

1 Introduction

1.1 Introduction

Bord Na Móna Energy Ltd (BNME) commissioned Mott MacDonald Pettit Limited (MMP) to prepare an Environmental Impact Statement (EIS) and planning application for the proposed construction of a power plant development at Derrygreenagh, County Offaly, (OS Grid Reference: E 249 580 N 238 208). See Figure 1.1 *Site Location*. This chapter is divided into the following sub-sections;

- 1.1 Introduction
 - *Background*
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- 1.3 Outline of the Project
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1.1.1 Background

The proposed power plant will consist of two generating units located on the site at Derrygreenagh. These are a flexible combined cycle gas turbine unit (CCGT) of *c.* 430 MW and a reserve/peaking open cycle gas turbine unit (OCGT) of *c.* 170 MW. The primary fuel source for the CCGT unit will be natural gas with distillate stored onsite as a back up fuel as required by the Commission for Energy Regulation's (CER) Secondary Fuelling Obligation. The OCGT unit will be capable of dual firing, running on either natural gas or distillate. The proposed development will also include all necessary ancillary structures and equipment to allow for the efficient and safe running of the power plant. Further to this, it is proposed that the Bord na Móna's Power Generation business unit headquarters will be located at the site.

The proposed development occupies a total area of 25.4 ha. The site occupies an area of 22.8 ha with the main site occupying an area of 17.5 ha and the adjacent switchyard site on the western side of the R400 roadway, occupying 5.3 ha. The proposed discharge pipeline to the Yellow occupies an area of 2.6 ha. The development site is currently used as a Bord na Móna works site where peat harvesting and transport equipment is serviced and repaired. There is also an office building on the site, which functions as the current headquarters for Bord na Móna Energy.

1.2 Bord na Móna PLC Company Profile

Bord Na Móna Energy (BNME) is a wholly owned subsidiary of Bord na Móna plc (BNM). BNM was created in 1946 under the *Turf Development Act, 1946* with the primary responsibility for developing the peat resources of Ireland in an economic manner. It currently owns ~80,000 ha of peatlands and employs approximately 1,800 people at 30 locations mainly in Ireland, but also in the United Kingdom and the United States. In recognition of the finite nature of the peat resource, BNM has embarked on a strategy of diversification from its core peat based businesses of horticultural products, peat harvesting and peat based fuel supply. In recent years BNM has branched out into new sectors, including electricity generation, heating solutions, resource recovery (waste), water treatment systems and environmental consulting.

Bord na Móna Energy is seeking to position itself as one of the leading power generation companies participating in the wholesale all-island market for electricity, thus contributing to the security, reliability and sustainability of the Irish electricity system. The strategy to deliver this vision is to develop a portfolio of power generation plants, centred on renewables. The renewable portion will include the development of wind farms on suitable areas of cutaway peatlands, and co-fuelling the Edenderry power station with biomass. The balance of the portfolio will consist of complementary flexible thermal generation.

Bord na Móna Energy currently owns and operates the 128 MW peat fired power station close to Edenderry, Co Offaly. Renewable Energy Ireland Ltd, a subsidiary of BNME, is the majority owner, and the operator of a 6.45 MW wind farm in Co. Mayo. BNME has secured planning permission to construct a wind farm of over 300 MW at Oweninny, Co Mayo, which when commissioned would be one of the biggest onshore wind farms in Europe.

BNME recognises the importance of renewable sources of electricity for Ireland as reflected in the proposed portfolio. However the company is also cognisant that renewable electricity supply, with particular reference to wind generated electricity, is inherently intermittent and variable in nature. This means that the provision of a dependable and sustainable electricity supply requires the renewable portfolio to be supported by the provision of flexible electricity generating plant.

As a responsible and environmentally compliant company, one of BNME's primary objectives is to ensure that proposed developments have minimal environmental impact. In this respect a team of leading environmental and engineering professionals were commissioned to undertake the various assessments that comprise this EIS.

1.3 Outline of the Project

As stated above the proposed development comprises a power station consisting of two units, a flexible combined cycle gas turbine unit (CCGT) of c. 430 MW and a reserve/peaking open cycle gas turbine unit (OCGT) of c. 170 MW. CCGT technology is the most efficient method of generating electricity from a thermal primary energy source. In a CCGT unit, a gas turbine generator generates electricity and the waste heat from the gas turbine is used to make steam to generate additional electricity via a Heat Recovery Steam Generator (HRSG) and a steam turbine. This final step enhances the efficiency of the process. A CCGT generator can reach efficiency levels of up to 58%. The efficiency of the proposed CCGT unit means that this type of generator emits the lowest levels of greenhouse gases per unit of electricity generated of any conventional generating plant. The flexible CCGT unit is also capable of varying the power generation across a wide range of power outputs and can turn on and off on a daily basis. This mode of operation allows the unit to complement and thus maximise the electricity generating potential from variable renewable energy sources such as wind.

The proposed OCGT unit consists of a single gas turbine linked to a generator which produces electricity. An OCGT unit is less efficient than the CCGT unit with typical efficiencies in the range 33% - 36%. However the advantage of the OCGT unit is that it can supply electricity in a much shorter timeframe than the larger CCGT unit. The OCGT unit is capable of reaching full output from cold within 20 minutes. This type of plant is also capable of turning on and off multiple times during the day in response to short term peaks and troughs in energy demand and other system requirements.

A typical peaking plant does not generally make a large energy contribution to the system. Rather it provides capacity at those times when generation supply is limited or constrained. This mode of operation is characterised by extended periods of inactivity where the unit is providing contingency reserve, and a few hours per year of actual running when, for example, several unit outages coincide or constraints on the transmission network need to be alleviated.

The proposed development site is in a strategic location in close proximity to the Maynooth - Shannonbridge 220 kV power line, the Oldstreet-Woodland 400 kV power line and also to the 110 kV substation at Derryiron, adjacent to Rhode Peaking Power station, which will allow for a connection to the national grid. Electrical power will be exported from a switchyard within the proposed development site to either one or a combination of these power lines. The final design of the connection, including the route, will depend on optimisation studies carried out by the Transmission System Operator, Eirgrid. Bord na Móna have applied to Eirgrid for grid connections for the two generating units proposed in the development. These applications are being processed as part of the 'Gate 3' process of group connection application processing. The initial phase of this process has deemed that the connections to the site will be via a new 400 kV node at the site in Derrygreenagh, although it will be at least the end of 2009 before it is known when the details of a connection will be available. A more detailed description of the grid connection procedure, and the Gate 3 process is given in Section 2.5.1 *Connection to the National Grid*.

Natural gas, supplied from the Bord Gáis Networks (BGN) pipeline, will be the primary fuel source for the facility. To comply with Commission for Energy Regulation's (CER) Secondary Fuelling Obligation, distillate will be used as a backup fuel in the event of interruption to the natural gas supply. Five days running capacity of distillate will be stored on site for the CCGT unit and a further three days running capacity for the OCGT unit. This equates to approximately 8,100 m³ and 3,600 m³ respectively. The total storage capacity on the site will amount to 15,000 m³ which will be contained within a 110% capacity bund. The distillate will be limited to 0.1% sulphur content as per the requirements of *EU Directive 1999/32/EC, (relating to a reduction in the sulphur content of certain liquid fuels)*.

The development will include primary power generating plant for the CCGT unit comprising:

- Gas Turbine Generator (GTG).
- Heat Recovery Steam Generator (HRSG) with exhaust stack.
- Steam Turbine Generator (STG).
- Air Cooled Condenser (ACC).

And for the OCGT unit:

- Gas Turbine Generator (GTG).

Ancillary services will include a fire pump house, water treatment plant, process water discharge pit, stormwater attenuation tank, distillate storage tanks, bulk chemical storage tanks, water storage tanks, an above ground natural gas installation, an electrical switchyard, minor ancillary buildings and a proprietary foul water treatment system. Site buildings and works will include an administration building, a workshops and stores, landscaping, fencing, car parks and access roads.

In addition, the proposed facility will require the following associated developments:

- Construction of an underground pipeline connection by BGN, from the existing East-West gas supply line to the above ground installation (AGI) to be constructed on the site. BGN will be responsible for the construction of the pipeline, and the associated routing.
- Connection from the electricity substation on the site to the local high voltage transmission network, as determined by EirGrid.
- Construction of a maximum eight inch underground pipeline connection to a discharge point on the Yellow River for discharge of waste water.

Pending planning approval the construction phase is expected to commence in 2011. The proposed development is scheduled to be fully operational by 2014.

A detailed description of the site, neighbouring land uses and the proposed development is provided in Chapter 3 *Description of the Development*.

1.4 Statutory Requirements

An EIS may be broadly defined as:

“A statement of the effects, if any, which a proposed development if carried out, would have on the environment”

The *European Communities (Environmental Impact Assessment) Regulations, 1989-2006* and the *Planning and Development Regulations 2001-2008* bring EC Directive 85/337/EEC, as amended by Directives 97/11 and Article 3 of 2003/35/EC, (commonly known as the Environmental Impact Assessment Directive) into effect.

1.4.1 Strategic Infrastructure

Following consultation with An Bord Pleanála it has been determined that the proposed development satisfies the conditions set out in Sections 37A (2) (a) and (b) of the *Planning and Development Act, 2000* as inserted by the *Planning and Development (Strategic Infrastructure) Act, 2006* for a Seventh Schedule development as described in the *Planning and Development Act, 2000* as so amended:

“A thermal power station or other combustion installation with a total energy output of 300 megawatts or more”.

The strategic infrastructure provisions of the *Planning and Development (Strategic Infrastructure) Act 2006* came into effect on 1st January 2007. The Act, which amends the *Planning and Development Act 2000*, requires that planning applications for certain developments are made directly to An Bord Pleanála. Part 18 of the *Planning and Development Regulations 2006 (S.I. No. 685 of 2006)* relating to strategic infrastructure development also came into effect on 31st January 2007. The 2006 Regulations amend the *Planning and Development Regulations 2001*.

The Seventh Schedule to the *Planning and Development Act, 2000* as inserted by the *Planning and Development (Strategic Infrastructure) Act, 2006* lists the classes of infrastructure development which, if considered by the Board to be strategic infrastructure development, would require direct application for permission to the Board instead of the local planning authority. These generally relate to major energy, transport and environmental infrastructure projects. The statutory provisions provide for up to three stages – pre-application consultations, scoping of the EIS, and the application for permission.

To qualify as strategic infrastructure development the Board must be satisfied that the proposed development, if carried out, would fall within one or more of the following categories namely:

- (a) *“the development would be of strategic economic or social importance to the State or the region in which it would be situated,*
- (b) *the development would contribute substantially to the fulfilment of any of the objectives of the National Spatial Strategy or any regional planning guidelines in respect of the area or areas in which the development would be situate, or*
- (c) *the development would have a significant effect on the area of more than one planning authority.”*

It is a mandatory requirement for a prospective applicant for planning permission for strategic infrastructure development listed in the 7th Schedule to enter into pre-application consultations with the Board and obtain notice from the Board stating whether or not the proposed development is regarded as strategic infrastructure development. Pre-application consultations were held with An Bord Pleanála on July 28th 2008 and November 6th 2008.

As the Board has given written notice to Bord na Móna, subsequent to mandatory pre-application consultations, that the development is Strategic Infrastructure, the application will be made directly to the Board and not to the local planning authority.

The application procedure differs in that the application will be made direct to the Board with copies of the application sent to the relevant local planning authority(s). As the development site is close to the border of County Westmeath, a copy of the application will be sent to both Offaly and Westmeath Planning Authorities. The development is in the area of the Offaly Planning Authority.

There is a requirement for the planning authority for the area to prepare and submit a report to the Board within ten weeks of receipt of the application by the Board. The report will set out the views of the authority on the effects of the proposed development on the environment and/or the proper planning and sustainable development of the area, having regard to the usual considerations as set out in Section 34(2) of the Planning and Development Act 2000 as amended by the Protection of the Environment Act, 2003 and the Planning and Development Act, 2006..

A copy of the letter from An Bord Pleanála indicating that the development comes under the remit of the Strategic Infrastructure Act is included in Appendix 1A *Letter from An Bord Pleanála*.

1.5 Environmental Impact Statement Methodology

The primary objective of the Environmental Impact Statement (EIS) is to identify baseline environmental and socio-economic conditions in the area of the proposed development. It also seeks to predict potential beneficial and/or significant effects, and to propose mitigation measures where considered necessary.

This EIS has been prepared in accordance with all relevant legislation, guidance and advice notes including:

- Guidelines on the Information to be Contained in Environmental Impact Statements, March 2002 (derived from the European Communities (Environmental Impact Assessment) Regulations 1989 to 2006 which give effect to the European Directives 85/337/EEC and 97/11/EC).
- Advice Notes on Current Practice (in the preparation of Environmental Impact Statements), November 2003.
- The requirements of EC Directives and Irish Regulations regarding Environmental Impact Assessments.
- Current Local, County, Regional and National Development Plans.

Information on the project and the receiving environment was obtained through a number of means including;

- Site visits;
- Field surveys;
- Review of existing data for the environs of the proposed development site;

- Review of existing studies carried out in the Derrygreenagh area;
- Meetings and discussions with Offaly County Council representatives; and
- Consultation with statutory bodies and interested parties.

Preliminary studies identified the Technical Scope (range of aspects) of the EIS taking both spatial (geographical) and temporal (time) factors into account. Site surveys and modelling exercises were then carried out to identify the predicted impacts arising from the proposed development. Each impact was then evaluated in turn and assessments made regarding the required mitigation measures, if any.

1.6 Environmental Impact Statement Format

This EIS has been prepared according to the ‘Grouped Format Structure’ as outlined in the EPA’s ‘*Guidelines on the Information to be Contained in Environmental Impact Statements*’. The EIS is divided into three main volumes:

- Volume I Non Technical Summary
- Volume II Environmental Impact Statement
- Volume III Appendices

Volume II is divided into thirteen chapters with chapters four to thirteen addressing the topics as set out in the Second Schedule of the *European Communities (Environmental Impact Assessment) Regulations, 1999 (S.I. No. 93 of 1999)* as follows;

- Human Beings
Human Beings and Material Assets (Chapter 4)
- Flora and Fauna
Flora and Fauna (Chapter 5)
- Water
Water Quality (Chapter 6)
- Soils
Soils, Geology and Hydrogeology (Chapter 7)
- Air Quality and Climatic Factors
Air Quality and Climate (Chapter 8)
- Noise and Vibration
Noise and Vibration (Chapter 9)

- Landscape

Landscape and Visual Assessment (Chapter 10)

- Material Assets (including Architectural, Archaeological and Cultural Heritage)

Cultural Heritage (Chapter 12)

- Interrelationships

Interactions of the Foregoing (Chapter 13)

Roads and traffic issues are addressed in Chapter 11 *Roads and Traffic*.

Within each chapter, individual topics are assessed with reference to the existing environment, the proposed development, likely and significant impacts and, where appropriate, mitigation measures. Where relevant the inter-relationship between the above factors is addressed within each section or included in Chapter 13 *Interaction of the Foregoing*.

A Non Technical Summary has been prepared to accompany the EIS and is included as a separate document. This document is Volume I – Non Technical Summary.

1.7 Scoping and Consultation

1.7.1 EIS Scoping

In order to identify the issues that needed to be addressed in the EIS a scoping exercise was undertaken which included the following;

- Site reconnaissance.
- Written consultation with Statutory Consultees.
- Public consultation.
- Consultation with Offaly County Council.
- Consultation with Eastern Regional Fisheries Board.
- Consultation with the Environmental Protection Agency.
- Pre-application consultation with An Bord Pleanála.

1.7.2 Consultation

(i) Statutory Bodies and Other Organisations

Various statutory bodies and other organisations were consulted regarding the proposed development. The consultation letter and scoping report that was circulated to these consultees is included in Appendix 1B *Consultation Letter* and a list of all consultees is appended as Appendix 1C *List of Consultees*.

Submissions regarding the development and the scope of the environmental impact assessments were received from a number of relevant statutory bodies and other organisations as detailed in Table 1.1 *Submissions Received* below.

Table 1.1: Submissions Received

| Respondent | Issue | Relevant Chapters |
|--|---|---|
| An Taisce | <p>They specified the following issues to be addressed:</p> <ul style="list-style-type: none"> - The proposal must be considered in conjunction with the National Greenhouse Gas Reduction and Sustainable Energy Strategy; - Concerns were expressed regarding the development of large scale, base load CCGT plants around the country; - Concerns were expressed regarding the OCGT unit and its use as a back up to wind energy ;and - Concerns that there is insufficient distinction provided between the rationale for a 400 - 450 MW CCGT unit on this site and a 170 MW OCGT unit. | <p>Chapter 8</p> <p>Chapter 2</p> <p>Chapter 2</p> <p>Chapter 2</p> |
| Department of Environment, Heritage and Local Government | <p>The Department of Environment, Heritage and Local Government made a number of recommendations in relation to archaeological and architectural heritage;</p> <ul style="list-style-type: none"> - It was recommended that pre-development testing be carried out should the cultural heritage assessment conclude that there are no known archaeological remains on site; - It was recommended that a suitably qualified archaeologist carry out the archaeological assessment of the development site and carry out any relevant documentary research and inspect the site; - It was recommended that the | <p>Chapter 12</p> <p>Chapter 12</p> |

| Respondent | Issue | Relevant Chapters |
|--|--|--|
| | <p>Environmental Impact Statement should take into account the effect of the proposal on the architectural heritage of the locality;</p> <ul style="list-style-type: none"> - It was recommended that the assessment of structures deemed to be of architectural merit be carried out by a suitably qualified person; - It was also recommended that the County Conservation Officer be contacted regarding the proposed development; and - It was recommended that the Advice Notes - Scoping for Environmental Impact Assessment in relation to Architectural Heritage be considered in the Cultural Assessment. | <p>Chapter 12</p> <p>Chapter 12</p> <p>Chapter 5</p> <p>Chapter 12</p> |
| Heritage Office, Offaly County Council | The Heritage Officer in Offaly County Council advised that there is an area rich in possible prehistoric archaeological remains within 80m of the development site to the south-east and there is potential that archaeology will be found associated with the development site. | Chapter 12 |
| Eircom | Eircom stated that the proposed development did not interfere with the Eircom Radio Network. However, they advised that all other radio equipment operators, both fixed line and mobile, should be contacted, in order to get their approval. | Refer to Appendix 1C List of Consultees |
| Geological Survey of Ireland | <p>The Geological Survey of Ireland advised that there are no geological heritage sites within the study area. They also requested any reports of site investigations carried out and notification of any ground excavations. They made a number of other recommendations and comments;</p> <p>The GSI stated that they do not make observations on specific Environmental Reports;</p> <ul style="list-style-type: none"> - It was recommended that a number of Groundwater datasets are taken into consideration including; the Generalised Bedrock Map, the Bedrock Aquifer Map, the Gravel Aquifer Map, the Interim Vulnerability Map and the Source Protection Areas Map. Other datasets that were recommended for consideration include; Groundwater Delineation and Descriptions, Wells Database, Karst Features Database and Karst Tracer – Tests Database - The following reports were also recommended for review; Groundwater Protection Scheme (GWPS) Reports, Source Protection | <p>Chapter 7</p> <p>Chapter 7</p> |

| Respondent | Issue | Relevant Chapters |
|--|---|---|
| | <p>Reports and Various Historic Reports.</p> | |
| <p>Eastern Regional Fisheries Board</p> | <p>The following issues were raised regarding the proposed development;</p> <ul style="list-style-type: none"> - It was advised that a water cooled system should not be used due to the fact that water requirements of such a system would be too large; - The Mongagh River , the Yellow River, Milltownpass River and Rochfortbridge Stream were all highlighted as important salmonid streams; | <p>Chapter 2, Chapter 6</p> |
| <p>National Parks and Wildlife Service</p> | <p>The NPWS advised that they have not conducted a winter hen harrier survey this year in the Derrygreenagh area. It was advised to note in the EIS that there is anecdotal information that hen harriers have been seen in the area and that they are most probably migratory birds which fly through the area.</p> | <p>Chapter 5</p> |
| <p>Planning Department, Westmeath County Council</p> | <p>Consultations with the Planning Department of Westmeath County Council yielded the following recommendations and comments;</p> <ul style="list-style-type: none"> - The EIS should determine whether the surrounding road infrastructure will have the capacity to assimilate the traffic generated by the proposed development; - A Traffic Impact Assessment of the proposed development should be undertaken; - Traffic volumes for the development during construction and operation should be considered; - Routes of vehicles to and from the site should be considered; - The level of traffic generated should be determined including the number of employees, customer and visitor traffic, details of employees shifts and times and duration of occupation; - Possible mitigation / alternative measures including development contributions, if necessary, should be explored; - Likely significant impacts on the | <p>Chapter 11 Chapter 11 Chapter 11 Chapter 11 Chapter 11</p> |

| Respondent | Issue | Relevant Chapters |
|---|---|--|
| | <p>local environment; human beings, soil, water, climate, landscape and material assets should be considered; and</p> <ul style="list-style-type: none"> - An outline of the alternatives considered should be provided and an indication of the main reasons for the location and process proposed taking account of environmental effects. | <p>Chapter 4, Chapter 7, Chapter 6, Chapter 8, Chapter 10</p> <p>Chapter 2</p> |
| <p>Planning Department, Offaly County Council</p> | <p>The Planning Department of Offaly County Council made the following comments and recommendations;</p> <ul style="list-style-type: none"> - It was queried whether the proposed development would qualify as a Seveso site and the environmental impacts this may represent; - There may be a security threat given the large amounts of explosive material on site; - There is a concern regarding the fire safety implications of the proposed development; - The safety/capacity impacts of construction traffic on the nearby motorway and motorway junction and the cumulative traffic impacts of existing and permitted developments in the vicinity; - Implications for upgrading of public roadways given levels of construction traffic proposed; - The effect on views on Croghan Hill, an Area of High Amenity; - It was stated that the site is a High Sensitivity Area in the draft Offaly County Development Plan 2009-2015; - A concern was expressed regarding the amounts of water required for the proposed development and the sources of this water; and - The proposed methods of connection of gas pipes and electricity to the site and potential impacts on the bog/other landscapes should be addressed in the EIS. | <p>Chapter 3</p> <p>Chapter 3</p> <p>Chapter 3</p> <p>Chapter 11</p> <p>Chapter 11</p> <p>Chapter 10</p> <p>Chapter 10</p> <p>Chapter 2, Chapter 6,</p> <p>Chapter 2</p> |
| <p>Vincent Wildlife Trust</p> | <p>It was recommended that a detailed bat survey be</p> | |

| Respondent | Issue | Relevant Chapters |
|---|---|--|
| | undertaken prior to any works and that any mitigation measures proposed are adopted. | Chapter 5 |
| Water Services, Offaly County Council | <p>The following comments and recommendations were made by the Water Services Department in Offaly County Council;</p> <ul style="list-style-type: none"> - Offaly County Council advised that they would not be in a position to provide water from the public water supply in Rhode; and - They also advised that there is no Group Water Scheme in the area. | <p>Chapter 3, Chapter 7</p> <p>Chapter 3, Chapter 7</p> |
| National Roads Authorities Regional Design Office | <p>The National Roads Authorities Regional Design Office made the following comments;</p> <ul style="list-style-type: none"> - The structural integrity of the Regional R400 Road from the M6 interchange to the Westmeath Offaly County boundary is considered vulnerable. This is a bog rampart rising 3 to 4m over peat sub-grade, requiring continuous repairs and maintenance. For this reason, a Structural Survey and Analysis will be required to assess the impact this development will have on this road. | Chapter 11 |
| National Roads Authority | <p>The National Roads Authority made the following recommendations in relation to the proposed development;</p> <ul style="list-style-type: none"> - Consultations should be had with the relevant Local Authority / National Roads Design Office; - The EIS should consider the proximity of the proposed development to the existing M6; - Visual impacts from the existing national road should be assessed; - Regard should be had to any EIS and all conditions and/or modifications imposed by An Bord Pleanala regarding road schemes in the area and any potential cumulative impacts; - The NRA Design Manual for Roads and Bridges and the NRA Manual of Contract Documents for Road Works should be considered; - The NRA's Environmental and Construction Guidelines should be considered including <i>Guidelines for the Treatment of Air Quality during</i> | <p>Appendix 1B, 1C and 1D</p> <p>Chapter 11</p> <p>Chapter 10</p> <p>Chapter 11</p> <p>Chapter 11</p> <p>Chapter 8</p> |

| Respondent | Issue | Relevant Chapters |
|------------|--|--|
| | <p><i>the Planning and Construction of National Road Scheme;</i></p> <ul style="list-style-type: none"> - A Traffic Impact Assessment should be carried out; - Determine whether a Road Safety Audit is required in accordance with the NRA's <i>Road Safety Audit Guidelines</i>; and - The EIS should consider the Environmental Noise Regulations 2006 and if noise barriers should be incorporated. | <p>Chapter 11</p> <p>Chapter 11</p> <p>Chapter 9</p> |

Submissions and comments received from statutory bodies and interested parties were considered throughout the design phase of the power plant development and preparation of the EIS, written responses are included in Appendix 1D *Consultation Responses*.

(ii) Public Consultation

Two public consultation events were held in order to inform the local population of the proposed development at Derrygreenagh. These public consultations were undertaken at the two closest population centres to the proposed development site as follows;

- Rhode on October 22nd 2008.
- Rochfortbridge on October 23rd 2008

The Public Consultation Brochure is appended to Appendix 1E *Public Consultation Brochure*. In order to keep the public informed of progress on the development of this project a page on the Bord na Móna website was created which will be kept updated during the entire duration of this project from pre-planning consultation up to the commissioning of the plant.

1.8 Sub-Consultants Engaged

The following sub-consultants were engaged in the preparation of this EIS;

- ERM (Environmental Resources Management Ireland Ltd)
Noise and Vibration/ Landscape and Visual Impact Assessment
- Awn Consulting
Air Quality and Climate
- Ecofact Ltd
Ecology
- ADS Archaeology
Archaeology, Architecture and Cultural Heritage

- DBFL Ltd
Road Safety Audit
- Glover Site Investigations Ltd
Preliminary Ground Investigation
- Pavement Management Services Ltd
Pavement Integrity testing

1.9 Key Challenges Encountered

During the environmental impact assessment process a number of challenges were encountered regarding available water supply, suitable water discharge locations, noise shielding and cooling requirements.

Water Supply

A full assessment was undertaken of the possible sources of water for the operation of the power plant development. An assessment of the nearby surface water resources, the Yellow and Mongagh Rivers, determined that there was not sufficient flow within these watercourses to allow for the extraction of the required quantities of water without negatively impacting on the integrity of each stream. Both Offaly Co. Co. and Westmeath Co. Co. were approached in regard to the potential for sources of water arising from local water supply schemes. Neither local authority had sufficient water capacity from their current water supply schemes to allow for the required quantity of water to be supplied from these sources. Finally a detailed geotechnical and hydrogeological assessment was undertaken at the site which included an assessment of the groundwater resource in the locality. This assessment detailed that there was sufficient water resources at the site to allow for the extraction of water from the groundwater reserve without having a significant impact on the ground water resource or on surrounding wells and rivers. Full details of this assessment are given in Chapter 7 *Soils Geology and Hydrogeology*.

Noise

Following identification of the nearest sensitive receptor it was decided that the loudest components, the Turbine Hall & Air Cooled Condenser (ACC), would be located as far within the site as possible in order to minimise the impacts of noise. In particular, the power train was oriented so that the ACC was located on the site as far from sensitive receptors as possible. Full details of this issue are given in Chapter 9 *Noise and Vibration*.

Cooling

Due to the site being inland with no proximity to a suitable watercourse or large water body, it was decided to use a method of cooling which required the minimum amount of water. Therefore an Air Cooled Condenser (ACC) was selected rather than a wet or hybrid cooling tower. While the ACC has a higher profile than alternative options, it consumes no water and does not give rise to a visible water vapour plume.