

## 5. Air and Climate

### 5.1 Introduction

The purpose of this section of the EIS Scoping Report is to describe the scope of work and methods to be applied in the identification and assessment of air quality impacts associated with the proposed development. A high level overview of the baseline conditions is included, together with the proposed methodology and a scope of work likely to be required to undertake a detailed assessment of the impact of the proposed development on air quality as part of the EIA.

#### 5.1.1 Policy & Plan Context

In order to reduce the risk to health from poor air quality, National and European statutory bodies have set limit values in ambient air for a range of air pollutants. These limit values or “Air Quality Standards” are health or environmental-based levels for which additional factors may be considered. For example, natural background levels, environmental conditions and socio-economic factors may all play a part in the limit value which is set. The assessment of air quality will be conducted with consideration of the relevant legislation and guidance including:

- Ambient Air Quality and Cleaner Air for Europe (CAFE) Directive (2008/50/EC);
- European Union Directive on air quality assessment and management (96/62/EC) and the associated “daughter Directives”, which set the Limit Values;
- Air Quality Standards Regulations 2011 (S.I. 180 of 2011), which incorporate European Commission Directive 2008/50/EC which has set limit values for the pollutants SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub>, benzene and CO;
- Air Pollution Act 1987;
- 2030 Climate and Energy Policy Framework;
- IAQM Guidance on the Assessment of Dust from Demolition and Construction (2014);
- NRA Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes (NRA, 2011) [Note NRA now TII]; and
- Local Authority air quality and planning guidance.

#### 5.1.2 Study Area

This proposed development covers an extensive study area that extends from Parteen Basin on the River Shannon, directly south of Lough Derg in County Tipperary, through Tipperary and the midland counties of Offaly and Kildare, and terminating in Peamount Reservoir in South County Dublin. The extent of the proposed development, particularly the c.170km treated water pipeline component, requires crossing a significant section of the country. The entirety of the study area will require sensitivity in the siting and design process due to the potential for proximity to a range of sensitive receptors.

It is expected that there may be sensitive receptors located within 500m of elements of the proposed development’s infrastructure (abstraction site, water treatment plant, break pressure tank, pipeline and termination point reservoir) including both low density residential dwellings and a number of larger residential settlements.

## 5.2 Baseline Information

### 5.2.1 Desktop Study

Extensive work has been completed to date in order to identify the location of the proposed infrastructure sites and preferred pipeline corridor. This was completed as part of the options appraisal which initially supported the Preliminary Options Assessment Report (POAR) and subsequently the Final Options Appraisal Report (FOAR) and assessed proposed sites and proposed pipeline corridors against a range of environmental criteria including air quality.

A desktop review of available data regarding the baseline air quality over the study area has been undertaken and will be supplemented with additional information to support the development of the EIA. Air quality constraints such as the number of sensitive receptors, baseline air quality conditions, meteorological conditions and the presence of EPA Integrated Pollution Prevention and Control (IPPC), waste licenced facilities and quarries have been reviewed to date. Key items of note related to:

- At the Parteen Basin location, in terms of air quality, the area was considered rural/suburban with the larger residential settlements of both Killaloe and Ballina noted;
- At the Termination Point Reservoir, in the vicinity of Peamount Reservoir and environs, the area was considered predominantly rural with few residential receptors. The location of the Peamount Hospital and some EPA waste and IPPC licenced facilities in the vicinity were identified;
- There were marginal differences in terms of air quality constraints across the pipeline corridors that were considered as part of the FOAR with generally low-very low levels of air quality constraints across the length of the corridor. A summary of all constraints considered in the FOAR can be viewed in Drawings 2.1 – 2.90 in Appendix B.

The National Roads Authority document entitled *Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes* (NRA, 2011) [Note NRA now TII] provides guidance on route selection assessment procedures, the primary aspect of which relates to existing ambient air quality and the proximity of sensitive receptors. This document, although designed for road schemes, is applicable in this instance due to the linear nature of much of the proposed development and the fact that the identification of air quality constraints is a component in supporting the selection process.

Following the identification of the Preferred Scheme, a further more detailed assessment of air quality will be carried out in order to establish a baseline and inform the impact assessment. The following data sources will be referred to during the air quality assessment:

- Environmental Protection Agency – National Ambient Air Quality Monitoring Data Archive;
- Environmental Protection Agency – Air Quality in Ireland 2014 Report;
- Dublin Regional Air Quality Management Plan 2009-2012;
- National Parks and Wildlife Service Maps;
- Environmental Protection Agency – Integrated Pollution Control Licences;
- Clare County Development Plan 2011-2017;
- Draft Clare County Development Plan 2017-2023;
- North Tipperary County Development Plan 2010-2016;
- Nenagh Town & Environs Development Plan 2013-2019;
- Offaly County Development Plan 2014-2020;
- Laois County Development Plan 2011-2017;

- Kildare County Development Plan 2011-2017;
- Draft Kildare County Development Plan 2017-2023;
- South Dublin County Development Plan 2010-2016; and
- Draft South Dublin County Development Plan 2016-2022.

### 5.2.2 Future Survey Needs

In order to characterise the existing air quality environments, representative air quality monitoring data from the EPA will be analysed to enable a full and proper impact assessment of the proposed development to be undertaken and to enable suitable mitigation to be designed as needed.

### 5.2.3 Consultation

It is considered that consultation on the air quality impact assessment will be undertaken with the following organisations:

- Environmental Protection Agency (EPA);
- National Parks and Wildlife Service (NPWS);
- The Local Authorities where infrastructure for the abstraction, water treatment plant, break pressure tank and termination point reservoir would be situated as well as the relevant Local Authorities along the proposed pipeline route.

Air quality related comments arising during the consultation phases of the project will also be reviewed and considered within the EIS as relevant.

## 5.3 Potential Impacts

### 5.3.1 Potential Construction Phase Impacts

During the construction phase there is potential for an impact on air quality from the following:

- Potential for construction dust emissions and nuisance dust. This will potentially be caused by activities such as excavation, soil movement, soil storage and backfilling, and would be exacerbated by winds and dry weather. Dust tends to be deposited within 500 metres of the generation site, and therefore sensitive receptors which fall within this distance of construction activities would be most at risk; and
- Emissions from Heavy Goods Vehicles (HGVs) and on site construction plant and equipment which may give rise to emissions including; CO particulates (PM<sub>10</sub> and PM<sub>2.5</sub>), volatile organic compounds (VOCs), nitrogen oxides (NO<sub>x</sub>) and carbon dioxide (CO<sub>2</sub>).

### 5.3.2 Potential Operational Phase Impacts

The main air quality impact is likely to come from operational traffic at the abstraction facility at Parteen Basin, water treatment plant near Parteen Basin, the break pressure tank site location in the Midlands and the termination point reservoir at Peamount Reservoir. These vehicle related air emissions may generate quantities of air pollutants common to vehicle emissions such as NO<sub>2</sub>, VOC's and particulate matter (PM<sub>10</sub>/PM<sub>2.5</sub>). Of these the most pertinent are NO<sub>2</sub> and PM<sub>10</sub> as these have the greatest potential to exceed the air quality standards. The NRA's [now TII] '*Guidelines for the Treatment of Air Quality during the Planning and Construction of National Road Schemes*' states that roads should be assessed for air quality impacts where "significant traffic changes (greater than 10% Annual Average Daily Traffic)" occur. Generally, low levels of operational traffic are expected to be generated during the operational stage and it is predicted that the operation of the proposed development would have no net significant negative impact on sensitive receptors with respect to air quality or climate. However, this will be confirmed in the air quality impact assessment as part of the EIS.

## 5.4 Proposed Methodology & Assessment Scope

It is proposed that an assessment of air quality will be carried out in accordance with the EPA's current EIS guidance documents and the following guidance and established best practice, and will be tailored accordingly based on professional judgement and local circumstance:

- The National Roads Authority document entitled *Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes* (NRA, 2011) [Note now TII].

In line with the above guidance, the assessment will cover potential impacts to air quality and will describe the existing conditions and the likely potential impacts associated with the construction and operation of the proposed development. The impact assessment process will involve:

- Assigning the receptor sensitivity;
- Identifying and characterising the magnitude and significance of any potential impacts;
- Incorporating measures to avoid and mitigate (reduce) these impacts; and
- Assessing the significance of any residual effects after mitigation.

The air quality assessment carried out on the proposed development will include the following elements:

- Review of standards and legislation;
- Identification of air quality issues relevant to the components of the proposed development;
- Review of background ambient air quality in the vicinity of the proposed development (relevant air quality baseline data will be obtained from the EPA);
- Assessment of potential impacts of plant and equipment processes on air quality; and
- Assessment of potential impacts of traffic on ambient air quality.

The assessment will take account of sensitive receptors relevant to the proposed development. Sensitive receptors include locations where people spend significant periods of time, such as domestic properties. Ecological receptors are habitats that might be sensitive to dust. Examples of these sensitive receptors include:

- Residential dwellings;
- Industrial or commercial uses sensitive to dust;
- Recreational areas and sports grounds;
- Schools and other educational establishments;
- Buildings of religious sensitivity;
- Designated ecological area of conservation (either Irish or European designation);
- Hospitals and nursing homes; and
- Offices or Shops.

The complete list of sensitive receptors within the vicinity of the proposed development will become transparent once the final infrastructure sites and preferred treated water pipeline corridor is selected, thus informing the full study area for the EIA. A series of mitigation measures to minimise any foreseen impacts for both the construction phase and operational phase of the project will be proposed as required as part of the EIS.