5. EIA Methodology

5.1 Introduction

This Environmental Impact Statement (EIS) sets out the findings of an Environmental Impact Assessment (EIA) of the likely significant effects associated with the construction and operation of the proposed 100MW OCGT power plant at Purcellsinch, Kilkenny.

5.2 EIA Methodology

5.2.1 Overview

This chapter sets out the framework principles of the methodology that has been applied during the EIA process. The framework methodology that is used is broadly consistent across all chapters and has been adopted and adhered to as much as possible, in order to ensure that the assessment methodology is transparent and can be effectively communicated to, and understood by all stakeholders including the general public.

The general principles set out in this section have been developed to a greater level of detail by each of the environmental specialists in the technical assessments undertaken as part of this EIA. For this reason, more detailed, topic-specific methodologies are outlined in the relevant chapters of this EIS.

The framework methodology used in this EIS comprises the following steps:

- Definition of the study area;
- Methodology for technical assessments;
- Existing environment;
- Identification of potential environmental impacts;
- Definition of mitigation measures to minimise potential impacts; and
- Description and evaluation of residual impacts.

5.2.2 Methodology

All of the data collected as part of the EIA is relevant to the specific study area defined for each individual chapter. The data requirements for each environmental topic have been determined by technical specialists and are driven by relevant legislation, guidelines and policy requirements.

Desktop reviews of existing information have been carried out for all environmental topics. These desktop reviews have been supplemented by specialised field studies and consultation with Kilkenny County Council and, by association, with statutory consultees, as required. The data sources for all information are clearly set out in each individual chapter.

5.2.3 Existing Environment

A 'study area' has been defined in each individual technical assessment. This study area encompasses all locations that may potentially be impacted upon by the proposed power plant. Impacts may occur during the construction phase or the operation phase and may be temporary or permanent. They may also be positive or negative. All types of impact are considered when defining the study area.

The study area for the proposed power plant at Purcellsinch typically encompasses an area of between 100 metres and 500 metres around the site. Depending on the local situation these dimensions may be increased (i.e. distant landscape views or ecological corridors). The dimensions may also be decreased (e.g. in the case of point features such as archaeological features, which will typically only be affected if they are in direct proximity to the scheme).

The study area for each specialist technical assessment is clearly described in each individual chapter of the EIS.

5.2.4 Identification of Potential Environmental Impacts

All specialist technical contributors to this EIS have reviewed the design of the proposed power plant and the information contained in Chapter 3 *Description of the Development* and identified potential impacts based on their experience and expertise. The source and type of all potential impacts is clearly identified for each individual environmental topic in the relevant chapters of the EIS.

The proposed power plant has the potential to impact on the environment during:

- The construction phase; and
- The operational phase.

For this reason, the assessment of the impacts of the development is differentiated into construction and operational impacts. Construction impacts can be of temporary and permanent nature whereas operational impacts will typically tend to be permanent only.

The EIA must identify, describe and assess potential direct and indirect impacts on all environmental topics as set out in Schedule 6 of the *Planning and Development Regulations 2001,* as amended. Furthermore, an EIA must identify, describe and assess the potential for impacts on any one environmental topic to have an effect on other environmental topics due to interaction between the two topics. The potential for many small impacts (from one or more projects) to have a cumulative impact on the environment must also be considered. These types of impacts are known as interactions and cumulative impacts and further detail in this regard is provided in individual chapter and summarised in Chapter 15 *Interactions of the Foregoing*.

In accordance with best EIA practice, the assessment of impacts is conservative, considering a 'reasonable worst case' where there is any degree of uncertainty'. The EIA therefore constitutes a robust and transparent assessment of the *'likely significant environmental effects'* associated with the '*reasonable worst case scenario'*.

5.2.5 Mitigation Measures

Substantial mitigation by avoidance and reduction has been achieved through the consideration of alternative sites and layouts. The manner in which alternative site locations and site layouts were considered is described in Chapter 2 *Justification for the Development.*

In a number of cases, impacts of the proposal could not be completely mitigated through consideration of alternatives during the project design. Additional mitigation measures have therefore been defined during the course of the EIA to mitigate these impacts. Mitigation measures that have been defined for each

environmental topic are set out in the individual chapters of the EIS. These mitigation measures relate to both the construction and operational phases of the project.

The mitigation measures are to be implemented by means of targeted management plans by the detailed design and construction phase project engineers and the associated construction contractors. Such plans may include a Construction Environmental Management Plan (CEMP), a Construction Traffic Management Plan (CTMP) and a Decommissioning and Residuals Management Plan (DRMP) as already identified in this document. All agreed mitigation measures will be incorporated into these management plans. The content of these documents will be agreed with the relevant authorities (i.e. Kilkenny County Council and the Environmental Protection Agency) and regularly reviewed and updated.

5.2.6 Residual Impacts

Any likely significant impacts that continue to exist when the mitigation measures have been put in place are assessed for each individual environmental topic. These residual impacts are identified and the relevant ones are described in detail and assessed (where appropriate) in terms of a combination of magnitude and significance.