	T3-5	0.05	0.06	0.01	0
	T4-1	1.41	1.60	0.19	1
	T4-2	0.21	0.24	0.03	0
	T4-3	0.13	0.15	0.02	0
	T4-4	0.10	0.12	0.01	0
	T4-5	0.09	0.10	0.01	0
Breydon Water SSSI	T5-1	0.52	0.55	0.03	0
	T5-2	0.24	0.26	0.02	0
	T5-3	0.17	0.18	0.01	0
	T5-4	0.14	0.15	0.01	0
	T5-5	0.13	0.14	0.01	0
	T6-1	2.78	2.97	0.18	1
	T6-2	0.42	0.45	0.03	0
	T6-3	0.26	0.28	0.02	0
	T6-4	0.20	0.21	0.01	0
	T6-5	0.17	0.18	0.01	0
Broadland SPA	T7-1	0.18	0.20	0.02	0
	T7-2	0.11	0.12	0.01	0
	T7-3	0.08	0.09	0.01	0
	T7-4	0.06	0.07	0.01	0
	T8-1	1.83	1.94	0.11	1
	T8-2	0.29	0.31	0.02	0
	T8-3	0.18	0.19	0.01	0
	T8-4	0.14	0.15	0.01	0

Designated ecological site	Transect ID	Nutrient nitrogen deposition (kgN.ha.y ⁻¹)		Change (kgN.ha.y ⁻¹)	Change as % of lowest Critical Load
		Without Norfolk Boreas Scenario 2 and Hornsea Three	With Norfolk Boreas Scenario 2 and Hornsea Three		
	T8-5	0.12	0.13	0.01	0
Cawston and Marsham Levels SSSI	T9-1	0.15	0.18	0.03	0
	T9-2	0.14	0.17	0.03	0
Buxton Heath SSSI	T10-1	0.31	0.37	0.06	1
	T10-2	0.19	0.22	0.04	0
	T10-3	0.14	0.16	0.03	0
	T10-4	0.12	0.14	0.02	0
Holt Lowes SSSI	T11-1	0.37	0.49	0.11	1
	T11-2	0.10	0.12	0.03	0
	T11-3	0.07	0.08	0.02	0
	T11-4	0.05	0.07	0.01	0
	T11-5	0.05	0.06	0.01	0
Foxley Wood SSSI	T12-1	0.05	0.05	0.01	0
	T12-2	0.05	0.05	0.01	0
East Winch Common SSSI	T13-1	1.24	1.30	0.06	1
	T13-2	0.20	0.21	0.01	0
	T13-3	0.11	0.12	0.01	0
	T13-4	0.08	0.08	0.00	0
	T13-5	0.06	0.07	0.00	0
Holly Farm Meadow SSSI	T14-1	1.61	1.76	0.15	1
	T14-2	0.49	0.53	0.05	0
	T14-3	0.31	0.33	0.03	0
	T14-4	0.23	0.25	0.02	0
	T14-5	0.18	0.19	0.02	0
Pottern and Scarning Fens, East Dereham SSSI	T15-1	2.28	2.50	0.21	1
	T15-2	0.31	0.34	0.03	0
	T15-3	0.16	0.18	0.02	0
	T15-4	0.11	0.12	0.01	0
	T15-5	0.09	0.10	0.01	0
Beetley and Hoe Meadows SSSI	T16-1	0.35	0.38	0.03	0
	T16-2	0.09	0.10	0.01	0
	T16-3	0.06	0.07	0.01	0
	T16-4	0.05	0.05	0.00	0
	T16-5	0.04	0.05	0.00	0
River Wensum SSSI	T17-1	1.62	1.86	0.24	2
	T17-2	0.32	0.36	0.05	0
	T17-3	0.21	0.24	0.03	0
	T17-4	0.16	0.18	0.02	0
	T17-5	0.13	0.15	0.02	0
	T18-1	1.04	1.20	0.16	1
	T18-2	0.17	0.19	0.02	0
	T18-3	0.10	0.12	0.01	0
	T18-4	0.08	0.09	0.01	0
T18-5	0.07	0.08	0.01	0	

1.2 Scenario 1

1.2.1 Human Receptors

4. The 24-hour AADT flows and HGV percentages used in the air quality assessment for the Scenario 1 cumulative assessment are detailed in Appendix 26.2.
5. Predicted NO₂, PM₁₀ and PM_{2.5} concentrations for the 2027 year of peak construction 'with project' scenario are detailed in Table 1.5 to Table 1.7. Concentrations for the 'without project' assessment and the predicted change in NO₂, PM₁₀ and PM_{2.5} concentrations, as a result of the proposed project, are also shown for comparison purposes.

Table 1.5 Scenario 1 cumulative Annual mean NO₂ results at sensitive human receptor locations

		Scenario 1 – 2027 annual mean NO ₂ concentrations (µg.m ⁻³)				
Local Authority	Receptor ID	Without Norfolk Boreas Scenario 1 and Hornsea Three	With Norfolk Boreas Scenario 1 and Hornsea Three	Change	Change as % of objective	Impact descriptor
Breckland	R3	17.54	17.90	0.36	1	Negligible
	R4	20.57	21.06	0.49	1	Negligible
	R12	9.22	9.33	0.11	0	Negligible
	R15	10.04	10.16	0.12	0	Negligible
	R16	19.92	20.50	0.58	1	Negligible
Broadland	R17	10.36	11.02	0.66	2	Negligible
	R18	9.41	9.72	0.31	1	Negligible
	R19	13.60	13.83	0.23	1	Negligible
	R20	17.33	18.01	0.68	2	Negligible
	R21	12.05	12.29	0.24	1	Negligible
	R35	26.57	26.89	0.32	1	Negligible
	R36	28.26	28.62	0.36	1	Negligible
	R49	16.88	17.87	0.99	2	Negligible
	R69	14.88	15.13	0.25	1	Negligible
	R70	23.64	24.32	0.68	2	Negligible
	R71	35.15	35.97	0.82	2	Negligible
Great Yarmouth	R33	20.06	20.44	0.38	1	Negligible
	R34	25.85	26.23	0.38	1	Negligible
	R37	17.64	17.84	0.20	0	Negligible
	R72	26.74	27.21	0.47	1	Negligible
North Norfolk	R5	12.14	12.50	0.36	1	Negligible
	R6	12.36	12.74	0.38	1	Negligible
	R7	14.56	15.45	0.89	2	Negligible
	R8	12.30	12.92	0.62	2	Negligible
	R13	12.80	13.09	0.29	1	Negligible
	R14	15.01	15.73	0.72	2	Negligible
	R44	13.92	14.63	0.71	2	Negligible
	R45	14.67	15.47	0.80	2	Negligible
	R46	10.61	11.08	0.47	1	Negligible

Scenario 1 – 2027 annual mean NO ₂ concentrations (µg.m ⁻³)						
Local Authority	Receptor ID	Without Norfolk Boreas Scenario 1 and Hornsea Three	With Norfolk Boreas Scenario 1 and Hornsea Three	Change	Change as % of objective	Impact descriptor
	R47	13.22	14.07	0.85	2	Negligible
	R48	13.99	14.65	0.66	2	Negligible
	R50	13.83	14.78	0.95	2	Negligible
Waveney	R30	18.83	19.55	0.72	2	Negligible
	R31	13.70	14.02	0.32	1	Negligible
	R32	21.76	22.35	0.59	1	Negligible

Table 1.6 Scenario 1 cumulative annual mean PM₁₀ results at sensitive human receptor locations

Scenario 1 – 2027 annual mean PM ₁₀ concentrations (µg.m ⁻³)						
Local Authority	Receptor ID	Without Norfolk Boreas Scenario 1 and Hornsea Three	With Norfolk Boreas Scenario 1 and Hornsea Three	Change	Change as % of objective	Impact descriptor
Breckland	R3	14.27	14.31	0.04	0	Negligible
	R4	15.73	15.78	0.05	0	Negligible
	R12	14.61	14.62	0.01	0	Negligible
	R15	15.16	15.17	0.01	0	Negligible
	R16	16.21	16.27	0.07	0	Negligible
Broadland	R17	13.86	13.92	0.06	0	Negligible
	R18	13.61	13.64	0.03	0	Negligible
	R19	14.46	14.49	0.03	0	Negligible
	R20	15.24	15.32	0.08	0	Negligible
	R21	15.47	15.50	0.03	0	Negligible
	R35	14.69	14.73	0.04	0	Negligible
	R36	17.26	17.30	0.04	0	Negligible
	R49	15.06	15.15	0.08	0	Negligible
	R69	15.20	15.23	0.03	0	Negligible
	R70	15.07	15.15	0.08	0	Negligible
Great Yarmouth	R71	17.32	17.43	0.11	0	Negligible
	R33	15.94	15.97	0.04	0	Negligible
	R34	15.41	15.46	0.04	0	Negligible
	R37	13.94	13.96	0.02	0	Negligible
North Norfolk	R72	14.45	14.49	0.04	0	Negligible
	R5	15.06	15.10	0.04	0	Negligible
	R6	14.88	14.92	0.04	0	Negligible
	R7	15.36	15.43	0.07	0	Negligible
	R8	14.24	14.29	0.05	0	Negligible
	R13	14.92	14.94	0.02	0	Negligible
	R14	15.45	15.50	0.06	0	Negligible
	R44	18.03	18.08	0.06	0	Negligible
R45	14.63	14.69	0.07	0	Negligible	

Scenario 1 – 2027 annual mean PM ₁₀ concentrations (µg.m ⁻³)						
Local Authority	Receptor ID	Without Norfolk Boreas Scenario 1 and Hornsea Three	With Norfolk Boreas Scenario 1 and Hornsea Three	Change	Change as % of objective	Impact descriptor
	R46	13.62	13.66	0.04	0	Negligible
	R47	15.88	15.95	0.07	0	Negligible
	R48	14.42	14.46	0.04	0	Negligible
	R50	15.07	15.12	0.05	0	Negligible
Waveney	R30	14.63	14.68	0.06	0	Negligible
	R31	14.21	14.23	0.02	0	Negligible
	R32	15.30	15.36	0.06	0	Negligible

Table 1.7 Scenario 1 cumulative annual mean PM_{2.5} results at sensitive human receptor locations

Scenario 1 – 2027 annual mean PM _{2.5} concentrations (µg.m ⁻³)						
Local Authority	Receptor ID	Without Norfolk Boreas Scenario 1 and Hornsea Three	With Norfolk Boreas Scenario 1 and Hornsea Three	Change	Change as % of objective	Impact descriptor
Breckland	R3	9.26	9.29	0.02	0	Negligible
	R4	10.00	10.03	0.03	0	Negligible
	R12	9.48	9.48	0.01	0	Negligible
	R15	10.08	10.09	0.01	0	Negligible
	R16	10.70	10.74	0.04	0	Negligible
Broadland	R17	8.85	8.89	0.04	0	Negligible
	R18	8.90	8.91	0.02	0	Negligible
	R19	9.30	9.32	0.01	0	Negligible
	R20	9.96	10.01	0.05	0	Negligible
	R21	9.93	9.94	0.02	0	Negligible
	R35	10.06	10.08	0.02	0	Negligible
	R36	12.38	12.41	0.03	0	Negligible
	R49	9.52	9.57	0.05	0	Negligible
	R69	9.99	10.01	0.02	0	Negligible
	R70	10.01	10.06	0.05	0	Negligible
R71	11.46	11.53	0.06	0	Negligible	
Great Yarmouth	R33	10.28	10.30	0.02	0	Negligible
	R34	9.81	9.84	0.03	0	Negligible
	R37	9.04	9.06	0.01	0	Negligible
	R72	9.56	9.58	0.02	0	Negligible
North Norfolk	R5	9.59	9.62	0.02	0	Negligible
	R6	9.45	9.48	0.02	0	Negligible
	R7	9.96	10.00	0.04	0	Negligible
	R8	9.27	9.30	0.03	0	Negligible
	R13	9.56	9.57	0.01	0	Negligible
	R14	10.01	10.05	0.03	0	Negligible
	R44	13.50	13.53	0.03	0	Negligible
R45	9.59	9.63	0.04	0	Negligible	

Scenario 1 – 2027 annual mean PM _{2.5} concentrations (µg.m ⁻³)						
Local Authority	Receptor ID	Without Norfolk Boreas Scenario 1 and Hornsea Three	With Norfolk Boreas Scenario 1 and Hornsea Three	Change	Change as % of objective	Impact descriptor
			R46	8.91	8.93	0.02
	R47	10.42	10.46	0.04	0	Negligible
	R48	9.18	9.20	0.02	0	Negligible
	R50	9.54	9.57	0.03	0	Negligible
Waveney	R30	9.66	9.69	0.03	0	Negligible
	R31	9.23	9.24	0.01	0	Negligible
	R32	10.05	10.08	0.03	0	Negligible

1.2.2 Ecological Receptors

6. The results of the assessment of nutrient nitrogen deposition on designated ecological sites (as shown in Figure 26.5) for the Scenario 1 cumulative assessment are detailed in Table 1.8.

Table 1.8 Scenario 1 cumulative nutrient nitrogen deposition results

Designated ecological site	Transect ID	Nutrient nitrogen deposition (kgN.ha.y ⁻¹)		Change (kgN.ha.y ⁻¹)	Change as % of lowest Critical Load
		Without Norfolk Boreas Scenario 1 and Hornsea Three	With Norfolk Boreas Scenario 1 and Hornsea Three		
Felbrigg Woods SSSI	T1-1	0.57	0.67	0.10	1
	T1-2	0.19	0.22	0.03	0
	T1-3	0.12	0.14	0.02	0
	T1-4	0.09	0.10	0.01	0
	T1-5	0.07	0.08	0.01	0
	T1-6	0.07	0.08	0.01	0
Breydon Water SSSI	T5-1	0.54	0.55	0.02	0
	T5-2	0.25	0.26	0.01	0
	T5-3	0.18	0.18	0.01	0
	T5-4	0.14	0.15	0.00	0
	T5-5	0.14	0.14	0.00	0
	T6-1	2.90	2.99	0.09	0
	T6-2	0.44	0.45	0.02	0
	T6-3	0.27	0.28	0.01	0
	T6-4	0.20	0.21	0.01	0
	T6-5	0.17	0.18	0.01	0
Broadland SPA	T8-1	1.90	1.96	0.06	0
	T8-2	0.30	0.31	0.01	0
	T8-3	0.19	0.19	0.00	0
	T8-4	0.15	0.15	0.00	0
	T8-5	0.13	0.13	0.00	0
	T14-1	1.68	1.75	0.07	0

Designated ecological site	Transect ID	Nutrient nitrogen deposition (kgN.ha.y ⁻¹)		Change (kgN.ha.y ⁻¹)	Change as % of lowest Critical Load
		Without Norfolk Boreas Scenario 1 and Hornsea Three	With Norfolk Boreas Scenario 1 and Hornsea Three		
Holly Meadow Farm SSSI	T14-2	0.51	0.53	0.02	0
	T14-3	0.32	0.33	0.01	0
	T14-4	0.23	0.24	0.01	0
	T14-5	0.19	0.19	0.00	0
Potter and Scarning Fens SSSI	T15-1	2.38	2.48	0.10	1
	T15-2	0.33	0.34	0.01	0
	T15-3	0.17	0.18	0.01	0
	T15-4	0.12	0.12	0.00	0
	T15-5	0.09	0.10	0.01	0
River Wensum SSSI	T17-1	1.68	1.82	0.14	1
	T17-2	0.33	0.35	0.03	0
	T17-3	0.22	0.23	0.01	0
	T17-4	0.16	0.18	0.02	0
	T17-5	0.14	0.15	0.01	0
	T18-1	1.08	1.17	0.09	1
	T18-2	0.17	0.19	0.02	0
	T18-3	0.11	0.11	0.00	0
	T18-4	0.09	0.09	0.00	0
	T18-5	0.08	0.08	0.00	0