S.37
File With _____

SECTION 131 FORM

Appeal No: PL 04.245824 Defer Re O/H ☐

To. SEO _____

Having considered the contents of the submission ~~dated~~/received 07/01/16 from applicant I recommend that section 131 of the Planning and Development Act, 2000 ~~be~~/not be invoked at this stage for the following reason(s): No new material issues

EO: Rob Forde Date: 13/01/16

To EO: Mr Forde

Section 131 not to be invoked at this stage ☐

Section 131 to be invoked - allow ~~2~~ 3 weeks for reply ☑

SEO: _____ Date: 13/1/16

SAO: _____ Date: _____

M R Sutton

Please prepare BP 70 Section 131 notice enclosing a copy of the attached submission to: PA + Cohalan + Hanley

Allow ~~2/3~~/4 weeks BP 3 weeks

EO: Rob Forde Date: 18/01/16

AA: _____ Date: 19/01/16

CORRESPONDENCE FORM

Appeal No: PL 245824

M R Sutton

Please treat correspondence received on 7/01/16 as follows:

1. Update database with new agent for Applicant/Appellant _____

2. Acknowledge with BP 20

3. Keep copy of Board's Letter ☐

1. RETURN TO SENDER with BP _____

2. Keep Envelope: ☐

3. Keep Copy of Board's letter ☐

Amendments/Comments

4. Attach to file

(a) R/S ☐

(b) Mapping ☐

(c) Proce sshg ☑

(d) Screening ☐

(e) Inspectorate ☐

RETURN TO EO ☐

	Plans Date Stamped ☐ Date Stamped Filled in ☐
EO: Rob Forde	AA: [signature]
Date: 08/01/16	Date: 13/01/16

Rob Forde

From: procbordemail
Sent: 07 January 2016 15:53
To: Rob Forde
Subject: FW: Response to Third Party Appeal - Planning Reference PL04.245824
Attachments: P0067_RPTRpt001-1.pdf

From: Bord
Sent: 07 January 2016 15:36
To: procbordemail
Subject: FW: Response to Third Party Appeal - Planning Reference PL04.245824

From: Clodagh O'Donovan [mailto:clodagh.odonovan@ftco.ie]
Sent: 07 January 2016 14:00
To: Bord
Cc: William O'Connor
Subject: re: Response to Third Party Appeal - Planning Reference PL04.245824

To whom it may concern

Please find attached a response by the applicant to a third party appeal by Barna Wind Action Group, represented by Noonan Linehan Carroll Coffey Solicitors, to the proposed Barnadivane Wind Farm (ABP planning reference PL04.245824, CCC planning reference 14/6760).

Should you have any queries, please do not hesitate to contact the undersigned.

I would also be obliged if receipt of this appeal response could be acknowledged.

Kind regards

Clodagh

Clodagh O'Donovan
Director
Fehily Timoney & Company | Core House | Pouladuff Road |Cork | Ireland

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Skype: Clodagh.ODonovan

BARNADIVANE WIND FARM, CO. CORK, (CORK COUNTY COUNCIL PLANNING REF. 14/6760) – RESPONSE TO THIRD PARTY APPEAL MADE TO AN BORD PLEANÁLA BY BARNA WIND ACTION GROUP

BARNA WIND ENERGY (B.W.E.) LTD.

JANUARY 2016

FEHILY TIMONEY & COMPANY

BARNADIVANE WIND FARM, CO. CORK, (CORK COUNTY COUNCIL PLANNING REF. 14/6760) – RESPONSE TO THIRD PARTY APPEAL MADE TO AN BORD PLEANÁLA BY BARNA WIND ACTION GROUP

User is Responsible for Checking the Revision Status of this Document

Rev. No.	Description of Changes	Prepared by	Checked by	Approved by	Date
0	Issue for Client Review	AMC/MG	COD	COD	18.12.2015
1	Issue to Client	AMC/MG	COD	COD	06.01.2016

Client: Barna Wind Energy (B.W.E.) Ltd.

Keywords: Barnadivane Wind Farm, planning, appeal

Abstract: Cork County Council issued a Notification of a Decision to Grant Permission to Barna Wind Energy Ltd. (CCC planning ref 14/6760) in connection with the development of a proposed 6 no. turbine wind farm (with a maximum tip height of 131 m), and associated infrastructure at Lackareagh and Garranereagh, Lissarda and Barnadivane (Kneeves), Teerelton, Co. Cork. This decision by Cork County Council has been appealed to An Bord Pleanála by third parties. This document comprises the applicant's response to the third party appeal by Noonan, Linehan, Carroll, Coffey Solicitors on behalf of Barna Wind Action Group against this decision.

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1 INTRODUCTION

1.1 Proposed Wind Farm Development

On 19 December 2014, Barna Wind Energy (BWE) Ltd. submitted a planning application (planning ref. 14/6760) to Cork County Council (CCC) for the development of a wind farm consisting of 6 no. wind turbines (with a maximum tip height of 131 m), and associated turbine foundations and hardstanding areas, 1 no. 90 m high permanent meteorological mast, construction of approximately 1.96 km of new internal site tracks, upgrade of approximately 2.34 km of existing tracks and road, new access junction and improvements to the public road to facilitate turbine delivery, drainage infrastructure, 1 no. borrow pit, underground electrical and communications cables linking the turbines and the substation/control building, permanent signage and all related site works and ancillary development at Lackareagh and Garranereagh, Lissarda and Barnadivane (Kneeves), Teerelton, Co. Cork.

This application was to replace an existing planning permission for a wind farm at this site. The permitted development comprises 14 turbines with a tip height of 105 m, a meteorological mast, a 110 kV substation and switching station and all associated access roads, handstands, drainage, cabling and ancillary infrastructure. The relevant planning references for this permitted development are CCC planning ref. 05/5597, An Bord Pleanála (ABP) reference 04.219620 and CCC planning ref. 11/06605 (for extension of duration of permission). The existing planning permission is valid until December 2016.

The proposed Barnadivane Wind Farm development reduces the number of turbines from 14 to 6, with a corresponding reduction in the length of access roads, hardstands and ancillary infrastructure. If the proposed development were not to proceed, the wind farm development granted by both CCC and ABP would be constructed at this site. In addition, the opportunity to capture an equivalent energy yield in a more efficient and environmentally sensitive manner, in comparison to the permitted wind farm, would be lost, as would the opportunity to use the best available technology.

The applicant engaged in pre-application consultation with CCC and other relevant stakeholders, in order to inform and scope the environmental impact appraisal for the proposed wind farm development at Barnadivane.

An Environmental Impact Statement (EIS) was prepared for the proposed development in accordance with Schedule 6 of the Planning and Development Regulations 2001, as amended, which sets out the contents of an EIS. In addition, in the preparation of this EIS, the contents of Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment were also considered (the 2014 EIA Directive). An Appropriate Assessment (AA) Screening Report was prepared, in accordance with the EU Habitats Directive (92/43/EEC) in order to evaluate the potential impacts of the proposed development on Natura 2000 sites.

Following the planning application submitted by B.W.E. Ltd. for the proposed Barnadivane Wind Farm on 19 December 2014, a Further Information Request (RFI) was issued by CCC on 20 February 2015. Further information was requested in relation to Zones of Theoretical Visibility (ZTVs), photomontages, turbine infrastructure and dimensions, the grid connection, wind take, ecology, noise and vibration and traffic and transport. A Response to the RFI was submitted on 26 May 2015 by the applicant. A clarification to the RFI (CFI) was issued by CCC on 28 July 2015 and additional further information was submitted on 10 September 2015.

On 03 November 2015, CCC granted planning permission for the development, subject to planning conditions, stating that:

Having regard to the development plan objectives for the area and the pattern of development in this rural area, it is considered that subject to compliance with conditions attached in the Second Schedule, the proposed development would not seriously injure the amenities of the area and would not be prejudicial to public health and, therefore, would be in accordance with the proper planning and sustainable development of the area.

1.2 Additional Planning Applications

In addition to the wind farm planning application, a separate application was submitted (under Arran Wind Farm Ltd. which forms part of a larger group of companies controlled by Enerco Energy Ltd.) seeking permission for a new grid connection substation to replace the consented substation, in order to meet current Eirgrid standards. A separate planning application has been submitted for this proposed substation (planning ref. 14/557 and ABP ref. 04.244439).

Further a separate planning application was lodged by Barna Wind Energy (B.W.E.) Ltd. (and subsequently granted permission) for the development of a private roadway, approximately 150 metres long, from the R585 to the L6008, in Bengour West, Newcestown, Co. Cork (planning reference 14/06803). This development is to facilitate delivery of the turbine components to the wind farm site.

The reasons for the separate planning applications, along with detailed information in respect of potential cumulative impacts associated with these developments and other potential developments in the vicinity, have all been discussed in detail in the wind farm planning application (14/06760), the response to the request for further information (RFI) from Cork County Council (May 2015) and the response to the clarification request (CFI) from Cork County Council (September 2015). The board is therefore referred to the significant detail provided therein, in this respect.

1.3 3rd Party Appeals

Following the decision by CCC to grant permission, a third party appeal was lodged with ABP on 30 November 2015 by Noonan Linehan Carroll Coffey, Solicitors, on behalf of Denis Buckley and others known as the Barna Wind Action Group.

This appeal was made on various grounds, namely:

- The original Observations submitted on 02 February 2015 by Noonan Linehan Carroll Coffey Solicitors on behalf of their clients to Cork County Council,
- The further Observations submitted on 09 July 2015 in response to Cork County Council's RFI,
- A submission by Michael O'Donovan of Barna Wind Action Group.

In addition, Noonan Linehan Carroll Coffey Solicitors also refer to extensive local opposition to the project, conflicting policies (favouring renewable policies over national and regional policies) and issues relating to large wind turbines.

This document sets out the response of the applicant to the grounds of the third party appeal being made to ABP seeking the decision of Cork County Council to be overturned and for permission to be refused for this proposed development.

It should be noted that a separate third party appeal has also been lodged by Jerome Coholan and Geraldine Hanley in respect of this application. A response to this appeal has been lodged by the applicant, under separate cover.

2 BACKGROUND TO THE PROPOSED DEVELOPMENT

The aim of this section is to provide ABP with a summary of the main elements of the proposed project.

2.1 Policy and Legislative Context

The proposed wind farm is considered to be in accordance with Global, European, national and regional policy and legislation as set out below. This was detailed in the EIS (Chapter 3) which accompanied the planning application.

2.1.1 Global Policy

Under the Kyoto Protocol, Ireland has a legally binding target to limit greenhouse gas emissions to 13% above 1990 levels. This is to be achieved in the period 2008 – 2012. Countries not fulfilling their obligations will be forced to purchase carbon credits from compliant countries. The EPA's most recent publication (May 2014), states that current projections indicate that Ireland is not on a pathway to a low carbon economy. Total national greenhouse gas emissions are projected to, at best, decrease by an average of 0.4% per annum up to 2020 if all national policies are implemented and delivered. Furthermore, emissions are projected to increase between 2020 and 2030 (12% in total), with transport a key contributor to this trend, in the absence of additional policies and measures.

2.1.2 EU Directives and Policies

An EU Directive on the 'Promotion of the Use of Energy from Renewable Sources'[1] establishes the rules for achieving 20% of European Union (EU) energy consumption from renewable sources by 2020 and a 20% cut in greenhouse gas emissions by 2020, known as the 20:20:20 plan. Ireland's national overall EU target for the share of energy from renewable sources in gross final consumption of energy in 2020 is 16%. This was increased from the 2005[2] target of 3.1%.

2.1.3 Irish Energy & Environmental Policies

National energy and environmental policy guidance makes specific reference to the development of renewable energy projects in the following:

- National Spatial Strategy (2002-2020)
- Green Paper – Towards a sustainable Energy Future for Ireland (2006)
- White Paper – Ireland's Transition to a Low Carbon Energy Future 2015-2030
- National Renewable Energy Action Plan
- Strategy for Renewable Energy 2012-2020
- Renewable Energy Feed in Tariff (REFIT)
- Green Paper on Energy Policy in Ireland (2014)
- National Climate Change Strategy 2007-2012
- Ireland's Greenhouse Emission Projections 2013-2030
- Mid-West Regional Planning Guidelines 2010-2022
- Regional Planning Guidelines for the South West Area (2010–2022)

[1] Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directive 2001/77/EC and 2003/30EC
[2] Proposal for a Directive of the European Parliament and of the Council on the Promotion of the Use of Energy from Renewable Sources, 2008/0016 (COD), Council of the European Union, Brussels, December 2008

The Irish power system is undergoing its most significant change in the last 50 years. From less than 1% in the year 2000, Ireland's own renewable target to supply 40%[3] of all electricity to consumers by 2020, is in line with and supersedes government and EU targets which aim to achieve 20% of all energy from renewable sources by 2020. It is estimated that wind energy will provide up to 90% of the renewable energy required to meet this target.

Ireland has doubled the connected renewable generating capacity over the past three years and according to the Irish Wind Energy Association, the Republic of Ireland's total installed wind energy capacity is 2,911 megawatts generated from over 188 wind energy developments in 23 counties[4]. The most recent Government White Paper sets out an ambitious vision for Ireland in which greenhouse gas emissions from the energy sector will be reduced by 80-90% compared with 1990 levels, by 2050 and will fall to zero or below by 2100. The White Paper also states that in order to achieve the 2020 target of 40%, a total of 3,500-4,000 MW of onshore renewables generation capacity is likely to be required. This will require an increase in the average rate of build of onshore wind generation to up to 260 MW per year (compared with the current 170 MW per year).

2.1.4 Cork County Development Plan 2014

The current Cork County Development Plan adopted in December 2014 specifically details objectives relating to 'Onshore Wind Energy' under Section 9.3 of Volume One: Main Policy Material. The objectives are presented in Table 2.1.

Table 2-1: Cork County Development Plan Objectives Relating to On-shore Wind Energy

On-shore Wind Energy Objective	Description
County Development Plan Objective ED 3-1 National Wind Energy Guidelines	Development of on-shore wind shall be designed and developed in line with the 'Planning Guidelines for Wind Farm Development' 2006 issued by DoELG and any updates of these guidelines.
County Development Plan Objective ED 3-2 Wind Energy Projects	On-shore wind energy projects should focus on areas considered 'Acceptable in Principle' and Areas 'Open to Consideration' and generally avoid "Normally Discouraged" areas in this Plan.
County Development Plan Objective ED 3-3 Wind Energy Generation	Support a plan led approach to wind energy development in County Cork and identify areas for wind energy development. The aim in identifying these areas is to ensure that there are no significant environmental constraints, which could be foreseen to arise in advance of the planning process.
County Development Plan Objective ED 3-4 Acceptable In Principle	Commercial wind energy development is normally encouraged in these areas subject to protection of residential amenity particularly in respect of noise, shadow flicker, visual impact and the requirements of the Habitats, Birds, Water Framework, Floods and EIA Directives.'
County Development Plan Objective ED 3-5 Open to Consideration	Commercial wind energy development is open to consideration in these areas where proposals can avoid adverse impacts on: • Residential amenity particularly in respect of noise, shadow flicker and visual impact; • Urban areas and Metropolitan/Town Green Belts; • Natura 2000 Sites (SPA and SAC), Natural Heritage Areas (NHA's) or adjoining areas affecting their integrity. • Architectural and archaeological heritage;

[3] Budget 2009
[4] Irish Wind Energy Association, http://www.iwea.com/windfarmsinireland updated May 2015.

On-shore Wind Energy Objective	Description
	• Visual quality of the landscape and the degree to which impacts are highly visible over wider areas
County Development Plan Objective ED 3-6 Normally Discouraged	Commercial wind energy developments will be discouraged in these areas which are considered to be sensitive to adverse impacts associated with this form of development (either individually or in combination with other developments). Only in exceptional circumstances where it is clear that adverse impacts do not arise will proposals be considered.
County Development Plan Objective ED 3-7 Other Wind Energy Development	The Council will consider proposals where it can be shown that significant impacts on; • Residential amenity particularly in respect of noise, shadow flicker and visual impact; • Urban areas and Metropolitan/Town Green Belts; • Sites designated for nature conservation, protected species and habitats of conservation value; • Architectural and archaeological heritage and; • Visual quality of the landscape and the degree to which impacts are highly visible over wider areas can be avoided.

The proposed Barnadivane Wind Farm lies in an area classed as '*Acceptable in Principle*', under County Development Plan (CDP) Objective ED 3-4, as shown on Table 2.1, in addition to being in an area 'Likely to be Most Suitable' for Wind Energy Projects.

Section 9.3.13 of the CDP details the '*Acceptable in Principle*' designation. As stated in the CDP, '*these areas (River Ilen basin north of Skibbereen and an area south of Macroom) are in optimal locations for wind farm development without significant environmental impacts*'. In addition the '*Acceptable in Principle*' areas have '*viable wind speeds (>7.5 m/s) and good proximity and access to the grid*'.

2.2 Site Selection

Precedent for a wind farm at this location is established with the existing consented 14 turbine wind farm. It is now proposed to optimise this layout, using modern turbine technologies, and reducing the number of turbines and associated infrastructure, with the number of turbines reduced from 14 to 6. The layout went through a number of iterations based on the constraints identified, which included:

- Availability of modern turbines and associated turbine spacing
- Setback from adjacent Garranereagh operational wind farm
- Minimum setback from dwellings inhabited by non-contributory landowners
- Landscape and Visual Impacts
- Ecology
- Archaeology, architectural and cultural heritage

2.3 Description of Existing Site

The proposed Barnadivane Wind Farm site is located in the townlands of Lackareagh, Garranereagh and Barnadivane (Kneeves), near Teerelton, Co. Cork.

There is a good network of local roads accessing the site. The nearest national route, the N22, is the main arterial route for traffic commuting between Cork and Killarney and is located approximately 5 km to the north at its closest. The nearest regional route, the R585 between Cork and Bantry, passes 1 km to the south of the site. The R585 connects to the N22 at Crookstown, 5 km to the east of the site.

The proposed wind farm is located on a ridgeline within the Bride River valley. The site ranges in elevation from 180 m on the southern boundary to 270 m to the north of the site.

The majority of the site is used for agricultural grazing. The field boundaries are defined both by the hedgerows and by sod and stone banks. There are a number of occupied dwellings within 1km of the site, with the closest being approximately 300 m from the nearest turbine. This dwelling is occupied by a stakeholder.

There are no hospitals, schools, hotels or guesthouses within 1 km of the site. There are no recreational activities associated with this site. The nearest watercourse is a tributary of the River Bride in the southwestern portion of the site.

The landform reflects the underlying geology of the region which is dominated by east-west anticlines and synclines. The anticlines form the hills with sandstone dominated bedrock and the synclines form the main river valleys (Lee, Bride and Bandon Rivers) which are underlain by limestone.

The proposed site does not lie within any Natura 2000 sites. There are three Natura 2000 sites (two cSACs[5] and one SPA) within a 10 km radius. The Gearagh cSAC (site code 000108) and the Gearagh SPA (004109) lie over 6.5 km to the north. The Bandon River cSAC (002171) lies over 9.5 km southwest of the proposed development site.

Two recorded monuments occur within the proposed wind farm study area. These are a ringfort (CO083-078) and an enclosure (CO094-036). The ringfort is to the north of the study area, being approximately 300 m north of the proposed turbine, T2. The enclosure is located in a small mature forestry plantation in the south-western corner of the study area, approximately 265 m from proposed turbine, T6.

Existing land use in the area surrounding the site is predominately agricultural, with some forestry nearby, particularly adjacent to the proposed private roadway at the junction of the R585 and L6088 (subject to separate planning application). There are a number of existing and permitted wind farm developments nearby. There is an existing wind farm, namely Garranereagh Wind Farm with 4 operational turbines adjacent to the site. The nearest turbine at Garranereagh is over 800 m to the east of the nearest proposed turbine.

[5]At present all SACs in Ireland are currently 'candidate' SACs, and referred to as cSACs. The relevant Statutory Instruments for the SACs in Ireland have not yet been put in place, though these sites must still be afforded protection in accordance with the EU Habitats Directive (92/43/EEC).

3 RESPONSE TO GROUNDS OF THIRD PARTY APPEAL

3.1 Introduction

A third party appeal was lodged with ABP on 30 November 2015 by Noonan Linehan Carroll Coffey, Solicitors, on behalf of Denis Buckley and others known as the Barna Wind Action Group.

This appeal was made on various grounds, namely:

- The original Observations submitted on 02 February 2015 by Noonan Linehan Carroll Coffey Solicitors on behalf of their clients to Cork County Council,
- The further Observations submitted on 09 July 2015 in response to Cork County Council's RFI,
- A submission by Michael O'Donovan of Barna Wind Action Group.

Noonan Linehan Carroll Coffey Solicitors also refer to extensive local opposition to the project, conflicting policies (favouring renewable policies over national and regional policies) and issues relating to large wind turbines.

The applicant has addressed each of the grounds of appeal herein under a number of key headings. Where relevant, for ease of reference, the text of the appeal is provided in italic text, with the applicants response provided thereafter.

3.2 Original Observations of 02 February 2015 Submitted to Cork County Council

3.2.1 Invalid Application

Remarkably the application is one of a series of at least three applications all dealing with individual elements of the same project. Based on public statements attributed to the developer, the project is designed to facilitate still more developments, the details of which are not yet disclosed to the public.

The developer applied on 26 September 2014 for permission for a large substation on the site – see your file PA Reg. Ref 14/00557. This was subject of an Order to grant permission made by Cork County Council on 13 January 2015, and that decision will be the subject of an appeal to An Bord Pleanála.

The developer is also seeking permission for a private road joining the R585 to the L6008 intended to facilitate the present application.

It is self-evident and undeniable that this is a case of project splitting.

Project splitting in the context of wind farm planning applications has been recently considered by the High Court. In O'Grianna and others v An Bord Pleanála [2014] IEHC 632 the Court quashed a permission granted in the absence of an EIA of the project in its entirety.

The present application is for a part of a larger project. It is not accompanied by an EIS for the entire project. The application before the Council is therefore invalid. It thus cannot be considered by the County Council.

As stated herein, the reasons for the separate applications for the wind farm, the 110 kV substation and the haul route together with all relevant information in respect of cumulative impacts between these developments and any other relevant developments in the vicinity have already been provided in significant detail, in the wind farm planning application, the response to the RFI (May 2015) and the response to the CFI (September 2015). The Board is referred to the information therein in this respect.

The appellants reference the recent decision in the case of Ó'Grianna vs. An Bord Pleanála and include a copy of that judgement with the appeal. In reference to same, I would draw the Boards attention to the following excerpts from this judgement:

"The wind turbine development on its own serves no function if it cannot be connected to the national grid. In that way, the connection to the national grid is fundamental to the entire project, and in principle at least the cumulative effect of both must be assessed in order to comply with the Directive".

Further, in conclusion in the judgement, the following is stated:

"In that way, it is difficult to see any real prejudice to the developer by having to wait until the necessary proposals are finalised by ESB Networks so that an EIS for the entire project can be completed and submitted, and so that a cumulative assessment of the likely impact on the environment can be carried out in order to comply with both the letter and the spirit of the Directive".

It is clear from the above, that the potential impact of the development overall, including the grid connection (and any other ancillary works) needs to be considered. The applicant contends that it has considered such impacts in the documentation submitted as part of the planning application, the response to the RFI and the response to the CFI and that these issues have been fully addressed therein.

3.2.2 No Reliable Planning Precedent

The developer places considerable stress on the existence of a planning permission for 14 turbines and for a smaller substation at the site, which permission was sought in 2005, issued in 2007 and was extended in 2011.

Subsequent EU Court of Justice and Irish High Court judgements however have found that the assessment system in place at those times was legally unsound. The legal standards for assessment were not met, with the result that the 2005/2011 permission should not now be relied on as a valid planning precedent.

Specifically we refer to the judgement of the Court of Justice of the European Union in Commission v. Ireland case C-50/09. In its judgement delivered on 3 March 2011 the CJEU ruled that Ireland had failed properly to transpose the obligations under Article 3 of the EIA Directive. This was because it had failed to make it obligatory for any single body to conduct an EIA.

The court expressly rejected the State's defence that the system then in use was lawful. It was under that system that the site was approved for 14 turbines. It follows that no lawful EIA was ever conducted in respect of development for which planning permission was granted in 2007. The extension fared no better in this context. No EIA was even claimed to be carried out at the time the Council extended permission in 2011.

The planning application, the subject of this appeal, refers to a proposed 6 no. turbine wind farm (planning ref. 14/6760). Planning permission exists at this site for a 14 turbine wind farm, including a 110 kV substation, and associated infrastructure granted by both the Planning Authority and ABP under planning reference numbers 05/5907 and 04.219620 respectively, with a subsequent extension of duration granted by CCC under 11/6605. It is intended that the proposed wind farm, if consented, would replace the consented wind farm.

There is therefore a wind farm permitted at this location and despite the appellant's allegations, this existing permission remains valid and can be enacted by the applicant. If permission for this wind farm is not granted, the applicant intends to construct and operate the permitted wind farm.

Both the permitted and proposed wind farm are subject to EIA and are supported by EIS documents. There has therefore been a comprehensive review of all aspects of the site of the proposed development. The current proposal is also supported by an AA Screening Report which demonstrates that the proposed development is appropriate and can be provided without significant adverse impacts arising.

3.2.3 Appropriate Assessment

We also rely on the judgement of the High Court in the case of Kelly v. An Bord Pleanála [2014] IEHC 400 delivered by the Court on 25th July 2014. That judgement emphasised the mandatory nature of the Habitats Directive obligations on planning authorities in relation to the conduct of Appropriate Assessment.

The developer's EIS and AA Screening Report only address one aspect of what is clearly a larger project. As well as rendering the present planning application invalid for the reasons described above, this approach also fails to equip the Council and its Officials to meet the assessment requirements under the Habitats Directive. If the full project is not considered, then no proper Appropriate Assessment is possible. For that reason the Council is legally prohibited from giving planning permission.

As stated herein, the reasons for the separate applications for the wind farm, the 110 kV substation and the haul route together with all relevant information in respect of cumulative impacts between these developments and any other relevant developments in the vicinity have already been provided in significant detail, in the wind farm planning application, the response to the RFI (May 2015) and the response to the CFI (September 2015).

Separate AA Screening Reports were also submitted along with the proposed wind farm, substation and public road modifications applications. Again, the reasons for the stand-alone applications have been fully detailed previously.

In the preparation of the AA Screening Report for the proposed wind farm, regard was given to the EU Habitats Directive (92/43/EEC) and the European Communities (Birds and Natural Habitats) Regulations 2011, and reference was made to the relevant guidance, in particular:

- *Assessment of Plans and Projects significantly affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*, European Commission 2001.
- *Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats Directive' 92/43/EEC*, European Commission, 2000.
- *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities*. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin 2009.

The cumulative impact of the proposed wind farm along with the other relevant developments in the area, including the proposed substation and public road modifications was fully appraised in the documentation submitted in respect of the wind farm (which includes the responses to the RFI and CFI). The applicant considers that these issues have been fully dealt with therein.

3.2.4 Planning Policy and Related Issues

The developer places great reliance on selected national policies in relation to renewable energy. He ignores other fundamental national policies supportive of people in rural Ireland, including the rights of citizens to respect for their bodily integrity, their family life and their property.

Long standing national and regional policies in respect of the protection and strengthening of rural life are faithfully reflected in the Cork County Development Plan for example in the Development Plan Objective CS 4-2 e) which records it as an objective of the County to strengthen and protect the rural communities of the area by encouraging sustainable growth in population, protecting agricultural infrastructure and productivity so that agriculture remains the principal rural land use and focusing other employment development in the main towns and key villages.

Ireland's peak electrical power demand is about 5 GW. Installed wind power generation capacity is already about 2 GW. There is no need either in terms of EU policy on renewables or in terms of national economic benefit, for increasing the proportion of wind generation connected to the grid. On power station capacity and other sources such as interconnectors, as UCD Economist Colm McCarthy pointed out in Cork in October 2014:

"The new gas units were planned before the bust. There is now 3300 MW of modern gas capacity plus 880 of peaking plant. Plus 500 MW of new interconnection to Wales. Plus almost 900 MW at coal-fired Moneypoint. Plus hydro at about 500 MW, plus peat at about 340, plus oil – the total dispatchable is 7400 MW. Non-dispatchable, mainly wind, adds 2,400, grand total 9800, twice peak demand."

The proposed Barnadivane Wind Farm development will comply with all the relevant legislation, directives and policy objectives as outlined in Section 2.1. It will contribute significantly towards achieving the Government's commitment to meeting its Kyoto Protocol target, as well as EU, National and Regional targets for renewable energy production. At a local level the proposed wind farm is located in an area designated '*Acceptable in Principle*' according to the Cork County Development Plan (CDP) 2014 (Objective ED 3-4). As stated in the CDP, '*these areas (River Ilen basin north of Skibbereen and an area south of Macroom) are in optimal locations for wind farm development without significant environmental impacts*'. The site is also located in an '*Area Likely to be Most Suitable*' for Wind Energy Projects taking account of all key policy considerations, under the CDP. Therefore, the site for the proposed development is deemed to be an optimum location for a wind energy project.

Government policies identify the development of renewable energy, including wind energy, as a primary strategy in implementing national energy policy. Currently over 2,911MW of installed wind generating capacity is connected to the system on the island of Ireland[6]. It is estimated that approximately 3,500MW to 4,000MW of installed wind generating capacity will be required to meet the 40% target[7].

In the event of wind generating capacity being surplus to the national target, it will be beneficial to offset against the heat and transport targets, both of which are expected to fall short of their respective targets. The proposed Barnadivane Wind Farm will assist significantly towards meeting this target.

The move to a renewable energy supply source is also an attraction for inward investment of employers and companies e.g. Google and Apple which are now more frequently requiring a renewable energy supply for their businesses and is seen as an incentive for selecting locations from which to base their operations.

The recent Department of Communications, Energy and Natural Resources (DCENR) White Paper 'Ireland's Transition to a Low Carbon Energy Future 2015-2030'sets out a framework to guide policy and the actions that Government intends to take in the energy sector from now up to 2030. The White Paper identifies onshore wind as continuing to 'make a significant contribution' in terms of this transition.

The proposed wind farm development is therefore consistent with current energy and planning policy context. In addition, by virtue of the existing permission, the principle of this type of development has already been established in the vicinity.

Protection and enhancement of amenity is a mandatory objective of the Development Plan pursuant to Section 10 of the Planning & Development Act 2000 (as amended). Section 10 of the Planning Act also includes a number of discretionary objectives which a Development Plan can also include, for example, preserving the quality of rural areas. It is noted that Section 28 of the Planning & Development Act also clearly sets out that a Development Plan must have regard to Ministerial Guidelines and expressly state how such Guidelines are taken into consideration in the making of a Development Plan. There is no expressed legal or planning definition of residential amenity. However it is generally considered to be the benefit enjoyed from physical external space which is part of the private home. The benefit enjoyed depends on the quality of space.

The level of enjoyment is also dependent on a number of factors / interactions including location, size, orientation, sounds, noise, accessibility and enclosure. Indeed, different individuals will often have conflicting opinions on how residential amenity at one site or another is enhanced or undermined, as the judgement on amenity is fundamentally based in personal choice and opinion.

As referred to above formal Section 28 statutory documents provide some assistance in particular guidelines issued by the Department of the Environment, Community and Local Government (DoECLG). The 'Sustainable Residential Development in Urban Areas (Cities, Towns & Villages)' (2009) provides some general points in respect of the features that can enhance the amenity of residences.

[6] Irish Wind Energy Association, http://www.iwea.com/windfarmsinireland updated May 2015.
[7] EirGrid & SONI, All-Ireland Generation Capacity Statement 2012-2021, 2011.

Checklists encompassing the individual house and its setting include criteria comprising of:

- Quality of the built structures and setting.
- Daylight, privacy and security.
- Nature of car dependency.
- Ease access and use to pedestrians, children or people with disabilities.
- Availability of private, communal open space, access to services (shops, community facilities, schools, health).
- Availability and ease of access for services to the residence (postal, waste collection).

The guidelines do not provide standards on noise or assessment of visual quality, however the Urban Design Manual – Best Practice Guide' in Volume 2 recognises the importance of balancing requirements of neighbouring uses and suggests solutions may be achieved through a combination of design and management measures defined at planning stage. It is noted however that these guidelines are tailored for the urban environment, which may experience different qualities than say the rural environment.

In a rural context the 'Sustainable Rural Housing - Guidelines for Planning Authorities' provides criteria for assessing sites but is largely silent on how new development may affect existing residences except in terms of water quality and traffic safety. The guidelines point to rural housing design guides, such as the 'Cork Rural Design Guide: Building a New House in the Countryside' (2003). These include details on siting and appropriate design features but do not provide information on defining the measurement or appraisal of residential amenity in a rural setting.

Having regard to the above the Wind Energy Development Guidelines (2006) provides the most useful and practical guide to assessment of impact on residential amenity. These focus attention on noise and shadow flicker as impacts to residences and provide guidance on acceptable levels of each. For noise the guidelines consider separation of 500 metres for dwellings (noise sensitive receptors) will be adequate for most situations. The guidelines provide standards for shadow flicker for houses less than 500 metres from turbines and state that:

> *"At distances greater than 10 rotor diameters from a turbine, the potential for shadow flicker is very low."*[8]

Visual dominance is mentioned in respect of landscapes generally but not with specific respect to the effects on individual houses, notwithstanding this, the 500m separation distance is generally considered to satisfy issues of visual dominance / encroachment from turbine heights.

The DoECLG has indicated that they are undertaking a targeted revision of these guidelines for noise, shadow flicker and proximity, although no timeframe is available on when these will be formally issued. In the context of this planning application, the criterion for noise, shadow flicker and proximity as described in the 2006 guidelines are used.

In summary, there is no legal or planning definition of what determines residential amenity. It is considered to be an interaction of material impacts on residence in an area and is largely a matter of professional judgement by the competent authority. It is a statutory requirement for the Development Plan to include policies that protect amenity and also Local Authorities are obliged to have regard to statutory Section 28 Ministerial Guidelines. With regard to the class of development proposed, the most appropriate considerations relate to noise and shadow flicker which are set out in the Wind Energy Guidelines (2006).

Specifically the Cork County Development Plan 2014 considers that with respect to on-shore wind energy developments, residential amenity should be considered in terms of noise, shadow flicker and visual impact,

Objective ED3-5
Commercial wind energy development is open to consideration in these areas where proposals can avoid adverse impacts on:

- *Residential amenity in respect of noise, shadow flicker and visual impact...*

[8] Section 5.12, page 33. Wind Energy Guidelines (2006)

Careful siting of turbines was used for the Barnadivane site to achieve the minimum separation distance for the protection of residential amenity. Various iterations of the layout were considered to arrive at the current proposed development. Separation distances between the turbines and the nearest non-involved and habituated houses have been maintained at a minimum of 500m. In addition, there are no hospitals, schools, hotels or guesthouses within 1 km of the site. This design response to residential amenity has a positive result on predicted noise and shadow flicker from the wind farm site. As described, the appraisal of noise and shadow flicker are directed by the guideline limits in place from the 2006 Wind Energy Development Guidelines.

3.2.5 Noise

The steadily emerging problems of noise nuisance explains in part why the Government felt it necessary to review Windfarm Planning guidelines issued nine years ago at a time when turbines were much smaller and less extensively promoted, and when their noise signature and its effect was less well understood. The departmental review is still underway and is seeking to find new and appropriate measures of balancing competing interests, particularly focusing on separation distances, noise nuisance and nuisance from shadow flicker.

We refer to our submission to that review (copy enclosed) and ask you to treat that submission as part of this observation.

There is patently an emerging problem, with some exceptionally serious consequences in certain areas. The Council is bound to have regard to that fact when considering assurance put before it by or on behalf of this developer.

We refer to the enclosed Shirley Windfarm Study in this regard. This was unusual in that it was a study prepared on an agreed co-operative basis by a team of four independent acousticians, some of whom had mainly worked for wind turbine promoters, some of whom had worked more often for residents reporting adverse affects from turbine operation. The study found that noise limits in vogue currently do not adequately protect the public.

The noise impact appraisal carried out for Barnadivane Wind Farm (December 2014) was carried out using the 2006 Wind Energy Guideline noise limit structure which are the guideline limits in place. The local authority, while aware of the ongoing targeted review of the noise, shadow flicker and proximity elements of the guidelines, are dependent on the existing limits in order to assess existing wind farm planning applications. It would have been inappropriate for the applicant to appraise the application on any other limits other than the 2006 guidelines limits, which still remain current.

3.2.6 Other EIS Issues

The EIS is unreliable as a basis for informed assessment. It makes reassuring claims which do not stand up to being tested against current scientific knowledge. Noise nuisance is one important example. Residential property values will be adversely affected.

Another example to illustrate the point is its assessment of impact on bats. A more realistic objective picture of the likely impact emerges from the recent scientific study on that topic by Cryan et al., published in the Proceedings of the National Academy of Sciences, a copy of which is enclosed.

The 2003 EPA Guidelines on Environmental Impact Statements say that an EIS should identify, describe and assess what impacts are likely if all mitigation measures fail. The developer's EIS does not do this.

The EIS which was submitted along with this planning application for the proposed wind farm was prepared in accordance with Schedule 6 of the Planning and Development Regulations 2001, as amended, which sets out the contents of an EIS. In addition, in the preparation of the EIS, the contents of Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment were also considered (the 2014 EIA Directive).

An initial or informal scoping of possible impacts of the proposed development was carried out to identify impacts thought to be potentially significant, not significant or uncertain. Consultation with the relevant private and public agencies ensured that the most significant impacts and the areas of greatest concern were addressed during the EIA process. Details of the consultation carried out for the proposed development were provided in Chapter 4 of the EIS, 'EIA Scoping, Consultation and Key Issues'.

The purpose of the EIS was to provide in particular:

(a) a description of the project comprising information on the site, design, size and other relevant features of the project;

(b) a description of the likely significant effects of the project on the environment;

(c) a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;

(d) a description of the reasonable alternatives studied by the applicant, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;

(e) a non-technical summary of the information referred to in points (a) to (d); and

(f) any additional information relevant to the specific characteristics of the wind farm project proposed.

The EIA methodology was undertaken in accordance with best practice EIA guidelines:

- *Guidelines on the Information to be contained in Environmental Impact Statements*, (EPA, 2002)
- *Advice notes on Current Practice (in the preparation of Environmental Impact Statements)* (EPA, 2003)
- *Directive 2011/92/EU Consolidation*
- *European Commission Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment, EU 2013*

In relation to residential property values, in general, studies and property valuation information which has been published and peer-reviewed is the most reliable when reviewing available literature on property devaluation as a result of wind farm developments. The published reports to date suggest that the presence of wind farms does not devalue residential property.

For instance a study was carried out by Renewable UK on 'The effect of wind farms on house prices' (1) which looked at the effect of wind farms on the value of residential properties within a 5 km radius. This was done by comparing house price growth based on transactions completed within a 5 km radius of seven windfarm sites with prices in the wider county area between 1995 and mid-2013. The study also used econometric tests to assess whether or not windfarms had an impact on price growth. The analysis of the raw house price data for transactions completed within the vicinity of the wind farms (radius of 5 km) yielded no evidence that prices had been affected by either the announcement, construction or completion of the wind farms for six out of seven sites.

In a study by Hoen *et al.*, 2009 (2) '*The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis',* the potential impacts of wind power facilities on the sales prices of residential properties in proximity to and/or which have a view of the house to those wind facilities was investigated. A large quantity of residential transaction data was collected from communities surrounding a wide variety of wind power facilities.

Each of the homes included in this analysis was visited to clearly determine the degree to which the wind facility was visible at the time of home sale and to collect other essential data. To frame the analysis, three potentially distinct impacts of wind facilities on property values are considered: Area, Scenic Vista, and Nuisance Stigma.

To assess these potential impacts, the authors applied a base hedonic model, explored seven alternative hedonic models, conducted a repeat sales analysis, and evaluated possible impacts on sales volumes.

The results are consistent in that each model fails to uncover conclusive evidence of the presence of any of the three property value stigmas. Based on the data and analysis presented in this report, no evidence is found that home prices surrounding wind facilities are consistently, measurably, and significantly affected by either the view of wind facilities or the distance of the home to those facilities.

In a later study by Hoen *et al.*, 2013 (2), *'A Spatial Hedonic Analysis of the Effects of Wind Energy Facilities on Surrounding Property Values in the United States',* data was collected from more than 50,000 home sales among 27 counties in nine states in the U.S.A. These homes were within 10 miles of 67 different then-current or existing wind facilities, with 1,198 sales within 1 mile of a turbine (331 of which were within a half mile). The data spans the periods well before announcement of the wind farm projects to well after construction. The authors used OLS (Ordinary Least Squares) and spatial-process hedonic models to estimate the home-value impacts of the wind facilities. Across all model specifications, they find no statistical evidence that home prices near wind turbines were affected in either the post-construction or post-announcement/pre-construction periods.

In summary, it is noted from a literature review that the reports prepared to date suggest that the presence of wind farms does not devalue residential property. The authors concluded that there remain areas for further research and the primary goal of subsequent research should be to concentrate on those homes located closest to wind facilities, where the least amount of data are available.

We also refer the Board to the separate response by the applicant to the third party appeal by Jerome Coholan and Geraldine Hanley, which deals in particular with this issue.

In relation to bats, the RFI for the proposed development included a discussion on the potential impacts on bats. The bat activity surveys at the proposed wind farm site did not show any significant bat activity in the immediate vicinity of the proposed turbines, with the possible exception of proposed Turbine 6. The lack of bat activity recorded during field surveys is likely due to the high degree of wind exposure at the site. Bats were found to forage in the more sheltered hedgerows, earth banks and treelines at lower elevations in the surrounding landscape.

Mitigation measures were proposed to reduce the negative impact of hedgerow removal on bats. For instance the Natural England Technical Information Note TIN051 (7) was used to calculate a suitable buffer zone around each individual turbine in which vegetation clearance should take place. The removal of vegetation around turbines helps to ensure that bats are not drawn towards turbines, following vegetation corridors such as hedgerows, which could lead to collision impacts. Taking this measure into consideration the potential impacts on bats from the proposed 6 no. turbine development were not considered significant.

The study by Cryan *et al.* (5) involved monitoring bat behaviour at three wind turbines in Indiana in the United States in 2012 using thermal cameras and other methods. By looking at the way bats approached turbines it suggested behaviours that evolved at tall trees might be the reason why many bats die at wind turbines. This study is not relevant to the current planning application as the habitats at the proposed site as well as the bats identified in and around the proposed site and the levels of bat activity are not comparable with the activity of the tree bat species surveyed in the study by Cryan *et al.* (5)

Furthermore, in relation to bat collision, most of the research related to bat mortality at wind farms comes from research in mainland Europe and North America. Many of these overseas turbine/bat mortality studies are at wind farms, with significantly large numbers of turbines, sited along known bat migration routes where many hundreds or even thousands of bats commute seasonally resulting in numerous deaths and injuries. There is currently no evidence that mortality of bats on the same scale occurs in Ireland.

Although it is known that Nathusius' pipistrelle migrates from Scandinavia to Scotland and to the north of Ireland and back again (3), apart from this species, there is currently no evidence that internal or external bat migration routes of other bat species exist elsewhere in Ireland as no research has been undertaken.

3.3 Further observations of 09 July 2015 submitted in response to the Council's RFI

3.3.1 Application Process

The planning application is invalid.

In particular, it fails to provide the information necessary for the Council to conduct an assessment as defined in the EIA Directive and in the Planning and Development Act of the impacts arising for an assessment in relation to the entirety of the project of which the proposed development forms part.

A full justification for the stand-alone application for the proposed wind farm, substation and modifications to the public road has previously been provided in the wind farm planning application, response to the RFI and the response to the CFI, as referenced herein. The applicant considers that this issue has been fully dealt with therein.

3.3.1.1 The Planning Code

There is no national or European policy to say that it is permissible to privilege either commercial energy generators or the energy needs of one sector of society to an extent that expropriates others or devalues their homes or diminishes their normal established life style. In the very carefully prescribed circumstances in which the State or other public bodies have been given power to interfere with a person's property rights, a balance is struck between the rights of affected citizens and the rights of the affected landowners through the compulsory purchase compensation system.

Outside of the compulsory purchase arena the public and in particular our clients are entitled to freedom from the undue interference with their personal family and property rights. The Council has a duty to protect the public and to vindicate their property rights and their rights to family life when it is carrying out its planning functions.

The reports prepared to date in respect of the potential effects of wind farms on property prices suggest that there is no evidence that the presence of wind farms devalues residential property. We refer the Board to Section 3.2.6 herein in this regard, as well as the separate response by the applicant to the third party appeal by Jerome Coholan and Geraldine Hanley, which deals in particular with this issue.

3.3.2 Noise

Points 7 through 22 of the Appellants submission of 09 July 2015 relate to noise, namely, the pre-planning use of a candidate turbine for appraisal purposes, the data collection and analysis, the turbine data and noise level predictions.

Use of Turbine Model in Prediction Modelling

Points 7 through 12 relate to the Appellants concern about the turbine type modelled and the actual turbine that will be installed. At the pre-planning stage of the a wind development project when the impact appraisal is carried out, the choice of turbine to be installed cannot be confirmed since the choice is dependent on a "*competitive tender process*" as mentioned in EIS Volume 2 Chapter 2, Section 2.3.1. This point was re-iterated in the noise appraisal chapter at Section 9.4.1 'Potential Impacts during Operation' where it was highlighted that "*...any reference to the Nordex N100 2.5MW in this chapter must be considered in the context of the noise assessment and should not be construed as meaning it is the only make or model of turbine that may be used on the site.*

The turbines will be a pitch regulated upwind turbine with a three-blade rotor. Based on the sound power data provided, the worst-case sound power levels are outlined in Table 9.1." At no point in the planning application documentation or in the further information submitted did the applicant confirm the specific turbine model to be installed.

Notwithstanding, the application was appraised using a rated sound power level of 107.8 dB applying the guidelines limit, the layout was shown to meet these guideline limits and the applicant has confirmed in the June 2015 FI response that noise emission limits conditioned in a grant of planning will be met, irrespective of the turbine model chosen.

On that understanding, the appellants points relating to turbine choice are hereunder responded to:

7. *...There is now a fatal vagueness about what is to be built."*

There is no vagueness about what is to be built. A turbine of specific dimensions has been applied for with respect to specific co-ordinates. The turbine to be installed at said co-ordinates will be at or less than the dimensions applied for. With respect to noise emissions, the impact appraisal has been carried out using a turbine with a rated sound power level of 107.8 dB determining predicted sound pressure levels to one decimal place at specific noise sensitive locations using an internationally recognised and industry best practice noise propagation standard recommended for wind farm study. The final turbine may be a different model or manufacturer than that used in the impact appraisal but the layout has been appraised to a sound power level of 107.8 dB and any turbine selection will be based on using a similar or lower sound power level. There is therefore no 'vagueness' in the development appraisal. In the same way as the physical dimensions of the turbines have been set, the sound power limit of the development has been set and both the dimensions and the sound power levels can be at or less than those appraised.

8. *"The developer had placed on record in the EIS their acknowledgement that their acoustic consultants made noise predictions based on one specific model of turbine, a Nordex N100 2.5MW turbine. The consultants in turn said that they worked with what are called 'declared sound pressure levels' relating to that model of turbine alone."*

9. *"However in the Response to the Council's RFI the developer makes it clear that they regard themselves as free to use a completely different model of turbine produced by a different manufacturer if necessary and importantly that any turbine ultimately constructed may have a power output capacity of 3MW. Indeed from their Response it is not possible to be sure that they will not install turbines of even greater power output. The only turbine parameters to which they are committed relate to matters such as hub height and blade length. In other words the physical dimensions. Everything else is open including maximum power output. Noise is a function of power output. Noise impact cannot be assessed in these circumstances."*

It was unequivocally stated in the planning application and re-iterated in the FI response that the applicant is not in a position to agree the turbine model to be installed at the pre-planning stage. The planning description provides a tip height envelope in which the applicant must select a final turbine but the noise impact appraisal also provides a sound power envelope. In the case of the wind farm in question, the impact appraisal was carried out using a 107.8 dB rated sound power turbine and established that up to and including this sound power can be installed using this layout and that the noise impact is not significant at non-landowner involved properties based on this sound power and layout. We would also note that noise levels are not directly related to power output capacity. Each manufacturer uses different technology.

10. *"...No-one can assess the noise to be generated by this development."*

The noise levels to be generated by this development were assessed using sound power data determined using an international standard by the manufacturer, predicted using an international noise propagation standard recommended for the purposes of wind farm noise modelling and analysed against baseline data collected using international standards, using equipment calibrated and verified by independent calibration laboratories. It is therefore a very robust appraisal, in accordance with best practice international methodologies and standards.

11. "The Council requested (Question 32) that the impact of the final choice of turbine (if different to the one used in the model) on predicted noise levels be clearly demonstrated and illustrated. That request has been ignored."

As described in the response to Item 32 of the request for further information from the local authority, the layout has been appraised using a 107.8dB sound power level. The applicant has committed to selecting a turbine model which will meet the noise limits conditioned in a grant of planning.

12. "Their declared apparent sound pressure levels will be in excess of 100 dBA. Bear in mind this predicted level is for the model which may or may not in fact be the one actually constructed on site. We refer to the attached graphic of relative turbine sizes - taken from the EIS. We know how visible they will be. We do not know, and cannot know, how loud."

The sound power (and not the sound pressure) level of the turbines will be, as described in Table 9.1 of the EIS, from 102.7 dB at 5m/s to 107.8 dB which is the maximum sound power output at 10m/s. As described, the prediction model has been tested to a rated sound power of 107.8 dB. The predicted values described in Table 9.8 of the EIS are the sound pressure levels.

We can in fact, contrary to the appellants claim, accurately define how loud turbines are and manufacturers report sound power levels in accordance with international standard IEC 61400: Part 11 'Wind turbines - Part 11: Acoustic Noise Measurement Techniques'. The sound power values used are IEC 61400-11 test values and the turbine to be installed will also be provided with a sound power level warranty by the manufacturer.

Wind Speed Data

13. "Having noted that astonishing degree of vagueness. we must now deal another remarkable situation which arises from the Response. In the Response the developer makes an admission that completely inappropriate information was contained in the EIS with regard to background noise measurements. As a result multiple tables in the EIS contain information which is now said to be no longer appropriate. An effort is made in the Response to substitute a large quantity of new information with the assurance that the information is appropriate this time.

The Response provides a new set of Baseline Noise Survey Results by way of revised Figures 1 to 8 inclusive, to replace those in the original EIS. The Response also provides revised Time History Charts of the Measured Noise Levels at each monitoring location. Further changes have also been made according to this section of the Response.

No explanation is offered for the blunders in the original EIS."

During the preparation of the further information response, a review of the analysis showed that the wind speed data used in the derivation of the prevailing background noise levels was based on instantaneous L_{A90} values rather than the 10-minute averaged L_{A90} values. The replacement data was provided with the finding that "*The results using the appropriate ten-minute averaged wind data are generally lower than the results using the ten-minute instantaneous wind data that are presented in the EIS.*"

Sound Power Test Data

14. "The Council requested details and supporting documentation regarding predicted noise levels. That request has not been complied with. Paragraph 34.1 of the Response says: 'Hayes McKenzie is unable to supply noise test reports from Nordex because of a non disclosure agreement but Appendix 4 contains a noise data sheet from Nordex showing source noise levels for this turbine.' Appendix 4 relates to supporting ecology documentation. It does not contain any noise data sheet from Nordex. If this was intended to be a reference to Appendix 5, we can see no Nordex noise data sheet there either."

Appendix 5 to the Further Information Submission was not supplied in its entirety to the Planning Authority in May 2015 and unsolicited further information was submitted on 20 July 2015 containing the entire Appendix 5, to correct this error. This appendix contained the Nordex Technical Report Octave Sound Power Levels Nordex N100/2500 Document number K0818-014289_EN (dated April 2010).

15. "We note the assertion in paragraph 34.1 of the Response that Hayes McKenzie is unable to supply noise test reports from Nordex because of a non disclosure agreement. The existence of such a non disclosure agreement has two immediate implications.

The first is that essential information which is sought by the Council is being withheld even though it exists. This means that the Council is deprived of material data which in its opinion (an opinion our clients share) it is necessary to have in order to complete an assessment of this aspect of the development. The Council cannot now complete that assessment. As a result it cannot grant permission."

16. "Secondly. if there is a commercial relationship between the developer and/or the developer's acoustic consultants and the equipment manufacturer which restricts their ability to furnish necessary information, this means the Council is only being presented with part of the picture. This in turn puts a doubt of a significant degree over the weight which the Council can place on this noise section of the EIS and the Response."

It is common for turbine manufacturers to consider turbine data as sensitive and not for public disclosure. The necessary sound power data for prediction modelling was provided in the EIS together with the basis for uncertainty values used and there is no "*essential*" information that was withheld.

As discussed, the sound power data used in the prediction modelling was provided in the EIS with the manufacturer's data sheet provided to Cork County Council in supplementary correspondence.

17. "In Question 32 the Council requested that an assessment of tonality with reference to the proposed wind turbine manufacturer's octave sound power data at all operational speeds and modes of operation be undertaken. The Response states 'it is not possible to determine tonal content from octave band data but a warranty will be obtained from the manufacturer of the eventual turbine for the site to the effect that tonal content will not be significant.' This Response cannot be taken seriously. Tones are particular sources of noise nuisance. If they cannot be assessed, the project cannot be permitted."

The option of selecting the turbine at post-planning stage is favourable. The turbine manufacturers need to provide a warranty in terms of the turbine's noise output. This warranty is described in terms of the sound power and uncertainty values permitted under the warranty but also in terms of tonal audibility. The applicant will select the turbine model based on the sound power envelope appraised and the conditioned noise limits but also in terms of tonal performance, as detailed in the applicant's response to the RFI and CFI from Cork County Council.

18. The central importance of an EIS to the EIA process is obvious but may need to be recalled briefly here. The proposed project is a highly complex expensive intrusive industrial type development. In certain respects the technology being deployed will be new or relatively novel. The developer makes the point that they will be keeping their options open as the technology develops before deciding what form of turbine they are going to erect. In turn this means that the assessment of the impact of the technology on the local environment is not an easy task. The Council therefore has to make an independent assessment of the noise issue and should retain independent expertise to help it to do so if necessary.

As detailed above, there are commercial reasons why the final turbine model cannot be selected at the pre-planning stage. Notwithstanding this, the impact appraisal was thorough and representative of the potential impacts of the wind farm on the surrounding environment. The appraisal was carried out in full accordance with legislative and best practice requirements and reached reasoned conclusions as to the level of impact from the proposed development.

The Council has granted permission for the development having, as the competent authority, carried out an Environmental Impact Assessment (EIA) in accordance with the governing legislation. Where the Council so requires, it can retain independent expertise to assist in the EIA. However, the Council also retains significant in-house expertise and as the competent authority it makes a decision as to what external expertise may or may not be required.

19. The Council is obliged to complete an EIA. Under the legislation that means it must identify describe and assess the likely significant impacts of the proposed project. That is a distinct stand alone legal obligation on the Council. That obligation cannot be displaced for example by simply inserting a noise condition in the planning permission.

The local authority has clearly fully appraised the noise impact of the proposed development and to assist them in this appraisal, sought additional information from the applicant during the planning process. The noise conditions imposed on the planning consent is further evidence that the planning authority had fully assessed the potential impact and has considered appropriate planning conditions to ensure control the development. This is in accordance with proper planning and sustainable development.

Noise Level Predictions

21. "Noise is a seriously problematic topic from our clients' perspective. A study commissioned for the Scottish government has found that environmental impact statement predictions for noise levels from turbines are not always reliable. A look-back study on wind turbine developments found unreliable predictions of noise levels, visual impact and shadow flickers. Cork County Council will be aware that in a number of parts of the country people have abandoned their homes in circumstances where wind turbine developments nearby have rendered them unfit for human habitation. No local authority would consciously grant permission for a development which would have this drastic consequence. Yet these consequences have resulted."

It is assumed that the Appellants are referring to the 'Wind Farm Impacts Study Review of the Visual, Shadow Flicker and Noise Impacts of Onshore Wind Farms' prepared by SLR and Hoare Lee Acoustics in July 2015.

With specific regard to noise prediction, the Scottish study's authors re-modelled the noise levels at 10 no. wind farms applying the Institute of Acoustics's A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise (May 2013) and compared these with the predicted values submitted with the original planning applications. Of the 10 projects, 5 no. under-predicted, 3 no. over-predicted and the remaining 2 no. applications had limited differences and were considered to "*not fully accord with what is currently regarded as good practice*" and "*were made using methods which often differed from what is now current good practice*".

The recommendations from the study were that "*application of the IOA Good Practice Guide recommendations would have resulted in more robust predictions...*". Clearly, as stated in the EIS for the proposed Barnadivane Wind Farm, the noise predictions were carried out applying the IOA GPG recommendations in the prediction modelling and therefore are applying best known and available prediction practices.

22. In summary therefore, the noise impact assurances are seriously incomplete, excessively theoretical and utterly unreliable. To compound matters there is a notorious difficulty in enforcing noise conditions. In fact we are unaware of any local authority successfully mounting a prosecution for a noise breach under planning conditions relating to a wind turbine. This reality goes to the heart of our clients' concerns. In theory an appropriate noise condition in a planning permission is supposed to protect people. In fact that is not what happens as enforcement may prove impossible to achieve. This underlines the importance of a full and proper EIA at the outset by the Council.

The appraisal of a development at the pre-planning stage, is obviously by its nature, theoretical. We will however re-iterate that the appraisal was carried out using standardised equipment, data and methodologies and while theoretical, the appraisal should be considered robust and accurate.

We would strongly refute any claims of incompleteness and unreliability. The information provided for the EIS and further supplemented by the FI requests provide the necessary complete information on which a noise impact appraisal can be carried out; baseline data, prevailing background L_{A90} levels from which to derive the DoEHLG 2006 guideline limits and prediction modelling applying best available practices. The Local Authority sought confirmatory detail on the appraisal elements carried out and the grant of planning demonstrates that it was satisfied with the complete and reliable nature of the appraisal.

Regarding compliance with conditioned limits post construction, a standardised methodology for post-completion monitoring was published by the Institute of Acoustics as a supplementary guidance note in July 2014 requiring best practice implementation of data collection and appraisal. This methodology will be employed by the applicant to demonstrate operational compliance in a transparent and co-operative manner with the local authority.

3.3.3 Project Splitting

Cumulative assessment is simply one part of the EIA process and it is not a replacement or substitute for the EIA process.

In this case we are dealing with a single development chopped in three. The developer cannot turn to the language of cumulative impact assessment in order to remedy that circumvention of requirement for integrated assessment of the development in line with the EIA legal requirements.

We note that they say that they cannot run the road application and the windfarm application together by reason of an email from the Council that requires development sites that are not contiguous to be the subject of separate applications.

The project splitting issues are further complicated by the assertion in the public press on behalf of the parent company of the Applicant that the sub-station is intended to act as a utility to serve windfarms in the 25 km radius.

A full justification for the stand-alone applications for the proposed wind farm, substation and modifications to the public road has already been provided in the wind farm planning application, response to RFI and response to CFI. The applicant considers that this issue, together with any cumulative impact assessment of the various applications as well as other relevant developments in the vicinity, has been fully dealt with therein.

3.3.4 Guidelines

The public and other stakeholders are waiting for revised guidelines from the Department covering issues including noise and shadow flicker for over 18 months.

We submit that it follows as a matter of logic that the 2006 Guidelines are not fit for purpose. Therefore we submit that the County Council when assessing the present application in 2015 should assess it having regard to the published Draft Guidelines issued by the Department in December 2013 for consultation.

The draft Guidelines prohibit shadow flicker outright within 10 rotor diameters of any wind turbine. They also reduce the maximum permissible noise levels to 40 dBA. Each of these factors have a direct relevance to the current application and would form basis for refusing it.

The noise impact appraisal carried out for Barnadivane Wind Farm (December 2014) was carried out using the 2006 Wind Energy Guideline noise limit structure as required. The local authority, while aware of the ongoing targeted review of the noise, shadow flicker and proximity elements of the guidelines, are reliant on the existing limits in order to assess wind farm planning applications. It would have been inappropriate for the applicant to appraise the application on any other limits than the 2006 guidelines limits as these are the guideline limits in force at the time of preparing and submitting the application and which still remain current.

3.4 Submission by Michael Donovan

3.4.1 Hydrological Connection to the Gearagh cSAC

The Gearagh cSAC (108)/Screening Conclusion
Here it is stated that because of the 'lack of physical or hydrological connection between the development site and this site...no further information is required'.

The ecologist has agreed with the EIS and concluded for the above mentioned reasons that the Gearagh cSAC can be screened out at this point of the process. It is my contention that this is a factual error.

The Cummer River, which drains the northern part of the proposed site, connects with the Bulingea River, which subsequently enters the Carrigadrohid reservoir to the north west of Lissarda. Carrigadrohid reservoir stretches from Carrigadrohid village, almost as far as Toon Bridge.

Carrigadrohid reservoir most certainly includes the Gearagh cSAC and also the Gearagh SPA. This is an indisputable fact and the Bord can verify this for themselves. No information is provided by the applicants in relation to the hydrology of the lake reservoir with regard to lake water balance, geochemical processes, siltation and sedimentation processes, flow rates and directions, input forces and interconnectivity of the above.

I have no doubt that the planning authority and the applicant have made a mistake in screening out the Gearagh based on the lack of hydrological connection.

This submission mentions the Cork County Council's (CCC) Ecologist Primary Report of 13 February 2015 and the CCC Engineering Report Further Information on 27 July 2015. In the Ecologist Primary Report, the Council's Habitats Directive Screening Conclusion is that the proposed development does not have the potential to have negative impacts on the Gearagh cSAC. This conclusion was based on the information provided in the Appropriate Assessment Screening Report submitted by the applicant along with the EIS for the proposed wind farm.

In the Appropriate Assessment Screening Report for the proposed wind farm, it is acknowledged that there is a hydrological connection between the Cummer River, which is situated along the northern section of the proposed development site and the Carrigadrohid Reservoir. *'Siltation or pollution of watercourses during construction and operation of the wind farm'* is listed as an individual element of the project that could give rise to impacts on the Gearagh cSAC, via hydrological links.

However, potential significant impacts on the Gearagh cSAC were 'screened out' based on a number of factors, namely;

- the two most northerly turbines in the proposed site, T1 and T2, are situated over 600 m from the rising of the Cummer River and therefore the proposed construction works will be at a significant distance from this watercourse,
- the point at which the Cummer River reaches the Carrigadrohid reservoir is 11.5 km downstream of the proposed development site,
- the Gearagh cSAC is upstream of the location at which the Cummer River flows into Carrigadrohid reservoir.

Combining these main elements, it is highly unlikely that any silt-laden runoff or pollutants that may arise during the construction of the wind farm would enter the upper reaches of the Cummer River, let alone the Carrigadrohid Reservoir, and then in turn mix with upstream waters at the Gearagh cSAC. Furthermore, the proposed development will be constructed using best practise methodologies including mitigation measures specifically designed for the control and prevention of silt runoff and pollutants entering any watercourse.

3.4.2 White-tailed Sea Eagle

The submission in relation to White-tailed Sea Eagle (WTSE) notes that the applicant has failed to contact the Irish Raptor Study Group and that there is a *'severe lack of understanding of the ecological requirements of the WTS Eagle in the EIS and subsequent reports'.*

As stated in both the EIS and the RFI for the proposed wind farm, every effort was made to consult with the Irish Raptor Study Group in relation to WTSE, but no response was received. In addition to this, extensive consultation with other stakeholders in relation to ecology and avifauna was made, including the Development Applications Unit (DAU) and the National Parks and Wildlife Service (NPWS). A number of consultations were carried out with the NPWS in relation to avifauna at the proposed site. NPWS Divisional Ecologist, Dr. Jervis Good was contacted by phone on 01 November 2013. Following discussions with Dr. Good, a winter bird vantage point survey, following best practice Scottish Natural Heritage guidance was carried out in the overall area (encompassing the wind farm site) from November 2013 to March 2014. NPWS staff Declan O'Donnell and Danny O'Keefe were contacted by phone on 13 May 2014.

With regard to assessing the potential impact(s) of the proposed development on ecology, advice was given to screen for impacts on Hen harrier, Golden Plover, Merlin, Barn Owl, Short-eared Owl, White-tailed Eagle, Red Grouse and Curlew, and also to address potential impacts on Freshwater Pearl Mussel.

The CCC Heritage Officer was also contacted with regard to known records of this species in the vicinity of the proposed development and she confirmed that the Council did not have specific records of the species but was aware of records in the Lee Valley, greater than 6 km from the proposed site. In Counties Cork and Kerry WTSE activity has been known to occur in the areas of the upper Lee Valley, Lough Allua and Gougane Barra, the Gearagh, Co. Cork, and Sillahertane, Co. Kerry. Successful nests have been reported by the Golden Eagle Trust in County Cork, near Glengarriff and also in Co. Kerry, in the Killarney National Park and near to Kenmare, as well further north in County Clare and County Galway.

In light of the consultation described here in relation to ecology and avifauna, it is considered that every effort was made to obtain information on WTSE and other birds of conservation concern from the relevant statutory bodies, and any potential concerns that might exist in relation to the proposed development.

In relation to the ecology of WTSE, in terms of breeding, the proposed development site lacks suitable breeding territory and nesting habitat required, such as tall mature trees, crags, or cliffs, on or near large inland waterbodies or on the coast (2) (3). WTSE pairs set up their all-year-round breeding territories at coastal and large in-land lake/river/marsh areas (see www.goldeneagle.ie). The EIS study area, wind farm development site and surrounding landscape do not provide such habitats to sustain a breeding territory.

During the winter, immature birds tend to disperse widely during their pre-breeding stage and roost at communal roost sites preferring mature woodland or crags (2). As stated in the RFI, winter based usage of the proposed site by birds was evaluated by means of a Vantage Point (VP) study, following Scottish Natural Heritage (SNH) methodology. Thirty-six hours of survey effort from two VP locations was carried out overlooking the site and surrounding landscape, and no sightings of WTSE were recorded during that period. Therefore winter based usage of the wind farm development area by WTSE was taken into consideration here, where no sightings were ever noted during the 36-hour field study.

3.4.3 Kestrel and Snipe

The submission in relation to Kestrel and Snipe notes that there is not sufficient data on the *'quantification of actual losses'* of these species that could be incurred by the proposed development. Concern was also expressed in relation to the impact on the red-listed Meadow Pipit.

The RFI response submitted for the proposed wind farm provided detailed information on the Kestrel and Snipe activity recorded during both the 36 hours of winter VP survey on the site as well as on breeding bird transects and all other ecology surveys of the site. Details of Kestrel flight activity was provided including a map showing the flightlines in relation to the proposed windfarm. Overall, Snipe and Kestrel activity was relatively low at the site, though it was acknowledged that some habitats on the site could be used by both species for foraging and/or roosting and that both species are likely to use the site from time to time.

In order to evaluate the impact of the proposed development on Kestrel and Snipe, the impact assessment methodology devised by Percival (4) for birds and wind farms was used. The methodology works by assigning key avian receptors an evaluation of importance (or sensitivity) for assessment. Following this the significance of potential impacts are rated as a product of both the magnitude of the predicted effect and the importance value (sensitivity) of the key receptor affected, based on the probability of the likely impact occurring. As was detailed in the RFI response, this methodology was applied for Kestrel and Snipe, and in the context of relatively low levels of activity on the site, and the presence of some (but not extensive) suitable habitat, the sensitivity of both species to the proposed development was evaluated as very low.

Meadow Pipit were found in the study area, recorded during winter VP surveys as well as on breeding bird transects. This species has recently become red-listed in Ireland, due to short-term declines in the breeding population (5). According to the most recent Scottish Natural Heritage guidance (3) for bird survey methods at onshore wind farms, most passerine species and general lowland farmland birds (including Meadow Pipit) are not considered to be particularly susceptible to impacts from wind farms. Furthermore, recent research by Pearce-Higgins *et al.* (6) suggests potential positive effects of wind farm construction on Meadow Pipit (as well as Skylark and Stonechat).

Such effects may result from vegetation disturbance during construction creating greater openness in the sward structure, known to benefit these species.

3.4.4 Bats and Land Alterations

This submission relates to '*land alterations*' which have occurred within the site boundary subsequent to the submission of the EIS and RFI for the proposed development. Hedgerows and field boundaries were removed in an area at the south of the proposed site. It is suggested that the flight patterns of bats have been seriously altered and that a reassessment should take place.

The information on habitats within the site that was submitted in the EIS and RFI was the most up-to-date information available to the applicant at the time of the submission of those documents. The applicant does not have control over any minor alterations to the landscape that may have occurred due to the actions of others subsequent to the submission of the planning application.

An evaluation of the potential impact of the proposed development on bats was made as part of the EIS for the proposed development, with further information provided at the RFI stage. The RFI provided maps showing the locations of all bat species recorded during three field surveys at the site in June, July and August 2014. A map was provided showing the confirmed (based on field surveys) and prospective bat commuting areas (hedgerows, earth banks, treelines) within the site. The hedgerows which were shown to have been subsequently removed in this submission by Michael O'Donovan were marked as 'prospective bat commuting areas' on Figure LE1470202_0400_016 of the RFI.

The removal of these additional areas constitutes habitat loss (foraging/commuting corridors) for bats in the area. However, this habitat loss does not alter the findings of the impact assessment of the proposed wind farm on bats, as it is outside of the footprint of the development. The amount of vegetation clearance required as a result of the proposed development was calculated as part of the RFI, and where hedgerows and treelines and other vegetated areas were earmarked for removal, it was proposed to replant 1.5 times this amount of vegetation on the site with native species (i.e. 2403 m of hedgerow). Again, the vegetated areas which have subsequently been removed are outside of the development footprint and do not alter these calculations.

As part of the mitigation measures for bats presented in the RFI, the Natural England Technical Information Note TIN051 (7) was used to calculate a suitable buffer zone around each individual turbine in which vegetation clearance should take place. The removal of vegetation around turbines helps to ensure that bats are not drawn towards turbines, following vegetation corridors such as hedgerows, which could lead to collision impacts. A map of each individual turbine was provided showing the buffer zone around each turbine and the vegetation clearance required. The most southerly turbine on the site, Turbine 6 had a buffer zone of 69.1 m around the turbine base, and vegetation clearance that would be required here involves hedgerow removal and clearance of gorse/scrub areas. The hedgerows that were removed subsequent to the RFI are to the south of Turbine 6 and thus do not alter the vegetation clearance zones provided.

3.4.4.1 Terrestrial Habitats

The submission suggests that certain habitats were not included in the habitat map provided in the planning application.

A revised habitat map was provided in the RFI along with a table showing the estimated area of each habitat that would be lost due to the proposed development. The habitats in the study area were identified during habitat walkover surveys of the site on 11 June and 08 July 2014. The habitats were classified according to *'A Guide to Habitats in Ireland'* (8). Smaller portions of habitat which are below the criteria for minimum mappable units used in Smith *et al.* (8) *'Best practice guidance for habitat survey and mapping'* were not included in the habitat map, according to best practice. The FT ecology group has extensive experience in ecological survey and habitat mapping, and it is considered that the habitat map provided in the RFI and the associated habitat descriptions in Section 5.3 of the EIS provide an accurate representation of the existing habitats on the site.

3.4.5 Freshwater Habitats/River Bride and Adjacent Marsh

This submission relates to the CCC Senior Executive Planner's Report – Further Information Assessment and the information provided in this report relating to the River Bride, and that there are no significant watercourses within the proposed development site.

Chapter 7 'Hydrology and Water Quality' of the EIS submitted by the applicant for the proposed development describes the current drainage conditions at the site. The assessment of hydrology and water quality was prepared following all of the relevant policy and planning documents to identify objectives regarding surface waters and followed EPA guidance with respect of the information to be provided in an EIS as well as all other relevant guidance.

Chapter 7 of the EIS states that the *'River Bride rises at an elevation of 220 m OD between Moneygaff East and Reanacaheragh to the southwest of the site. It flows firstly in an easterly direction along the southern boundary of the site and then turns in a south easterly direction, as it flows away from the site from the south eastern corner of the site'.* As discussed in Chapter 7 (as well as in Chapter 2 Description of the Proposed Development and Chapter 5 Ecology) the watercourse skirting the southern boundary of the site is a tributary of the River Bride. Chapter 7 includes an assessment of the potential impacts on the River Bride catchment due to the proposed development, providing details on proposed mitigatory measures to avoid adverse impacts on all watercourses draining from the site.

There will be no direct discharges from the proposed development to any natural watercourses, with all drainage waters being dispersed to soakaways or as overland flows via vegetation filters at a significant distance from the nearest natural watercourses. It is concluded that following the implementation of mitigation measures at the site that *'activities during the construction of the wind farm are of negligible significance in the River Bride'*.

The CCC Senior Executive Planner's Report states that the development site is within the catchment of the River Bride and that there are no significant watercourses within the proposed development site (the watercourse skirting the southern boundary of the site is a tributary of the River Bride). The report also states that there will be no direct discharge to any natural watercourses as a result of the proposed development. This report takes into consideration the impact assessment provided in the EIS and also concludes that the proposed development is *'expected to have a negligible impact on the receiving environment in respect of surface water'.*

3.4.6 Invasive Species

This part of the submission states that there is *'very little consideration given to invasive species at and around this site'*.

It is considered that the EIS submitted by the applicant adequately addresses invasive species through mitigatory measures during and post-construction. Chapter 5 'Ecology' of the EIS identifies the location of the invasive species Japanese Knotweed outside of the study area. The mitigatory measures identified for the protection of habitats and botanical species includes the implementation of measures to prevent further introduction of any invasive species at the site, by following the 2010 NRA guidance on *'The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads'*.

Post-construction monitoring for invasive species is listed as an additional mitigatory measure. In circumstances where invasive species are discovered at the site following an ecological survey, measures will be taken to remove them, as described in Chapter 5 of the EIS.

3.4.7 Proposed Substation – Strategic Infrastructure Development

'The applicant has subsequently revealed that the substation will be taken over by Eirgrid who will be free to make any connections and extensions that they wish'. 'This change of circumstances means that the substation qualifies as a transmission generator strategic infrastructure development'.

With regard to the planning application for the proposed substation, having established the reasons why a stand-alone permission for the substation was required (as detailed fully in the planning application documentation for the wind farm, RFI and CFI response), the applicant consulted with the planning authorities with regard to the appropriate planning route for this proposed development.

Under Section 182(A) of the Planning and Development Act, as amended, as inserted by Section 4 of the Planning and Development (Strategic Infrastructure) Act 2006 where an undertaker:

> "*...intends to carry out development comprising or for the purposes of electricity transmission the undertaker shall prepare, or cause to be prepared, an application for approval of development under section 182B and shall apply to the Board for such approval accordingly*".

Subsection 9 of 182A states that:

In this section 'transmission', in relation to electricity, shall be construed in accordance with section 2(1) of the Electricity Regulation Act 1999 but, for the purposes of this section, the foregoing expression, in relation to electricity, shall also be construed as meaning the transport of electricity by means of—

(a) a high voltage line where the voltage would be 110 kilovolts or more, or
(b) an interconnector, whether ownership of the interconnector will be vested in the undertaker or not.

In section 2(1) of the Electricity Regulation Act, 1999, "transmission" is defined in relation to electricity as meaning "*the transport of electricity by means of a transmission system, that is to say a system which consists, wholly or mainly, of high voltage lines and electric plant and which is used for conveying electricity from a generating station to a substation, from one generating station to another, from one substation to another or to or from any interconnector or to final customers but shall not include any such lines which the Board may, from time to time, with the approval of the Commission, specify as being part of the distribution system but shall include any interconnector owned by the Board.*"

Subsection 9 of 182A sets a threshold of 110 kV in order for a high voltage electricity transmission line to be considered strategic infrastructure. However, no specific threshold is set in respect of a substation.

Therefore, the applicant commenced pre-application discussions with An Bord Pleanála to determine whether this proposal constitutes "strategic infrastructure development". A letter, seeking a determination from the Board in this regard, was submitted in April 2014 (see copy included in Appendix 2).

Following further correspondence and a meeting with An Bord Pleanála in August 2014, the Board determined (in a letter dated 27 August 2014, copy included in Appendix 5) that "*..having regard to the scale and nature of the proposed development An Bord Pleanála has concluded that the proposed development does not come within the scope of Section 182A of the Planning and Development Act, 2000, as amended. Accordingly any application for planning consent for the proposed development should be made to the local planning authority for the area in accordance with the provisions of Section 34 of the Planning and Development Act, 2000, as amended*".

A pre-planning meeting was held with Cork County Council on 16 July 2014 to discuss the project. At this meeting, the background to the project was provided by the applicant, together with a description of the proposed development.

The applicant also detailed the pre-application process which was ongoing at the time with An Bord Pleanála with respect to whether a planning application to the Board would be required, in lieu of a planning application to Cork County Council.

The key environmental aspects of the proposed development were also outlined. The applicant also committed to undertaking AA/EIA screening for the proposed development and, should Cork County Council be determined as the relevant planning authority, that an EIA Screening Report and AA Screening Report would be submitted to the Council, to assist the council in its screening assessment.

Eirgrid operates the 110 kV transmission network and therefore any connection to this network, in terms of the connection infrastructure required, such as the substation size and layout, must meet its requirements. The fact that Eirgrid will take over the substation can hardly be considered *'a change in circumstances'* as the appellant claims, given that the fundamental reason for the application was to ensure its compliance with Eirgrid requirements, which was clearly stated in the application documentation.

3.4.8 Liquid effluents

In relation to liquid effluents the appellant raises concerns that the *'details of all liquid effluents and solid wastes, including method statement of disposal and/or treatment of sewage'* has not been provided by the applicant. The appellant states that *'the applicant has limited his comments to the operational phase only, which constitutes an omission. Liquid effluents will be produced during the operational phase actually, nacelle maintenance etc.'*

Chapter 2 of the EIS, 'Description of the Proposed Development' provides information in Section 2.4.5 'Waste Disposal' on how waste will be disposed of during the Construction, Operation/Maintenance, and Decommissioning phases. In relation to Operation/Maintenance, it is clearly stated that *'all waste arising as a result of servicing and maintenance (e.g. lubricating oils, cooling oils, packaging from spare parts or equipment, unused paint, etc.) will be removed from the site and reused, recycled or disposed of in accordance with best practice in an authorised facility'*.

3.4.9 Hydrology

I am not satisfied with the Boards decision, especially considering that there are no mitigation measures in place to protect the River Bride and the River Cummer, and associated wetlands from potential leaching of $CaCO_3$ and other minerals from the concrete bases of turbines.

It is assumed that the appellant is referring to the Council's decision to grant planning for the proposed wind farm. Chapter 7 of the EIS 'Hydrology and Water Quality' details extensive mitigation measures to reduce and protect the receiving waters from the potential impacts of the proposed development. The assessment of hydrology and water quality was prepared following all of the relevant policy and planning documents to identify objectives regarding surface waters and followed EPA guidance with respect of the information to be provided in an EIS as well as all other relevant guidance.

There will be no direct discharges from the proposed development to any natural watercourses, with all drainage waters being dispersed to soakaways or as overland flows via vegetation filters at a significant distance from the nearest natural watercourses. It is concluded that following the implementation of mitigation measures at the site that *'activities during the construction of the wind farm are of negligible significance in the River Bride'*.

The CCC Senior Executive Planner's Report states that the development site is within the catchment of the River Bride and that there are no significant watercourses within the proposed development site (the watercourse skirting the southern boundary of the site is a tributary of the River Bride). The report also states that there will be no direct discharge to any natural watercourses as a result of the proposed development. This report takes into consideration the impact assessment provided in the EIS and also concludes that the proposed development is *'expected to have a negligible impact on the receiving environment in respect of surface water'*.

3.4.10 Noise

"The applicants have however reassessed their data which was subsequently peer reviewed and declared that there was no point in conducting any additional noise monitoring as the results would be that same as before.

I do not concur with this rational. The applicants cannot be absolutely sure that there have been no environmental changes at this site. They also have not taken this opportunity to place microphones in alternate locations in order to give as balanced a record of background noise as is possible. As it stands the windfarm is only barely within the allowable noise thresholds as per the DoEHG guidelines."

The baseline data was collected at representative locations around the site in multiple directions using appropriate monitoring equipment for the task and over sufficient periods so as to determine prevailing background noise levels. While it is unclear what is meant by "environmental changes", baseline noise levels usually increase as a result of change so the impact of the wind farm development would be lessened if baseline levels increased.

The appraisal has demonstrated that Barnadivane Wind Farm will meet the 2006 limit criteria and the applicant has committed to meeting the limit conditions. It does not matter to what degree the threshold limits are met, only that they are met and that compliance with such limits is demonstrated in a transparent and standardised method.

"The issues around turbine make and model and the methodology of the applicants noise modelling has not been satisfactorily resolved in my opinion and needs to be resolved in the interests of fairness and clarity. To this point a large number of the issues in the submissions on this proposed development raised the issue of noise impacts."

The noise prediction modelling carried out has been done in accordance with the IOA Good Practice Guide which was published in order to standardise the prediction methods in the UK and Ireland to date and provide robust predictions.

"Cork County Planning Dept. have imposed a number of conditions relating to noise emissions from the proposed development conditions no. 22 & 23. This inherently implies that there is the potential for the proposed development to exceed the allowable thresholds as expressed in the DoEHG .guidelines."

Firstly, only one planning condition relates to noise emissions, Condition No. 23, where the noise levels from the development are conditioned to not exceed 43dB $L_{A90,\ 10\ mins}$ or a maximum of 5dB above background noise at nearby sensitive locations. Noise emission limits are set for a range of developments and not just wind energy developments. Regulatory bodies such as the Environmental Protection Agency and Transport Infrastructure Ireland have identified appropriate operational limits for their respective activities and any developments falling under these are required to meet noise emission limits. This ensures that these developments are designed from the feasibility stage to meet these limits.

I do not have faith in conditions that are wholly to be implemented by the developer. In fact Cork County Councils Environment department does not even have the equipment necessary to measure the noise levels at windfarm developments. I find this situation to be unacceptable and at the very least, for the sake of public health and safety, windfarm noise emissions should come in well below the allowable thresholds."

The applicant will agree a methodology for demonstrating compliance and for ongoing monitoring if required. This will be in accordance with international best practice guidelines and will be subject to the approval of the planning authority. The conditioned limits are those considered by the planning authority as being appropriate for the proposed development. If lower limits were considered appropriate then these would have been conditioned.

3.5 General

In the appeal lodged on 30 November 2015 Noonan Linehan Carroll Coffey Solicitors also refer to extensive local opposition to the project, conflicting policies (favouring renewable policies over national and regional policies) and issues relating to large wind turbines.

3.5.1 Conflicting Policies

While Government policy favours the rapid development of renewable energy sources including wind, that policy is not intended, and should not be interpreted to as to nullify all other relevant policies.

The proposed Barnadivane Wind Farm development will comply with all the relevant legislation, directives and policy objectives as outlined in Section 2.1. It will contribute significantly towards achieving the Government's commitment to meeting its Kyoto Protocol target, as well as EU, National and Regional targets for renewable energy production. At a local level the proposed wind farm is located in an area '*Acceptable in Principle*' according to the Cork County Development Plan (CDP) 2014 (Objective ED 3-4). As stated in the CDP, '*these areas (River Ilen basin north of Skibbereen and an area south of Macroom) are in optimal locations for wind farm development without significant environmental impacts*'. The site is also located in an '*Area Likely to be Most Suitable*' for Wind Energy Projects taking account of all key policy considerations, under the CDP. Therefore, the site for the proposed development is deemed to be an optimum location for a wind energy project.

The proposed Barnadivane Wind Farm lies in an area classed as '*Acceptable in Principle*', under County Development Plan (CDP) Objective ED 3-4, as shown on Table 2.1, in addition to being in an area '*Likely to be Most Suitable*' for Wind Energy Projects. In addition, by virtue of the existing permission, the principle of this type of development has already been established in the vicinity.

The applicant would refer to Section 2.1 herein, which provides a brief summary of the policy and legislative context for this proposed development. Further detail and information is also provided in the Environmental Impact Statement which accompanied the application. The proposed development is clearly in line with EU, national and local energy policy.

3.5.2 Large Wind Turbines Pose Particular Challenges

Several family homes have been rendered uninhabitable due to careless planning decisions which permitted large industrial wind turbines to be located close by.

The Government has acknowledged that there is a problem by initiating its review of some of the elements of the 2006 Guidelines, including noise and shadow flicker. While the review process appears to have become bogged down, we submit that the Board must acknowledge that the fact of the review is confirmation that the noise and shadow flicker elements of the 2006 Guidelines are not now fit for purpose. We ask the Inspector and the Board to address our submission in this regard specifically in their Report and in their Decision, respectively as it is a key submission in this appeal. We further submit that it follows as a matter of logic and best practice that no planning permission should be granted on the basis of those elements of the 2006 Guidelines.

The noise impact appraisal carried out for Barnadivane Wind Farm (December 2014) was carried out using the 2006 Wind Energy Guideline noise limit structure as required. The local authority, while aware of the ongoing targeted review of the noise, shadow flicker and proximity elements of the guidelines, are reliant on the existing limits in order to assess wind farm planning applications. It would have been incorrect for the applicant to appraise the application on any other limits than the 2006 guidelines limits. Notwithstanding this, it is worth noting that the draft Guidelines, issued for public consultation, included a compulsory 500 m separation distance between turbines and houses. The proposed development meets this criterion.

3.6 Conclusion

The applicant, Barna Wind Energy (B.W.E.) Ltd. applied for permission to develop a wind farm consisting of 6 no. wind turbines (with a maximum tip height of 131 m), and all associated infrastructure at Lackareagh and Garranereagh, Lissarda and Barnadivane (Kneeves), Teerelton, Co. Cork on 19 December 2014. The applicant engaged in pre-application consultation with Cork County Council and other relevant stakeholders, in order to inform and scope the environmental appraisal for the proposed wind farm development at Barnadivane.

An Environmental Impact Statement (EIS) was prepared for the proposed development in accordance with Schedule 6 of the Planning and Development Regulations 2001, as amended, which sets out the contents of an EIS. In addition, in the preparation of this EIS, the contents of Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment were also considered (the 2014 EIA Directive). An Appropriate Assessment (AA) Screening Report was prepared, in accordance with the EU Habitats Directive (92/43/EEC) in order to evaluate the potential impacts of the proposed development on Natura 2000 sites.

A Further Information Request (RFI) was issued by Cork County Council on 20 February 2015. A Response to the RFI was submitted on 26 May 2015 by the applicant. A clarification to the RFI (CFI) was issued by CCC on 28 July 2015 and additional further information was submitted on 10 September 2015.

A stand-alone planning application for a new grid connection substation to replace the consented substation, in order to meet current Eirgrid standards was submitted to Cork County Council (planning reference14/557 and ABP ref. 04.244439). A planning application has also been submitted for the development of a private roadway, approximately 150 metres long, from the R585 to the L6008, in Bengour West, Newcestown, Co. Cork (planning reference 14/06803). The three separate planning applications for the proposed Barnadivane 110 kV substation, the proposed private roadway and the proposed wind farm comply with the objectives of the EIA Directive, and are separate applications for specific and justifiable reasons, as described in detail in the wind farm planning application documentation and the responses to both the RFI and CFI submitted to Cork County Council.

The potential impacts of all three proposed developments (the wind farm, substation and private road) have been considered in full. This was done in the EIS and in the response to both the RFI and CFI which accompanied the wind farm planning application, which considered the potential cumulative impacts of the proposed wind farm, the proposed substation, the proposed turbine delivery route realignment and any other relevant developments within the area.

All of this demonstrates the robust nature of the proposal, which was borne out by the granting of permission for the development by Cork County Council.

Should planning permission be granted for the proposed 6 turbine Barnadivane Wind Farm, it will be constructed instead of the permitted 14 turbine Barnadivane Wind Farm. This is clearly stated in the application documentation. While the height of the turbines has increased by approximately 25%, the total number of turbines has been substantially reduced from 14 to 6 (c. 60% reduction). The location of the turbines has also been amended in order to maximise the energy yield making the proposed project more efficient. If the proposed 6 turbine wind farm is not granted planning permission, the applicant intends to develop the permitted 14 turbine wind farm in accordance with the planning permission for same.

In the opinion of the applicant, (and Cork County Council in granting permission) this proposal represents a robust planning application, which has been prepared in full accordance with the statutory and best practice requirements, has assessed all relevant potential impacts on the surrounding environment and is in line with European, national and local energy and planning policy.

The applicant therefore requests that An Bord Pleanála upholds the decision of Cork County Council to grant permission for this proposed development.

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Appendix 1

Correspondence with Cork County Council
re: Planning and Red Line Boundary

Clodagh O'Donovan

From: Ger Moore <Ger.Moore@CorkCoCo.ie>
Sent: 06 March 2015 16:12
To: William O'Connor
Subject: RE: 2015-03-04-Planning Application Boundary

William,
The Councils attitude to applications showing multiple separate site areas is that they do not comply with Article 22 (2) (b) and 22 (2) (b) (i) of the Regs. These essentially state that the **site** to which the application relates must be marked so as to clearly identify "the **land or structure** to which the application relates and boundaries thereof in red" The planning authority considers on the basis of the above that any application, to comply with the above requirements, must show the site as **a single unit incorporating within its undivided boundaries all the elements of the application**. Where development is proposed that requires some type of ancillary work to the main proposal on a separate site or sites that cannot be connected to the main site area, then separate applications must be made possibly linked in the development descriptions and with the applicants names.

Regards,
Ger

From: William O'Connor [mailto:william.oconnor@turnkeydev.com]
Sent: 04 March 2015 18:14
To: Ger Moore
Cc: O'Brien Neil
Subject: 2015-03-04-Planning Application Boundary

Ger,

I refer to our discussion regarding the red line boundary for Barnadivane Wind Farm (currently under consideration 14/6760).
You advised that Cork County Council do not allow more than one application boundary per planning application and therefore we made a separate application for road widening to facilitate the delivery of abnormal loads to the proposed 6 turbine wind farm. The reason for the separate applications in relation to the wind farm has been queried by Third Party submissions. I would be grateful if you could outline the reasons that more than one application boundary is not acceptable to Cork County Council by return.

Thank you

Regards,

William O'Connor

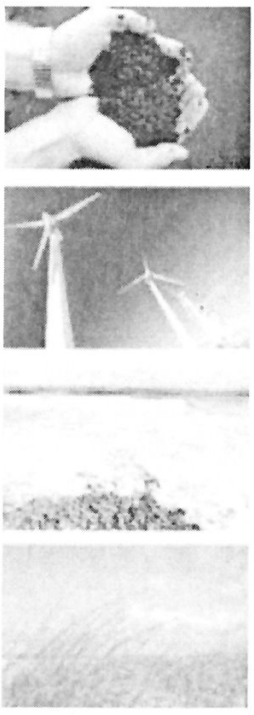
Enerco Energy Ltd., Lissarda Business Park, Lissarda, Co Cork, Ireland

T DD +353 21 7336956 | T +353 21 7336034 (Ext 214)

E william.oconnor@turnkeydev.com | www.enercoenergy.ie

Appendix 2

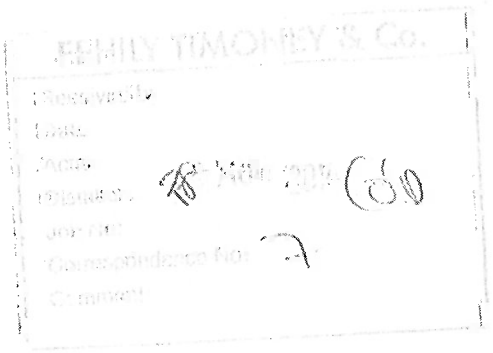
Correspondence with An Bord Pleanála re SID



Our Ref: 04.VC0074

Your Ref: Q:/2014/LE14/702/01/LET001/MT

An Bord Pleanála



Clodagh O'Donovan
Fehily Timoney & Company
Core House
Pouladuff Road
Togher
Cork

27th August 2014

Re: Proposed 110kV Substation at Barnadivane,
Co. Cork

Dear Madam,

Please be advised that following consideration of the issues raised at the above consultation and having regard to the scale and nature of the proposed development An Bord Pleanála has concluded that the proposed development does not come within the scope of section 182A of the Planning and Development Act, 2000, as amended. Accordingly any application for planning consent for the proposed development should be made to the local planning authority for the area in accordance with the provisions of section 34 of the Planning and Development Act, 2000, as amended.

In accordance with section 146(3) of the Planning and Development Act, 2000, as amended, the Board will make available for inspection and purchase at its offices the documents relating to the decision within 3 working days following its decision. In addition, the Board will also make available the Board Direction on the decision on its website (www.pleanala.ie). This information is normally made available on the list of decided cases on the website on the Wednesday following the week in which the decision is made.

The attachment contains information in relation to challenges to the validity of a decision of An Bord Pleanála under the provisions of the Planning and Development Act, 2000, as amended.

In accordance with the fees payable to the Board and where not more than one pre-application meeting is held in the determination of a case, a refund of €3,500 is payable to the person who submitted the pre-application consultation fee. As only one meeting was required in this case, a refund of €3,500 will be sent to you in due course.

If you have any queries in relation to the matter please contact the undersigned officer of the Board. Please quote the above mentioned An Bord Pleanála reference number in any correspondence or telephone contact with the Board.

Yours faithfully,

Kieran Doherty
Executive Officer
Direct Line:01-8737248

Encls.

AHC/VC74.01.LTR

Judicial review of An Bord Pleanála decisions under the provisions of the Planning and Development Act, 2000, as amended

A person wishing to challenge the validity of a Board decision may do so by way of judicial review only. Sections 50, 50A and 50B of the Planning and Development Act 2000 (as substituted by section 13 of the Planning and Development (Strategic Infrastructure) Act 2006, as amended/substituted by sections 32 and 33 of the Planning and Development (Amendment) Act 2010 and as amended by sections 20 and 21 of the Environment (Miscellaneous Provisions) Act 2011) contain provisions in relation to challenges to the validity of a decision of the Board.

The validity of a decision taken by the Board may only be questioned by making an application for judicial review under Order 84 of The Rules of the Superior Courts (S.I. No. 15 of 1986). Sub-section 50(6) of the Planning and Development Act 2000 requires that subject to any extension to the time period which may be allowed by the High Court in accordance with subsection 50(8), any application for judicial review must be made within 8 weeks of the decision of the Board. It should be noted that any challenge taken under section 50 may question only the validity of the decision and the Courts do not adjudicate on the merits of the development from the perspectives of the proper planning and sustainable development of the area and/or effects on the environment. Section 50A states that leave for judicial review shall not be granted unless the Court is satisfied that there are substantial grounds for contending that the decision is invalid or ought to be quashed and that the applicant has a sufficient interest in the matter which is the subject of the application or in cases involving environmental impact assessment is a body complying with specified criteria.

Section 50B contains provisions in relation to the cost of judicial review proceedings in the High Court relating to specified types of development (including proceedings relating to decisions or actions pursuant to a law of the state that gives effect to the public participation and access to justice provisions of Council Directive 85/337/EEC i.e. the EIA Directive and to the provisions of Directive 2001/12/EC i.e. Directive on the assessment of the effects on the environment of certain plans and programmes). The general provision contained in section 50B is that in such cases each party shall bear its own costs. The Court however may award costs against any party in specified circumstances. There is also provision for the Court to award the costs of proceedings or a portion of such costs to an applicant against a respondent or notice party where relief is obtained to the extent that the action or omission of the respondent or notice party contributed to the relief being obtained.

General information on judicial review procedures is contained on the following website, **www.citizensinformation.ie.**

Disclaimer: The above is intended for information purposes. It does not purport to be a legally binding interpretation of the relevant provisions and it would be advisable for persons contemplating legal action to seek legal advice.

Our Ref: 04.VC0074

Your Ref: Q:/2014/LE14/702/01/LET001/MT

An Bord Pleanála

Paul O'Brien
Fehily Timoney & Company
Core House
Pouladuff Road
Togher
Cork

12th August 2014

Re: Proposed 110kV Substation at Barnadivane,
Co. Cork

Dear Sir,

I have been asked by An Bord Pleanála to refer further to the above-mentioned pre-application consultation request.

The Board intends to hold a pre-application consultation meeting and the arrangements are as follows:

Date: Friday, 15th August 2014

Time: 11.00 a.m.

Venue: Conference Room, An Bord Pleanála, 64 Marlborough Street, Dublin 1

Please note that it is intended that the meeting will be essentially for the purpose of facilitating the Board's consultation team to obtain information from the prospective applicant in relation to the proposed development.

Having regard to the above please be advised that the following information should be submitted by you at the meeting:

(a) A site location map to a reasonable scale (1:2500) to precisely pinpoint the propsoed site.

(b) Details of the nature of the issues on which advice is sought from the Board in respect of the proposed development application having regard to section 182E(2) of the Planning and Development (Strategic Infrastructure) Act, 2006 and to article 210 of the Planning and Development Regulations, 2001 as inserted by Article 41 of the Planning and Development Regulations, 2006.

With regard to the above, please provide three copies of any written documents or other materials which you intend to submit at the meeting.

In respect of the conduct of the consultation meeting you should also note the following general matters:

1. The meeting will be chaired by a representative from the staff of An Bord Pleanála.

2. Please be advised that the Board is required to keep a record in writing of any consultations in relation to a proposed development and that a copy of this record shall become publicly available after consultations have been completed. Accordingly any material or information discussed or presented at pre-application consultation meeting by a prospective applicant should be clearly understood not to be subject to any guarantee of confidentially by An Bord Pleanála.

3. You are requested to bring 5 copies of a list of your attendees to the meeting together with details of their status vis a vis the proposed development and professional qualifications as appropriate.

Teil (01) 858 8100 Tel
Glao Aitiúil 1890 2 5 1 5 LoCall
Facs (01) 8 2 2684 Fax
Láithreán Gréasáin www.pleanala.ie Web
Ríomhphost bord@pleanala.ie Email

64 Sráid Maoilbhride,
Baile Átha Cliath 1

64 Marlborough Street,
Dublin 1

4. Please note that the holding of consultations does not prejudice the Board in any way and cannot be relied upon in the formal planning process or in legal proceedings.

5. No verbatim recording of the meeting by the use of recording equipment or a stenographer is allowed.

If you have any queries in relation to the matter please contact the undersigned officer of the Board. Please quote the above-mentioned An Bord Pleanála reference number in any correspondence or telephone contact with the Board.

Yours faithfully,

Kieran Doherty
Executive Officer
Direct Line:01-8737248

VC0/AC007400.ahc

Our Ref: 04.VC0074

Your Ref: Q:/2014/LE14/702/01/LET001/MT

An Bord Pleanala

FEHILY TIMONEY & Co.
Received by
Date 11 APR 2014
Action
Distribution
Job No:
Correspondence No: 3
Comment:

Paul O'Brien
Fehily Timoney & Company
Core House
Pouladuff Road
Togher
Cork

11th April 2014

Re: Proposed 110kV Substation at Barnadivane,
Co. Cork

Dear Sir,

An Bord Pleanála has received your request to enter into pre-application consultations under section 182E of the Planning and Development Act, 2000, as amended in respect of the above mentioned proposed development. A receipt for the fee lodged is enclosed.

Please be advised that the amendments introduced by the Planning and Development (Amendment) Act, 2010 provide for the Board to recover its costs in conducting pre-application consultations. These costs together with costs incurred by the Board in determining any **application** made to it will be included in the Board's decision. The Board will offset any application fees paid by the applicant against its costs.

Further advice or details in relation to the above will be provided by the Board at pre-application consultation meetings (if held).

The Board will revert to you in due course in respect of the request.

If you have any queries in the meantime please contact the undersigned officer of the Board.

Please quote the above mentioned An Bord Pleanála reference number in any correspondence with the Board.

Yours faithfully,

Kieran Doherty
Executive Officer
Direct Line:01-8737248

VC01.LTR

64 Sráid Maoilbhríde
Baile Átha Cliath 1

Teil (01) 858 8100 Tel
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64 Marlborough Street,
Dublin 1

FEHILY TIMONEY & COMPANY

CONSULTANTS IN ENGINEERING & ENVIRONMENTAL SCIENCES

IRELAND UNITED KINGDOM POLAND SAUDI ARABIA

Our Ref: Q:/2014/LE14/702/01/Let001/MT

The Secretary
An Bord Pleanála
64 Marlboro St
Dublin 2

03 April 2014

RE: Request seeking a determination from An Bord Pleanála as to the status of a proposed development comprising a 110kV Substation at Barnadivane, Co. Cork in relation to the Strategic Infrastructure Development Act under Section 182A / Section 37B of the Planning and Development Act, 2000, as amended by the Planning and Development (Strategic Infrastructure) Act, 2006.

Dear Sir/Madam

This document has been prepared by Fehily Timoney and Company and forms the pre-application consultation submission of Arran Windfarm Limited (herein after referred to as the applicant), for a proposed 110kV substation development at Barnadivane, Co. Cork, to serve a wind farm development. The following outlines the main elements of the proposed development and sets out the planning legislative context.

Introduction

The applicant intends to seek planning permission to construct a 110kV grid connection substation compound with associated control buildings, equipment plinths, bunds and fencing, oil interceptor, treated effluent storage tank and associated site development works at Barnadivane, Co. Cork. Barnadivane wind farm has been permitted under 05/5907 and PL04.219620 and a 5 year extension of planning permission was granted by Cork County Council under 11/06605. The requirement for a substation was anticipated in the planning application for the wind farm, and planning permission has been obtained for a 110 kV control building and switch station *"to ESB specifications"*.

However new Eirgrid requirements necessitate this application and the applicant is commencing pre-application discussions with An Bord Pleanála to determine whether this proposal constitutes "strategic infrastructure development" (SID).

Cont'd.....

Description of the Permitted Development, including a currently permitted 110kV substation

The Barnadivane Wind Farm was permitted by An Bord Pleanála on 30 June 2006, comprising of 14 no. turbines, with hub height up to 70m and rotor diameter of 70m, and base to blade-tip height of 105m, 14 no. associated transformers, a 70m meteorological mast, substation and switch station compounds, construction of internal tracks, turbine foundations, hardstands and associated works and a connection to the national grid.

An Environment Impact Statement accompanied the planning application. The requirement for a substation was anticipated in the planning application, which referred to the following development works:

- Control building and compound surrounded by a 2m high security fence adjacent to the local road on the eastern side of the site.

- An application for a power line connection to the national grid was submitted to the ESB at the time of the original application which necessitated the construction of a switch station which is located adjacent to the proposed substation on a 70m by 45m compound.

Details of the permitted substation are illustrated on the following drawings that accompanied the planning application which you will find enclosed in Appendix A:

- Drawing No. 2003-188-01-007: Plan and Elevation of Proposed Substation
- Drawing No. 2003-188-01-008: Plan and Section of Proposed ESB Switch Station Compound

The permitted 110kV substation arrangement was based on ESB requirements at the time of the planning application and is no longer in accordance with current Eirgrid requirements. Any wind farm electricity substation must meet the design, electrical and layout requirements of Eirgrid and/or ESB Networks, as the substation will form part of national electricity grid and will be taken in charge by Eirgrid or ESB Networks. In the case of the substation granted permission as part of the wind farm permitted under 05/5907 and PL04.219620, given the electrical rating of the substation at 110kV, the substation will be taken in charge by Eirgrid and, therefore, will have to meet current Eirgrid specifications and requirements.

In this regard, Eirgrid's current design standards for substations of this nature were issued in 2011 after the planning application was made.

Description of the Proposed Development

The proposed substation is based on current Eirgrid requirements as illustrated on the following, which you will find enclosed in Appendix B:

- Drawing No. LE14-702-01-001: Proposed Barnadivane Substation Schematic Layout

Cont'd.....

There is some design flexibility in the layout of the individual components, provided certain minimum separation distances and other requirements are met. The proposed substation layout shown in the enclosed drawings now takes account of the Eirgrid requirements, but gives rise to a larger development footprint than that of the permitted substation. This larger footprint necessitated it to be relocated.

The proposed development will comprise of a 110kV grid connection substation compound with associated control buildings, equipment plinths, bunds and fencing, oil interceptor, treated effluent storage tank and associated site development works. The proposed substation is situated approximately 500m southwest of the permitted substation location, just south of an existing local road, as indicated the following which you will find enclosed in Appendix B:

- Figure No. LE14-702-01: Barnadivane Substation Site Location Map 'Permitted vs Proposed'

The new location was selected to accommodate the increased compound area whilst maintaining an appropriate separation distance from the existing 110kV overhead line traversing the site and avoiding the need for 110 kV overhead lines.

The proposed development is not within, adjoining or in relative proximity to a Natura 2000 site. The nearest sites are Boylegrove Wood (NHA), approx 4km northwest, Killaneer House Glen (NHA), approximately 5km southeast and Gearagh (SAC/NHA/SPA and Nature Reserve), approximately 6km to the north of the study area.

Planning Legislative Context

Under Section 182(A) of the Planning and Development Act as inserted by Section 4 of the Planning and Development (Strategic Infrastructure) Act 2006 where an undertaker:

> *"...intends to carry out development comprising or for the purposes of electricity transmission the undertaker shall prepare, or cause to be prepared, an application for approval of development under section 182B and shall apply to the Board for such approval accordingly".*

Subsection 9 of 182A states that:

In this section 'transmission', in relation to electricity, shall be construed in accordance with section 2(1) of the Electricity Regulation Act 1999 but, for the purposes of this section, the foregoing expression, in relation to electricity, shall also be construed as meaning the transport of electricity by means of—

> *(a) a high voltage line where the voltage would be 110 kilovolts or more, or*
> *(b) an interconnector, whether ownership of the interconnector will be vested in the undertaker or not.*

Cont'd.....

In section 2(1) of the Electricity Regulation Act, 1999, "transmission" is defined in relation to electricity as meaning *"the transport of electricity by means of a transmission system, that is to say a system which consists, wholly or mainly, of high voltage lines and electric plant and which is used for conveying electricity from a generating station to a substation, from one generating station to another, from one substation to another or to or from any interconnector or to final customers but shall not include any such lines which the Board may, from time to time, with the approval of the Commission, specify as being part of the distribution system but shall include any interconnector owned by the Board."*

Subsection 9 of 182A sets a threshold of 110 kV in order for a high voltage electricity transmission line to be considered strategic infrastructure. No threshold is set in respect of a substation, therefore it is reasonable to refer directly to Section 37A(2) of the Planning and Development (Strategic Infrastructure) Act, 2006. Section 37A(2) sets out the criteria that a proposed development must meet before it can be deemed a Strategic infrastructure Development:

> *(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 in the National Spatial Strategy or in any regional planning guidelines in force in respect of the area or areas in which it would be situated,*
>
> *(c) the development would have a significant effect on the area of more than one planning authority."*

Planning Legislative Assessment

The legislation explicitly sets a threshold of 110 kV in order for a high voltage electricity transmission line to be considered strategic infrastructure. However, no specific threshold is set in respect of a substation. Therefore, the applicant is commencing pre-application discussions with An Bord Pleanála to determine whether this proposal constitutes "strategic infrastructure development".

Having regard to the nature and scale of the development, it is our opinion that the proposed development is not SID for the following reasons:

1. The permitted wind farm development at Barnadivane that the proposed substation will serve is not itself within the strategic infrastructure thresholds of more than 25 turbines or having a total output greater than 50 megawatts, as specified in the Seventh Schedule

2. The development will not make a significant contribution to the delivery of regional planning guidelines or the National Spatial Strategy

3. The development is entirely within the catchment of a single planning authority.

Cont'd.....

Planning Precedent
The applicant wishes to draw the attention of the Board to a number of previous decisions on similar cases:

- VC0069 - 110kV substation at Barnakyle, Grange Castle, Clondalkin, County Dublin.
- VC0061 - Redevelopment of existing 110kV electricity substation at Ardnacrusha, Co. Clare.
- PC0161 - Alterations to a permitted electrical substation serving Slievecallan Wind Farm. Co Clare
- VC0067 - Proposed extension to existing substation compound, removal, reconfiguration, replacement and new substation infrastructure and local realignment of part of existing 220 kV circuits and 2 no. supporting towers at existing Knockraha 220kV substation, Co Cork.
- VC0063 - Redevelopment of existing 220/110kV electricity substation at Killonan, Milltown, Ballysimon, Co. Limerick.
- VC0031 - Line bay in Corderry 110 kV station to facilitate connection of Garvagh Glebe Windfarm

It was the decision of the Board on all of these pre-SID applications that the proposed grid connection works did not fall within the meaning of Section 182A of the Act and that a planning application should be made in the first instance to the relevant Local Authority.

Conclusion
The requirement for a substation was anticipated in the planning application for the permitted wind farm and planning permission has been obtained for a 110 kV control building and switch station *"to ESB specifications"*. The proposed development is required to meet current Eirgrid standards in substation design and will replace the currently permitted substation that is not yet constructed.

Having regard to the nature and scale of the development, it is our opinion that the proposed development is not SID for the following reasons:

1. The permitted wind farm development at Barnadivane that the proposed substation will serve is not itself within the strategic infrastructure thresholds of more than 25 turbines or having a total output greater than 50 megawatts, as specified in the Seventh Schedule

2. The development will not make a significant contribution to the delivery of regional planning guidelines or the National Spatial Strategy

3. The development is entirely within the catchment of a single planning authority.

The applicant is seeking a determination from An Bord Pleanála as to whether the proposed development is considered SID within section 182A of the Act, having regard to the provisions of the legislation.

Cont'd.....

We enclose the statutory fee of €4,500 for the Board's determination of this case. We understand that €3,500 may be refunded if no more than one meeting with An Bord Pleanála is required.

We look forward to hearing from you on the matter.

Yours faithfully

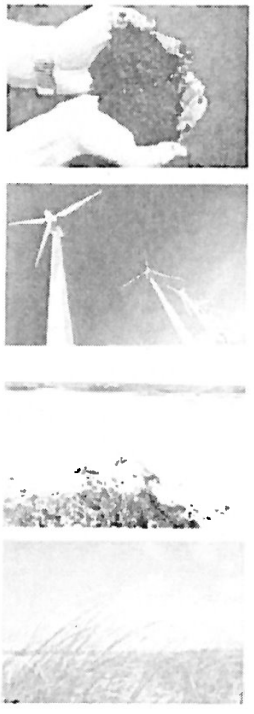
Paul O'Brien
for and on behalf of **Fehily Timoney & Company**

APPENDIX A

Drawings of Existing Development:

Plan and Elevation of Proposed Substation

Plan and Section of Proposed ESB Switch Station Compound

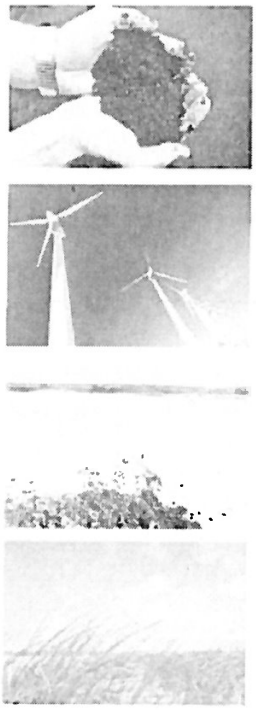


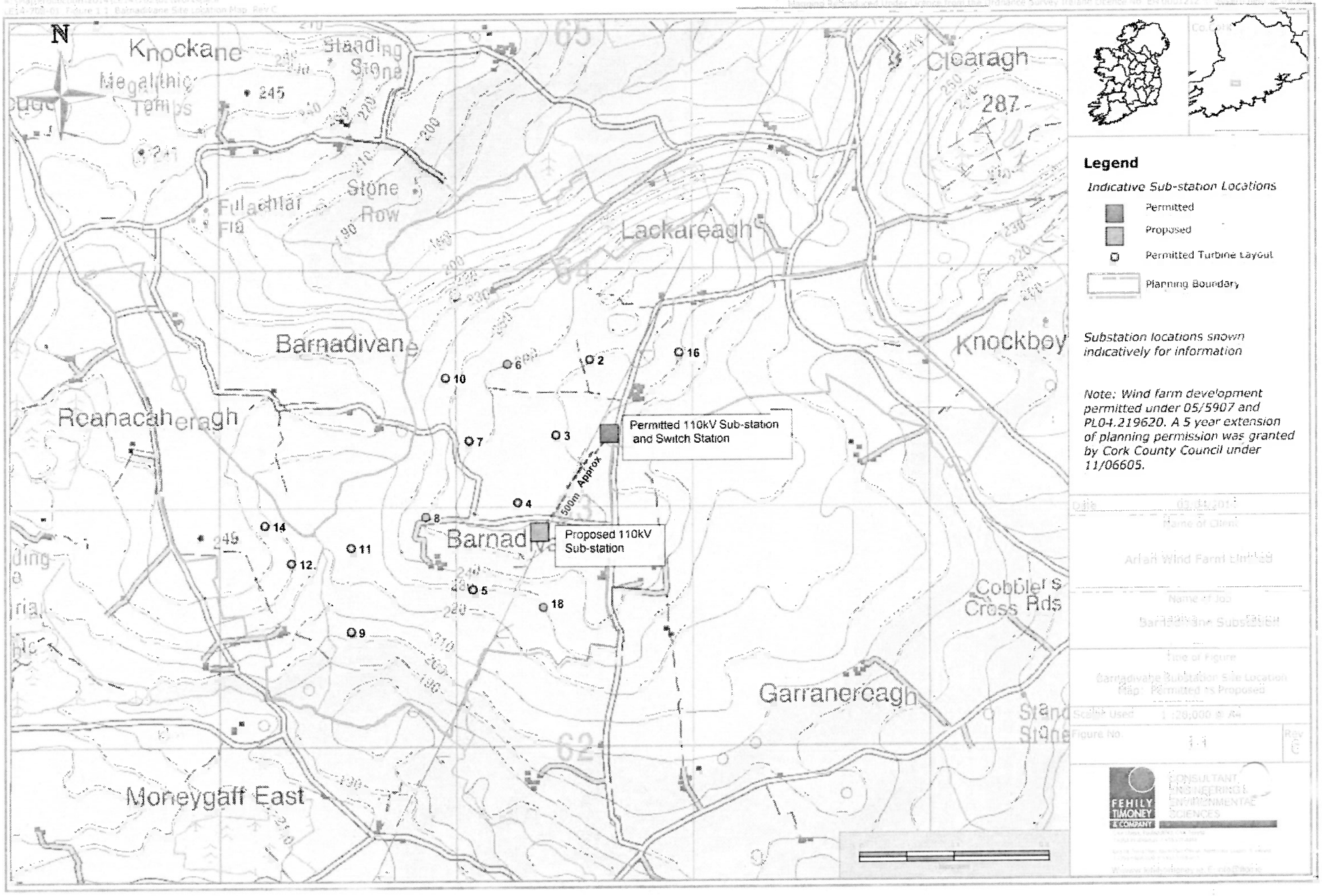
APPENDIX B

Drawings of Proposed Development:

Proposed Substation

Barnadivane Substation Site Location Map Permitted vs Proposed




N
Knockane
Megalithic Tombs
Standing Stone
Fulachtaí Fia
Stone Row
Clearagh
Lackareagh
Barnadivane
Knockboy
Roanacaheragh
Barnadivane
Cobblers Cross Rds
Garraneraegh
Moneygaff East
Permitted 110kV Sub-station and Switch Station
Approx 500m
Proposed 110kV Sub-station
Legend
Indicative Sub-station Locations
Permitted
Proposed
Permitted Turbine Layout
Planning Boundary
Substation locations shown indicatively for information
Note: Wind farm development permitted under 05/5907 and PL04.219620. A 5 year extension of planning permission was granted by Cork County Council under 11/06605.
Arlan Wind Farm Limited
Barnadivane Substation
Barnadivane Substation Site Location Map: Permitted vs Proposed
1:20,000 @ A4
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Appendix 3

Cumulative Impact Assessment

Cumulative Impact Assessment of the Proposed Barnadivane Wind Farm with the Proposed Barnadivane 110 kV Substation and Proposed Private Roadway

Introduction

Cumulative impacts have been defined as "impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project" (Hyder, 1999). In general within the EU there are environmental concerns over increasing numbers of developments and associated cumulative impacts on designated sites. Individually a development, or indeed any action, may have minor effects on the environment, but collectively these effects may be significant and potentially greater than the sum of the individual parts acting alone (Masden *et al.* 2009).

It has been assumed for the purposes of this cumulative impact assessment that the proposed wind farm, the proposed substation and the proposed private roadway will be constructed concurrently as this represents the most onerous scenario in terms of cumulative impacts, particularly during the construction stage. However, the construction programme will not be finalised until the appointment of contractors to carry out the works and so it has yet to be determined whether the proposed developments will be constructed in sequence or concurrently.

Description of the Proposed Development

The EIS submitted with the planning application for the proposed wind farm details the EIA undertaken including the cumulative assessment of the combined impact of the wind farm infrastructure, i.e. the:

- erection of 6 no. wind turbines with a tip height of up to 131 m
- construction of turbine foundations and hardstanding areas
- construction of approximately 1.96 km of new site tracks
- upgrade of approximately 2.34 km of existing tracks
- excavation of one borrow pit
- associated drainage and sediment control
- installation of underground cabling
- underground communication cables
- 1 permanent meteorological mast up to 90 m in height
- new access junction and improvements to the public road to facilitate turbine delivery
- permanent signage
- associated site works including landscaping

A 110 kV grid connection substation that meets current Eirgrid standards is required in place of the 110 kV substation and switch station permitted under the original planning application for the 14 turbine Barnadivane Wind Farm. In 2014, the applicant applied for planning permission for this proposed substation by submitting a stand-alone application (planning reference 14/00557). The proposed substation has a defined planning boundary to include a 110 kV grid connection substation compound with associated control buildings and electrical equipment as well as ancillary infrastructure such as internal access roads and security fencing. The proposed substation layout gives rise to a larger development footprint than that of the permitted substation.

The permitted substation is constrained to the west by the existing 110kV overhead line and to the east by the local road. A new site was identified for the proposed substation within the EIS boundary of the permitted wind farm that meets the necessary criteria such as, capacity for accommodating Eirgrid requirements, proximity to transmission system, good access and visual screening. Underground cables will connect each of the proposed wind turbines to this substation. The proposed 110 kV substation is located directly adjacent to the existing 110 kV Dunmanway-Macroom overhead line and the connection to the transmission network will be at this location. As such, no new overhead lines or underground cables will be required outside of the proposed wind farm site to allow for connection of the proposed wind farm to the national grid. Although the grid connection for the wind farm, via the proposed substation, is subject to a separate planning application, the relevant environmental impacts have been appropriately assessed. The EIA processes followed were in accordance with the European Environmental Impact Assessment Directive and the transposing legislation in Ireland.

The proposed substation location is approximately 500m southwest of the permitted substation, within the planning boundary of the permitted wind farm which was subject to an EIA by both Cork County Council and An Bord Pleanála. The proposed substation will replace the already permitted substation that has not yet been constructed. Accordingly, a development of this nature has already been deemed appropriate within the area.

A separate planning application has been lodged with Cork County Council for the proposed road improvements required at the junction of the R585 and L6008 at Bengour West (as necessitated by Cork County Council, given that the landownership boundary/planning boundary here is not contiguous with that of the wind farm). This planning application is for a new private roadway, approximately 150 m in length, in the townland of Bengour West, Newcestown, Co. Cork. The proposed private roadway will facilitate the delivery of abnormal loads to the proposed wind farm which is located some 3 km to the northwest of the proposed road. The proposed private roadway is located at the junction of the R585 and the L6008 at Bengour West, some 6 km northeast of Coppeen. The proposed private roadway is approximately 150 m in length and has a defined planning boundary. It will be constructed in granular material, with a stone finish. Access to this roadway will be restricted by gates at either end of the site. The area of this proposed site is approximately 0.46 ha. The proposed site comprises primarily scrubland, between the roadside boundary and conifer plantations to the north. The field boundaries consist primarily of hedgerows.

Cumulative Ecology Impact Assessment

Chapter 5 Ecology of the EIS submitted with the planning application for the proposed wind farm outlines a baseline assessment of the ecology at the proposed site and discusses potential impacts of the proposed development on ecology during construction, operation and decommissioning. It also proposes appropriate mitigation measures to minimise these impacts.

Chapter 6 Ecology of the Environmental Report (ER) submitted with the planning application for the proposed substation outlines a baseline assessment of the ecology at the proposed site and discusses potential impacts of the proposed development on ecology during construction, operation and decommissioning. It also proposes appropriate mitigation measures to minimise these impacts.

The Appropriate Assessment Screening Report for the proposed private roadway examines the potential impact of this proposed development on Natura 2000 sites.

The potential impacts of the proposed wind farm, the proposed substation and the proposed private roadway on Ecology during their construction, operation and decommissioning phases are considered cumulatively here. The 'do-nothing' scenario referenced, is the scenario by which none of the proposed developments (the proposed wind farm, the proposed substation and the proposed private roadway) are constructed and instead the permitted wind farm and the proposed substation are constructed at this location (Cork County Council planning reference numbers 11/06605 and 05/5907, An Bord Pleanála planning reference number PL04.219620).

Cumulative Impacts on Designated Nature Conservation Sites

There are four designated nature conservation sites within a 15 km radius of the proposed developments. The nearest of these however, is at a minimum distance of 6.7 km from any of the three proposed development sites. Thus there will be no direct impact on the size, scale or structure of any designated site as a result of the proposed developments.

Potential indirect cumulative impacts resulting from the proposed wind farm, the proposed substation and the proposed private roadway are as follows:

- Disturbance/displacement impacts on birds from the Gearagh SPA arising from construction works. This could result in a negative impact on the SPA and could impact on the conservation objective of the SPA which is to maintain a favourable conservation condition (or population status) of the birds for which the SPA is designated.
- Siltation or pollution of watercourses during construction leading to pollution of watercourses draining to sites designated for aquatic habitats and species. The designated sites within the zone of influence of the site which contain aquatic habitats and species include the Gearagh cSAC (and pNHA), Bandon River cSAC and Killaneer House Glen pNHA.

Siltation or pollution of watercourses could result in a negative impact on aquatic species by affecting growth and reproduction in aquatic species and/or reducing the scale of aquatic habitats.

Cumulative Hydrological Impacts on Designated Nature Conservation Sites

The development sites are all situated within the catchment of the River Bride which rises at an elevation of 220 m OD between Moneygaff East and Barnadivane (Kneeves). It flows firstly in an easterly direction along the southern boundary of the site and then turns in a south easterly direction, as it flows away from the site from the south eastern corner of the site. The river then flows north east adjacent to the R585 to Crookstown. It then follows the N22 eastwards to Ovens. The River Bride joins the River Lee just north east of Ovens. The River Bride is located approximately 80 m north of the site boundary for the proposed private roadway.

There are no significant watercourses within any of the proposed development sites. The proposed wind farm and proposed substation sites drain south-eastwards into two agricultural drains, or drainage ditches, which meet at a T-Junction at the bottom of the field. There will be no direct discharges from the proposed developments to any natural watercourses, with all drainage waters being dispersed to soakaways or as overland flows via vegetation filters at a significant distance from the nearest natural watercourses. The drainage from the proposed private roadway is in a northerly direction. Again there will be no discharges from the proposed private roadway to any natural watercourses, with all drainage waters being dispersed via overland flows via vegetation filters.

The proposed development locations are not within an area of 'benefitting lands' or 'drainage districts' and there are no reported incidents of flooding in the vicinity of the proposed developments, as per national flood hazard mapping (www.floodmaps.ie).

As a result of the above, together with the significant separation between the proposed developments and designated sites and the construction best practice measures to be applied, the developments are expected to have a negligible impact on the receiving environment in terms of surface water.

None of the proposed developments is within the catchment of the Bandon River, and therefore there will be no drainage to the Bandon River cSAC. Similarly, the River Bride discharges to the River Lee downstream of the Gearagh and therefore no drainage from the developments will discharge to the Gearagh cSAC.

The proposed developments will therefore not result in any drainage to a designated site, and thus there will be no negative impacts on any aquatic habitats or species of special conservation interest in any designated site. In addition, all sites are a minimum distance of 6.7 km (direct distance) from the Gearagh cSAC.

Cumulative Disturbance/Displacement Impacts on Designated Nature Conservation Sites

In terms of potential disturbance to key species in designated sites during construction of the developments, the Gearagh SPA is the site most likely to be impacted as it is designated for numerous bird species. The Gearagh SPA lies a minimum of 6.7 km to the north of the proposed developments. The SPA supports important populations of wintering waterfowl, including swans, dabbling duck, diving duck and some waders. The qualifying interests of the site are Teal, Wigeon, Mallard and Coot as well as wetland habitat. Should birds from the SPA commute regularly over the proposed development sites, indirect impacts could occur through noise disturbance or displacement during construction works.

A winter bird Vantage Point (VP) survey following SNH (2013) guidelines, was carried out at the proposed development site from November 2013 to March 2014. Two fixed VPs overlooking the site and surrounding area were monitored for a total of 36 hours for bird activity over the site. In terms of the qualifying interests/species of the Gearagh SPA, only Mallard was recorded flying over the site, on one occasion, in January 2014.

Golden plover is not a qualifying species of the Gearagh SPA, but the SPA does support a population of national importance. A small flock of about 35 Golden plover were recorded flying about 2 km west of the proposed development sites on one occasion in January 2014. No other qualifying species, or species of note, from the SPA were recorded. Taking into consideration the low levels of activity of wintering waterbirds recorded during VP watches, it is not likely that the construction of the developments will result in adverse impacts, or disturbance of key species from the Gearagh SPA.

Furthermore the proposed developments are at a minimum distance of 6.7 km from the SPA and it is highly unlikely that construction noise will create a disturbance to birds in the SPA.

Hen harriers are known to be relatively tolerant of construction activities and therefore the potential impact upon designated sites for which Hen harrier is a qualifying interest are discussed under operational impacts.

The potential cumulative impacts of the proposed developments on habitats during the construction period, relative to the 'do nothing' scenario, is considered to be a minor, positive impact.

Cumulative Impacts on Habitats

No Annex I habitats will be removed as a result of any of the three proposed developments. There will be no impact through loss of rare or protected species as none were found in the survey areas.

There will be some permanent loss of other habitat resulting from the proposed works. The land area requirement for the proposed wind farm is approximately 6.43 ha. The land area requirement for the proposed substation is approximately 2.95 ha. The land area requirement for the proposed private roadway is 0.46 ha. As such, the total land area requirement for the proposed developments is 9.84 ha. The majority of the land-take for the proposed wind farm, the proposed substation and the proposed private roadway will be from improved agricultural grassland (GA1) habitat. This is an artificial habitat, and is considered to be of 'Local Importance (Lower Value)' according to NRA (2009) guidelines, and it does not contain any key environmental receptors. In addition to the loss of improved agricultural grassland habitat, there will be some small-scale permanent loss of Hedgerow (WL1) and earth banks (BL2). Both habitats are considered to be of 'Local Importance (Higher Value)', according to the NRA (2009) guidelines, as they provide habitat links and ecological corridors for wildlife between habitats in the surrounding landscape.

The removal of sections of hedgerow for the proposed developments is expected to cause a permanent negative impact on local wildlife by reducing potential breeding habitat for passerine birds and potential foraging and commuting habitat for bats and other mammals. Approximately 370 m of hedgerow will be removed to facilitate the proposed wind farm. Approximately 70 m of hedgerow will be removed to facilitate the proposed substation. Hedgerow will also be removed to facilitate the proposed private roadway. However as the amount of habitat removal for the proposed developments will be relatively small and as there is a good network of wildlife corridors (hedgerows, treelines and earthbanks) in the surrounding landscape, this cumulative impact is expected to be a slight, negative impact (i.e. noticeable changes in the character of the environment without affecting its sensitivities (EPA (2002)). Mitigation measures will be put in place to minimise the impact of habitat removal on birds and mammals. The mitigation measures are outlined in the EIS for the proposed wind farm, the ER for the proposed substation and in Section 24.1 of this report which details bat mitigation measures.

The potential cumulative impacts of the proposed developments on habitats during the construction period, relative to the 'do nothing' scenario, is considered to be a minor, positive impact.

Cumulative Impacts on Terrestrial Mammals

The proposed construction works will have a temporary negative impact on mammals through noise disturbance and increased human presence in the area during construction. In addition the removal of approximately 500 m of hedgerow in total, and as described above, will result in a reduction in potential foraging habitat for mammals.

No mammal burrows, tracks or signs were recorded during the ecological surveys of the proposed development sites. Signs of Fox, Rabbit and Hedgehog were found in the surrounding landscape and these species are likely to forage at the proposed development site. Thus there will be a permanent loss of foraging habitat for these species as a result of the proposed developments. Other species which may occasionally occur within the site boundaries include Badger, Otter, Sika deer, Hare, Stoat and Red Squirrel, as these species have all been recorded in the wider area.

The potential negative impact on non-volant mammals from the proposed works is expected to be slight, as there is a good network of wildlife corridors (hedgerows, treelines and earthbanks) in the surrounding landscape which will provide connectivity and suitable alternative habitat for mammals. In addition to this, mitigation measures will be put in place to minimise the potential impact of habitat removal on mammals.

The mitigation measures are outlined in the EIS for the proposed wind farm and the ER for the proposed substation.

The potential cumulative impacts of the proposed developments on terrestrial mammals during the construction period, relative to the 'do nothing' scenario, is considered to be a minor, positive impact.

Cumulative Impacts on Bats

The bat activity surveys at the proposed wind farm site did not show any significant bat activity in the immediate vicinity of the proposed turbines, with the possible exception of proposed Turbine 6. The bat activity surveys at the proposed substation site did not show any significant bat activity, although bats may occasionally forage along the hedgerows to the east and south of the proposed substation location. The proposed substation site, dominated by agricultural grassland and with bordering hedgerow and earth banks, does not provide roosting potential for bats. There will be no significant impact on bats as a result of the installation the turbines and the substation however, the removal of hedgerows will have a negative impact on bats. The removal of hedgerows is required for all three proposed developments and so there is the potential for cumulative impact on bats in this respect.

The lack of bat activity recording during field surveys is likely due to the high degree of wind exposure at the site. Bats were found to forage in the more sheltered hedgerows, earth banks and treelines at lower elevations in the surrounding landscape. Mitigation measures have been proposed to reduce the negative impact of hedgerow removal on bats. These mitigation measures are outlined extensively in Section 24.1 of this document.

The potential cumulative impacts of the proposed developments on bats during the construction period, relative to the 'do nothing' scenario, is considered to be a minor, positive impact.

Cumulative Impacts on Birds

The main impacts on birds from the proposed construction works will be from short-term noise disturbance caused by machinery, and increased human presence, as well as small-scale habitat loss. Habitat loss can in turn result in reduced feeding, nesting and roosting opportunities for birds. Hedgerows are an important habitat for some passerine species and approximately 500 m of hedgerow will be removed as a result of the proposed development.

However, the passerine species recorded during the transects to the north and west of the proposed development sites are among the most common and widespread breeding birds in Ireland (Balmer *et al.*, 2013; Crowe *et al.*, 2014). As per NRA (2009) guidance, the majority of the passerine species recorded are not key environmental receptors. Most species recorded are of '*local importance (lower value)*', as per NRA (2009) guidance, i.e. assemblages on site comprise less than 1% of the local population. Meadow Pipit was the only red-listed species recorded from transects. Meadow Pipit have been red-listed due to recent declines in their breeding populations, possibly linked with recent cold winters in Ireland (Colhoun & Cummins, 2013). The species recorded in the transect surveys may be found in the proposed development site areas, however given the relatively small scale of the proposed developments (9.84 ha total), habitat removal and disturbance are only expected to have a slight negative impact on birds.
Furthermore, there is a good network of wildlife corridors (hedgerow, earth bank and treelines) in the surrounding environment which will provide suitable alternative habitat for birds. In addition, mitigation measures will be put in place to minimise the potential impact to birds associated with hedgerow removal.

The potential cumulative impacts of the proposed developments on birds associated within designated sites is discussed under 'Impacts on Designated Nature Conservation Sites' above.

The potential cumulative impacts of the proposed developments on birds during the construction period, relative to the 'do nothing' scenario, is considered to be a minor, positive impact.

Cumulative Impacts on Freshwater Pearl Mussel

There will not be any impact on Freshwater pearl mussel as a result of the proposed developments. The Lower Lee catchment, downstream of all three of the proposed developments, is unlikely to contain extant populations of Freshwater pearl mussel. Furthermore, there are no significant watercourses within any of the proposed development sites. There will also be no direct discharges from the proposed developments to any natural watercourses. The developments are expected to have a negligible impact on the receiving environment in terms of surface water.

Overall Cumulative Impact on Ecology during Construction Phase

It is assumed for the purpose of this cumulative impact assessment that the construction of the proposed wind farm, the proposed substation and the proposed private roadway will occur concurrently. As such, there may be a cumulative disturbance impact on birds and mammals through noise and increased human presence in particular.

Impacts during the construction phase will arise through habitat loss, including hedgerow removal, and associated disturbance to mammals, birds, and bats. There is likely to be a cumulative impact on habitats through habitat loss from the proposed wind farm, the proposed substation and the proposed private roadway. The total land area requirement for the proposed developments is 9.84 ha.
A potential cumulative impact of the concurrent construction of the three proposed developments would be an increase in run-off or siltation compared with the standalone construction of each proposed development. The proposed developments will not result in any drainage to designated sites, and thus there will be no negative impacts on any aquatic habitats or species of special conservation interest in any designated site. In addition, all designated sites are a minimum distance of 6.7 km from the proposed developments.

Along with mitigation measures proposed in the EIS for the proposed wind farm, the ER for the proposed substation and Section 24.1 of this report, a Construction Environmental Management Plan (CEMP) will be put in place for the construction period which will cover all aspects of the proposed wind farm, the proposed substation and the proposed private road in combination. This CEMP will be developed from the outline CEMP that was included in the EIS for the proposed wind farm.

As such, relative to the 'do nothing' scenario, the overall cumulative impact on ecology as a result of construction works is considered to be a minor, positive impact.

Overall Cumulative Impact on Ecology during the Operational Phase

There are not expected to be any further impacts on ecology associated with the proposed substation or proposed private roadway during their operational phase. As such cumulative impacts are not a consideration for the operational phases of the proposed developments.

Overall Cumulative Impact on Ecology during Decommissioning

The proposed private roadway will not be decommissioned, it is proposed as a permanent structure.

In the event of decommissioning of the proposed substation, which is extremely unlikely, activities will take place in a similar fashion to the construction phase, and increased human presence and noise disturbance will be expected.

Considering the fact that the proposed private roadway will not be decommissioned, that it is extremely unlikely that the proposed substation will be decommissioned, it is not considered that the proposed wind farm development will present any cumulative impacts.

Cumulative Geology Impact Assessment

The potential risk of slope failure on the proposed wind farm and proposed substation sites has been addressed by means of a desk study and site walkover which included a series of hand-held probes. The peat landslide hazard on these sites has been assessed as absent and there are no indications that slope failure could present any cause for concern. No particular mitigation measures have been considered necessary in relation to slope stability for the proposed wind farm and proposed substation. Though peat probing hasn't been carried out for the proposed private roadway, it can be concluded through acknowledgement of the absence of slope failure risk for the proposed wind farm and the proposed substation, that there is no potential for cumulative impacts in this respect.

Where possible, earthworks will be balanced on all sites with minimal importation of materials. To minimise the importation of rock and cohesive fill, a borrow pit has been proposed as part of the planning application for the proposed wind farm.

Material for the construction of new site tracks and for use during the construction of turbine bases and hardstanding areas will be sourced on site from this proposed borrow pit as much as possible. Any imported material required for the proposed developments will be sourced locally where possible.

Cumulative Hydrology Impact Assessment

The development sites are all situated within the catchment of the River Bride which rises at an elevation of 220 m OD between Moneygaff East and Barnadivane (Kneeves). It flows in an easterly direction and then veers south eastwards from the proposed site for 5 km towards the R585 regional road. The river then flows north east adjacent to the R585 to Crookstown. It then follows the N22 eastwards to Ovens. The River Bride joins the River Lee just north east of Ovens. The River Bride is located approximately over 1.5 km to the south-west of the site boundaries for the proposed wind farm and proposed substation and approximately 80 m north of the site boundary for the proposed private roadway.

There are no significant watercourses within any of the proposed development sites. The proposed wind farm and proposed substation sites drain south-eastwards into two agricultural drains, or drainage ditches, which meet at a T-Junction at the bottom of the field. There will be no direct discharges from the proposed developments to any natural watercourses, with all drainage waters being dispersed to soakaways or as overland flows via vegetation filters at a significant distance from the nearest natural watercourses. The drainage from the proposed private roadway is in a northerly direction. However, again there will be no discharges from the proposed private roadway to any natural watercourses, with all drainage waters being dispersed via overland flows via vegetation filters.

The proposed development locations are not within an area of 'benefitting lands' or 'drainage districts' and there are no reported incidents of flooding in the vicinity of the proposed developments, as per national flood hazard mapping (www.floodmaps.ie).

A potential cumulative impact of the concurrent construction of the three proposed developments would be an increase in run-off or siltation compared with the construction of each proposed developments individually. A Construction Environmental Management Plan (CEMP) will be developed to cover the three proposed developments. The CEMP will incorporate mitigation measures to reduce siltation and will outline construction best practice methodology for the three proposed developments. This CEMP will be developed from the outline CEMP included in the EIS for the proposed wind farm. The proposed developments will not result in any drainage to designated sites, and thus there will be no negative impacts on any aquatic habitats or species of special conservation interest in any designated site. In addition, all designated sites are a minimum distance of 6.7 km from the proposed developments.

Cumulative Landscape and Visual Impact Assessment

The proposed substation location is approximately 500m southwest of the permitted substation and is within the planning boundary of the permitted wind farm which was subject to an EIA by both Cork County Council and An Bord Pleanála. The proposed substation will replace the already permitted substation that has not yet been constructed. Accordingly, a development of this nature has already been deemed appropriate within the wind farm site.

The proposed private roadway is not inter-visible with the proposed wind farm and the proposed substation.

The visual impacts from the proposed substation and the proposed private road are estimated to be slight to imperceptible in any view of the proposed Barnadivane Wind Farm and so there will be no significant cumulative visual impact.

The intensity and clutter of the proposed substation structures contrast with the relatively low intensity of other rural land uses in the vicinity. Nonetheless, the existing Garranereagh Wind Farm, an existing 110 kV overhead electricity line supported on double timber poles traversing the site and the proposed wind farm will all provide a thematic justification for the proposed substation and private roadway.

As such, relative to the 'do nothing' scenario, the overall landscape and visual cumulative impact is considered to be a minor, positive impact.

Cumulative Noise Impact Assessment

The proposed substation location is approximately 500m southwest of the permitted substation, within the planning boundary of the permitted wind farm which was subject to an EIA by both Cork County Council and An Bord Pleanála. The proposed substation will replace the already permitted substation that has not yet been constructed. Accordingly, a development of this nature has already been deemed appropriate within the wind farm site. The proposed wind farm and proposed substation are not in the direct vicinity of the proposed private roadway. There is also an existing wind farm, namely Garranereagh Wind Farm with 4 operational turbines, neighbouring the site. The nearest of the Garranereagh Wind Farm turbines is approximately 1 km from the proposed substation. There is no other significant permitted or planned development in the immediate vicinity of the proposed wind farm, proposed substation or proposed private roadway.

The construction works for the proposed wind farm are assumed here to overlap with the construction of the proposed substation and the construction of the proposed private roadway. However, the majority of the proposed wind farm construction works will be carried out at relatively large separation distances from the construction of the proposed substation and again from the construction of the private roadway and so cumulative impacts during the construction phase are not expected to be significant. Mitigation measures will be implemented to control noise generation during the construction stage of each proposed development. Working hours for all construction activities will be controlled such that activities will be carried out during normal working hours. As such, it is likely that cumulative construction activities will be below the 65 dB L_{Aeq} adopted criterion at residential properties in the vicinity of the proposed wind farm, the proposed substation and the proposed private roadway such that no significant cumulative noise impacts are predicted. A Construction Environmental Management Plan (CEMP) will be developed and will incorporate all mitigation measures for noise for the three proposed developments. This CEMP will be developed from the outline CEMP included in the EIS for the proposed wind farm.

Operational noise levels from the proposed substation will not exceed a noise rating level of 30 dB $L_{A,Tr}$, which is considered to be very low, and therefore no significant cumulative noise impacts are predicted from the operational phase of the proposed substation, the proposed wind farm and the proposed private roadway.

Cumulative Human Environment Impact Assessment

There are a number of potential impacts from the proposed development on the human environment. These impacts include noise, infrastructure, roads, traffic and transportation, land use, health and safety and shadow flicker. The main areas of concern with respect to the potential effects of the development on humans are traffic, visual and noise impacts. The cumulative traffic, visual and noise impacts of the three proposed developments are discussed under their individual headings in this document.

As regards shadow flicker, there will be no cumulative impact due to the three proposed developments as there is no potential for shadow flicker associated with the proposed substation and the proposed private roadway.

Chapter 10 of the EIS for the proposed wind farm concludes that the potential impact of the wind farm on the human environment from landscape change will be negligible. This is because just 6.43 ha of the EIS study area of 276 ha will be required for permanent infrastructure, thus minimising the impact on the current land-use within the site boundary. The land area requirement for the proposed substation is approximately 2.95 ha. The land area requirement for the proposed private roadway is 0.46 ha and this area currently comprises scrubland. The total land area requirement for the proposed developments is 9.84 ha.
As such, the cumulative impact of the proposed wind farm, the proposed substation and the proposed private roadway on the human environment from landscape change is considered to be negligible.

Potential cumulative socio-economic impacts will be positive based on the spending in the area likely to arise from the construction of the proposed wind farm, the proposed substation, the proposed private roadway and due to the associated development contributions and rates. The construction of the proposed substation will also facilitate the connection of the proposed wind farm to the national electricity grid thus assisting in the achievement of national and EU targets for renewable energy generation.

Operational impacts will be largely positive due to no local air/climate impacts associated with any of the three developments and due to the overall positive impact of facilitating the generation of energy without combustion of by-products.

A Construction Environmental Management Plan (CEMP) will be developed and will incorporate all mitigation measures for the three proposed developments. This CEMP will be developed from the outline CEMP included in the EIS for the proposed wind farm. Mitigation measures applicable to minimising cumulative impact on the human environment include the development of a comprehensive Safety & Health Plan.

As such, relative to the 'do nothing' scenario, the overall cumulative impact on human environment due to the three proposed developments is considered to be a minor, positive impact.

Cumulative Traffic and Transportation Impact Assessment

The proposed delivery route to the site is shown in Figure 11.1 of the EIS submitted with the planning application for the proposed wind farm. It is likely that turbines will be delivered via the N22 Cork-Killarney road, as far as the junction with the R585 at Castlemore. From here, the route will follow the R585 road (Crookstown-Bantry) as far as the junction with the local road L6008, at Gortadinnaghboght. From here it will follow the local road network through Lackareagh, as far as the proposed entrance to the site. Abnormal loads will be accommodated by the proposed private roadway which will be approximately 150 m long and which will run from the R585 to the L6008 at Bengour West, Newcestown, Co. Cork. Some further minor alterations to the public road network are required to accommodate the delivery of turbines and these are discussed in the EIS submitted with the planning application for the proposed wind farm as part of Chapter 11 – Traffic and Transportation.

The construction works for the wind farm are assumed here to overlap with the construction of the proposed substation and the construction of the proposed private roadway. As such, there is potential for cumulative impact on local traffic during the construction phase. The construction activities will be co-ordinated for the three developments throughout and a Traffic Management Plan (TMP) will be developed to consider all three proposed developments and in order to minimise any cumulative impact. This TMP will be developed from the outline TMP included in the EIS for the proposed wind farm.

Relative to the 'do nothing' scenario, the overall traffic and transportation cumulative impact is considered to be a minor, positive impact.

Cumulative Cultural Heritage Impact Assessment

The construction of the proposed substation will not result in any direct impacts on cultural heritage as there are no recorded monuments within close proximity of the proposed substation site and only two monuments occur within 1 km, the nearest being a ringfort situated over 770 m from the proposed substation. Given the intervening boundaries and distance between the nearest recorded monuments and the proposed substation site, indirect impacts (visual) are unlikely.

The construction of the proposed private roadway will not result in any direct impacts as no recorded monuments are located within close proximity. Given the intervening boundaries and distance between the nearest recorded monuments and the proposed private roadway, as well as the elevations involved in a roadway development, indirect impacts (visual) are unlikely.

Due to the limited potential for impacts on cultural heritage by both the proposed substation and the proposed private roadway, the impact of these on cultural heritage when considered cumulatively with the proposed wind farm is considered negligible.

Cumulative Telecommunications Impact Assessment

By their nature, the proposed substation and the proposed private roadway will not have any impact on telecommunications and so there is no potential for cumulative impact when the proposed substation and proposed private roadway are considered cumulatively with the proposed wind farm. The EIA of the proposed wind farm in respect of telecommunications is presented in Chapter 13 of the EIS submitted alongside the planning application for this development.

Cumulative Air and Climate Impact Assessment

The construction works for the wind farm are assumed here to overlap with the construction of the proposed substation and the construction of the proposed private roadway. Mitigation measures will be implemented to control dust generation for all three proposed developments. Any potential cumulative impacts arising from dust associated with the construction works will be mitigated through effective construction management techniques. A Construction Environmental Management Plan (CEMP) will be developed and will incorporate all mitigation measures for the three proposed developments. This CEMP will be developed from the outline CEMP included in the EIS for the proposed wind farm. As such, significant cumulative construction air impacts are not expected.

The proposed substation is expected to have a negligible impact on air quality and climate. It will function to transmit energy from the proposed wind farm, and this will result in an avoidance of greenhouse gas emissions that would otherwise arise from fossil fuel power generating plants. These avoided emissions will result in a direct, neutral impact, and a small, indirect, positive impact on air and climate.

Relative to the 'do nothing' scenario, the overall cumulative impact on air and climate is considered to be a minor, positive impact.

Cumulative Impact Assessment – Interaction of the Foregoing

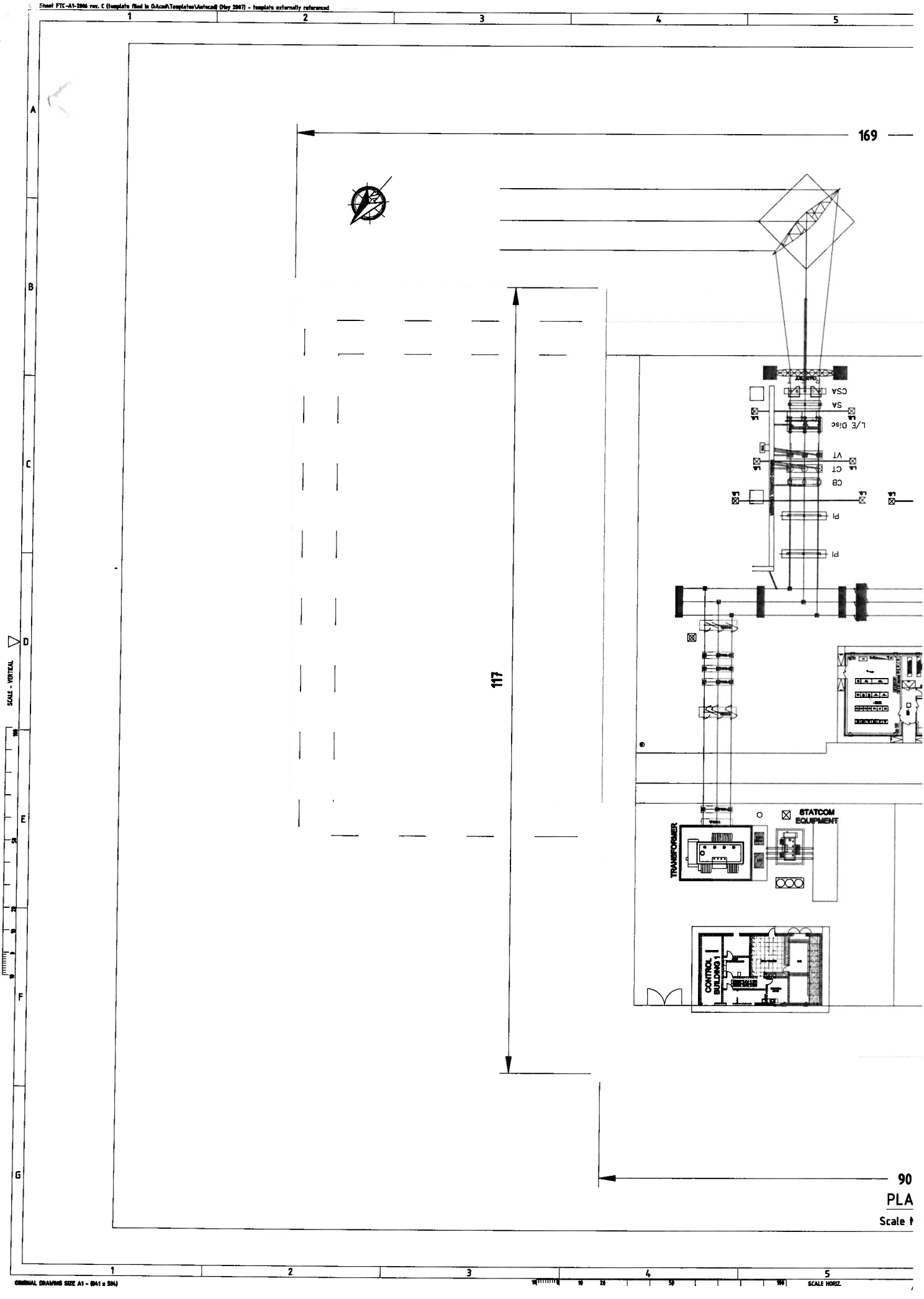
Overall, it is concluded that the cumulative impact of the proposed wind farm, the proposed substation and the proposed private roadway will be negligible when compared to the 'do-nothing' scenario, even assuming the worst case scenario, i.e. that the three developments will be constructed concurrently. This negligible cumulative impact is due to a combination of the following factors:

- Although it has a larger footprint, the proposed substation has been designed to replace the permitted 110 kV Barnadivane substation that has not yet been constructed. The proposed six turbine wind farm has been designed to replace the permitted 14 turbine Barnadivane Wind Farm. The permitted Barnadivane Wind Farm and 110 kV substation have already been subject to an EIA by both Cork County Council and An Bord Pleanála and have been deemed as cumulatively appropriate within this area. The proposed six turbine wind farm, the proposed 110 kV substation and the proposed private roadway are not anticipated to have a greater cumulative impact than the permitted 14 turbine Barnadivane Wind Farm and 110 kV substation;
- Detailed mitigation measures have been presented in the EIS for the proposed wind farm, in the ER for the proposed substation and in Section 24.1 of this document. These mitigation measures have been designed to minimise the construction and operational stage impacts of these proposed developments. Once all of these mitigation measures are implemented, there is a high degree of confidence that the impacts associated with these proposed developments, cumulative and otherwise, will be minimal;

- An outline Construction Environmental Management Plan (CEMP) has been prepared and was submitted with the planning application for the proposed wind farm. This outline CEMP will be developed further in conjunction with the appointed contractors and will cover all aspects of the proposed wind farm, the proposed substation and the proposed private roadway together. The CEMP will incorporate all mitigation measures for the three proposed developments;

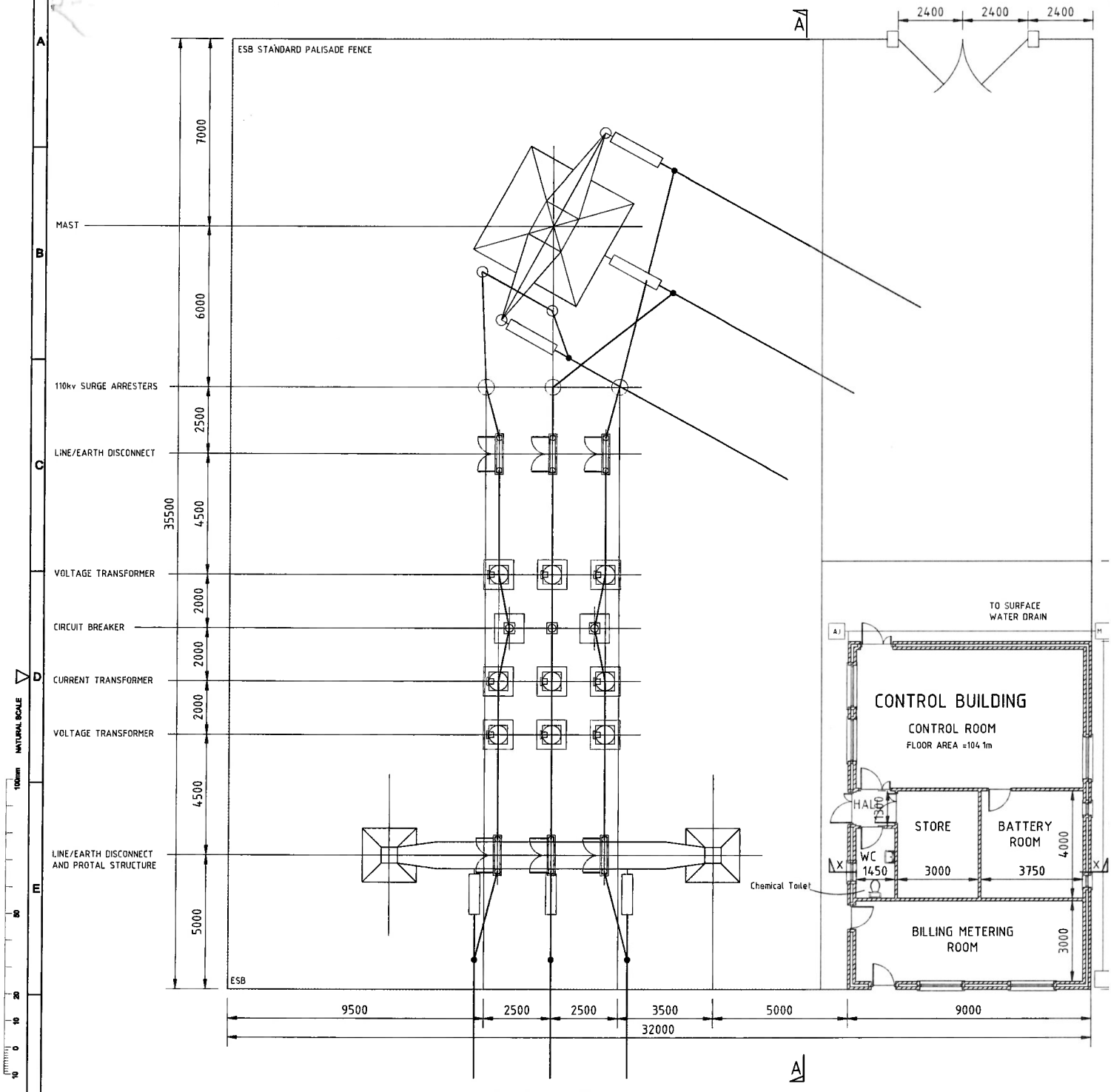
- The construction activities will be co-ordinated for the three developments throughout and a Traffic Management Plan (TMP) will be developed to consider all three proposed developments together and in order to minimise any cumulative impact on traffic and transportation. This TMP will be developed from the outline TMP included in the EIS for the proposed wind farm; and

- The varying natures and elevations of the three proposed developments mean a limited scope for cumulative impact. The 'complementary' nature of the proposed wind farm, the proposed substation and the proposed private roadway have also been acknowledged in this cumulative impact assessment.

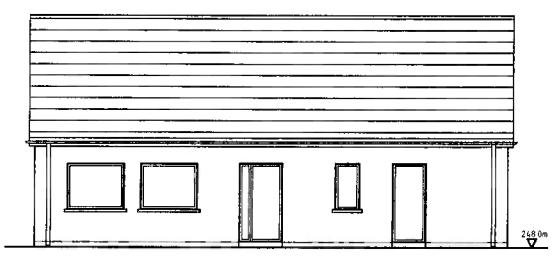


PLA

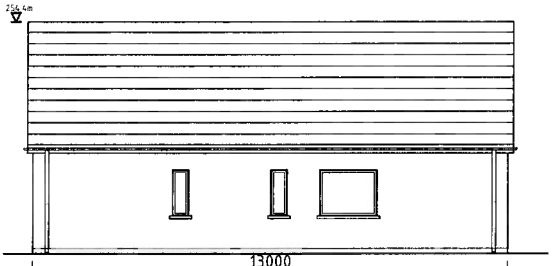
Scale



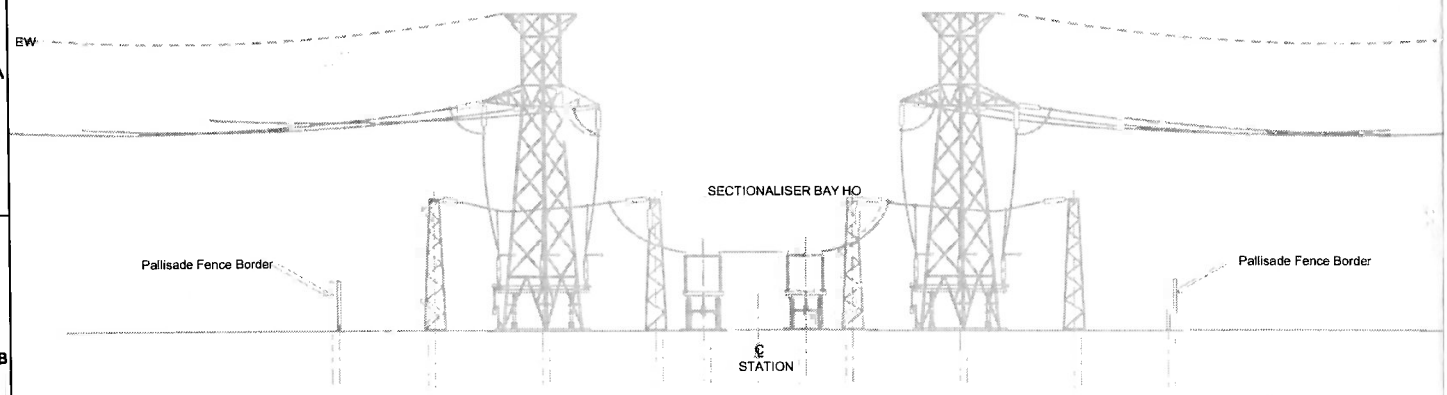
LAYOUT PLAN



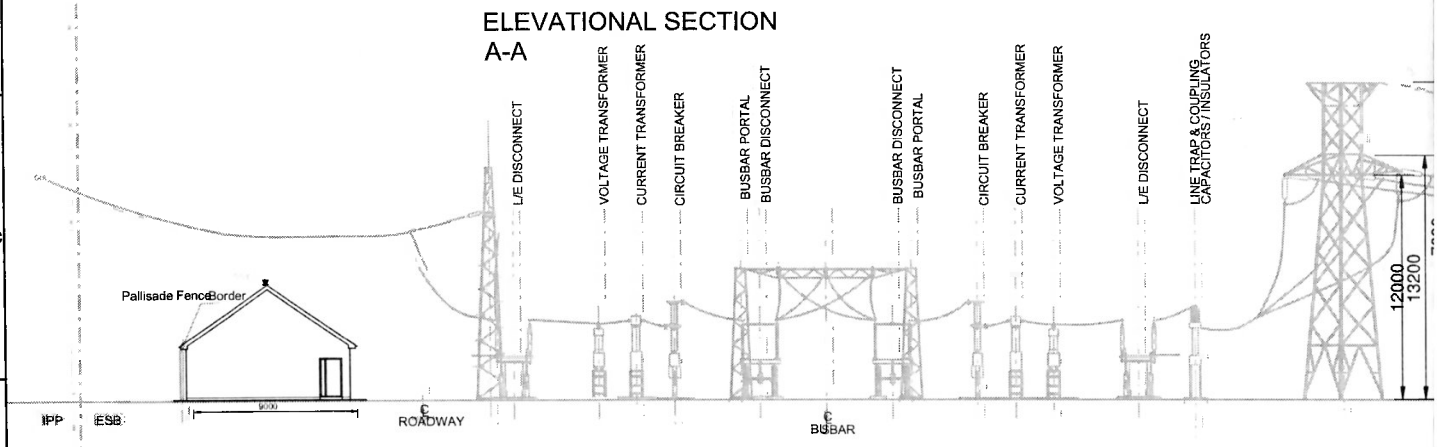
FRONT ELEVATION



REAR ELEVATION



ELEVATIONAL SECTION
A-A



ELEVATIONAL SECTION B-B