Appendix 16.3

Air Quality Modelling Results

Contents

Tables

16.1 Modelling Results

16.1.1 NO_2, NO_x, PM_{10} and $PM_{2.5}$ concentrations were predicted for the Base Year (2012) and Opening Year (2026) Do-Minimum and Do-Something scenarios.

16.1.2 **Table 1** presents the unadjusted and LTT Gap analysis adjusted results for NO_2 of the operational assessment of the Proposed Scheme for human receptors. There are no exceedances of AQS NO_2 objective at any receptor for the Proposed Scheme, and all changes are imperceptible.

Table 1: Unadjusted and Adjusted (HA LTT Gap Analysis) Annual mean NO_2 concentrations (µg m^{-3}) at human health receptors for all assessed scenarios for the Proposed Scheme Stage 3 with DMRB impact magnitudes

Receptor ID	Annual Mean NO_2					Impact Magnitude
	Base	Unadjusted DM	Unadjusted DS	Adjusted DM	Adjusted DS	
R1	2.5	1.9	1.9	1.8	1.8	IMPERCEPTIBLE
R2	3.3	2.8	3.1	2.4	2.7	IMPERCEPTIBLE
R3	3.0	2.5	2.6	2.2	2.3	IMPERCEPTIBLE
R4	3.1	2.6	2.6	2.3	2.3	IMPERCEPTIBLE
R5	3.3	2.8	2.8	2.4	2.4	IMPERCEPTIBLE
R6	3.3	2.8	2.8	2.4	2.4	IMPERCEPTIBLE
R7	2.7	2.2	2.3	1.9	2.0	IMPERCEPTIBLE
R8	2.7	2.1	2.3	1.9	2.1	IMPERCEPTIBLE
R9	2.7	2.2	2.3	2.0	2.1	IMPERCEPTIBLE
R10	3.6	3.1	3.5	2.7	3.0	IMPERCEPTIBLE
Annual mean AQS objective for NO_2 = 40 µg m^{-3}						

16.1.3 **Table 2** presents the results for PM_{10} and $PM_{2.5}$ of the operational assessment of the Proposed Scheme. There are no exceedances of the AQS objective for PM_{10} or $PM_{2.5}$ at any receptor. All changes are imperceptible.

Table 2: Annual mean PM_{10} and $PM_{2.5}$ concentrations (µg m^{-3}) at human health receptors for all assessed scenarios for the Proposed Scheme Stage 3 with DMRB impact magnitudes

Receptor ID	PM_{10}					$PM_{2.5}$				
	Base	DM	DS	Change (DS-DM)	Impact Magnitude	Base	DM	DS	Change (DS-DM)	Impact Magnitude
R1	7.8	7.5	7.5	0.0	IMPERCEPTIBLE	4.8	4.6	4.6	0.0	IMPERCEPTIBLE
R2	8.0	7.8	7.9	0.1	IMPERCEPTIBLE	5.0	4.7	4.8	0.2	IMPERCEPTIBLE
R3	8.0	7.7	7.7	0.0	IMPERCEPTIBLE	4.9	4.7	4.7	0.0	IMPERCEPTIBLE
R4	8.0	7.7	7.7	0.0	IMPERCEPTIBLE	4.9	4.7	4.7	0.0	IMPERCEPTIBLE
R5	8.1	7.8	7.8	0.0	IMPERCEPTIBLE	5.0	4.8	4.7	0.0	IMPERCEPTIBLE
R6	8.1	7.8	7.8	0.0	IMPERCEPTIBLE	5.0	4.8	4.7	0.0	IMPERCEPTIBLE
R7	7.5	7.2	7.3	0.1	IMPERCEPTIBLE	4.7	4.5	4.5	0.0	IMPERCEPTIBLE
R8	7.5	7.2	7.2	0.0	IMPERCEPTIBLE	4.7	4.5	4.5	0.0	IMPERCEPTIBLE
R9	7.5	7.2	7.2	0.0	IMPERCEPTIBLE	4.7	4.5	4.5	0.0	IMPERCEPTIBLE
R10	7.8	7.5	7.6	0.1	IMPERCEPTIBLE	4.8	4.6	4.7	0.1	IMPERCEPTIBLE
Annual mean AQS objective for PM_{10} = 18 µg m^{-3}, $PM_{2.5}$ = 10 µg m^{-3}										

16.1.4 **Table 3** presents the results for NO_x at ecological receptors for the operational assessment of the Proposed Scheme. There are no exceedances of the AQS objective for at any receptor. There

were one large, one medium and five small impact magnitude changes for Drumochter Hills SSSI, SPA and SAC. All concentrations are however below the 30 µg m^{-3} annual mean for NO_x and are therefore not significant.

Table 3: Annual mean NO_X concentrations (µg m^{-3}) at ecological all assessed scenarios for the Proposed Scheme Stage 3 with DMRB impact magnitudes

Receptor ID	Background NO_x		Annual Mean NO_X				
	Base Year (2015)	Opening Year (2026)	Base	DM	DS	Change (DS-DM)	Impact Magnitude
E1	3.2	2.4	5.8	5.4	7.7	2.3	MEDIUM
E2	3.2	2.4	4.3	3.7	4.5	0.8	SMALL
E3	3.1	2.3	3.6	2.9	3.3	0.4	SMALL
E4	3.1	2.3	3.4	2.7	2.9	0.2	IMPERCEPTIBLE
E5	3.1	2.3	3.1	2.4	2.4	0.0	IMPERCEPTIBLE
E6	3.1	2.4	6.1	5.7	11.4	5.7	LARGE
E7	3.1	2.4	4.3	3.7	5.3	1.6	SMALL
E8	3.1	2.4	3.6	3.0	3.7	0.7	SMALL
E9	3.1	2.4	3.4	2.8	3.1	0.3	IMPERCEPTIBLE
E10	3.1	2.4	3.2	2.5	2.6	0.1	IMPERCEPTIBLE
Annual mean AQS objective for NO_X = 30 µg m^{-3}							