

Appendix 8.3

Air Quality Effect from Traffic Sources

APPENDIX 8.3

8.3.1 Air Quality Effect from Traffic Sources

Cumulative air modelling of road traffic emissions associated with the project have also been undertaken and added to the existing worst-case background pollutant levels. Cumulative effects due to relevant projects have been included in both the “do-nothing” and “do-something” scenario. The effect of the operational traffic accessing the Ringaskiddy Resource Recovery facility has been assessed using the TII REM model⁽³⁷⁾ which is a recommended screening model to assess air quality effects from road traffic. The worst-case operational effect in the region of the facility has been assessed and is outlined in Table A8.9. Development traffic data was taken from the Traffic Chapter of the EIS (**Chapter 7**).

The TII guidance (2022) states that modelling should be conducted for NO₂, PM₁₀ and PM_{2.5} for the Opening and Design Years for both the Do Nothing, i.e. assuming the proposed development is not in place, and Do Something (with the proposed development in place) scenarios. Modelling of operational NO₂, PM₁₀ and PM_{2.5} concentrations has been conducted for the Do Nothing and Do Something scenarios using the TII Road Emissions Model (REM) online calculator tool (TII, 2025).

The following inputs are required for the REM tool: receptor locations, light duty vehicle (LDV) annual average daily traffic movements (AADT), heavy duty vehicles (HDV) AADT (HDV AADT), annual average traffic speeds, road link lengths, road type, project county location and pollutant background concentrations. The Default fleet mix option was selected along with the Intermediate Case fleet data for cars, ICE Sales Ban for LGVs and EU target projections for HGVs, as per TII Guidance (TII 2022, TII 2025). The Intermediate Case assumes a linear interpolation between the Business as Usual case – where current trends in vehicle ownership continue and the Climate Action Plan (CAP) case – where adoption of low emission light duty vehicles occurs. The ICE Sales Ban 2035 option for LGVs presents a sales ban on new combustion engine vehicles to be implemented by 2035. The EU Targets projections for HGVs represents interim targets for emissions from sales of new HGVs. The TII REM uses county-based Irish fleet composition for different road types, for different European emission standards from pre-Euro to Euro 6/VI with scaling factors to reflect improvements in fuel quality, retrofitting, and technology conversions. The TII REM also includes emission factors for PM₁₀ emissions associated with brake and tyre wear (TII 2025).

Table A8.9 Summary Of Predicted Traffic Derived Pollutant Levels At Nearest Receptor To The Proposed Ringaskiddy Resource Recovery Facility.

Scenarios	Traffic Speed (km/hr)	Nitrogen Dioxide ($\mu\text{g}/\text{m}^3$)	Particulates (PM_{10}) ($\mu\text{g}/\text{m}^3$)		Particulates ($\text{PM}_{2.5}$) ($\mu\text{g}/\text{m}^3$)
		Annual average NO_2	Annual average	No of Days > 45 $\mu\text{g}/\text{m}^3$	Annual average
2030 Existing Traffic	50	11.1	11.5	4	6.8
2030 Do Something Traffic	50	11.2	11.8	4	7.0
Standards		40 ⁽¹⁾	20 ⁽¹⁾	35 ^(1,2)	10 ⁽¹⁾

⁽¹⁾ Directive (EU) 2024/2881

⁽²⁾ 24-Hr limit of 50 $\mu\text{g}/\text{m}^3$ not to be exceeded > 18 times/year (95.1th %ile)