Report for the purposes of Appropriate Assessment Screening

as required under Article 6(3) of the Habitats Directive (Council Directive 92/43/EEC)

LEL Flexgen Castlelost

Prepared by: Moore Group – Environmental Services

17 December 2021



On behalf of Lumcloon Energy Limited (LEL)

Project Proponent	Lumcloon Energy Limited (LEL)
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Appendix A – Finding of No Significant Effects Report

Abbreviations

AA	Appropriate Assessment
EEC	European Economic Community
EPA	Environmental Protection Agency
EU	European Union
GIS	Geographical Information System
LAP	Local Area Plan
NHA	Natural Heritage Area
NIS	Natura Impact Statement
NPWS	National Parks and Wildlife Service
OSI	Ordnance Survey Ireland
pNHA	proposed Natural Heritage Area
SAC	Special Area of Conservation
SPA	Special Protection Area
SuDS	Sustainable Drainage System
WFD	Water Framework Directive

1. Introduction

1.1. General Introduction

This report for the purposes of Appropriate Assessment (AA) Screening has been prepared to support a Planning Application for the Proposed Development (described in Section 3 below). This report contains information required for the competent authority to undertake screening for Appropriate Assessment (AA) on the potential construction and operation of a 275MW Generator, 220kV substation and a 65MW Battery storage system at Kiltotan, Collinstown Oldtown, Co. Westmeath; LEL Flexgen Castlelost (hereafter referred to as the Proposed Development) to significantly affect European sites.

It has been updated to address comments issued by letter from the Department of Housing, Government & Local Heritage (Pl. Ref. 21/515) and requests for Further Information by Westmeath County Council.

Screening is the process that addresses the first two tests of Article 6(3) of Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (referred to as the Habitats Directive):

- I). whether a plan or project is directly connected to or necessary for the management of the site, and
- II). whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a Natura 2000 site in view of its conservation objectives.

Having regard to the provisions of the Planning and Development Act 2000 (section 177U and 177V), the purpose of a screening exercise under section 177U of the PDA 2000 is to assess, in view of best scientific knowledge, if the proposed development, individually or in combination with another plan or project is likely to have a significant effect on a European site.

If it cannot be *excluded* on the basis of objective information that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site then it is necessary to carry out a Stage 2 appropriate assessment.

When screening the project, there are two possible outcomes:

- the project poses no risk of a significant effect and as such requires no further assessment; and
- the project has potential to have a significant effect (or this is uncertain) and AA of the project is necessary.

This report has been prepared by Moore Group - Environmental Services to support an application for planning permission for the Proposed Development to allow Westmeath County Council to carry out AA screening in relation to the Proposed Development. The report was compiled by Ger O'Donohoe (B.Sc. Applied Aquatic

Sciences (GMIT, 1993) & M.Sc. Environmental Sciences (TCD, 1999)) who has 25 years' experience in environmental impact assessment and has completed numerous Appropriate Assessment Screening Reports and Natura Impact Statements on terrestrial and aquatic habitats for various development types.

1.2. Legislative Background - The Habitats and Birds Directives

It is necessary that the Proposed Development has regard to Article 6 of the Habitats Directive. This is transposed into Irish Law by the European Communities (Birds and Natural Habitats) Regulations, 2011 to 2015 (referred to as the Habitats Regulations). The Planning and Development Act 2000 (section 177U and 177V) govern the requirement to carry out appropriate assessment per Section 1.1 above.

The Habitats Directive is the main legislative instrument for the protection and conservation of biodiversity in the European Union (EU). Under the Habitats Directive, Member States are obliged to designate Special Areas of Conservation (SACs) which contain habitats or species considered important for protection and conservation in a EU context.

The Birds Directive (Council Directive 2009/147/EC on the Conservation of Wild Birds), transposed into Irish law by the Habitats Regulations 2011, is concerned with the long-term protection and management of all wild bird species and their habitats in the EU. Among other things, the Birds Directive requires that Special Protection Areas (SPAs) be established to protect migratory species and species which are rare, vulnerable, in danger of extinction, or otherwise require special attention.

SACs designated under the Habitats Directive and SPAs, designated under the Birds Directive, form a pan-European network of protected sites known as Natura 2000. The Habitats Directive sets out a unified system for the protection and management of SACs and SPAs. These sites are also referred to as European sites.

Articles 6(3) and 6(4) of the Habitats Directive set out the requirement for an assessment of proposed plans and projects likely to affect Natura 2000 sites.

Article 6(3) establishes the requirement to screen all plans and projects and to carry out a further assessment if required (Appropriate Assessment (AA)). Article 6(4) establishes requirements in cases of imperative reasons of overriding public interest:

Article 6(3): "Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to an appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."

2. Methodology

The Commission's methodological guidance (EC, 2002 & 2018, see Section 2.1 below) promotes a four-stage process to complete the AA and outlines the issues and tests at each stage. An important aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required.

Stages 1 and 2 deal with the main requirements for assessment under Article 6(3). Stage 3 may be part of Article 6(3) or may be a necessary precursor to Stage 4. Stage 4 is the main derogation step of Article 6(4).

Stage 1 Screening: This stage examines the likely effects of a project either alone or in combination with other projects upon a Natura 2000 site and considers whether it can be objectively concluded that these effects will not be significant. In order to screen out a project, it must be excluded, on the basis of objective information, that the Proposed Development, individually or in combination with other plans or projects, will have a significant effect on a European site.

Stage 2 Appropriate Assessment: In this stage, there is a consideration of the impact of the project with a view to ascertain whether there will be any adverse effect on the integrity of the Natura 2000 site either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are predicted impacts, an assessment of the potential mitigation of those impacts is considered.

Stage 3 Assessment of Alternative Solutions: This stage examines alternative ways of implementing the project that, where possible, avoid any adverse impacts on the integrity of the Natura 2000 site.

Stage 4 Assessment where no alternative solutions exist and where adverse impacts remain: Where imperative reasons of overriding public interest (IROPI) exist, an assessment to consider whether compensatory measures will or will not effectively offset the damage to the sites will be necessary.

To ensure that the Proposed Development complies fully with the requirements of Article 6 of the Habitats Directive and all relevant Irish transposing legislation, Moore Group compiled this report to support an application for planning permission for the Proposed Development to allow Westmeath County Council to carry out AA screening in relation to the Proposed Development to determine whether the Proposed Development, individually or in combination with another plan or project will have a significant effect on a Natura 2000 site.

2.1. Guidance

This report has been compiled in accordance with guidance contained in the following documents:

• Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities. (Department of Environment, Heritage and Local Government, 2010 rev.).

- Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular NPWS 1/10 & PSSP 2/10.
- 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 Environment Directorate-General, 2001); hereafter referred to as the EC Article Guidance Document.
- Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC (EC Environment Directorate-General, 2000); hereafter referred to as MN2000.
- Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC (EC, 2018).
- OPR Practice Note PN01 Appropriate Assessment Screening for Development Management (OPR, 2021).
- Guidance document on the strict protection of animal species of Community interest under the Habitats Directive (EC, 2021).
- Assessment of plans and projects in relation to Natura 2000 sites Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC (EC, 2021).

2.2. Data Sources

Sources of information that were used to collect data on the Natura 2000 network of sites, and the environment within which they are located, are listed below:

- The following mapping and Geographical Information Systems (GIS) data sources, as required:
 - National Parks & Wildlife (NPWS) protected site boundary data;
 - Ordnance Survey of Ireland (OSI) mapping and aerial photography;
 - o OSI/Environmental Protection Agency (EPA) rivers and streams, and catchments;
 - Open Street Maps;
 - Digital Elevation Model over Europe (EU-DEM);
 - Google Earth and Bing aerial photography 1995-2021;
- Online data available on Natura 2000 sites as held by the National Parks and Wildlife Service (NPWS) from www.npws.ie including:
 - Natura 2000 Standard Data Form;
 - Conservation Objectives;
 - Site Synopses;
- National Biodiversity Data Centre records;
 - Online database of rare, threatened and protected species;
 - Publicly accessible biodiversity datasets.
- Status of EU Protected Habitats in Ireland. (National Parks & Wildlife Service, 2019); and
- Relevant Development Plans;
 - Westmeath County Development Plan 2014-2020
 - o Draft Westmeath County Development Plan 2021-2027

The Proposed Development consists of the construction and operation of 275MW Gas-Fired Back-Up (Flexible) Generator, a 220Kv Electricity Substation and a 65MW Battery Energy Storage System (BESS) on lands at Kiltotan, Collinstown Oldtown, Co. Westmeath.

The proposed site was selected following a rigorous site suitability study. The proposed development will be located on a 51-acre site at Kiltotan and Collinstown, Oldtown, Co. Westmeath, which is under the control of the applicant. The proposed development will comprise three separate planning applications (projects). These are as follows.

Project 1: Proposed gas-fired back-up generator of 275MW electrical capacity. The project will combust natural gas supplied from the Gas Networks Ireland (GNI) transmission system. The proposal includes the installation of five (5no.) dry low emission (DLE) gas turbines, associated stack(s), raw water/fire water tank, fire water retention basin, back-up fuel tank, emergency generator, gas receiving station (AGI), customer control room, and all ancillary electrical plant and delivery systems. GNI will separately manage the process of delivering the underground gas transmission steel pipeline to the proposed site. The EIAR however will include assessment of up to three (3no.) indicative underground gas pipeline routes to the proposed site. The project will be licensed by the Environmental Protection Agency (EPA) under an industrial emissions licence.

Project 2: Proposed 220kV Gas Insulated Switchgear (GIS) Electrical Substation. The project will involve installation of two (2no.) 220 kV underground circuits forming a connection to the existing Shannonbridge-Maynooth 220 kV overhead line (located within the development boundary) and two (2no.) 220 kV underground circuits and associated low voltage and communication underground cabling connecting the proposed substation with electricity transformers to the adjacent backup generator (Project 1) and BESS (Project 3) sites, and all associated and ancillary site development works. The GIS substation itself includes a two storey, 17m high building (housing electrical switchgear, a battery room, a workshop room and WC), transformer bay(s), access roadway and all ancillary site development works. The GIS substation will be designed in accordance with Eirgrid specifications.

Project 3: Proposed Battery Energy Storage System (BESS) using vanadium flow battery (VFB) technology of 65MW capacity. The project will comprise a cluster of battery modules positioned within a dedicated BESS outdoor compound. Each module will consist of (i) a battery container (6.1m long container) housing pumps and heat exchangers positioned on top of two (ii) tank (electrolyte) enclosures (12.2m long containers). An associated battery management system (BMS) enclosure (cubicle) and medium voltage power station (MVPS) enclosure will also form part of the battery module. The BMS will monitor and control electrolyte circulation and the MVPS is provided to condition the power generated. A customer (IPP) building will also be installed within the BESS compound and it will house electrical switchgear, store, control room, welfare facilities and administration facilities.

Figure 1 shows the Proposed Development location and Figure 2 shows a detailed view of the Proposed Development boundary on recent aerial photography. Figure 3 shows the layout of the Proposed Development with details in the Key Fames in Figures 3a, b, and c.



Figure 1. Showing the Proposed Development location at Kiltotan, Collinstown Oldtown, Co. Westmeath.



Figure 2. Showing the Proposed Development boundary on recent aerial photography.



Figure 3. Plan of the Proposed Development.



Figure 3a. Plan of the Proposed Development showing Key Frame 1.



Figure 3b. Plan of the Proposed Development showing Key Frames 2 & 3 showing access areas.

4. Identification of Natura 2000 Sites

4.1. Description of Natura Sites Potentially Affected

The Department of Housing, Planning and Local Government (previously DoEHLG)'s Guidance on Appropriate Assessment (2009) recommends an assessment of European sites within a Zone of Influence (ZoI) of 15km. However, this distance is a guidance only and a zone of influence of a proposed development is the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a European site. In accordance with the OPR Practice Note, PN01, the ZoI should be established on a case-by-case basis using the Source- Pathway-Receptor framework and not by arbitrary distances (such as 15km).

The Zone of Influence may be determined by connectivity to the Proposed Development in terms of:

- Nature, scale, timing and duration of works and possible impacts, nature and size of excavations, storage of materials, flat/sloping sites;
- Distance and nature of pathways (dilution and dispersion; intervening 'buffer' lands, roads etc.); and
- Sensitivity and location of ecological features.

The potential for source pathway receptor connectivity is firstly identified through GIS interrogation and detailed information is then provided on sites with connectivity. European sites that are located within the potential Zone of Influence of the Proposed Development are listed in Table 1 and presented in Figures 4 and 5, below. Spatial boundary data on the Natura 2000 network was extracted from the NPWS website (www.npws.ie) on the 15 December 2021.

Site Code	Site name	Distance (km) ²
000582	Raheenmore Bog SAC	5.79
000685	Lough Ennell SAC	6.25
001831	Split Hills And Long Hill Esker SAC	7.19
002205	Wooddown Bog SAC	14.33
004044	Lough Ennell SPA	6.94
002299	River Boyne and River Blackwater SAC	19.47
004232	River Boyne and River Blackwater SPA	19.48

Table 1 European Sites located the potential Zone of Influence¹ of the Proposed Development.

¹ All European sites potentially connected irrespective of the nature or scale of the Proposed Development.

² Distances indicated are the closest geographical distance between the Proposed Development and the European site boundary, as made available by the NPWS. Connectivity along hydrological pathways may be significantly greater.

The nearest European sites to the Proposed Development are associated with Raheenmore Bog and include the Raheenmore Bog SAC (Site Code 000582), which is located just over 5.79km to the south.

The Proposed Development is located within the hydrological catchment of the Mongagh River, located approximately 1.1km to the north of the water course and in the rural setting of Westmeath.

Downstream, the Mongagh River flows east into the River Boyne with its associated European sites, the River Boyne and River Blackwater SAC (Site Code 002299) and the River Boyne and River Blackwater SPA (Site Code 004232), which are located over 20 river km to the northeast of the Proposed Development.

The Qualifying Interests (QIs) and Special Conservation Interests (SCIs) of the European sites in the vicinity of the Proposed Development are provided in Table 2 below.



Figure 4. Showing European sites and NHAs/pNHAs within the wider potential zone of influence of the Proposed Development.

European site name & Site code	Location Relative to the Proposed Development Site	Connectivity – Source-Pathway- Receptor	Considered further in Screening – Y/N
Raheenmore Bog SAC (000582) [7110] Active raised bogs * [7120] Degraded raised bogs still capable of natural regeneration [7150] Depressions on peat substrates of the Rhynchosporion NPWS (2015) Conservation Objectives: Raheenmore Bog SAC 000582. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht	5.79km to the south of the Proposed Development	No There are no pathways or connectivity to the habitats of this site. A Technical Note from the Air Modelling expert (TMS Environment Ltd.) submitted as part of the response to Further Information confirms that nitrogen deposition was modelled as part of the assessment and the levels determined at the designated ecological receptors identified in the EIAR as well as at all identified ecological sites within a 20km radius of the site were significantly lower than the critical loads for the relevant habitat. The most sensitive habitat for this purpose is bog ecosystems and a recommendation of 5kg N ha-1 year-1 has been made [UNECE 5 – 10 kg N ha-1 year-1 and EPA Research Report 390: Nitrogen–Sulfur Critical Loads: Assessment of the Impacts of Air Pollution on Habitats (2016-CCRP-MS.43) 5kg N ha-1 year-1] as the critical load for habitat protection. The maximum rate of deposition of total nitrogen at any of the designated ecological receptors within 20km of the proposed site was determined from dispersion modelling as well within the critical loads and are below the level that would be measurable for this parameter. In conclusion, it is confirmed that the total nitrogen deposition was considered and the levels which are predicted to arise as a result of the proposed development are orders of magnitude lower than the critical levels for the most sensitive habitats including bogs.	Ν
Lough Ennell SAC (000685) 7230 Alkaline fens NPWS (2018) Conservation Objectives: Lough Ennell SAC 000685. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht	6.25km to the north- west of the Proposed Development	No There are no pathways or connectivity to the habitats of this site.	Ν
Split Hill and Long Hill Esker SAC (001831)	7.19km to the west of the Proposed Development	No There are no pathways or connectivity to the habitats or species of this site.	N

Table 2 Identification of relevant European sites using Source-Pathway-Receptor model and compilation of information QIs and conservation objectives.

European site name & Site code	Location Relative to the Proposed Development Site	Connectivity – Source-Pathway- Receptor	Considered further in Screening – Y/N
6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites)			
NPWS (2018) Conservation Objectives: Split Hills and Long Hill Esker SAC 001831. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht			
Wooddown Bog SAC (002205) 7120 Degraded raised bogs still capable of natural regeneration NPWS (2021) Conservation objectives for Wooddown Bog SAC [002205]. Generic Version 8.0. Department of Housing, Local Government and Heritage	14.33km to the north of the Proposed Development	No Due to distance and the lack of any relevant ex-situ factors of significance to these species or habitat. A Technical Note from the Air Modelling expert (TMS Environment Ltd.) submitted as part of the response to Further Information confirms that nitrogen deposition was modelled as part of the assessment and the levels determined at the designated ecological receptors identified in the EIAR as well as at all identified ecological sites within a 20km radius of the site were significantly lower than the critical loads for the relevant habitat. The most sensitive habitat for this purpose is bog ecosystems and a recommendation of 5kg N ha-1 year-1 has been made [UNECE 5 – 10 kg N ha-1 year-1 and EPA Research Report 390: Nitrogen–Sulfur Critical Loads: Assessment of the Impacts of Air Pollution on Habitats (2016-CCRP-MS.43) 5kg N ha-1 year-1] as the critical load for habitat protection. The maximum rate of deposition of total nitrogen at any of the designated ecological receptors within 20km of the proposed site was determined from dispersion modelling as well within the critical loads and are below the level that would be measurable for this parameter. In conclusion, it is confirmed that the total nitrogen deposition was considered and the levels which are predicted to arise as a result of the proposed development are orders of magnitude lower than the critical levels for the most sensitive habitats including bogs.	Ν
Lough Ennell SPA (004044) [A059] Pochard (Aythya ferina)	6.94km to the northwest of the Proposed Development	No Due to distance and the lack of any relevant ex-situ factors of significance to these species or habitat.	N

European site name & Site code	Location Relative to the Proposed Development Site	Connectivity – Source-Pathway- Receptor	Considered further in Screening – Y/N
[A061] Tufted Duck (Aythya fuligula) [A125] Coot (Fulica atra)			
NPWS (2021) Conservation objectives for Lough Ennell SPA [004044]. Generic Version 8.0. Department of Housing, Local Government and Heritage			
River Boyne And River Blackwater SAC (002299) [7230] Alkaline fens [91E0] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno- Padion, Alnion incanae, Salicion albae) * [1099] River Lamprey (<i>Lampetra</i> <i>fluviatilis</i>) [1106] Salmon (<i>Salmo salar</i>) [1355] Otter (<i>Lutra lutra</i>) NPWS (2021) Conservation Objectives: River Boyne and River Blackwater SAC 002299. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.	19.4km to the northeast of the Proposed Development and over 20 river km downstream	Extremely limited Due to distance and the lack of any relevant ex-situ factors of significance to these species or habitat. The Proposed Development site is located within the enclosed catchment of the site to the north of the M6 Motorway. The internal drainage ditches assimilate surface water which goes to ground. There will be earth movement during site preparation, however, there will be no discharge of silt laden or contaminated surface water to the Kiltotan Stream. The possibility of contaminated surface water reaching the Rover Boyne is extremely low given the downstream distance of over 20 river km. To this end, the River Boyne is considered to be outside the potential Zone of Influence.	Y
River Boyne and River Blackwater SPA (004232) [A229] Kingfisher (<i>Alcedo atthis</i>) NPWS (2021) Conservation objectives for River Boyne and River Blackwater SPA [004232].Generic Version 8.0. Department of Housing, Local Government and Heritage.	19.4km to the northeast of the Proposed Development and over 20 river km downstream	The Proposed Development site is located within the enclosed catchment of the site to the north of the M6 Motorway. The internal drainage ditches assimilate surface water which goes to ground. There will be earth movement during site preparation, however, there will be no discharge of silt laden or contaminated surface water to the Kiltotan Stream. The possibility of contaminated surface water reaching the Rover Boyne is extremely low given the downstream distance of over 20 river km. To this end, the River Boyne is considered to be outside the potential Zone of Influence.	Y

4.2. Ecological Network Supporting Natura 2000 Sites

An analysis of the proposed Natural Heritage Areas (pNHA) and designated Natural Heritage Areas (NHA) in terms of their role in supporting the species using Natura 2000 sites was undertaken. It was assumed that these supporting roles mainly related to mobile fauna such as mammals and birds which may use pNHAs and NHAs as "stepping stones" between Natura 2000 sites.

Article 10 of the Habitats Directive and the Habitats Regulations 2011 place a high degree of importance on such non-Natura 2000 areas as features that connect the Natura 2000 network. Features such as ponds, woodlands and important hedgerows were taken into account during the preparation of this AA Screening report.

The majority of NHAs and pNHAs identified in Figure 4 are located outside the Zone of Influence. There are no areas of supporting habitat that will be affected by the Proposed Development.

This Department notes that there are designated Natural Heritage Areas (NHA) close to the proposed development:

- Cloncrow Bog (New Forest) NHA site code 000677 3 kilometres west
- Milltownpass Bog NHA site code 002323, 7 kilometres north east
- Black Castle Bog NHA site code 000570, 12.5 kilometres south east

The potential effects on these peatlands was assessed in the Air Quality section of the subject application EIAR. This has since been clarified in a Technical Note from the Air Modelling expert (TMS Environment Ltd.) submitted as part of the response to Further Information confirms that nitrogen deposition was modelled as part of the assessment and the levels determined at the designated ecological receptors identified in the EIAR as well as at all identified ecological sites within a 20km radius of the site were significantly lower than the critical loads for the relevant habitat.

The most sensitive habitat for this purpose is bog ecosystems and a recommendation of 5kg N ha-1 year-1 has been made [UNECE 5 – 10 kg N ha-1 year-1 and EPA Research Report 390: Nitrogen–Sulfur Critical Loads: Assessment of the Impacts of Air Pollution on Habitats (2016-CCRP-MS.43) 5kg N ha-1 year-1] as the critical load for habitat protection. The maximum rate of deposition of total nitrogen at any of the designated ecological receptors within 20km of the proposed site was determined from dispersion modelling as well within the critical loads and are below the level that would be measurable for this parameter.

In conclusion, it is confirmed that the total nitrogen deposition was considered and the levels which are predicted to arise as a result of the proposed development are orders of magnitude lower than the critical levels for the most sensitive habitats including bogs.

There are no other areas of conservation concern that would be affected by the Proposed Development.

5. Identification of Potential Impacts & Assessment of Significance

The Proposed Development is not directly connected with or necessary to the management of the sites considered in the assessment and therefore potential impacts must be identified and considered.

5.1. Assessment of Likely Significant Effects

The Proposed Development is located within the hydrological catchment of the Kiltotan stream, approximately 1.1km to the north of the stream and in the rural setting of Westmeath.

Downstream, the waters of the Kiltotan stream enter the Castlejordan River which flows east into the River Boyne with its European sites, the River Boyne And River Blackwater SAC (Site Code 002299) and the River Boyne and River Blackwater SPA (Site Code 004232), which are located respectively approximately 19.47km and c. 19.48km to the northeast of the Proposed Development.

There is no connectivity to Raheenmore Bog or to any other European sites within or outside the guideline 15km potential Zone of Influence.

The consideration of all potential direct and indirect impacts that may result in significant effects on the conservation objectives of a European site, taking into account the size and scale of the Proposed Development are presented in Table 3.

Impacts:	Significance of Impacts:
Construction phase e.g.	The Proposed Development site is located within the enclosed catchment of the site to the north of the M6
Vegetation clearance	Motorway. The internal drainage ditches assimilate surface water which goes to ground.
Demolition	
Surface water runoff from soil excavation/infill/landscaping (including borrow pits)	There will be earth movement during site preparation, however, there will be no discharge of silt laden or contaminated surface water to the Kiltotan Stream.
Dust, noise, vibration	The possibility of contaminated surface water reaching
Lighting disturbance	distance of over 20 river km.
Impact on groundwater/dewatering	To this end, the River Boyne is considered to be outside
Storage of excavated/construction materials	
1	

Table 3 Assessment of Likely Significant Effects.

Identification of all potential direct and indirect impacts that may result in significant effects on the conservation objectives of a European site, taking into account the size and scale of the project.

Access to site		
Pests		
Operational phase e.g.	All foul and surface water runoff, once the facility is operational, will be contained on site and discharged to	
Direct emission to air and water	urban drainage systems.	
Surface water runoff containing	There is no real likelihood of any significant effects on European Sites in the wider catchment area.	
contaminant or sediment		
Lighting disturbance	The facility is located at a distance of removal such that there will be no disturbance to qualifying interest	
Noise/vibration	species in any European sites.	
Changes to water/groundwater due to drainage or abstraction	A Technical Note from the Air Modelling expert (TMS Environment Ltd.) submitted as part of the response to Further Information confirms that nitrogen deposition was modelled as part of the assessment and the levels determined	
Presence of people, vehicles and activities	at the designated ecological receptors identified in the EIAR as well as at all identified ecological sites within a 20km radius of	
Physical presence of structures (e.g. collision risks)	the site were significantly lower than the critical loads for the relevant habitat.	
Potential for accidents or incidents	The most sensitive habitat for this purpose is bog ecosystems and a recommendation of 5kg N ha-1 year-1 has been made [UNECE 5 – 10 kg N ha-1 year-1 and EPA Research Report 390: Nitrogen–Sulfur Critical Loads: Assessment of the Impacts of Air Pollution on Habitats (2016-CCRP-MS.43) 5kg N ha-1 year-1] as the critical load for habitat protection. The maximum rate of deposition of total nitrogen at any of the designated ecological receptors within 20km of the proposed site was determined from dispersion modelling as well within the critical loads and are below the level that would be measurable for this parameter. In conclusion, it is confirmed that the total nitrogen deposition was considered and the levels which are predicted to arise as a result of the proposed development are orders of magnitude lower than the critical levels for the most sensitive habitats including bogs.	
In-combination/Other	No likely significant in-combination effects are identified.	
Describe any likely changes to the European site:		
Examples of the type of changes to give consideration to include:	None.	
Reduction or fragmentation of habitat area	The Proposed Development site is not located adjacent or within a European site, therefore there is no risk of	
Disturbance to QI species	habitat loss or fragmentation or any effects on QI habitats or species directly or ex-situ.	

Habitat or species fragmentation Reduction or fragmentation in species density Changes in key indicators of conservation status value (water quality etc.) Changes to areas of sensitivity or threats to QI Interference with the key relationships that define the structure or ecological function of the site Climate change	It can be noted that the level of development recorded during fieldwork and distance from the regional SPAs do not present opportunities to support the bird species for which the Lough Ennell Shore SPA (6.94km) is designated.		
Are 'mitigation' measures necessary to reach a conclusion that likely significant effects can be ruled out at screening?			
No	While best practice construction methods may be included for good housekeeping during construction, these are not required to avoid or reduce any effects on a European site. These measures are not relied upon to reach a conclusion of no likely significant effects on any European site.		

On the basis of the information supplied, which is considered adequate to undertake a screening determination and having regard to:

- the intervening land uses and distance from European sites,
- the lack of direct connections with regard to the Source-Pathway-Receptor model,
- here are no predicted emissions to air, water or the environment during the construction or operational phases that would result in significant effects.

It may be concluded that the proposed development, individually or in-combination with other plans or projects, would not be likely to have a significant effect on the above listed European sites or any other European site, in view of the said sites' conservation objectives.

5.2. Assessment of Potential In-Combination Effects

In-combination effects are changes in the environment that result from numerous human-induced, small-scale alterations. In-combination effects can be thought of as occurring through two main pathways: first, through persistent additions or losses of the same materials or resource, and second, through the compounding effects as a result of the coming together of two or more effects.

As part of the Screening for an Appropriate Assessment, in addition to the Proposed Development, other relevant plans and projects in the area must also be considered at this stage. This step aims to identify at this

early stage any possible significant in-combination effects of the Proposed Development with other such plans and projects on European sites.

A review of the National Planning Application Database was undertaken. The first stage of this review confirmed that there were no data outages in the area where the Proposed Development is located. The database was then queried for developments granted planning permission within 1000m of the Proposed Development within the last three years, these are presented in Table 4 below.

Planning Ref.	Description of development	Comments
186167	construction of a two-storey extension (floor area c192.00 sq.m) to rear and side of existing house and replace existing septic tank and percolation area with new septic tank and percolation area and carry out all associated site works.	It is considered that the proposal would not give rise to significant adverse direct, indirect or secondary impacts on the integrity of any Natura 2000 sites having regard to their conservation objectives.
186189	construction of a bungalow, garage, connection into existing sewer and all associated site works.	It is considered that the proposal would not give rise to significant adverse direct, indirect or secondary impacts on the integrity of any Natura 2000 sites having regard to their conservation objectives.
186231	construction of one number bungalow type dwelling house (172sqm) and domestic garage (41.1sqm). Permission is also sought to connect to existing sewer and all associated site works.	No potential for in-combination effects given the scale and location of the project.
206335	(A) Construction of a Silage Pit, Dungstead and Tyre Store. (B) Construction of an Agricultural Building to include Cubicles, Straw Bedding, and Underground Slatted Slurry Tanks.(C) Construction of a Milking Parlour, Dairy and Ancillary Rooms, Livestock Waiting Yard, Livestock Handling Facilities and an Underground Soiled Water Tank. (D) Erection of a Meal Bin and Water Storage Tank and all associated Site Works.	No potential for in-combination effects given the scale and location of the project.

Table 4. Planning applications granted permission in the vicinity of the Proposed Development.

There are no predicted in-combination effects given that the reasons discussed in the 'Comments' column of Table 4 above and given that the Proposed Development is unlikely to have any adverse effects on the Raheenmore Bog European sites.

The Westmeath County Development Plan in complying with the requirements of the Habitats Directive requires that all Projects and Plans that could affect the Natura 2000 sites in the same zone of influence of the Proposed Development site would be initially screened for Appropriate Assessment and if requiring Stage 2 AA, that appropriate employable mitigation measures would be put in place to avoid, reduce or ameliorate negative impacts. In this way any, in-combination impacts with Plans or Projects for the proposed development area and surrounding townlands in which the proposed development site is located, would be avoided.

The listed developments have been granted permission in most cases with conditions relating to sustainable development by the consenting authority in compliance with the relevant Local Authority Development Plan

and in compliance with the Local Authority requirement for regard to the Habitats Directive. The development cannot have received planning permission without having met the consenting authority requirement in this regard. There are no predicted in-combination effects given that it is predicted that the Proposed Development will have no effect on any European site.

Any new applications for the Proposed Development area will be assessed on a case by case basis *initially* by Westmeath County Council which will determine the requirement for AA Screening as per the requirements of Article 6(3) of the Habitats Directive.

6. Conclusion

There is no direct connectivity to any European sites within or outside the potential Zone of Influence.

There are no predicted effects on any European sites given:

- the intervening land uses and distance from European sites,
- the lack of direct connections with regard to the Source-Pathway-Receptor model,
- here are no predicted emissions to air, water or the environment during the construction or operational phases that would result in significant effects.

It has been objectively concluded by Moore Group Environmental Services that:

- 1. The Proposed Development is not directly connected with, or necessary to the conservation management of the European sites considered in this assessment.
- 2. The Proposed Development is unlikely to either directly or indirectly significantly affect the Qualifying interests or Conservation Objectives of the European sites considered in this assessment.
- 3. The Proposed Development, alone or in combination with other projects, is not likely to have significant effects on the European sites considered in this assessment in view of their conservation objectives.
- 4. It is possible to conclude that significant effects can be excluded at the screening stage.

It can be *excluded*, on the basis of objective information, that the Proposed Development, individually or in combination with other plans or projects, will have a significant effect on a European site.

An appropriate assessment is not, therefore, required.

A finding of no significant effects report is presented in Appendix A in accordance with the EU Commission's methodological guidance (European Commission, 2002).

7. References

Department of the Environment, Heritage and Local Government (2010) Guidance on Appropriate Assessment of Plans and Projects in Ireland (as amended February 2010).

European Commission (2000) Managing Natura 2000 sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.

European Commission Environment DG (2002) 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 92/43EEC. European Commission, Brussels.

European Commission (2007) Guidance document on Article 6(4) of the 'Habitats Directive '92/43/EEC: Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interests, compensatory measures, overall coherence and opinion of the Commission. European Commission, Brussels.

European Commission (2018) Managing Natura 2000 sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC.

European Commission (2021) Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Brussels 28.9.21.

European Commission (2021) Guidance document on the strict protection of animal species of Community interest under the Habitats Directive, Brussels 12.10.21.

NPWS (2019) The Status of EU Protected Habitats and Species in Ireland. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin.

NPWS (2021) National Parks and Wildlife Service Metadata available online at https://www.npws.ie/maps-anddata

Office-of-the-Planning-Regulator (2021) Appropriate Assessment Screening for Development Management OPR Practice Note PN01. March 2021

Appendix A

FINDING OF NO SIGNIFICANT EFFECTS REPORT

Finding no significant effects report matrix

Name of project or plan

LEL Flexgen Castlelost

Name and location of the Natura 2000 site(s)

The nearest European sites to the Proposed Development are associated with Raheenmore Bog and include the Raheenmore Bog SAC (Site Code 000582), which is located just over 5.79km to the south.

The Proposed Development is located within the hydrological catchment of the Mongagh River, located approximately 1.1km to the north of the water course and in the rural setting of Westmeath.

Downstream, the Mongagh River flows east into the River Boyne with its associated European sites, the River Boyne and River Blackwater SAC (Site Code 002299) and the River Boyne and River Blackwater SPA (Site Code 004232), which are located over 20 river km to the northeast of the Proposed Development.

There is no connectivity to any European sites within or outside the potential Zone of Influence.

Description of the project or plan

The Proposed Development consists of the construction and operation of 275MW Gas-Fired Back-Up (Flexible) Generator, a 220Kv Electricity Substation and a 65MW Battery Energy Storage System (BESS) on lands at Kiltotan, Collinstown Oldtown, Co. Westmeath.

Is the project or plan directly connected with or necessary to the management of the site(s)

No

Are there other projects or plans that together with the projects or plan being assessed could affect the site

A review of the National Planning Application Database was undertaken. The first stage of this review confirmed that there were no data outages in the area where the Proposed Development is located. The database was then queried for developments granted planning permission within 1000m of the Proposed Development within the last three years, these are presented in Table 4 below.

Planning applications granted permission in the vicinity of the Proposed Development.

Planning Ref.	Description of development	Comments
186167	construction of a two-storey extension (floor area c192.00 sq.m) to rear and side of existing house and replace existing septic tank and percolation area with new septic tank and percolation area and carry out all associated site works.	It is considered that the proposal would not give rise to significant adverse direct, indirect or secondary impacts on the integrity of any Natura 2000 sites having regard to their conservation objectives.
186189	construction of a bungalow, garage, connection into existing sewer and all associated site works.	It is considered that the proposal would not give rise to significant adverse direct, indirect or secondary impacts on the integrity of any Natura 2000 sites having regard to their conservation objectives.
186231	construction of one number bungalow type dwelling house (172sqm) and domestic garage (41.1sqm). Permission is also sought to connect to existing sewer and all associated site works.	No potential for in-combination effects given the scale and location of the project.
206335	(A) Construction of a Silage Pit, Dungstead and Tyre Store. (B) Construction of an Agricultural Building to include Cubicles, Straw Bedding, and Underground Slatted Slurry Tanks.(C) Construction	No potential for in-combination effects given the scale and location of the project.

Planning Ref.	Description of development	Comments
	of a Milking Parlour, Dairy and Ancillary Rooms, Livestock Waiting Yard, Livestock Handling Facilities and an Underground Soiled Water Tank. (D) Erection of a Meal Bin and Water Storage Tank and all associated Site Works.	

There are no predicted in-combination effects given that the reasons discussed in the 'Comments' column of the Table above and given that the Proposed Development is unlikely to have any adverse effects on the Raheenmore Bog European sites.

The Westmeath County Development Plan in complying with the requirements of the Habitats Directive requires that all Projects and Plans that could affect the Natura 2000 sites in the same zone of influence of the Proposed Development site would be initially screened for Appropriate Assessment and if requiring Stage 2 AA, that appropriate employable mitigation measures would be put in place to avoid, reduce or ameliorate negative impacts. In this way any, in-combination impacts with Plans or Projects for the proposed development area and surrounding townlands in which the proposed development site is located, would be avoided.

The listed developments have been granted permission in most cases with conditions relating to sustainable development by the consenting authority in compliance with the relevant Local Authority Development Plan and in compliance with the Local Authority requirement for regard to the Habitats Directive. The development cannot have received planning permission without having met the consenting authority requirement in this regard. There are no predicted in-combination effects given that it is predicted that the Proposed Development will have no effect on any European site.

Any new applications for the Proposed Development area will be assessed on a case by case basis *initially* by Westmeath County Council which will determine the requirement for AA Screening as per the requirements of Article 6(3) of the Habitats Directive.

THE ASSESSMENT OF SIGNIFICANCE OF EFFECTS

Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 site.

There is no connectivity to Raheenmore Bog or to any other European sites within or outside the guideline 15km zone of potential impact.

Explain why these effects are not considered significant.

There are no predicted effects on any European sites given:

- The distance between the Proposed Development and any European Sites;
- There are no predicted emissions to air, water or the environment during the construction or operational phases that would result in significant effects

List of agencies consulted: provide contact name and telephone or e-mail address

The requirement for Appropriate Assessment Screening was determined during pre-planning discussion with Westmeath County Council.

Response to consultation

N/A.

DATA COLLECTED TO CARRY OUT THE ASSESSMENT

Who carried out the assessment

Moore Group Environmental Services.

21180

Sources of data

NPWS database of designated sites at www.npws.ie

National Biodiversity Data Centre database http://maps.biodiversityireland.ie

Level of assessment completed

Desktop Assessment. Fieldwork was carried out as part of the EIA process.

Where can the full results of the assessment be accessed and viewed

Westmeath County Council Planning web portal.

OVERALL CONCLUSIONS

There is no direct connectivity to any European sites within or outside the potential Zone of Influence. There are no predicted effects on any European sites given:

- the intervening land uses and distance from European sites,
- the lack of direct connections with regard to the Source-Pathway-Receptor model,
- here are no predicted emissions to air, water or the environment during the construction or operational phases that would result in significant effects.

It has been objectively concluded by Moore Group Environmental Services that:

- 1. The Proposed Development is not directly connected with, or necessary to the conservation management of the European sites considered in this assessment.
- 2. The Proposed Development is unlikely to either directly or indirectly significantly affect the Qualifying interests or Conservation Objectives of the European sites considered in this assessment.
- 3. The Proposed Development, alone or in combination with other projects, is not likely to have significant effects on the European sites considered in this assessment in view of their conservation objectives.
- 4. It is possible to conclude that significant effects can be excluded at the screening stage.

It can be *excluded*, on the basis of objective information, that the Proposed Development, individually or in combination with other plans or projects, will have a significant effect on a European site.

An appropriate assessment is not, therefore, required.



Specialists in laboratory analysis, monitoring and environmental consultancy



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Colm Staunton Halston IHub Building, Westport Road, Castlebar, Co. Mayo, F23 K162

16 December 2021

Re: Planning Reference 21/515

Dear Colm

I refer to your correspondence in relation to the proposed Castlelost FlexGen development and specifically to the request for information in relation to the Department of Housing, Local Government and Heritage submission dated 21 October 2021 to Westmeath County Council. The relevant section of the DHLGH submission is as follows:

This Department notes that the only predicted air quality impacts associated with operation of the development are emissions to atmosphere from the combustion of natural gas in the gas turbines. The Environmental Impact Assessment Report (EIAR) notes that, with the chosen stack height of 30 metres, the predicted ambient air concentrations will be lower than the relevant air quality standards and therefore there will be no adverse impact on air quality, human health or on ecosystems as a result of the proposed development. However, NOx is a contributor to total Nitrogen deposition. Nitrogen deposition has been found to have a significant deleterious impact on the health of bog ecosystems in particular. Given the proximity of several designated bog habitats to the proposed development, the dispersion of NOx and its potential contribution to total nitrogen deposition locally could be modelled by relevant experts to assess potential impacts.

I confirm that nitrogen deposition was modelled as part of the assessment and the levels determined at the designated ecological receptors identified in the EIAR (E1 - E3) as well as at all identified ecological sites within a 20km radius of the site were significantly lower than the critical loads for the relevant habitat.

The most sensitive habitat for this purpose is bog ecosystems and a recommendation of 5kg N ha⁻¹ year⁻¹ has been made [UNECE 5 – 10 kg N ha⁻¹ year⁻¹ and EPA *Research Report 390: Nitrogen–Sulfur Critical Loads: Assessment of the Impacts of Air Pollution on Habitats (2016-CCRP-MS.43)* 5kg N ha⁻¹ year⁻¹] as the critical load for habitat protection. The maximum rate of deposition of total nitrogen at any of the designated ecological receptors within 20km of the proposed site was determined from dispersion modelling as follows with data provided for the highest concentration predicted from the five years of meteorological data for each of the designated sites represented by E1 - E3.

Ecological Receptor habitat	Maximum Total nitrogen deposition, kg N ha ⁻¹ year ⁻¹
E1	0.0051
E2	0.0213
E3	0.0335

Table 1 Total Nitrogen deposition as result of emissions from the proposed Flexgen plant

The predicted deposition rates for the worst case scenarios are well within the critical loads and are below the level that would be measurable for this parameter. The levels may also be considered in the context of measured nitrogen deposition rates at Valentia Observatory [EPA *Research Report 390: Nitrogen–Sulfur Critical Loads: Assessment of the Impacts of Air Pollution on Habitats (2016-CCRP-MS.43)*]. This study estimated deposition rates of 8.3 kg N ha–1 y–1 for 2006 - 2015, with a maximum deposition of 19.3 kg N ha–1 y–1 during 2009. The Research Report found that dry deposition made up 40% of total deposition, which was dominated by reduced species (56%), that is, wet ammonium, dry particulate ammonium and dry gaseous ammonia. None of these species are significant in the current study but it is useful to note that nitrogen oxides are not the dominant contributor to nitrogen deposition in Ireland.

In conclusion, I confirm that the total nitrogen deposition was considered and the levels which are predicted to arise as a result of the proposed development are orders of magnitude lower than the critical levels for the most sensitive habitats including bogs.

Yours sincerely

Inelda Shanaham

Dr Imelda Shanahan