10 Air Quality

Introduction

10.1 This section of the Screening and Scoping Report considers potential impacts on air quality, as a result of the construction, operation and decommissioning of the Proposed Project.

10.2 During the construction and decommissioning phases, there is the potential for particulate matter and oxides of nitrogen to be emitted by the activities being undertaken. This section considers the likelihood for the proposed construction and decommissioning activities to generate emissions of sufficient magnitude to adversely affect sensitive receptors.

10.3 During the operational phase there is limited potential for emissions of air pollutants to be generated by the Proposed Project.

Legislation and policy

National Legislation

10.4 Directive 2008/50/EC (Council of European Communities, 2008) is currently transcribed into UK legislation by the Air Quality Standards Regulations 2010. These limit values are binding on the UK and have been set with the aim of avoiding, preventing or reducing harmful effects on human health and on the environment.

Welsh National Planning Policy

10.5 Planning authorities in Wales should operate on the basis that the relevant pollutant control regimes will be properly applied and enforced by other agencies. They should not seek to control through planning measures, matters that are the proper concern of the pollution control authority. These regimes are set out in the Environment Act 1995, the Environmental Protection Act 1990, and the regulatory regimes introduced by the Pollution Prevention and Control Act 1999. Each of these may have a bearing on the environmental controls imposed on the development in respect of environmental and health concerns and planning authorities ensure that planning conditions do not duplicate or contradict measures more appropriately controlled under these regimes.

10.6 Local authorities are required to carry out periodic reviews of the air quality in their areas in relation to seven regulated pollutants and to assess this against the air quality objectives set out in the regulations. Where a local authority believes that there is currently, or that there is likely to be in future, a breach in an air quality objective, it must declare an ‘Air Quality Management Area’.

10.7 The potential for pollution affecting the use of land will be a material consideration in deciding whether to grant planning permission or not. Material considerations in determining applications for potentially polluting development are likely to include:

- location, taking into account such considerations as the reasons for selecting the chosen site itself;
- impact on health and amenity;
- the risk and impact of potential pollution from the development, insofar as this might have an effect on the use of other land and the surrounding environment (the environmental regulatory regime may well have an interest in these issues,

particularly if the development would impact on an Air Quality Management Area or a SAC);

- prevention of nuisance;
- impact on the road and other transport networks, and in particular on traffic generation; and
- the need, where relevant, and feasibility of restoring the land (and water resources) to standards sufficient for an appropriate after use.

National Air Quality Strategy

10.8 The UK National Air Quality Strategy (Defra, 2000) was initially published in 2000, under the requirements of the Environment Act 1995. The most recent revision of the strategy (Defra, 2007) sets objective values for key pollutants as a tool to help Local Authorities manage local air quality improvements in accordance with the EU Air Quality Framework Directive.

10.9 The air quality objective values referred to above have been set down in regulation for the purposes of local air quality management. Under the local air quality management regime Gwynedd Council has a duty to carry out regular assessments of air quality against the objective values and if it is unlikely that the objective values will be met in the given timescale, they must designate an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) with the aim of achieving the objective values. The boundary of an AQMA is set by the governing local authority to define the geographical area that is to be subject to the management measures to be set out in a subsequent action plan. Consequently it is not unusual for the boundary of an AQMA to include within it relevant locations where air quality is not at risk of exceeding an air quality objective. The UK's national air quality objective values for the pollutants of relevance to this assessment are displayed in Table 10.1.

Table 10.1: Air Quality Objective Values for England

Pollutant	Averaging Period	Objective Value (µg/m3)	Max Permitted Exceedances	Target Date
Nitrogen Dioxide (NO2)	Annual Mean	40	None	31/12/05
	Hourly Mean	200	18 times per year	31/12/05
Particulate Matter (PM10)	Annual Mean	40	None	31/12/04
	24-hour	50	35 times per year	31/12/04
Fine Particulate Matter (PM2.5)	Annual Mean	25	None	2020

Local Air Quality Management

10.10 Under the requirements of Part IV of the Environment Act (1995), Gwynedd Council has carried out a phased review and assessment of local air quality within the city (Gwynedd

Council, 2011). Gwynedd Council has not declared an AQMA within its administrative boundary for any pollutant listed in Table 10.1.

Local Planning Policy

10.11 Relevant local planning policy concerns the awareness of the Council to potential air quality impacts from development and that such impacts should be adequately mitigated.

Baseline Environment

10.12 The Proposed Project is situated in an area which is mainly rural, with the town of Penrhyndeudraeth and the village of Minffordd adjacent to the Proposed Project. The main sources of air pollution in the vicinity are the A487, A496, A497 and the A4085 main roads, and a quarry located at Y Garth.

10.13 National projections of air pollutant concentrations within the rural locations in the vicinity of the Proposed Project demonstrate that baseline air quality is of a very good standard (Defra, 2015a). Gwynedd Council undertakes monitoring at a number of locations within their administrative area (Gwynedd Council, 2011), and Defra has monitors as part of the Automatic Rural and Urban Network (AURN) (Defra, 2015b). The results from these monitoring regimes show that air quality in the vicinity of the Proposed Project is very good, with concentrations of nitrogen dioxide measured at less than half of the objective value in an urban location. Gwynedd Council has not identified any location within its administrative area that is likely to be above an objective value for any other pollutant.

10.14 Gwynedd Council has not declared an Air Quality Management Area (AQMA) within their administrative area.

10.15 A number of designated sites are located within close proximity to the Proposed Project details of these are presented in Section 5 (Ecology) of this Screening and Scoping Report.

Potential Impacts

10.16 Potential impacts on air quality from the Proposed Project are limited to the construction and decommissioning phases as during the operational phase activities will be limited to a small number of vehicles (typically less than 1 trip per day) associated with inspection and maintenance purposes.

10.17 During the construction phase, there is the potential to change traffic flows on the local road network as flows may be restricted due to traffic management methods. There are a number of receptors located along the A497 in Minffordd and along the A487/ Eryri Terrace in Penrhyndeudraeth, A496 and Cilfor. These roads carry a high amount of traffic, and the potential for disruption can be high without suitable traffic management in place.

10.18 The construction phase will also see an increase in emissions due to vehicles accessing the construction site, including vehicles transporting spoil from tunnelling works, and plant operating onsite. Vehicles accessing the site/s will do so using the local road network, and have the potential to increase local emissions. The Proposed Project will also require Non Road Mobile Machinery (NRMM), such as cranes or excavators.

10.19 There is also the potential for dust to be generated due to earthworks, vehicle movement on unpaved haul roads (although it is currently anticipated that temporary trackway or stone roads will be used), and track out of soils onto the road network, if appropriate standard construction practices were not applied. Sensitive receptors include human receptors sensitive to dust deposition.

Proposed Assessment Methodology

10.20 The Design Manual for Roads and Bridges (DMRB) includes advice on levels of additional road traffic movements above which there is the potential for adverse effects on local air quality to occur, dependent upon local conditions (Highways Agency, 2007). DMRB adopts a change in two way total traffic flows of 1000 AADT (Annual Average Daily Traffic) or a change in heavy duty vehicles (HDV) of 200 AADT, as screening criteria. Screening will be undertaken to determine the need for assessment of additional road traffic from the Proposed Project on air quality; should assessment be required the findings of the assessment will be presented in the Environmental Assessment Report.

10.21 Given the short-term use of NRMM at any given location within the construction period, it is not considered necessary to quantify the impact of emissions to air from NRMM to conclude that a significant adverse effect is unlikely to occur.

10.22 Short term impacts due to emissions from construction dust generated onsite have the potential to effect amenity, local air quality or designated ecological sites, without appropriate standard construction practices. With standard construction practices, such as those set out in the Institute of Air Quality Management (IAQM) guidance on the assessment of construction dust (IAQM, 2014) for low risk sites the impacts from the Proposed Project would not be significant.

Proposed Mitigation Measures

10.23 A Construction Environmental Management Plan (CEMP) will be prepared for the Proposed Project to manage the effects of construction activities on air quality. Best practice mitigation will be used during construction to reduce the effect of dust and emissions including but not limited to the following:

- wheel cleaning facilities will be provided and road sweeping will be undertaken in accordance with the draft Construction Traffic Management Plan;
- materials that have a potential to produce dust will be removed from site as soon as possible, unless being re-used on site. Where there is a requirement to temporarily store dusty materials they will be sheeted or prevented in some other way from becoming wind-borne;
- loaded vehicles that are carrying dust generating materials will be covered, for example with sheets, when leaving site to prevent escape of materials during transport;
- where activities could create dust clouds, dust suppression techniques will be adopted, for example water sprays and dampening of access roads. Suppression techniques will be used more frequently during periods of dry weather;
- the site speed limit will be signposted and will not exceed 10mph;
- there will be no burning of materials on site;
- all plant and vehicles will be maintained in good order so that they do not emit dark smoke, grit or dust;
- the use of diesel generators will be minimised and battery powered generators will be used where available;
- engines will be turned off when vehicles are not in use to avoid ‘idling’;
- alternative methods for business travel will be considered by all employees to reduce vehicle use; and

- all working areas will be kept in a clean and tidy condition.

10.24 The CEMP will form part of the planning submission for the Proposed Project.

Issues to be Scoped Out

10.25 Air quality impacts during construction, operation and decommissioning is proposed to be scoped out from further assessment on the grounds that there is unlikely to be a significant effect on local air quality sensitive receptors or the sustained achievement of the air quality limit values. The management of dust and emission during the construction phase will be address through the CEMP.

Overview of the Likely Significance of Effect

10.26 As the application of the measures in the CEMP will minimise the generation of emissions at source, construction phase activities are unlikely to give rise to significant adverse effects on amenity or air quality.

10.27 No emissions will be emitted to air during the operational phase of the Proposed Project with the exception of vehicles used for maintenance purposes.