

1 INTRODUCTION

Bord na Móna and ESB, through their wholly owned joint venture company Oweninny Power Ltd., lodged an application for a wind farm development on the Oweninny site to An Bord Pleanála in July 2013 (Ref 16.PA.0029). The proposed development comprised a wind farm of 112 wind turbines with ancillary infrastructure comprising 4 electrical substations, an Operation and Maintenance Building, 8 anemometer masts, 78 kilometres of access track, a visitor centre, temporary batching plant, borrow pit, peat repository area and contractors lay down areas. The Oweninny site comprises some 50km² being mainly a former industrial peat harvesting site providing peat to the now decommissioned Bellacorick Power Station.

The country's first commercial wind farm was established at the site at Bellacorick in Co. Mayo in 1992 and in 2003 planning permission was granted for 180 wind turbines on the site (Planning Reference 01/2542, ABP reference PL.16.131260). However, the construction of this 180 turbine wind farm was evidently not progressed due primarily to grid connection issues. A 5 year extension of the planning permission for this original wind farm was sought from Mayo County Council and the request was granted by the Planning Authority in 2014,

The proposed development at Oweninny in 2013, comprising 112 wind turbines with a rated output of 372MW, was equivalent to the development granted permission by An Bord Pleanála in 2003 and differs primarily only in terms of the number of turbines (decreased from 180 to 112) from the original planning approved wind farm.

The project has received Grid Connection Offers from EirGrid for 371.9 MW. Of this, 172 MW of the project has been assigned connection capacity on the existing 110 kV grid at Bellacorick substation with the remaining capacity scheduled to be available – only after EirGrid carries out further works to provide network capacity in the area under the Grid West project. In addition the new proposal is to be developed in 3 Phases, with Phases 1 and 2, with a rated export of 172 MW being connected to the existing ESB 110kV substation at Bellacorick.

EirGrid has published details of underground and overhead options for the Grid West project, as outlined in its report to the Government-appointed Independent Expert Panel (<http://www.eirgridprojects.com/projects/gridwest/iep/>). The Grid West report sets out, in detail, the technical, environmental and cost aspects of three technology options:

- a fully underground direct current cable;
- a 400kV overhead line and;
- a 220kV overhead line with partial use of underground cable

The Independent Expert Panel Report identifies two potential locations for the Grid West Substation or DC to AC Converter Station (which would be required if a High Voltage Direct Current (HVDC) cable option was selected). EirGrid plan to consult on the options in late 2015 with a view to seeking planning permission in 2016.

The final location of the Grid West substation site has not yet been identified by EirGrid and no planning application for it has been made. For this reason planning permission for Phase 3 of the development is no longer being sought. Instead permission is being sought for part of the development contained in the planning application i.e. the development of Phases 1 and 2 excluding Phase 3. These phases already have a grid connection point at the existing Bellacorick Substation location. The Oweninny planning application provided details and assessment of grid connections for Phases 1 and 2 to this substation. Renewable wind energy from the Oweninny Wind farm will therefore be exported to the grid via the existing Bellacorick Substation

The option exists to proceed with the planning approved 180 turbine wind farm

If the development of Phase 1 and Phase 2 is granted planning permission then the new design will replace the existing planning approved design resulting in a reduced number of larger more efficient turbines on the site.

1.1 SCOPE

This Phase 1 and Phase 2 development assessment has been prepared to accompany the revised EIS application by Oweninny Power Limited as requested by An Bord Pleanála in their Request for Further Information. It follows the format of the original EIS submitted but with reference to Phase 3 in terms of description and impacts being removed and focussing on updating information where relevant.

It should be noted that the red line boundary of the Oweninny wind farm site remains unchanged from the original application and hence the baseline information remains the same with minor updates.

The proposed wind farm site is located in North Mayo, west of Crossmolina and east of Bangor Erris, just north of the N59 road - see Figure 1-1. The site still comprises some 50 km² and the Phase 1 and Phase 2 development would comprise a footprint of some 1.16 km² of this.

The site lands are owned by Bord na Móna and comprise cutover and cutaway bog land, (see Table 1.1).

The total installed capacity of Phase 1 and Phase 2 is expected to be approximately 172 MW. The site is situated in the townlands indicated in Table 1.1. The Phase 1 and Phase 2 wind farm development will comprise 61 wind turbines, which will be used to harness the natural energy of the wind to generate electricity.

Table 1.1: Oweninny wind farm Phase 1 and Phase 2 project townlands

Townland Name	Proposed turbine numbers	Other structures
Bellacorick	No turbine[L2]	N/A
Corvoderry		Access Tracks, Peat disposal area (reduced in size)
Croaghaun West	56, , 67, 68, 69,	Access Tracks, Met Mast x1, Batching Plant, O&M Building, Sub-station x1, Sub-station (part), Contractors Compound x1, Overhead Line, U/G Cable
Doobehy	No turbine[L3]	N/A
Dooleeg More	No turbine[L4]	Board Gais Pipeline Existing
Formoyle	No turbine[L5]	N/A
Kilsallagh	88, 89, 90	Access Tracks, Contractors Compound (1), Site entrance no 2, Board Gais Pipeline Existing
Knockmoyle	1, 2, 3, 4, 5, 6, 7, 12	Access Tracks, Met Mast x1,
Laghtanvack	8, 9, 10, 13, 14, 15, 23, 24, 25, 29, 30, 37, 41, 42, 43, 45, 46	Access Tracks, Met Mast x2, Borrow Pit, Gravel Storage Area (part)
Moneynierin		Access Tracks, Board Gais Pipeline Existing, Site entrance no 1 & 3, Gravel storage area x1, Visitor Centre & parking (part)
Shanvodinnaun	31, 44,	Access Tracks, Contractors compounds x1, Gravel storage area (part)
Shanvolahan		Access tracks
Sheskin	19	Access Tracks, Board Gais Pipeline Existing
Srahnakilly	11, 18, 20, 21, 22, 28, 36, 40, 54, 55, 65, 66, 80, 82, 91	Access Tracks, Met Mast x1, Sub-Station x1, Contractor Area x1, Overhead Line, U/G Cable
Tawnaghmore	27, 33, 34, 35, 39, 51, 52, 53, 64, 79, 87	Access Tracks, Met mast (1), Board Gais Pipeline Existing

N/A = No structure

1.2 General Overview Phase 1 and Phase 2 Development

Bord na Móna has been involved in peat production operations at the site since the 1950s. Milled peat production ceased on the site in September 2003 and peat deliveries to the ESB power station at Bellacorick ceased in 2005. As part of the conditions of the Integrated Pollution Prevention and Control (IPPC) operational licence for the site, a bog rehabilitation programme was developed to enhance post-peat-harvesting recovery of parts of the site and ensure minimum residual impact on the environment. The bog remnant and bog rehabilitation areas will not be significantly affected by the proposed wind farm development of Phases 1 and 2 and the overall site development will be carried out in a manner that integrates with the bog rehabilitation programme.

The country's first commercial wind farm was established at the site at Bellacorick in Co. Mayo in 1992. It comprises 21 wind turbines with a total installed capacity of 6.45 MW, and produces enough electricity to supply approximately 3,500 households. This existing wind farm, if still in operation, will be replaced during the final phase of the proposed new development at Oweninny.

In 2003 planning permission was granted by An Bord Pleanála for 180 wind turbines on the site (An Bord Pleanála Reference PL 16.131260 – Mayo County Council Register Reference Number 01/2542). Subsequent to this Mayo County Council granted a 5 year extension of the planning permission duration. The original permission will now expire in 2018.

The Phase 1 and Phase 2 development is essentially lower in terms of installed capacity to the development granted permission by An Bord Pleanála in 2003 and differs from the development permitted primarily in terms of the number of turbines (decreased from 180 to 61) and turbine size (overall dimension from foundation level to blade tip increased from 100 metres (m) to a maximum of 176 m). These changes are to accommodate what are now essentially industry standard turbine models and reflect the technological advances that continue to occur in wind turbine design.

1.2.1 Proposed Phase 1 and Phase 2 development

The Phase 1 and Phase 2 development will comprise 61 wind turbines. The location and layout of these is exactly the same as that provided in the Oweninny Wind Farm Planning application. No change in the position or dimensions of the infrastructure described originally will occur.

The exclusion of the Phase 3 part of the proposed development will of course result in a reduction in the length of access track, number of turbines (from 112 to 61), number of substations (only substation 1 and substation 2 are required) and meteorological masts (a reduction from 8 to 6).

Phase 1 and Phase 2 will include 61 wind turbines and crane hardstands at each turbine, construction of 49 kilometres of new access tracks, two electrical substations containing control buildings and substation, underground electrical cables linking the turbines with the control buildings, underground communication

cables, six permanent meteorological masts, two 110 kV overhead lines linking the substations to the existing transformer station at Bellacorick, an Operation and Maintenance facility and all related site works and ancillary development including batching plant and borrow pits. The gravel storage area associated with the borrow pit will be retained as part of the Phase 1 and Phase 2 development as will part of the proposed peat repository area. The latter will be accessed via the access track leading via the original trackways to T83 and T70 which formed part of the Phase 3 development.

In addition the purpose built Visitor Interpretative Centre will be developed providing insight to the history of power generation, peat production, wind energy development, the bog rehabilitation programme, ecological interests and the social history of the area. In terms of other temporary works Phase 1 and Phase 2 will require 4 contractor's lay down areas.

The rated electrical output of the Phase 1 and Phase 2 development will be approximately 172 MW. The exact output cannot be specified at this stage. In accordance with procurement regulations that apply to the joint venture development company a competitive procurement process will be undertaken to select turbines for the project. Outputs of wind turbines are particular to the design of individual manufacturers and it is thus not possible in an open international competition to specify the exact output without prejudice or favour to one manufacturer. The overall rating may thus ultimately be marginally more or less than cited. However, throughout the EIA process, consideration of significant environmental impacts of the proposed development is based on the largest size of development foreseen. The choice of turbine model will not affect the assessment of impacts outlined herein.

1.2.2 Changes to Cumulative Impact Projects

A number of projects with potential for cumulative impact were assessed as part of the Oweninny wind farm application. Since the application was made and following on from the oral hearing some changes have occurred with respect to existing projects and some additional projects have entered the planning process. These are outlined as follows:

- The Coillte Cluddaun Wind Farm Development has been refused planning permission (ABP Planning Reference 16.PA0031).
- EirGrid proposed modification of existing Bellacorick Substation comprising construction of an extension (approx. 60sqm and 3.2m high) to the south western elevation of the existing 110kv control room. installation of 1 no. new 110kv cable bay with equipment and apparatus comprising busbar disconnect, circuit breaker, combined current/voltage transformer, line/earth disconnect, surge arrestor and cable sealing end and all associated site development works, (see Mayo Planning Reference 15456)
- EirGrid proposed upgrade of the Bellacorick to Castlebar 110kV OHL (that is the Bellacorick substation to Castlebar substation) (Planning

Reference P14/410). Planning permission has been granted on appeal by An Bord Pleanála (Reference: PL 16. 244534).

- EirGrid lodged a planning application for the Bellacorick to Moy 110 kV OHL deep works (Mayo Planning Reference 1545). Notification of permission was issued on 04/08/2015.
- ESB Networks planning application for the Bellacorick to Bangor Erris 38kV overhead line refurbishment/uprate project was lodged with Mayo County Council in September (Reference P15/611)
- Proposed Windfarm development at Tawnanasool (Planning Reference P14/666). Notification of refusal was issued by Mayo County Council on the 14th August 2015. The applicant appealed the decision to An Bord Pleanála on the 20/08/2015 with case listed to be decided by the 23/12/2015.
- Planning permission has been granted for a temporary three year meteorological mast development in the townland of Sheskin by ABO Wind Ireland Ltd (Planning Reference P15/460)
- Grid West Project
 - Undergrounding of Grid West option. The Government-appointed Independent Expert Panel confirmed that EirGrid has completed the report for the Grid West project in line with its (the Panel's) Terms of Reference. This includes a comprehensive analysis of underground and overhead options for the project, including assessment of potential environmental impacts, technical efficacy and cost factors.
 - EirGrid has published the full report and accompanying appendices (July 2015). The Grid West options assessed in the report include the following;
 - 400kV Overhead line with 400kV substations
 - 220kV overhead line with 220kV substations
 - HVDC underground cable with Inverter Stations

A cumulative impact assessment of each of these projects is included for the Phase 1 and Phase 2 development under each heading as appropriate.

1.3 METHODOLOGY

For the description, impact assessment and mitigation of the Phase 1 and Phase 2 development the assessment follows the EIA principles and format adhered to for the Oweninny wind farm application and takes all elements into account including the construction, operation and decommissioning of the wind farm.

The assessment of the Phase 1 and Phase 2 development is presented in the grouped-format structure of the original EIS with each category (Human Beings, Noise, etc.) being considered under the separate headings: Description of Existing Environment; Impact of the Development; Mitigation (where appropriate); Cumulative Impact and Conclusions (where appropriate).

Where appropriate, the assessment utilises readily available updated baseline information and also includes clarifications provided at the Oweninny Wind farm Oral Hearing, held in April 2014.

As the Bellacorick Iron Flush Special Area of Conservation (cSAC) is within the Phase 1 and Phase 2 proposed development area and as there are other designated areas hydraulically connected to or within 15km to the site, a separate appropriate assessment under Article 6.3 of the Habitats Directive has been made and is provided separately to this report.

Every effort has been made in the preparation of the document to keep it as concise as possible while also ensuring that relevant material is adequately covered.

In an effort to minimise repetition and to keep the document as concise as possible, mitigation measures that are applicable to a number of topics may or may not be repeated in the document. In general, only mitigation that is associated with the primary impacts is described.

While every effort is made to present together all details relating to individual topics, these should not be considered in isolation of others and without reference to context.

1.4 ORAL HEARING INFORMATION

As previously stated clarifications on issues raised by third parties were provided at the Oweninny Wind Farm oral hearing, which took place in Ballina in April 2014. The assessment of the Phase 1 and Phase 2 development includes clarification information provided at the oral hearing.

1.5 CONTRIBUTORS

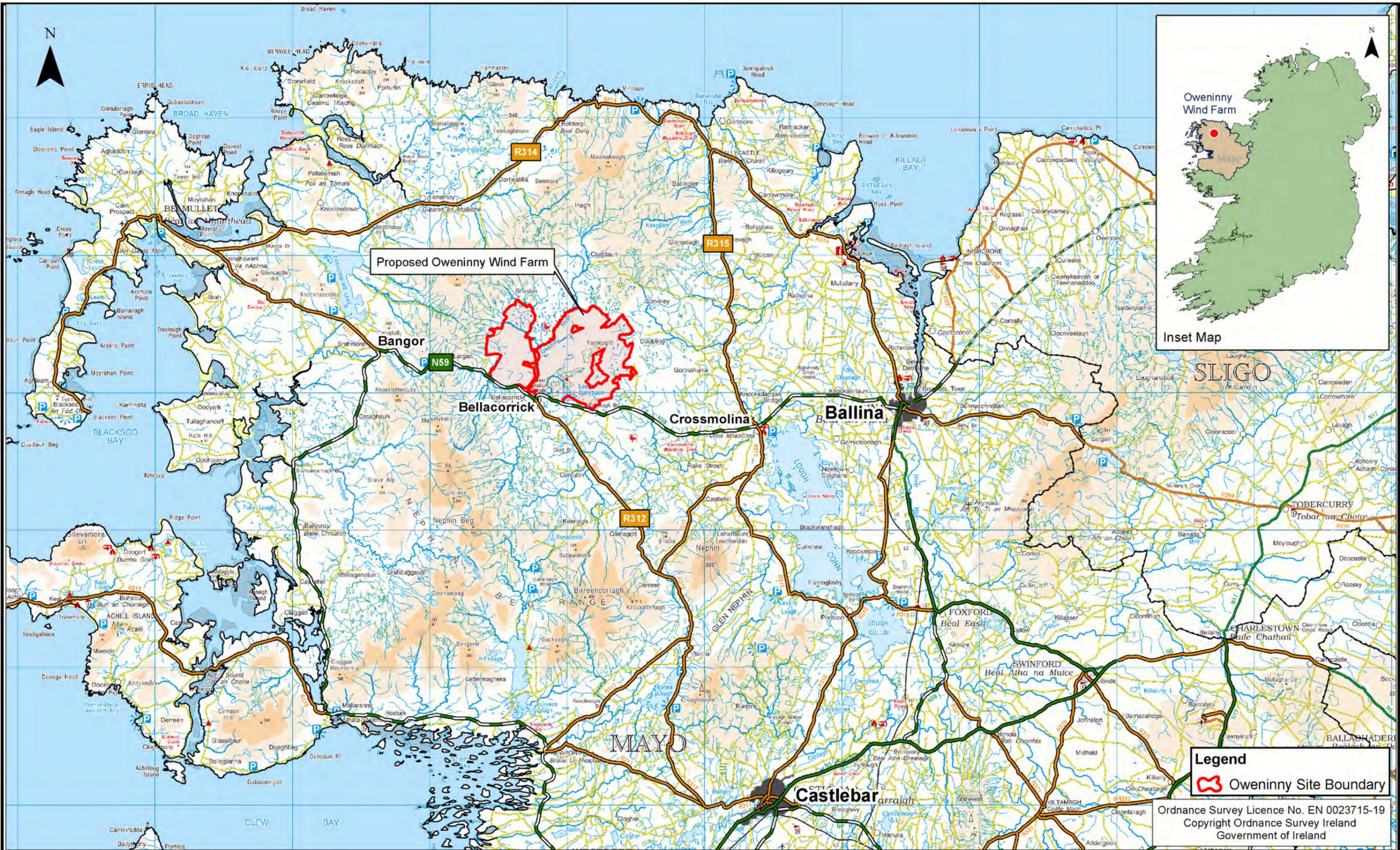
The Phase 1 and Phase 2 assessment was prepared by ESBI Civil and Environmental - Pre Development Group, Stephen Court, 18-21 St. Stephen's Green, Dublin 2, Ireland. The consultants and organisations who prepared the specialist reports for the original Oweninny wind farm EIS also contributed to the preparation. These are listed as follows:

- Bord na Móna
- ESB Wind Development
- RPS (the consultant in Biospheric Engineering Limited who prepared the noise assessment is now employed by RPS (Noise))
- Hayes McKenzie Partners Ltd (Noise)
- Biosphere Environmental Services (Terrestrial Ecology)
- Aquafact International Ltd. (Aquatic Ecology)
- Byrne Mullins & Associates (Cultural Heritage)
- AECOM (URS Ireland who prepared the original Landscape Assessment are now part of AECOM (Landscape))
- Hydro-environmental Services Limited (Bellacorick Iron Flush study)

No significant difficulties arising from lack of information were encountered in the development assessment process.

1.6 CONSULTATION

The issues identified through Stakeholder and public consultation and addressed in the Oweninny Wind Farm EIS remain current and no additional consultation was undertaken with respect to the assessment of Phase 1 and Phase 2 only.



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Oweninny Power Ltd.



Client Oweninny Power Ltd.
Project Wind Farm Project at Oweninny, Bellacorrick, Co. Mayo

Title Site Location Map
Production Unit Civil, Building & Environment Group

DRAWN BY EO'S	PRODUCED BY C.F	VERIFIED BY P.K	APPROVED BY N.Q	APPROVED DATE 10/09/2015
CLIENT REF. 00-00	NO. OF SHEETS 1/1	SHEET SIZE A3	SCALE 1:250,000	
MAP REFERENCE				

FIGURE 1.1

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