

ENVIRONMENTAL IMPACT ASSESSMENT REPORT (EIAR) FOR THE PROPOSED COOM GREEN ENERGY PARK GRID CONNECTION

VOLUME 1 – NON-TECHNICAL SUMMARY

Prepared for:

Coom Green Energy Park Ltd



Date: April 2026

Document No:

P24308-FT-EGN-XX-RP-EN-0001

Core House, Pouladuff Road, Cork, T12 D773, Ireland

T: +353 21 496 4133 | E: info@ftco.ie

CORK | DUBLIN | CARLOW

www.fehilytimoney.ie

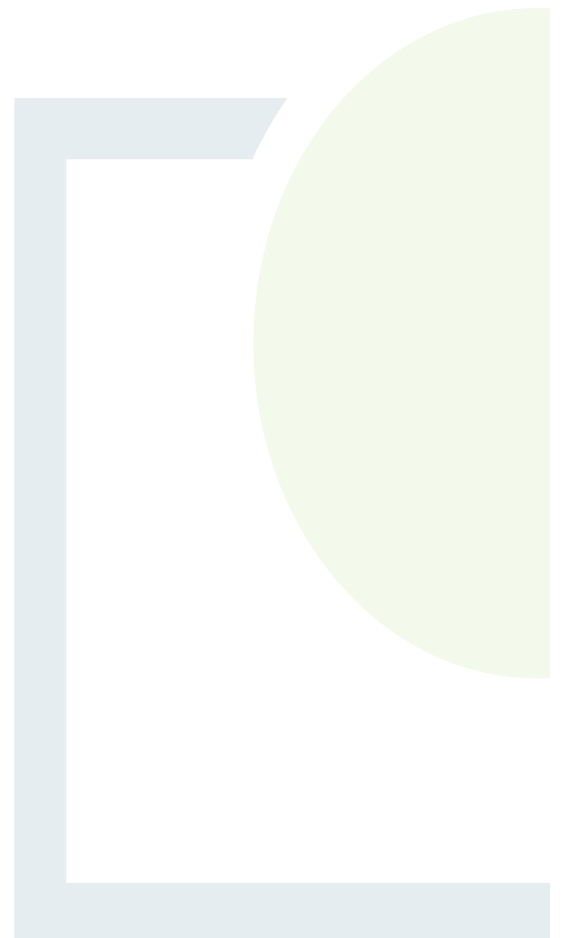


TABLE OF CONTENTS

1.	INTRODUCTION	1
1.1	Site Description and Development Description	1
1.2	Requirement for EIAR.....	2
1.2.1	Pre-Application Consultation	2
1.3	EIAR Structure	3
1.4	Permission Period.....	4
1.5	Difficulties Encountered	4
2.	DESCRIPTION OF THE PROPOSED DEVELOPMENT	5
2.1	Overview of the Proposed Development.....	5
2.1.1	Elements of the Proposed Development for which Development Consent is Being Sought	5
2.2	110 kV Underground Cable (UGC) Grid Connection Route (GCR).....	5
2.2.1	Cable Ducts and Trenches.....	5
2.2.2	110kV Joint Bays	6
2.2.3	Water Crossings	6
2.2.4	Crossing of the M8 Motorway	7
2.3	33 kV Underground Cable (UGC) Collector Network Route (CNR).....	7
2.3.1	Cable Ducts and Trenches.....	7
2.3.2	33kV Joint Slabs.....	8
2.3.3	Water Crossings	8
2.4	110kV Substation.....	8
2.5	Construction	9
2.6	Operation	9
2.7	Decommissioning	9
3.	SITE SELECTION AND ALTERNATIVES	11
3.1	Site Selection	11
3.2	Alternatives Considered	11
3.2.1	Alternative 110kV Substation Locations	11
3.2.2	Alternative 110kV Grid Connection Route.....	12
3.2.3	Alternative 33kV Collector Network Route Options	12
3.2.4	Do-Nothing Alternative.....	12
3.3	Conclusion	13

4. POLICY	14
4.1 International Global Policies	14
4.2 European Union Legislation and Policy	14
4.3 National Policies and Legislation	15
4.4 Irish Energy & Environment Policies	15
4.5 Regional and Local Plans	16
4.5.1 Southern Regional Spatial & Economic Strategy 2020-2031	16
4.5.2 Cork County Development Plan 2022 - 2028	17
5. EIA SCOPING, CONSULTATION AND KEY ISSUES	18
5.1 Introduction	18
5.2 Scoping	18
5.2.1 Key Issues Raised During Scoping	18
5.3 Public Consultation	19
5.4 Consultation with Planning Authorities and Stakeholders	19
5.5 Conclusion	19
6. POPULATION AND HUMAN HEALTH	20
6.1 Introduction	20
6.2 Study Area	20
6.3 Existing Population and Health Profile	20
6.4 Employment and Economic Activity	21
6.5 Land Use	21
6.6 Recreation, Amenity and Tourism	21
6.7 Human Health and Safety	21
6.8 Major Accidents and Natural Disasters	22
6.9 Mitigation Measures	22
6.10 Residual Effects	22
6.11 Do-Nothing Scenario	22
6.12 Conclusion	23
7. AIR QUALITY AND CLIMATE	24
7.1 Existing Environment	24
7.2 Impact Assessment	24
7.2.1 Air Quality	25
7.2.2 Climate	26
7.3 Mitigation Measures	27

7.4	Residual Impacts.....	27
7.5	Conclusion	28
8.	NOISE AND VIBRATION	29
8.1	Introduction.....	29
8.2	Potential Effects	29
8.2.1	Construction Noise.....	29
8.2.2	Construction Vibration.....	30
8.2.3	Operational Noise	30
8.2.4	Decommissioning Noise.....	30
8.3	Cumulative.....	30
8.3.1	Construction.....	30
8.3.2	Operational	31
8.3.3	Decommissioning.....	31
8.4	Mitigation Measures	32
8.4.1	Construction.....	32
8.4.2	Operational	32
8.4.3	Decommissioning.....	32
8.5	Residual Impacts.....	32
8.5.1	Construction.....	32
8.5.2	Operational	33
8.5.3	Decommissioning.....	33
9.	BIODIVERSITY	34
9.1	Introduction.....	34
9.2	Study Area and Methodology.....	34
9.3	Designated Sites	34
9.4	Existing Biodiversity Environment.....	35
9.5	Assessment of Likely Effects.....	35
9.5.1	Construction Phase	35
9.5.2	Operational Phase.....	36
9.5.3	Decommissioning Phase	36
9.6	Mitigation Measures	36
9.7	Residual Effects and Enhancement	37
9.8	Conclusion	37
10.	SOILS, GEOLOGY AND HYDROGEOLOGY	38

10.1	Existing Environment.....	38
10.2	Potential Effects	38
10.2.1	Do Nothing Effect.....	39
10.2.2	Construction Phase	39
10.2.3	Operational Phase.....	40
10.2.4	Decommissioning Phase	40
10.2.5	Cumulative Effects	40
10.3	Mitigation Measures	40
10.4	Residual Effects	41
10.5	Conclusion	42
11.	HYDROLOGY AND WATER QUALITY	43
11.1	Existing Environment.....	43
11.2	Proposed Development.....	43
11.3	Potential Impacts.....	43
11.4	Mitigation	44
11.5	Residual Effects	45
12.	MATERIAL ASSETS, TELECOMMUNICATIONS, TRAFFIC AND TRANSPORT	46
12.1	Potential Effects	46
12.1.1	Utility Infrastructure	46
12.1.2	Traffic and Transportation	47
12.1.3	Telecommunications.....	47
12.2	Mitigation Measures	48
12.2.1	Utility Infrastructure	48
12.2.2	Traffic and Transportation	48
12.2.3	Telecommunications.....	49
13.	ARCHAEOLOGY, ARCHITECTURAL AND CULTURAL HERITAGE.....	50
13.1	Existing Environment.....	50
13.2	Potential Effects	51
13.2.1	Construction Phase	51
13.2.2	Operation Phase.....	52
13.2.3	Cumulative Effects	52
13.3	Mitigation	53
13.4	Residual Effects	53
13.5	Conclusion	53

14. LANDSCAPE AND VISUAL IMPACT	55
14.1 Potential Effects	55
14.2 Construction Phase.....	55
14.3 Operational Phase	56
15. INTERACTIONS OF THE FOREGOING	57
15.1 Introduction.....	57
15.2 Assessment of Potential Interactions.....	57
15.3 Conclusion	58

LIST OF TABLES

Page

Table 13-1: Recorded archaeological sites within and adjacent to study area.....	50
--	----



1. INTRODUCTION

Fehily Timoney and Company (FT) has prepared this Environmental Impact Assessment Report (EIAR) on behalf of Coom Green Energy Park Limited. Coom Green Energy Park Limited intend to apply to An Coimisiún Pleanála (The Commission) for planning permission to construct a 110kV Grid Connection Route, a 33 kV Collector Network Route, and a 110kV Substation associated with the consented Green Energy Park (CGEP) wind energy development within the jurisdiction of Cork County Council, approximately 12 km to the southeast of Mallow and approximately 13 km west of Fermoy in County Cork.

The Proposed Development assessed in this EIAR comprises the following elements:

- A 110 kV Underground Cable (UGC) Grid Connection Route from the permitted onsite substation at Lackendarragh to the existing Barrymore 110 kV substation located near Rathcormac, Co. Cork (also referred to herein as the '**110 kV GCR**');
- A 33kV Underground Cable (UGC) Collector Network Route between the western and eastern arrays of the permitted Coom Green Energy Park (CGEP) development (also referred to herein as the '**33 kV CNR**');
- A 110kV onsite substation at Lackendarragh, in line with the latest Eirgrid functional specifications (also referred to herein as '**110 kV Substation**').

1.1 Site Description and Development Description

CGEP is a permitted development (ACP Ref: 308885-20) consisting of a 22-turbine wind farm, 110 kV substation, 20 no. battery energy storage containers and all associated ancillary works. Two 110 kV substations were permitted as part of the CGEP, one in the townland of Mullenaboree and one in the townland of Lackendarragh North. However, only the substation located in Lackendarragh North will be constructed. The permitted 110 kV substation at Mullenaboree shall not be constructed if the Proposed Development receives planning consent, as it will no longer be required.

The permitted CGEP is located approximately 12 km to the southeast of Mallow and approximately 13 km west of Fermoy in County Cork.

The 110kV GCR traverses the following townlands: Lackendarragh North, Moanlahan, Knockauncorin, Mullentaura, Glanakip, Rathcormack-mountain, Coolnakilla, Knockananig, Coolmucky, Ballynahina, Corrin, Farran North, Farran South, Kill-Saint-Anne-North, Co. Cork.

The 33kV CNR traverses the following townlands: Coom (Hudson), Mullenaboree, Knockaunalour, Knocknacaheragh, Chimneyfield, Killeagh, Glannasack, Knockdoorty and Lackendarragh North, Co. Cork.

The 110kV onsite substation is located at Lackendarragh North, Co. Cork.

The Proposed Development application area (i.e. the red line boundary depicting the land to which the application relates, which includes the 110kV GCR, 33kV CNR and the 110kV onsite substation) comprises a land area of 57.6 ha (0.58 km²) and is shown on Figure 2.1, Volume 4 of the EIAR and planning application drawings.

The works area associated with the 110 kV UGC and 33 kV CNR shall take place within an approximate 20 m corridor through private lands.

All works associated with the 110 kV UGC and 33 kV CNR within public roads shall be carried out within the boundaries of the public road corridor as shown on planning application drawings.



The development boundary associated with the 110 kV substation at Lackendarragh North is not proposing to change from that associated with the permitted CGEP development.

1.2 Requirement for EIAR

Under Section 172 of the Planning and Development Act, 2000 (as amended), a planning application for a development which comes within a class of development specified under Schedule 2 of Part 5 of the Planning and Development Regulations must be accompanied by an Environmental Impact Assessment Report. The following are the relevant classes of EIA Development in Part 2 of Schedule 5:

- Class 15 “Any project listed in this Part which does not exceed a quantity, area or other limit specified in this Part in respect of the relevant class of development, but which would be likely to have significant effects on the environment, having regard to the criteria set out in Schedule 7”.

The Proposed Development meets the mandatory threshold for EIA. Therefore, an EIAR has been prepared in accordance with the Planning and Development Act 2000 (as amended), and Planning and Development Regulations 2001 (as amended) and Directive 2011/92/EU as amended by Directive 2014/52/EU.

The European Union Directive 2011/92/EU (the EIA Directive) as amended by Directive 2014/52/EU on the assessment of the effects of certain public and private projects on the environment, requires Member States to ensure that a competent authority, in this instance, the Commission, carries out an appraisal of the environmental impacts of certain types of project, as listed in the Directive, prior to development consent being given for the project.

1.2.1 Pre-Application Consultation

An SID pre-application consultation meeting was held with An Coimisiún Pleanála on 28 August 2025. This meeting detailed the project background, project scope, and initiated the pre-application consultation process in respect of the Proposed Development.

A second SID pre-application consultation meeting was held with An Coimisiún Pleanála on 14 November 2025. This meeting confirmed the final consenting approach for the Proposed Development.

In a letter dated 18 February 2026, An Coimisiún Pleanála declares the Proposed Development a Strategic Infrastructural Development, falling within the scope of section 182A of the Planning and Development Act 2000. This letter also confirms that the Commission considers that the pre-application consultation process in respect of the Proposed Development is satisfactorily closed.

Pre-application consultation meeting was held with Cork County Council, first through a pre-planning meeting conducted with Cork County Council on 3rd of June 2025. A technical consultation was carried out with the Cork County Council Roads Department on 10th of September 2025. A second pre-planning meeting was held with Cork County Council on 4th of February 2026. A final meeting was had with the Cork County Council Roads Department on the 25th of February 2026.

Further details of technical consultation carried out as part of the EIAR process is contained in Volume 2, Chapter 5 - EIA Scoping and Consultation.



1.3 EIAR Structure

The EIAR has been prepared using the “grouped format structure” as outlined in EPA guidance document (EPA, 2002). Using this structure there is a separate chapter for each topic, e.g. air quality and climate, biodiversity, hydrology. The description of the existing environment, the Proposed Development and the likely significant effects, mitigation measures and residual effects are grouped in the chapter. The grouped format makes it easy to investigate topics of interest and facilitates cross-reference to specialist studies.

The EIAR consists of the following chapters:

- Chapter 1 – Introduction
- Chapter 2 – Description of the Development
- Chapter 3 – Site Selection and Alternatives
- Chapter 4 – Planning Policy
- Chapter 5 – EIA Scoping and Consultation
- Chapter 6 – Population and Human Health
- Chapter 7 – Air Quality and Climate
- Chapter 8 – Noise and Vibration
- Chapter 9 – Biodiversity
- Chapter 10 – Soils, Geology and Hydrogeology
- Chapter 11 – Hydrology and Water Quality
- Chapter 12 – Material Assets, Telecommunications, Traffic and Transportation
- Chapter 13 – Archaeology, Architectural and Cultural Heritage
- Chapter 14 – Landscape and Visual
- Chapter 15 – Interactions of the Foregoing

The EIAR is structured as follows:

- Volume 1 – Non-Technical Summary (NTS)
- Volume 2 – Main EIAR
- Volume 3 – Appendices
- Volume 4 – Figures
- Volume 5 – Natura Impact Statement

It should also be noted that a Natura Impact Statement (NIS) has also been submitted with the planning application. This is contained in Volume 5 of the EIAR submission.

The application is also supported by a Planning Statement and a Planning Application Drawing pack.



1.4 Permission Period

A permanent planning permission is being sought for the Proposed Development. A 30-year operational permission is being sought for the 33kV CNR.

The onsite 110kV substation and 110kV GCR will be taken in charge by ESBN / EirGrid upon completion of construction and shall be left in place forming part of the national electricity network and so should not have a conditioned limit to its operational life.

1.5 Difficulties Encountered

There were no difficulties encountered during the preparation of this EIAR.



2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1 Overview of the Proposed Development

CGEP is a permitted development (ACP Ref: 308885-20) consisting of a 22-turbine wind farm, 110 kV substation, 20 no. battery energy storage containers and all associated ancillary works. Two 110 kV substations were permitted as part of the CGEP, one in the townland of Mullenaboree and one in the townland of Lackendarragh North. However, only the substation located in Lackendarragh North will be constructed. The permitted 110 kV substation at Mullenaboree shall not be constructed if the Proposed Development receives planning consent, as it will no longer be required.

Presented hereunder are the elements of the Proposed Development for which development consent is being sought and all other associated project components are subject to EIA but for which development consent is not being sought within the current application.

2.1.1 Elements of the Proposed Development for which Development Consent is Being Sought

The Proposed Development for which consent is being sought will consist of the following:

- Installation of 13.9 km of permanent high voltage (110 kV) and communication cabling underground between the proposed onsite 110 kV electrical substation at Lackendarragh North and the existing Barrymore 110 kV substation and all associated ancillary works.
- Installation of approximately 15.8 km of underground medium voltage (33kV) electrical and communication cabling between the western and eastern arrays of the permitted CGEP and all associated ancillary works.
- A permanent onsite 110 kV electrical substation at Lackendarragh North and associated compound to meet current transmission network specifications;
- All associated infrastructure, services and site works including excavation, earthworks, soil management, drainage and sediment control to facilitate the works;
- Forestry felling of 17.8 ha to facilitate construction and operation of the Proposed Development.

2.2 110 kV Underground Cable (UGC) Grid Connection Route (GCR)

The 110kV GCR (shown in Figure 2.2.1, Volume 4) is approximately 13.9 km in length and traverses in a western direction from the Barrymore 110kV substation to the Coom Green Energy Park (CGEP) 110kV substation utilising public road networks and permitted wind farm access tracks. No overhead lines are required for this connection.

There is approximately 1.8 km of the 110kV GCR within private lands, of which 1.5 km is within the consented CGEP site boundary, and an additional 12.1 km within public road.

For a detailed description of the construction methodologies associated with the Proposed Development, please refer to the TLI Construction Methodology Report contained in Appendix 2.1, Volume 3.

2.2.1 Cable Ducts and Trenches

A minimum separation distance of 300 mm will be maintained with existing services. Usually, the new cables will be laid below existing services where possible.



The cable trench is typically 825mm wide by 1,315mm deep, with variations on this design to adapt to service crossings and watercourse crossings, etc. The ducts will be installed, the trench reinstated in accordance with landowner/ Cork County Council specification. Construction method statements and templates will be implemented to ensure that the underground HV ducting is installed in accordance with the correct requirements, materials, and specifications of ESBN and EirGrid.

Details of the cable and trench installation and construction methodologies are contained within the TLI Construction Methodology Report in EIAR Volume 3, Appendix 2.1 and the CEMP in Appendix 2.2, Volume 3.

It is expected that full road closures will be put in place to facilitate cabling works rather than partial road closures or stop/go systems. This will enable the works to be completed as quickly and as safely as possible, with minimal disruption time for residents of the area. These would be undertaken on a rolling basis with short sections closed for short periods before moving onto the next section. This is described in more detail in Chapter 12, Traffic and Transportation, and the TMP contained in Appendix 2.2, Volume 3.

The road will be reinstated in accordance with the Guidelines for Managing Openings in Public Roads and to a standard agreed with Cork County Council. Road opening licences supported by a detailed Traffic Management Plan (TMP) will be secured prior to works and will be followed to maintain public access along the route during the trenching and reinstatement works.

Refer to the TMP for further detail and the CEMP (Appendix 2.2, Volume 3), and the TLI Construction Methodology Report (Appendix 2.1, Volume 3) for detailed construction methodologies.

2.2.2 110kV Joint Bays

There are 20 no. joint bays along the 110kV GCR. Of these, 17 no. shall be located in public roads, and 3 no. shall be located on private lands.

Joint bays are pre-cast concrete chambers (typically 6m x 2.5m x 2.05m in size) where individual lengths of cables are joined to form one continuous cable. They are to be installed below finished ground level, approximately every 650m - 850m along the cable route to facilitate the jointing of the 110 kV GCR.

Joint Bays will be located in the non-wheel bearing strip of roadways where possible, however given the narrow profile of local roads this may not always be possible.

The locations of joint bays along the 110 kV GCR are shown in Figure 2.2.1, Volume 4, and planning application drawings.

Further details on joint bay construction methodologies can be found in the TLI Construction Methodology Report in EIAR Volume 3.

2.2.3 Water Crossings

The 110 kV GCR will cross an EPA-mapped WFD watercourse at one location, and the 33 kV CNR will cross EPA-mapped WFD watercourses at three locations. In addition to these crossings of WFD watercourses, there are 63 no. minor watercourse crossings (small streams and man-made drains) along the proposed route. For details on all watercourse crossings, please refer to Chapter 11 - Hydrology and Water Quality and see Figure 11.4, Volume 4, for the crossing locations.

Horizontal directional drilling (HDD) will be employed at several locations along the 110kV GCR as part of the Proposed Development.



Crossing existing culverts will be implemented using open trenching with either an undercrossing or an overcrossing, depending on the depth of the culvert.

The proposed crossing designs have been designed in line with Inland Fisheries Ireland (IFI) requirements for salmonid watercourses as included in their 2016 'Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (IFI, 2016)' and TII 'Guidelines for the Crossing of Watercourses During the Construction of Road Schemes (NRA, 2008)'. Details of proposed crossing structures are presented in the accompanying planning application drawings.

2.2.4 Crossing of the M8 Motorway

The proposed 110kV GCR will cross the M8 Cork to Fermoy Motorway at Corrin View Estate, south of Junction 15, as shown on the accompanying planning application drawings. For the schedule of planning application drawings, refer to Appendix 2.3, Volume 3 of the EIAR. Horizontal directional drilling (HDD) will be used to traverse beneath both carriageways of the M8.

The locations of the launch and reception pits will be adequately spaced from the carriageway to ensure the bore is at such depth as not to conflict with the drainage or surface of the motorway or associated embankments.

There is sufficient room available to accommodate the necessary equipment. The cables will be laid at sufficient depth below the motorway to stay below the motorway drainage and without impacting on the motorway foundations.

The locations of start and finish points for the HDD have been identified following desktop assessments, site visits and technical consultation.

2.3 **33 kV Underground Cable (UGC) Collector Network Route (CNR)**

The 33kV CNR (shown in Figure 2.2.2 Volume 4) is approximately 15.8 km in length and traverses in an eastern direction from the western wind parcel of the permitted Coom Green Energy Park (CGEP) to the permitted substation at Lackendarragh North using public roads, commercial Coillte forestry lands and private agricultural lands.

Of the total 15.8 km 33 kV CNR length, 14.7 km is located within third-party lands and 1.1 km within public road. Approximately 7.1 km of the CNR is located outside the permitted CGEP development boundary. Of this, 1.1 km is location in public roads with 6 km located in private lands.

For a detailed description of the proposed 33kV CNR, please refer to the TLI Construction Methodology Report in Appendix 2.1, Volume 3.

2.3.1 Cable Ducts and Trenches

The 33kV CNR will transmit electricity via a three-phase supply, using three individual conductors (or cables) per circuit. Each conductor will be installed in a separate duct, typically laid in a trefoil formation, though flat formation may be used where required.

The cable trench is typically 450 mm wide and 1250 mm deep. In areas requiring a triple circuit, the trench will have a width of 1550 mm and depth of 1250 mm. Trench dimensions may vary at watercourse and service crossings.



Duct installation and trench reinstatement will follow the requirements of Cork County Council when within public roads, and landowner specifications on private land.

Details of the cable and trench installation and construction methodologies are contained within the TLI Construction Methodology Report in Appendix 2.1, Volume 3.

2.3.2 33kV Joint Slabs

There are 23 no. joint slabs along the proposed 33kV CNR.

Joints slabs are to be installed approximately every 1,000m - 1,200m along the 33kV CNR to facilitate the jointing of 2 no. lengths of cabling. Joint slabs are typically 2.5m x 1.575m x 0.2m concrete slabs installed below finished ground level and will be located in the non-wheel bearing strip of roadways / access tracks where possible.

The locations of all joint slabs along the 33kV CNR are shown on the accompanying planning application drawings. For the schedule of planning application drawings, refer to Appendix 2.3, Volume 3 of the EIAR.

Further details on joint slab construction methodologies can be found in the TLI Construction Methodology Report in Appendix 2.1, Volume 3.

2.3.3 Water Crossings

The 33 kV CNR traverses 2 no. EPA mapped WFD Watercourses: the COOM_010, and the BRIDE (BLACKWATER)_010. The COOM_010 shall be traversed by HDD at 2 no. locations; one of which is located within the permitted CGEP development site where the internal wind farm access track crosses the river. The BRIDE (BLACKWATER)_010 shall be crossed by placing the proposed cable ducts in an existing stone arched bridge at Chimneyfield. The latter crossing also traverses the associated Blackwater River (Cork/Waterford) SAC. The proposed crossing methods avoid in-stream works within the watercourses or SAC.

Details of other water and service crossings are contained in the TLI Construction Methodology Report in Appendix 2.1, Volume 3, and Chapter 10.

Details of water crossing methodologies can be found in the TLI Construction Methodology Report in Appendix 2.1, Volume 3 and the CEMP in EIAR Volume 3, Appendix 2.2.

2.4 **110kV Substation**

It is proposed to construct a 110kV onsite substation at Lackendarragh North, as shown in Figure 2.1, Volume 4 of the EIAR which will meet current EirGrid specifications.

The dimensions of the substation compound will be approximately 115 m x 145 m (16,571 m²) and will include a 110kV substation control building and electrical components necessary to export the electricity generated from the CGEP wind farm to the national grid including a transformer compound and busbar compound.

The control building will include an Independent Power Producer (IPP) Medium Voltage (MV) switch room and grid operator control rooms, an office space and welfare facilities for staff during the operational phase of the wind farm.

The 110kV substation Eirgrid control building shall be single story with an area of approximately 450m². The IPP control building shall be single story with an area of approximately 300m².



The substation compounds will be surrounded by a ca. 2.6m high steel palisade fence and internal fences will also be provided to segregate different areas within the main substation compound.

Lighting will be required on site, and this will be provided by lighting poles located around the substation and exterior wall mounted lights on the control buildings.

2.5 Construction

Subject to Planning Permission being granted for the Proposed Development, tree felling, upgrading of existing site tracks and the provision of new site tracks will precede all other activities. Drainage infrastructure will be constructed in parallel with the access track construction. This will be followed by the construction of the onsite 110kV substation and 33kV CNR as well as the 110 kV GCR works.

The construction of the Proposed Development in its entirety is expected to take 12 months. The construction of the Proposed Development shall be carried out during the wider CGEP development construction programme which will be carried out over 18 - 24 months.

The hours of construction activity for the Proposed Development will be limited to avoid unsociable hours as per Section 6.3 (d) of BS 5228: Code of practice for noise and vibration control on construction and open sites, Part 1: Noise. Construction operations will generally be restricted to between 08:00 and 19:00 Monday to Friday and between 7:00 and 13:00 on Saturdays. However, to ensure that optimal use is made of fair-weather windows, or at critical periods within the programme, it could occasionally be necessary to work outside these hours. Any such out of hours working would be agreed in advance with the local planning authority. It should be noted that it may be necessary to commence turbine base concrete pours earlier due to time constraints incurred by the concrete curing process. Further details on working hours and restrictions of same are provided in the CEMP in Appendix 2.2, Volume 3 of the EIAR.

2.6 Operation

A 30-year operational permission is being sought for the connection of the permitted Coom Green Energy Park (CGEP) to the national grid.

The onsite 110kV substation and 110kV GCR will be taken in charge by ESBN / EirGrid upon completion of construction and shall be left in place forming part of the national electricity network.

The 110kV GCR and 33kV CNR will operate unmanned during the operational phase. Periodical maintenance may be required during the operational phase to inspect and or repair some of the cable routes.

2.7 Decommissioning

The 110kV GCR and onsite substation within Lackendarragh North and ancillary electrical equipment will form part of the national grid and will be left in situ.

The 33kV CNR that connects each turbine will be removed from the cable ducting. The cabling will be pulled from the cable duct using a mechanical winch which will extract the cable and re-roll it on to a cable drum. This will be undertaken at each of the joint bays/pull pits along the cable. The access track will be excavated using a mechanical excavator at each cable pulling pit location and will be fully re-instated once the cables are removed. The cable ducting will be left in-situ as it is considered the most environmentally prudent option, avoiding unnecessary excavation and soil disturbance for an underground element that is not visible.



It is proposed that all access tracks will be left in place. These will continue to be used for forestry and agriculture.

A detailed decommissioning plan will be agreed in advance of construction with Cork County Council.



3. SITE SELECTION AND ALTERNATIVES

3.1 Site Selection

CGEP is a permitted development (ACP Ref: 308885-20) consisting of a 22-turbine wind farm, 110 kV substation, 20 no. battery energy storage containers and all associated ancillary works. The EIAR carried out for the permitted CGEP development included assessment of the grid connection to the national grid. The grid connection element of the permitted CGEP development was not included in the planning application. The purpose of the Proposed Development is to carry out an up-to-date EIAR on the proposed grid connection to facilitate planning consent for same.

Several grid connection options were considered in the 2020 EIAR. At the outset of the project, a range of potential grid connection options were considered in the vicinity of the CGEP site. Each option was first examined with respect to capacity. Once capacity was confirmed, the environmental impacts of the potential options were examined. The options considered are made up of existing grid infrastructure in proximity to the subject site. The developer consulted with EirGrid during the examination of options to identify capacity in the network and to seek advice on feasible options. The options considered are set out in detail in Chapter 2 of the 2020 EIAR.

This EIAR involved the examination of up-to-date alternatives with respect to the Proposed Development as described in Chapter 2 of this EIAR. Namely the following key elements:

- A 110 kV Underground Cable (UGC) Grid Connection Route from the permitted onsite substation at Lackendarragh to the existing Barrymore 110 kV substation located near Rathcormac, Co. Cork (also referred to herein as the '**110 kV GCR**');
- A 33kV Underground Cable (UGC) Collector Network Route between the western and eastern arrays of the permitted Coom Green Energy Park (CGEP) development (also referred to herein as the '**33 kV CNR**');
- A 110kV onsite substation at Lackendarragh, in line with the latest Eirgrid functional specifications (also referred to herein as '**110 kV Substation**').

3.2 Alternatives Considered

3.2.1 Alternative 110kV Substation Locations

The proposed 110kV substation at Lackendarragh is situated in the same location as the previously consented substation at Lackendarragh (ACP Ref. PA04.308885) and is considered the optimal location for the substation. A constraints-led approach was followed in the identification of the site, where general constraints and environmental sensitivities were identified and screened out of the site selection process to avoid environmentally sensitive receptors.



3.2.2 Alternative 110kV Grid Connection Route

At the outset of the project, a range of potential grid connection locations were considered in the vicinity of the CGEP site. Each option was first examined with respect to capacity. Once capacity was confirmed, the environmental impacts of the potential options were examined. The options considered are made up of existing grid infrastructure in proximity to the subject site. The developer consulted with EirGrid during the examination of options to identify capacity in the network and to seek advice on feasible options, as would be standard good practice. The options are set out in *Chapter 3 - Site Selection and Alternatives* with their respective capacity as indicated by EirGrid.

3.2.3 Alternative 33kV Collector Network Route Options

Options assessments were carried out to inform the EIAR accompanying consented CGEP (ACP Ref. PA04.308885). Following these assessments, a 110kV interconnector cable route connecting the western CGEP array to the new Lackendarragh substation was identified and assessed. As a part of this EIAR, new alternatives have been considered to connect the Wind Parcel to the new Lackendarragh substation.

Following further detailed review of the previously assessed 110kV interconnector cable route and extensive consultations with EirGrid as a part of the ECP 2.4 process, where the consented CGEP development received a grid connection offer, a decision was made to reconsider the approach for interconnection between the western wind farm array and the proposed Lackendarragh substation. Spatial (land) constraints, EirGrid technical requirements and commercial implications all combined to dictate this reconsideration, with new alternative routes sought as well as a reduction in voltage from 110kV to 33kV.

A desktop analysis followed by site surveys were carried out using the study area constraints map to identify viable UGC routes between the wind park sites and the Lackendarragh 110kV substation. In order to carry the desired maximum export capacity (MEC) of the wind park sites to Lackendarragh 110kV substation, three no. 33kV circuits will be required from Wind Parcel 1 into Wind Parcel 2, with an additional two no. 33kV circuits added there within the wind farm boundary to the proposed Lackendarragh substation.

3.2.4 Do-Nothing Alternative

Article IV, Part 3 of the EIA Directive states that the EIAR should include “a description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge”. This is referred to as the “do nothing” alternative.

In the “Do-Nothing” scenario, the prospect of increasing the production of sustainable energy in Co. Cork through wind energy resources would be lost at this location. The nation’s ability to produce sustainable energy and reduce greenhouse gas emissions to meet EU targets and National targets, as set out above and in Chapter 4 - Policy, would be stifled. This may contribute to Ireland incurring significant financial penalties from the EU if targets are not achieved. Additionally, it would affect Ireland’s commitment to “pursue efforts” to limit warming as agreed to in the Paris Agreement (2015). This will result in continued likely significant negative effects to air quality and climate.



According to EirGrid’s ‘Generation Capacity Statement 2023-2032’ (EirGrid, January 2024), the energy demand in Ireland is forecasted to increase 43% by 2032 (median scenario). This is a marked increase on previously predicted forecasts with the 2020-2029 Generation Capacity Statement predicting only 33% (median scenario) increase in demand. Much of this revised forecasting is attributable to the predicted demand by data centres, with the CSO statistical publication of ‘Data Centres Metered Electricity Consumption’ (23 July 2024) noting that energy demand by data centres increased by 20% between 2022 and 2023. EirGrid’s publication predicts that 30% of all electricity demand is expected to come from data centres by 2032.

Under the “Do-Nothing” scenario, the socio-economic benefits associated with the Proposed Development will be lost. In the event that the Proposed Development would not go ahead, the CGEP Project in its entirety would not be constructed, resulting in a loss of approximately 100 jobs during the construction, operation and maintenance phases (and a similar number during decommissioning). For the Proposed Development, which is the subject of this EIAR, approximately 50 jobs would be generated during the construction phase, and for the operation and decommissioning phase approximately 25 jobs would be created. Please refer to Chapter 2 – Proposed Description of Development which sets out the full extent of the Community Benefit to be provided, should the scheme go ahead. Furthermore, under the “Do-Nothing” scenario the local community will not benefit economically from the community benefit fund associated with the Proposed Development which could be used to improve physical and social infrastructure in the locality.

In the “Do-Nothing” scenario, the potential environmental effects of the Proposed Development as set out throughout this EIAR will not occur.

3.3 Conclusion

The alternative layouts of the Proposed Development were established through the project philosophy of mitigation by design and technical feasibility.

The final proposed layout of the Proposed Development as assessed throughout this EIAR is thought to be the optimal design which minimises effects on the receiving environment, while enabling the provision of significant renewable electricity to the national grid through the consented Coom Green Energy Park, in line with national energy and climate policy.



4. POLICY

This Chapter of the Environmental Impact Assessment Report (EIAR) outlines current International, National, Regional, and Local policy (where relevant) in combination with legislation relating to the Proposed Development of a 110kV grid connection route (GCR), 33kV collector network route (CNR), and 110kV Substation associated with the consented Coom Green Energy Park (permitted under ACP Application Ref. 308885-20) located in the jurisdiction of County Cork and within the administrative boundary of Cork County Council. The Proposed Development refers to all elements of the project to be assessed in the EIAR, the details of which are set out within Chapter 2: Development Description.

The Irish Planning Policy system is set within a hierarchical structure. EU Directives, Planning Legislation, Ministerial Guidelines, Government Policy and Capital programmes inform national policy.

4.1 International Global Policies

International and European legally binding agreements to reduce the reliance on fossil fuels and to manage climate change internationally have been adopted into Ireland's National Energy Policy. Relevant international policies in relation to renewable energy and the need to prevent climate change include the *United Nations Framework Convention on Climate Change* and the *Kyoto Protocol*, which are legally binding agreements which are being facilitated through national energy and climate policy with a clear mandate to support onshore wind energy development within the state.

4.2 European Union Legislation and Policy

The various directives and policies of the EU set a clear mandate for each member state to transition to sustainable, renewable energy and reduce greenhouse gas emissions. The EU aims to reduce the EU's net greenhouse gas emission by at least 55% on 1990 levels by the end of this decade. EU Legislation and Policies include:

- Renewable Energy Directives (REDII and REDIII);
- Clean Energy for all Europeans Package (2019);
- European Green Deal (December 2019);
- European Climate Law (July 2021);
- Clean Industrial Deal: A Plan for EU Competitiveness and Decarbonisation (July 2025);
- RePower EU Plan;
- Commission Recommendation and Guidance to Member States (EU) 2024/1343 of 13 May 2024 on speeding up permit granting procedure for renewable energy and related infrastructure projects;
- EU Action Plan for Grids.



4.3 National Policies and Legislation

National energy and climate policy are informed by the overarching European Policy which aims to unify the European Union 's energy and climate goals. The following section sets out the relevant national policies which will influence the development of the country in the coming decades with respect to energy production, carbon neutrality and climate change mitigation.

These policies are supported by the latest Programme for Government (2025) titled 'Securing Ireland's Future' which presents strong climate governance in rapidly addressing climate change to protect and improve public health and quality of life and has identified wind energy as having a crucial role to play in achieving this. The government are committed to rapid decarbonisation of the energy sector with an aim of providing the necessary actions to deliver national renewable electricity targets. These government ambitions support the ongoing generation of renewable energy from onshore wind sources. The Climate Action Plan 2024 and Climate Action Plan 2025, which must be read together, state the following commitments:

- To achieve 80% renewable electricity by 2030;
- Deliver 9 GW of onshore wind by 2030;
- Hold at least one Renewable Energy Support Scheme (RESS) auction per year;
- Prioritizing and increase investment in the electricity grid;
- Develop a policy to address repowering and extend the life of existing onshore wind farms.

The importance in complying with the national energy policy at a local level cannot be overstated if Ireland is to achieve its national renewable energy targets. The increase in renewable electricity targets to 80% by 2030 indicates the need for significant escalation in renewable energy production in Ireland.

The following National Legislation and Policies include:

- The White Paper: Ireland's Transition to a Low Carbon Energy Future 2015-2030;
- Climate Action and Low Carbon Development (Amendment) Act 2021;
- Ireland's integrated National Energy and Climate Plans 2021-2023 (NECP's);
- Project Ireland 2040: National Development Plan 2021 – 2030 (NDP) and the National Planning Framework (NPF);
- Climate Action Plan 2025 (CAP25);
- EirGrid Assessment of Progress with Carbon Budget Compliance;
- Climate Change Advisory Council (CCAC) Assessment;
- National Onshore Wind Targets – State of play (Jan 2025);
- National Energy Security Framework.

4.4 Irish Energy & Environment Policies

The Proposed Development is in support of national policy. The project supports the enhancement of the competitiveness of rural areas and facilitates the development and diversification of the rural economy by supporting the energy sector and increasing the share of renewables in Ireland's energy mix.



The project supports national targets of climate change mitigation and reduction in greenhouse gas emissions where significant focus has been set out in the Climate Action and Low Carbon Development (Amendment) Act 2021. The ambitious programme for government is prioritising carbon neutrality and renewable energy generation. In light of this, it is important to rely on proven technologies such as on shore wind in order to meet the near-term objectives, as well as long-term objectives.

The Proposed Development promotes the generation of renewable energy at appropriate locations and supports the achievement of a low carbon economy by 2050. It is therefore considered that the Proposed Development is in line with national policy and supports the achievement of national energy and sustainability targets.

4.5 Regional and Local Plans

Regional and Local plans have also been adhered to, including the Southern Regional Spatial & Economic Strategy and the Cork County Development Plan 2022-2028 which sets out the wind energy strategy for the county. The Proposed Development is located within an area zoned as being “Open for Consideration” in County Cork's Wind Strategy Areas. The Proposed Development contributes to the nation's target increase of renewable energy from 30% to 80% by 2030 and supports the doubling of onshore wind energy in Ireland by 2030 as set out in the Climate Action Plan.

4.5.1 Southern Regional Spatial & Economic Strategy 2020-2031

The Southern Regional Spatial & Economic Strategy (RSES) came into effect on 31st January 2020. The RSES sets out a strategy to implement the NPF at a regional level and covers the period from 2020-2026. The RSES sets out a strategic vision which includes actions to mitigate against climate change. The RSES recognises the urgency to transition to a low carbon future, accelerate the transition towards a low carbon economy and increase the use of renewable energy sources across the key sectors of electricity supply, heating, transport, and agriculture in order to safeguarding and enhance the region's environment through sustainable development, prioritising action on climate change across the region, driving the transition to a low carbon and climate resilient society.

The RSES recognises the importance of the region in improving strategic energy grid infrastructure, stating:

"There is significant potential to use renewable energy across the Region to achieve climate change emission reduction targets. With costs actively driven down by innovation in solar, onshore and offshore wind in particular, the renewable industry is increasingly cost competitive. The RSES supports renewable industries and requirements for transmission and distribution infrastructure."

The RSES includes a range of policy objectives which support the development of renewable energy projects such as the Proposed Development. Of particular relevance is RPO 96 and RPO 219.

RPO 96: It is an objective to support the sustainable development, maintenance and upgrading of electricity and gas network grid infrastructure to integrate renewable energy sources and ensure our national and regional energy system remains safe, secure and ready to meet increased demand as the regional economy grows

RPO 219: It is an objective to support the sustainable reinforcement and provision of new energy infrastructure by infrastructure providers (subject to appropriate environmental assessment and the planning process) to ensure the energy needs of future population and economic expansion within designated growth areas and across the Region can be delivered in a sustainable and timely manner and that capacity is available at local and regional scale to meet future needs.



The Proposed Development aligns with the goals and objectives of the RSES, which prioritises the transition to a low-carbon economy through increased deployment of renewable energy at suitable locations. The Proposed Development supports and facilitates the approved Coom Green Energy Park which is set to provide green energy with a total Maximum Export Capacity (MEC) of approx. 105MW. The Proposed Development (110kV GCR, 33kV CNR, and 110kV Substation) will also serve to improve the overall grid stability in the area.

4.5.2 Cork County Development Plan 2022 - 2028

Specific policies relating to wind energy development in County Cork are contained within the current Cork County Development Plan (2022-2028), which came into effect on the 6th of June 2022. The Proposed Development will facilitate the transition to green energy by facilitating the connection of the associated permitted wind farm to the national grid. This will aid County Cork's contribution to the national targets to reduce carbon emissions and greenhouse gas emissions as identified in the Development Plan, by promoting the development of renewable energy sources.

The Proposed Development offers a chance to increase the wind capacity in County Cork and contribute positively towards reaching the national targets, through facilitating the export of energy generated by the approved Wind Farm to the national grid. Furthermore, the Proposed Development will facilitate the delivery of the Coom Green Energy Park, which is a valid (granted permission under ACP Case Ref. 308885) but unimplemented permission. This further contributes towards the Council's aspirations, as outlined in the Development Plan, through reducing the amount of Wind Power consented but not delivered or commissioned.

In conclusion, in accordance with the policy objectives outlined above, the Proposed Development is consistent with local planning policy related to energy and telecommunications and should be supported as it will deliver new grid infrastructure and facilitates the connection of the permitted Coom Green Energy Park to the national grid. This will in turn contribute significantly towards national climate obligations, reducing carbon emissions and transitioning towards a low carbon economy.



5. EIA SCOPING, CONSULTATION AND KEY ISSUES

5.1 Introduction

Consultation forms an important part of the Environmental Impact Assessment (EIA) process. This section describes the EIA scoping and consultation activities undertaken for the Proposed Development, which were carried out to identify the main environmental effects to be assessed in the Environmental Impact Assessment Report (EIAR).

Consultation for the Proposed Development has been extensive and ongoing over a number of years and includes engagement with statutory authorities, technical stakeholders, community representatives and local residents. Submissions and feedback received through this process have informed the design of the Proposed Development and the scope of the EIAR.

This section summarises the consultation undertaken, the key issues raised, and how these issues have been addressed as part of the EIAR.

5.2 Scoping

EIA scoping is the process used to identify the environmental issues that are most relevant to a proposed development and to determine the level of detail required within the EIAR.

A formal scoping request was issued to statutory bodies, government departments, non-governmental organisations and other relevant stakeholders in March 2025. The scoping documentation included a description of the Proposed Development, preliminary mapping and the proposed structure of the EIAR.

Responses received during the scoping process helped confirm the environmental topics that required detailed assessment and ensured that the EIAR focused on matters of most relevance to the Proposed Development.

5.2.1 Key Issues Raised During Scoping

The scoping process identified a range of environmental and technical issues which were considered during the design of the Proposed Development and assessed within the EIAR. The key issues raised included:

- Traffic and Transport, particularly in relation to construction traffic, temporary road closures and the crossing of the M8 motorway.
- Watercourses and Hydrology, including the protection of rivers and streams and the management of drainage during construction.
- Soils, Geology and Peat, with regard to excavation works and the management of peat and soils.
- Biodiversity, including protection of habitats and species during construction.
- Archaeology and Cultural Heritage, including the potential for archaeological features along the cable route.
- Utilities and Telecommunications, to ensure existing services are identified and protected.

All issues raised during the scoping process have been addressed within the relevant chapters of the EIAR, with mitigation measures proposed where necessary.



5.3 Public Consultation

Public consultation for the Proposed Development forms part of the wider consultation undertaken for the Coom Green Energy Park project, which commenced in 2018. This earlier consultation included extensive engagement with local communities and covered the grid connection route, which has remained largely unchanged.

In addition, a targeted public consultation specific to the Proposed Development was undertaken in February 2026. This involved the distribution of information letters and maps to properties along the proposed cable routes and direct engagement with residents by Community Liaison Officers.

Residents were provided with contact details to allow queries to be raised directly with the project team. Feedback received related mainly to construction activities, temporary traffic disruption and interaction with existing services. These matters are addressed through construction management and mitigation measures set out in the EIAR.

5.4 Consultation with Planning Authorities and Stakeholders

Pre-planning consultation meetings were held with Cork County Council and An Coimisiún Pleanála to discuss the Proposed Development, the approach to assessment and the planning process.

Consultation also took place with a range of technical stakeholders, including Transport Infrastructure Ireland, the National Museum of Ireland, Inland Fisheries Ireland, Gas Networks Ireland and others, depending on their statutory remit.

Issues raised through these consultations informed route selection, construction methodologies and environmental mitigation measures. All relevant matters have been assessed within the EIAR.

5.5 Conclusion

The EIA scoping and consultation process has played a key role in the development of the Proposed Development and the preparation of the EIAR. Engagement with statutory authorities, stakeholders and the public helped to identify potential environmental effects and concerns at an early stage.

The outcomes of this process have directly informed the final design of the Proposed Development, the scope of environmental assessment and the mitigation measures proposed. As a result, the EIAR provides a focused and comprehensive assessment of the likely environmental effects of the Proposed Development in accordance with best practice.



6. POPULATION AND HUMAN HEALTH

6.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) assesses the likely indirect and direct significant effects of the Proposed Development on Population and Human Health.

The assessment considers the existing population and health profile of the area and examines the potential effects of the Proposed Development during the construction and operational phases. Decommissioning relates only to the 33 kV underground cable, as the 110 kV grid connection route and onsite substation will form part of the national electricity network and will remain in place.

The assessment considers the following topics:

- Population
- Employment and economic activity
- Land use
- Recreation, amenity and tourism
- Human health and safety

The assessment draws on related EIAR chapters, including Air Quality and Climate, Noise and Vibration, Hydrology and Water Quality, Traffic and Transport, and Landscape and Visual Impact.

6.2 Study Area

The Proposed Development is located in a rural area of County Cork, approximately 12 km southeast of Mallow and 13 km west of Fermoy. It includes the 110 kV underground grid connection, a 33 kV collector network, and an onsite 110 kV substation at Lackendarragh North.

For the purpose of assessing population and human health, the study area is defined using Electoral Divisions (EDs), as population and health data from the Central Statistics Office (CSO) are available at this level. The relevant EDs include Carrig, Castlelyons, Glenville, Kildinan and Rathcormack.

6.3 Existing Population and Health Profile

The study area is predominantly rural in character, consisting mainly of dispersed housing along local roads, with more concentrated settlement in nearby villages such as Castlelyons, Fermoy, Rathcormac and Glenville.

Population data from the CSO shows that the population of the study area increased between the 2016 and 2022 Census periods, consistent with growth trends at county and national level. Overall, the area supports a stable and growing population.

Health data from the 2022 Census indicates that the majority of residents within the study area report their health as “Very Good” or “Good”. The general health profile of the local population is slightly better than the national and county averages, reflecting the rural setting and high environmental quality of the area.



6.4 Employment and Economic Activity

The local economy is characterised by agriculture, forestry, small-scale enterprise and employment associated with nearby towns. Census and live register data indicate that the majority of the working-age population in the area is in employment.

The Proposed Development is expected to generate temporary employment during the construction phase, including direct construction jobs and indirect employment through local supply chains. Construction workers may also provide minor short-term benefits to local businesses through spending on goods and services.

No adverse effects on long-term employment or economic activity are expected.

6.5 Land Use

Land use along the grid connection route is primarily agricultural land, forestry and public road corridors. The underground nature of the cabling means that land use will be temporarily disturbed during construction but fully reinstated following completion of works.

The onsite substation will be located in an agricultural and forestry setting and is not expected to result in long-term changes to land use patterns. Existing agricultural and forestry activities can continue around the completed infrastructure.

6.6 Recreation, Amenity and Tourism

There are no major tourist attractions along the grid connection route. However, local recreational amenities exist in the wider area, including Fermoy Golf Club and public parks and walking routes in nearby towns and villages.

During construction, there may be temporary, localised disturbance to amenity as a result of traffic management, noise or visual presence of works. These effects will be short-term and managed through standard mitigation measures.

Once construction is complete, there will be no permanent effects on recreation, amenity or tourism, as the grid connection infrastructure will be underground and the land reinstated.

6.7 Human Health and Safety

Potential effects on human health are primarily related to construction activities such as noise, dust and traffic. These topics are assessed in detail in other EIAR chapters and are summarised in this chapter.

The assessment concludes that:

- Construction-related noise and dust will be temporary and controlled through mitigation measures
- Traffic management arrangements will ensure safe access for residents and road users
- There will be no loss of homes or displacement of residents
- There will be no long-term health effects during the operational phase



The operational phase of the grid connection will not generate emissions, noise or activity that could affect human health. The operational impacts of the onsite substation have already been assessed as part of the consented Coom Green Energy Park project.

6.8 Major Accidents and Natural Disasters

The Proposed Development is not considered vulnerable to major accidents or natural disasters that could give rise to significant effects on population or human health.

Potential risks such as flooding, fire or ground instability have been assessed and are addressed through project design and standard construction and operational controls. The crossing of the M8 motorway will be undertaken using Horizontal Directional Drilling to avoid impacts on critical national infrastructure.

6.9 Mitigation Measures

Mitigation measures are incorporated into the design and construction of the Proposed Development to protect population and human health. These include:

- Traffic management plans to maintain access and road safety
- Dust and noise control measures during construction
- Phased, short-duration works along the road network
- Ongoing communication with local residents through a Community Liaison Officer

All mitigation measures will be implemented through the Construction and Environmental Management Plan.

6.10 Residual Effects

Following the implementation of mitigation measures:

- No significant adverse effects on population or human health are predicted
- Any temporary construction-related effects will be short-term and localised
- There will be no long-term impacts on settlements, land use, amenity or health

6.11 Do-Nothing Scenario

If the Proposed Development does not proceed, existing land uses would continue unchanged and construction-related disturbances would not occur. However, the grid connection required to export renewable energy from the Coom Green Energy Park would not be delivered.

This would reduce the ability of the wider project to contribute to national renewable energy targets and climate objectives.



6.12 Conclusion

The assessment concludes that the Proposed Development will not result in any significant adverse effects on population or human health. While temporary impacts may arise during construction, these will be managed through appropriate mitigation measures and will cease once construction is complete.

Overall, the Proposed Development will provide essential electricity infrastructure to support renewable energy generation, without giving rise to significant effects on the local population or human health.



7. AIR QUALITY AND CLIMATE

This chapter identifies, describes and assesses the likely significant direct and indirect effects on air quality and climate arising from the construction, operation and decommissioning of the Proposed Development, as well as the effects of climate change on the Proposed Development and the ability of the Proposed Development to adapt to possible climate changes over the course of its lifetime.

European air quality legislation requires that each member state be defined in terms of Zones and Agglomerations for air quality, with Ireland divided into four zones. The EPA has designated four zones within Ireland:

- Zone A: Dublin City and its environs
- Zone B: Cork City and its environs
- Zone C: 24 cities and towns (such as Galway, Limerick and Waterford cities and towns such as Naas, Newbridge, Celbridge, Leixlip) with a population of greater than 15,000
- Zone D: covers the remainder of the country.

These zones were defined to meet the criteria for air quality monitoring, assessment and management described in the Framework Directive and Daughter Directives. The site of the Proposed Development is in Zone D.

7.1 Existing Environment

The study area is located in Zone D and the air quality index for health map on the EPA website shows that the current air quality within the study area is classed as 1 – Good. In terms of climate, the dominant influence on Ireland’s climate is the Gulf Stream. Consequently, Ireland does not suffer from the extremes of temperature experience by other countries at the same latitude. Climatic data from Met Eireann’s Fermoy Moore Park weather station is presented in the chapter.

7.2 Impact Assessment

If the Proposed Development does not proceed, local air quality and the microclimate will remain unchanged. On a national scale, there will be an increase in greenhouse gas emissions if increasing future electricity needs are not met by alternative renewable sources which has the potential to contribute to air pollution and climate change. The opportunity to contribute to Ireland’s commitments under the Kyoto Protocol and to meet national targets as set out in the Climate Action Plan would also be lost.

While immediate forestry felling of 17.8 ha would not be required, clear felling forms part of the cycle of commercial forestry and without the Proposed Development clear felling would likely occur as normal, if at a later date.



7.2.1 Air Quality.

The principal sources of potential air emissions during the construction of the Proposed Development will be from the Site and haulage routes, from dust arising from earthworks, tree felling activities, trench excavation along cable routes, construction of the new access tracks, the temporary storage of excavated materials, the construction of the proposed substation, the movement of construction vehicles, loading and unloading of aggregates/materials and the movement of material within the site.

Due to the small number of human receptors (refer to Figure 6.1 within EIAR Volume IV which shows the Receptors within 2km of the Site), and distance from the source of the dust emissions, with the closest residential dwelling being approximately 600 m from the Proposed 110kV Substation, the “sensitivity” of the area is “low”, as per the criteria set out in the guidance (DMRB, 2007). For further information on human receptors, please refer to Chapter 6 – Population and Human Health, within EIAR Volume 2.

Combining the large magnitude of the earthworks with the low sensitivity, the IAQM guidance indicates that the Risk of Dust Impacts are “Low Risk” for the Proposed Development. This will apply during the construction stage and is not likely to be a significant effect.

7.2.1.1 *Construction Phase*

It is estimated that the construction phase for the proposed development will lead to 12,711 HGV trips (two-way) over the duration of the installation works which is estimated to last 12 months (i.e. approx. 22 HGV trips per day). Based on the preliminary construction programme this would increase to a peak of 26 HGV trips per day during the peak month, which occurs in the first month of the programme (see Chapter 12, Volume 2 of the EIAR).

An average workforce of 15 no. site staff is anticipated. This is estimated to give rise to an average increase in LGV traffic of 19 no. trips per working day. The combined HGV and LGV average daily increase are 41 vehicles per day and rising to 44 vehicles per day during peak construction period occurring during the first month of the construction programme.

For context, these average daily increases in traffic are significantly below the threshold of 1,000 annual average daily traffic (AADT) referenced in TII Guidance, below which construction traffic impacts are generally considered to be not significant. The relatively low volume of additional traffic is not expected to result in a likely significant effect on or air quality.

In general, air quality impacts during the construction phase of the Proposed Development are predicted to be short-term, localised, and minor in nature. No likely significant effects on air quality are anticipated during the construction phase.

Air quality effects may arise from emissions produced by construction plant and vehicles, as well as the potential for dust generation during excavation to formation level and placement of imported stone. Some dust migration may also occur during compaction of the stone layers. However, these effects will be short term and given the relatively small scale of the road improvement works compared to typical road construction projects, any adverse impacts on air quality are expected to be of slight magnitude. As such, the works are anticipated to result in short-term, slight adverse effects on air quality, which are not likely significant.



7.2.1.2 Operational Phase

Once the Proposed Development is constructed there will be no likely significant direct emissions to atmosphere. Maintenance vehicles will access the Site during the operational period, however, due to the low traffic movements involved (see Chapter 12, Volume 2 of the EIAR), the potential adverse effects from their operation will be imperceptible and not significant.

Additionally, the operational phase of the development will result in positive effects on air quality due to the displacement of fossil fuels as an energy source that will be facilitated. This would have a significant positive effect on Cork County Council meeting their CDP and CAP targets: and a slight, positive effect on Ireland meeting its various climate targets. The likely effect on Climate Change on a global scale would be imperceptible and as such non-significant.

7.2.1.3 Decommissioning Phase

The 110kV GCR and onsite substation within Lackendarragh North and ancillary electrical equipment will form part of the national grid and will be left in situ.

The 33kV CNR that connects each turbine will be removed from the cable ducting. The cabling will be pulled from the cable duct using a mechanical winch which will extract the cable and re-roll it on to a cable drum. This will be undertaken at each of the joint bays/pull pits along the cable. The access track will be excavated at each cable pulling pit location using a mechanical excavator and will be fully re-instated once the cables are removed.

There will be truck movements required for removal of cabling, earthmoving, track reinstatement and landscaping resulting in vehicular emissions and dust. However, the number of truck movements will be significantly less than the construction phase and the likely potential adverse effects on air quality will be temporary, imperceptible and not significant.

The cable ducting will be left in-situ as it is considered the most environmentally prudent option, avoiding unnecessary excavation and soil disturbance for an underground element that is not visible. It is proposed that all access tracks will be left in place. These will continue to be used for forestry and agriculture.

A detailed decommissioning plan will be agreed in advance of construction with Cork County Council.

7.2.2 Climate

The Transport Infrastructure Ireland (TII) Carbon Tool was used to calculate whole life carbon emissions resulting from the Proposed Development. The carbon emissions were calculated by multiplying the emission factor by the quantity of the material that will be used over the entire construction/maintenance phase. The land use change associated with the Construction Phase of the Proposed Development has also been quantified using the TII Carbon Assessment Tool which considers the loss or gain of carbon sinks. Loss of mixed forest, natural grassland, transitional woodland scrub and peat bogs has the potential to release GHGs, while increasing the amount of these land use types has the potential to absorb GHGs from the atmosphere. Appendix 7.1, Volume III contains a summary of the variables / inputs used to generate a model for the Proposed Development.

Based on the *TII Carbon Tool*, embodied carbon emissions associated with the Proposed Development will release 59,793 tonnes of CO₂ to the atmosphere. It should be noted that the Proposed Development will facilitate the connection of the consented Coom Green Energy Park (CGEP) Development to the National Grid. The CGEP has an operational life of 30 years, with an estimated 6,508,140 tonnes of CO₂eq displaced over that lifespan.



In proportion to this potential reduction in emissions, the necessary carbon emissions associated with the Proposed Development to connect the CGEP to the national grid is not considered significant.

7.3 Mitigation Measures

The impact assessment has not identified any likely significant adverse effects on Air or Climate from the Proposed Development. However, while mitigation measures are not required, they are provided here as best practice.

Mitigation measures in relation to air quality include the use of a water bowser to spray works areas and haul routes; loads to be covered; revegetation of exposed soils; good maintenance of machinery; implementation of a dust control plan as part of the Construction and Environmental Management Plan; no idling of vehicles.

It is considered that the Proposed Development will have an overall likely positive non-significant effect in terms of carbon reduction and climate change. It will assist Ireland in meeting the EU's latest renewable energy targets set out in the Renewable Energy Directive (2023) which contains a binding target for 2030 of at least 42.5% but aiming for 45%. Also, it will facilitate increasing the onshore wind capacity, as per the Climate Action Plan 2024. In terms of renewable energy, the target increase set in the Climate Action Plan 2024 in electricity generated from renewable sources is to increase to 80% by 2030, with 9GW of onshore wind capacity.

7.4 Residual Impacts

The implementation of the above mitigation measures will keep residual effects arising from fugitive dust emissions to slight to moderate impact. Construction activities involving excavations, felling or earthmoving will be localised in nature and as they will be associated with the construction phase, they will be temporary in nature and will not result in any likely significant residual effects.

As no likely significant effects on air quality were identified for the construction phase in the pre-mitigation assessment, no likely significant residual effects will arise for the construction phase. While the proposed mitigation measures may reduce the magnitude and duration of the residual effects as compared to the pre-mitigation effects, such mitigation measures are not required to reach a conclusion of no likely significant residual effects.

Should the Proposed Development not be developed the consented CGEP will not be connected to the National Grid, fossil fuel electricity generation will likely be the primary alternative to provide the required quantities of electricity. This will further contribute to greenhouse gas and other air pollutant emissions, as well as hindering Ireland in its commitment to meet its international commitments in relation to increasing renewable electricity production and reduction in GHG emissions.



7.5 Conclusion

There are no likely significant effects expected on Air Quality or Climate as a result of the construction, operation and decommissioning of the Proposed Development.

There are no likely significant cumulative effects expected on Air Quality and Climate as a result of other existing or proposed projects.

There will be a likely long term positive residual effect on Air Quality and Climate as a result of the Proposed Development due to the displacement of fossil fuels.

The mitigation measures identified in this Chapter will be adopted and implemented by the Contractor and have been incorporated into the construction stage CEMP included in Appendix 2.2, Volume 3 of the EIAR.



8. NOISE AND VIBRATION

8.1 Introduction

This chapter considers the potential noise and vibration impacts associated with the Proposed Development. Finally cumulative construction and operational noise from the proposed scheme is assessed.

8.2 Potential Effects

8.2.1 Construction Noise

Construction noise is generated from construction of the substation, tree felling activities, drainage and water crossing works and the proposed 33 kV NCR and 110 kV GCR.

Construction noise criteria for the proposed project are included in Table 8-1 of Chapter 8 of the EIAR. They include noise limits for the proposed working hours, which are 08:00 to 19:00 Monday to Friday and 08:00 to 13:00 on Saturday (if required). This includes a daytime noise limit of 65 dB $L_{Aeq,1hr}$ for the works.

The total duration of the substation development is 12 months, the 110kV UGC is 6.5 months and the 33kV UGC Cable is 7 months. The Horizontal Directional Drilling works is estimated to be 1 month in duration.

The construction noise scenarios described above have been assessed in the EIAR as follows:

Tree felling works with all plant operating at once have the potential to cause a significant negative effect, temporary in duration at a single property that is 50m from tree felling works.

The 33 kV CNR works predict a significant adverse effect at up to 5 properties within 50m of these works which will be temporary in duration. At properties more than 50m from the GCR works, the construction noise limit will be met, and the effect is predicted to be not significant that is temporary in duration. With proposed watercourse crossing works along the 33 kV CNR, these are predicted to be within the daytime construction noise limits, and the effect is not significant at the nearest properties which is temporary in nature.

Construction noise generated from the proposed 110 kV GCR works will result in a temporary (less than 3 days) significant adverse effect at up to 57 properties within 50m of the grid connection works. Beyond 50m the daytime construction noise limit is met and there is a not significant temporary effect.

Construction noise generated from proposed Watercourse and Motorway Crossing works along the 110 kV GCR are predicted to have a slight negative effect that is temporary.

The works associated with the construction of the substation are expected to have a slight negative effect that is temporary in duration.

In terms of cumulative noise from different construction activities associated with the proposed development, there is potential for cumulative noise if tree felling works occur at the same time as 33 kV CNR at properties near Chimneyfield Woods, Chimneyfield. If these works take place simultaneously, there is potential for the noise limit to be exceeded at 5 properties east of Chimneyfield woods.

Also, if tree felling works occur simultaneously with the 110kV GCR, east of the substation at Moanlahan, these would result in an exceedance the 65 dB construction noise limit at two properties north and south of the forestry access track close to the proposed tree felling works.



A summary of cumulative construction noise impacts from developments outside the proposed scheme are discussed in section 8.3.

8.2.2 Construction Vibration

Vibration is generated by construction activities such as passing heavy goods vehicles. However, the nearest sensitive locations are sufficiently distant that vibration will not be perceivable by residents at their dwellings and building damage will not occur from construction incurred vibration. As such, construction vibration will not have a significant impact on the nearest sensitive locations and are not be considered in this Chapter.

8.2.3 Operational Noise

During operation of the proposed development, the noise sources considered as part of this assessment are from the substation transformer. Noise levels associated with the proposed equipment at the closest noise sensitive location were predicted using noise modelling software and were compared to best practice noise criteria.

In summary, during both the daytime and nighttime periods, the predicted operational noise from the proposed substation is below the noise level where there is likely to be an indication of an adverse impact. In summary, the effect of operational noise from the proposed substation is not significant and is long term in duration.

8.2.4 Decommissioning Noise

The decommissioning activities will use comparable equipment to the construction phase and the predicted noise from decommissioning activities will be equivalent or less than the construction noise levels and will comply with best practice noise limits at the time of decommissioning.

Noise from the 33 kV CNR decommissioning works is less than the construction works. During the construction works from the 33 kV CNR cable there was a potential for construction noise to be exceeded at up to 5 properties during the 33 kV CNR works. Potentially there will be a significant adverse effect at up to 5 properties during these works which will be temporary in duration.

The main source of noise from the 33 kV CNR decommissioning works is as a result of the removing the cable from the ducting. If the location of the equipment for winching can be located to be sufficiently distant (at least 50m) from NSL's, and phasing plant so multiple items of plant do not operate simultaneously this will reduce the noise impact. With these mitigation works in place there will be a slight negative effect at nearby NSL's which will be temporary in duration.

8.3 Cumulative

8.3.1 Construction

Potential cumulative construction noise activities have been assessed from the consented Coom Green Energy Park Development, forestry activities from adjacent lands and construction of the Moneygorm single turbine, if these occur at the same time as works associated with grid connection works.

Predicted noise from the consented CGEP are low and not predicted to contribute to construction noise at properties near the proposed development.



The Moneygorm wind turbine is over 800m south of the proposed substation area. Given the low level of construction noise predicted from the CEGP substation construction activities and the distance to the Moneygorm Wind Farm, cumulative construction noise is considered to be below the daytime construction noise limits.

Given the low levels of construction noise from the proposed substation, if forestry activities on adjacent lands were to occur at the same time, construction noise from the substation construction would not contribute to the cumulative noise.

8.3.2 Operational

Cumulative noise for the CGEP and Moneygorm Wind Farm was assessed as part of the EIAR submission for the CGEP.

Cumulative noise from the proposed substation and the consented noise from the battery storage area are below the level where there is an indication of an adverse Impact. Therefore, cumulative noise from the proposed substation and consented BESS are expected to have a not significant effect that is long term in duration.

Cumulative noise for the CGEP and Moneygorm Wind Farm was assessed as part of the EIAR submission for the CGEP. Moneygorm Wind Farm has not been constructed. There is no guidance for assessing cumulative noise from windfarms and other developments such as substations. Windfarms are normally assessed in terms of the L_{A90} . The substation is assessed in terms of the L_{Aeq} . It is generally accepted that for windfarm noise 2 dB is added to the L_{A90} to obtain the L_{Aeq} . The predicted noise from the substation is 22 dB L_{Aeq} . Comparing this with the minimum L_{A90} , noise level specified in the planning condition for the CGEP, predicted noise from the proposed development is at least 18 dB lower than the lowest noise limit (40 dB L_{A90}) set out in the CGEP noise limit.

8.3.3 Decommissioning

Decommissioning works are described in Chapter 2 Development Description Chapter Section 2.6. The 110kV GCR will be left in situ. The 33kV CNR that connects each turbine will be removed from the cable ducting, with a mechanical winch at joint bay/pull pit. The access track will be excavated with a mechanical excavator at each cable pulling pit location and will be reinstated once the cables are removed. The cable ducting will be left in situ. All access tracks will be left in place.

Noise from the 33 kV CNR decommissioning works is less than the construction works. During the construction works from the 33 kV CNR cable there was a potential for construction noise to be exceeded at up to 5 properties during the 33 kV CNR works. Potentially there will be a significant adverse effect at up to 5 properties during these works which will be temporary in duration.

The main source of noise from the 33 kV CNR decommissioning works is as a result of the removing the cable from the ducting. If the location of the equipment for winching can be located to be sufficiently distant (at least 50m) from NSL's, and phasing plant so multiple items of plant do not operate simultaneously this will reduce the noise impact. With these mitigation works in place there will be a slight negative effect at nearby NSL's which will be temporary in duration.



8.4 Mitigation Measures

8.4.1 Construction

During tree felling works, when these works take place at the location at Chimneyfield where works are within 60m from the NSL, construction works will be phased.

For both the 33 kV CNR and 110 kV GCR, the daytime limit will be exceeded when works are passing close to properties on the road. It is recommended that screening is implemented between works and adjacent properties within 50 m of grid connection works which can reduce the noise level by up to 10 dB.

Details of the temporary noise barrier specification that is recommended where GCR and CNR works occur within 50m of NSL's are provided in the EIAR. These have the potential to mitigate noise by up to 10 dB.

Phasing of works is recommended to avoid cumulative noise from tree felling works along the 33kV CNR near Chimneyfield Woods and at the 110 kV GCR works at Moanlahan, east of the proposed substation.

Other good practice noise control measures are detailed in the EIAR.

8.4.2 Operational

The predicted noise from operation of the proposed substation is within the noise limits and therefore no mitigation is proposed.

8.4.3 Decommissioning

During the 33 kV GCR decommissioning works it is recommended that screening is implemented between works and adjacent properties within 50 m of grid connection works. Also, it is recommended the location of joint bay/pull pit is located to be at least 50m from noise sensitive locations to minimise the noise impact. If decommissioning works take place closer to properties it is recommended that a temporary barrier is installed between NSL's and the works as specified in the EIAR.

8.5 Residual Impacts

8.5.1 Construction

During tree felling works, with the proposed mitigation comprising phasing of the works when these occur within 60m of the NSL, the proposed construction noise will have a slight effect that is temporary.

During 33kV CNR, with the proposed mitigation comprising phasing of the works, and use of a temporary noise barrier, with mitigation, the 33 kV CNR works will have a significant adverse effect that is temporary at two properties. The impact at properties over 25m from the 33 kV CNR construction works will have a slight effect that is temporary.

During the 110kV GCR works, with mitigation the 110 kV grid connection works will have a significant adverse effect that is temporary at twelve properties. The impact at properties over 25m from the 110 kV GCR construction works will have a slight effect that is temporary.



8.5.2 Operational

As there is no change to the operational noise predicted from the operation of the proposed substation and BESS, the predicted noise is below the level where there is likely to be an indication of an adverse impact. Therefore, there is a not significant effect due to the operational phase of the project in the long term.

8.5.3 Decommissioning

During 33kV CNR decommissioning works, with the proposed mitigation comprising phasing of the works, and use of a temporary noise barrier, the 33 kV CNR works will have a significant adverse effect that is temporary at two properties. The impact at properties over 25m from the 33 kV CNR construction works will have a slight effect that is temporary.



9. BIODIVERSITY

9.1 Introduction

This section of the Non-Technical Summary describes the likely effects of the Proposed Development on biodiversity, including habitats, flora and fauna. It is based on the detailed assessment presented in Chapter 9 of the Environmental Impact Assessment Report (EIAR).

The Proposed Development comprises underground electricity cables, watercourse crossings and an onsite substation associated with the permitted Coom Green Energy Park. The assessment considers potential effects during construction and operation. Decommissioning relates only to the 33 kV underground cabling.

The ecological assessment included desktop studies, field surveys and specialist assessments to identify habitats and species within the study area and to assess the significance of potential impacts and the effectiveness of mitigation measures.

9.2 Study Area and Methodology

The biodiversity study area includes the footprint of the Proposed Development and surrounding areas where effects could arise through ecological or hydrological connections.

A comprehensive programme of ecological surveys was undertaken between 2024 and 2026, including:

- Habitat and botanical surveys
- Surveys for birds, bats and mammals.
- Aquatic and fisheries habitat assessment at watercourse crossings locations.

These surveys were supported by a desktop review of existing ecological records held by statutory bodies and the National Biodiversity Data Centre.

An Ecological Impact Assessment was carried out in accordance with relevant Irish and European guidance and legislation.

9.3 Designated Sites

A stand-alone Appropriate Assessment Screening Report (AA) and Natura Impact Statement (NIS) was prepared for the Proposed Development. It was determined that only the Blackwater River (Cork/Waterford) SAC (002170) has potential to be affected by impact pathways from the Proposed Development. As likely significant effects could not be excluded at the screening stage, a NIS was prepared. The NIS presents the predicted effects on this site and its Qualifying Interests and prescribes mitigation measures to address the negative effects identified. It was concluded that with the prescribed mitigation, there would be no residual effects of the Proposed Development on the Blackwater River (Cork/Waterford) SAC.

There are no Natural Heritage Areas within the immediate vicinity of the Proposed Development.



9.4 Existing Biodiversity Environment

The Proposed Development is located in a predominantly rural landscape comprising commercial conifer forestry, agricultural grassland, roadside verges and watercourses.

The main habitat types recorded include:

- Improved grassland
- Conifer plantation forestry
- Scrub, hedgerows and treelines
- Areas of wet grassland and modified wet heath
- Small rivers, streams and drainage channels

No habitats of national or international conservation importance were recorded within the Proposed Development footprint. The most abundant habitat type recorded on site was Conifer plantation and Improved agricultural grassland, both of which were classified as Local Importance (Lower Value). Wet grassland, modified Wet heath, Scrub, (Mixed) broadleaved woodland, and Hedgerows were recorded during the surveys and were classified as Local Importance (Higher Value).

The desktop study returned a range of fauna species in the study area and wider environs. While there was no evidence of resting or breeding signs of otter, badger or red squirrel, signs of commuting or foraging of these species were recorded within the study area. A wide range of avifauna, including several Amber and Red-Listed (BoCCI) species were recorded, with Meadow Pipit, Dunnock and Wren recorded as breeding. A potential Dipper nest was identified on the bridge over the River Bride. In addition, the bridge may provide roosting potential for bats, however no bats were recorded during the surveys.

All watercourses crossed by the Proposed Development have hydrological connectivity to the Blackwater catchment. Several of which provide potential fisheries habitat for salmonoids, lamprey spp. and European eel.

Invasive plant species, namely Himalayan balsam and Himalayan knotweed, were recorded during the survey. Only the occurrence of Himalayan knotweed is within the construction footprint of the Proposed Development.

9.5 Assessment of Likely Effects

9.5.1 Construction Phase

Potential effects during construction include:

- Habitat loss to facilitate construction
- Risk of sediment or pollution entering watercourses during in-channel works and degrading aquatic habitats and
- Disturbance to fauna due to noise or lighting during construction
- Risk of spreading invasive plant species during in-channel works

Most of the Proposed Development follows existing roads and forestry tracks, which significantly reduces habitat loss and fragmentation.



Watercourse crossings have been designed to avoid or minimise in-channel works through techniques such as horizontal directional drilling and use of existing bridge structures.

9.5.2 Operational Phase

During operation, the grid connection infrastructure will be underground and will not result in fragmentation and barrier effects or disturbance.

Noise and lighting associated with the substation will be minimal and is not expected to affect wildlife.

No significant operational impacts on biodiversity are predicted.

9.5.3 Decommissioning Phase

The removal of the 33 kV CNR will require works with similar impacts on biodiversity as those during construction but at a far lesser scale and magnitude.

9.6 Mitigation Measures

A comprehensive suite of mitigation measures has been incorporated into the design and construction of the Proposed Development. These include:

- Avoidance of sensitive habitats where practicable
- Strict controls on works near watercourses, including sediment and pollution prevention following IFI and EPA guidance
- The reinstatement of in-channel morphology and replacement of habitats to pre works condition
- Timing of works to avoid sensitive periods for breeding birds and bats
- Where artificial lighting is required during the construction and operation, bat-sensitive lighting will be implemented
- Pre-construction checks for protected species
- Deep excavations will be fitted with ramps to ensure animals cannot be trapped
- Box culvert will be designed with a mammal ledge in accordance with TII guidance
- Fish salvage will be undertaken at any watercourses requiring a dry works area and will follow best practice guidelines
- Appointment of an Ecological Clerk of Works to oversee implementation
- Detailed invasive species management measures to prevent spread during construction
- Habitat reinstatement of modified wet heath habitat following cable installation
- All mitigation measures will be implemented through the Construction and Environmental Management Plan.



9.7 Residual Effects and Enhancement

Following the full implementation of the mitigation measures, no residual impacts are predicted from the construction, operational or decommissioning of the Proposed Development.

Ecological enhancement measures are proposed, namely native hedgerow planting at the substation and the installation of two bat and Dipper boxes at the bridge over the River Bride, providing a minor long-term ecological benefit at the local level.

9.8 Conclusion

Provided that the Proposed Development is constructed and operated in accordance with the design, best practice and mitigation measures proposed, significant residual effects on biodiversity are not likely on any Key Ecological Feature (KER). The application of mitigation and protection measures throughout the construction phase will ensure that no significant residual effects are likely to arise from the proposed scheme, either alone or in combination with other plans or projects.



10. SOILS, GEOLOGY AND HYDROGEOLOGY

This chapter has been prepared to examine the likely significant effects of the Proposed Development on existing geological conditions within the study area.

10.1 Existing Environment

Based on the TII (previously NRA) methodology (2009), criteria for rating site importance of geological features, the importance of the bedrock and soil features at this site is rated as 'Low Importance' due to local geological attribute has a low quality, significance or value on a local scale.

Based on the TII methodology (2009) the importance of the hydrogeological features at this site is rated as 'medium importance' based on the assessment that the attribute has a medium quality significance or value on a local scale. The aquifer is predominantly a locally important aquifer and is not widely used for public water supply or generally for potable use, with the eastern extent of the GCR underlain by a regionally important karstified aquifer.

As shown in Figure 10.1 of the main EIAR, the majority of the Proposed Development is located within areas classified as Till derived from Devonian Sandstones. Limited areas of bedrock outcrop or sub crop are identified along the route of the 110 kV GCR and the 33 kV CNR. There is a limited extent of Alluvium identified along the south-western section of the 110 kV GCR, and a limited extent of Blanket Peat and Cut Peat identified in the western-most extent of the Proposed Development.

The GSI 1:100,000 scale bedrock geology map (Figure 10.2) shows that the Proposed Development traverses the Ballytrasna Formation for the majority of the route. The eastern extent of the Proposed Development is underlain by the Gyleen Formation and Waulsortian Limestones.

Groundwater mapping (Figure 10.3) indicates that the Site is predominantly underlain by a Locally Important Aquifer – Moderately productive bedrock in local zones with the eastern extent of the GCR underlain by a Regionally Important Karstified Aquifer. The Site lies within the Glenville and Tallow Groundwater Bodies (GWBs).

The groundwater vulnerability is variable across the site and ranges from 'High' to 'Extreme' with areas of exposed bedrock also present, as classed by the GSI.

From a review of the GSI Landslide Susceptibility database, the Proposed Development locations are almost exclusively within an area mapped as having a 'Low' landslide susceptibility.

The underlying bedrock (Waulsortian Formation) at the eastern extent of the Proposed Development is prone to karstification. However, according to the GSI datasets, there are no karst features recorded within the Proposed Development.

There are no known areas of soil contamination on the Site. No evidence of soil contamination was noted during Site walkovers or during the intrusive ground investigation.

10.2 Potential Effects

The following on-Site activities have been identified as the sources of potential impacts on the existing geological and hydrogeological conditions during the construction phase of the Project:



10.2.1 Do Nothing Effect

If the Proposed Development were not constructed, it is likely that the current land uses will continue for the foreseeable future. The effect on the soils, geology and hydrogeology would remain largely unaltered as a result.

10.2.2 Construction Phase

During the construction phase, activities which may have an impact on soils, geology and hydrogeology prior to mitigation include:

Tree Felling

An area of the Proposed Development comprises of commercial coniferous forestry. Felling of approximately 17.8 ha of coniferous forestry is required within and around the Proposed Development to accommodate the construction.

Earthworks:

The following earthworks excavations will be required:

- Excavation of Topsoil
- Excavation of Glacial Till

The following filling and material deposition operations will be required:

- Deposition of surplus material in berms for reinstatement purposes across the site
- Importation and filling of site won and imported General Fill and Engineering Aggregates

Horizontal Directional Drilling (HDD) Under Existing Structure:

Direct impacts to the existing environment associated with the proposed HDD works include:

- Potential for contamination to groundwater from spills/leakages during construction phase earthworks and HDD operations. The use of construction plant and associated refuelling and storage of fuels and hydrocarbons with potential for spills or leaks could result in contamination of the underlying aquifers.
- Potential for overburden collapse at the proposed HDD locations at water crossings during the advancement of the HDD bore.



10.2.3 Operational Phase

Very few potential direct impacts are envisaged during the operational phase of the Proposed Development. These are:

- Minor excavations of replaced soils, subsoils, trench backfill material will be required along the Proposed Development if a fault occurred during the operational phase. These works will be temporary and of short duration. The road surface and underlying subsoils excavated along the grid cable connection will be exported from the Proposed Development site to a licenced waste facility.
- Some construction vehicles may be necessary for maintenance of Proposed Development which could result in minor accidental leaks or spills of fuel/oil.

10.2.4 Decommissioning Phase

The potential impacts associated with decommissioning will be similar to those associated with construction but of reduced magnitude.

During the decommissioning phase, very few potential direct effects are envisaged. The 110kV GCR and onsite substation within Lackendarragh North and ancillary electrical equipment will form part of the national grid and will be left in situ. The 33kV CNR that connects each turbine will be removed from the cable ducting. The cabling will be pulled from the cable duct using a mechanical winch and the cable duct will be left in-situ as it is considered the most environmentally prudent option.

10.2.5 Cumulative Effects

Appendix 1.2 provides a full list of cumulative developments proximate to the Site.

There are 3 relevant projects in proximity to the proposed development. It is considered that no cumulative impacts between the Proposed Development and the other projects will occur. There may be indirect cumulative impacts in terms of demands placed on local quarries for aggregate and concrete required during the construction phase of the development.

10.3 Mitigation Measures

The following section outlines appropriate mitigation measures by design and best practice to avoid or reduce the potential impact of the Project. Further details are given in the CEMP which is included as part of the main EIAR.

Detailed design and best practice will be implemented as follows:

- The works have been designed and checked by geotechnical and civil engineers, who are suitably qualified and experienced in excavation and earthworks design and construction methodologies.
- Any excavation and construction related works will be subject to a design risk assessment at detailed design stage to evaluate risk levels for the construction, operation and maintenance of the works. Identified impacts will be minimised by the application of principles of avoidance, prevention and protection. Information on residual impacts will be recorded and relayed to appropriate parties.
- A detailed method statement for each element of the works will be prepared by the Contractor prior to any element of the work being carried out.



- Given that the works comprises a significant proportion of excavation and earthworks, suitably qualified and experienced geotechnical personnel will be required on site to supervise the works.
- The Contract will require programming of the works such that earthworks are not scheduled during severe weather conditions. Where such weather is forecast, suitable measures will be taken to secure the works.

The following will also be implemented:

- Soil excavated from trenches along the Proposed Development will be taken to a licenced facility for disposal or recycling where required.
- To mitigate against erosion of the exposed soil or rock, all excavations will be constructed and backfilled as quickly as possible. Excavations will stop during or immediately after heavy rainfall (>10mm/hour).
- No spoil stockpiles will be left on site after construction.
- To mitigate against the increased vulnerability of the underlying aquifer to groundwater pollution, all excavations will be constructed and backfilled as quickly as possible. Excavations will stop during or prior to heavy rainfall events. To mitigate against possible contamination of the underlying groundwater, refuelling of machinery and plant will only occur at designated refuelling areas.

A Construction Environmental Management Plan (CEMP) has been prepared for the proposed development and is included in Volume 3, Appendix 2.1. The CEMP defines the work practices, environmental management procedures and management responsibilities relating to the construction phase of the proposed development.

The CEMP sets out the key environmental management measures associated with the construction, operation and decommissioning of the Proposed Development, to ensure that during these phases of the development, the environment is protected, and any potential effects are minimized. The final CEMP will be developed further at the construction stage, on the appointment of the main Contractor to the Proposed Development to address the requirements of any relevant planning conditions, including any additional mitigation measures that are conditioned and shall be submitted to the planning authority.

10.4 Residual Effects

Following the implementation of the mitigation measures to be applied, the proposed development is expected to have a low impact on the receiving environment. As such, the proposed development is not expected to contribute to any significant, negative cumulative impacts of other existing or known developments in the vicinity. Slight residual cumulative impacts from the excavation of fill material from local quarries and disposal of material deemed unsuitable for reuse are considered to result from the Project by placing demand on existing quarries and available void space at licensed facilities during the construction phase of the development.



10.5 Conclusion

A study has been undertaken which has identified the principal impacts of the construction of the proposed development in relation to the Soils, Geology and Hydrogeology.

The assessment of Soils, Geology and Hydrogeology has established a baseline for the receiving environment for the impact assessment. Potential impacts were considered for the construction, operational and decommissioning phases of the Project as well as potential residual and cumulative impacts. Mitigation measures have been proposed where relevant.

The Project site is not a sensitive site in terms of soil, geology and hydrogeology, and poses a low risk for landslide.

A number of potential effects have been identified associated with the excavation of soil and rock on the site. The significance of these potential effects is assessed as being slight to moderate significance prior to mitigation.

The proposed development is not expected to result in any significant, negative cumulative impacts with other existing, permitted or proposed developments in the vicinity.



11. HYDROLOGY AND WATER QUALITY

11.1 Existing Environment

The Proposed Development is contained within 1 no. WFD catchment unit, the Blackwater (Munster) (catchment ID 18) of the Irish River Network System. The Proposed Development extends across 3 no. WFD sub-catchment units. The western portion of the Proposed Development, comprising the 33 kV CNR as well as the 110 kV Substation is contained entirely within the Bride [Waterford]_SC_010; while the 110 kV GCR straddles the boundary between the Bride [Waterford]_SC_010 and the Blackwater[Munster]_SC_110 for approximately 4 km, and terminates in the east in the Bride[Waterford]_SC_020, where it is proposed to connect into the existing Barrymore 110 kV substation.

According to the CFRAM and NIFM flood mapping, the majority of the Proposed Development comprising the 33kV CNR, the 110 kV GCR and the 110 kV Substation are within 'Flood Zone C'; Low risk of flooding (less than 0.1% annual exceedance probability [AEP]). According to NIFM mapping, the 33 kV CNR crosses 'Flood Zone A', which corresponds to a 'high risk' of flooding (1 in 100 years or 1% AEP) where the proposed cable route crosses the River Bride.

Key local waterbodies include the Bride River, the Toor River, and the Farran North River. Desk studies and field sampling indicate that most local rivers have "High" or "Good" water quality status under the Water Framework Directive (WFD) classification.

11.2 Proposed Development

The Proposed Development will be drained by a sustainable drainage system (SuDS). This will involve the separation of 'clean water' and 'dirty water'; with clean water allowed to drain away into the existing landscape while dirty water is passed through a 'treatment train' before being released back into the surrounding drainage landscape. The 'treatment train' involves the removal of potential contaminants from the drainage water by, for example, settling sediment out of suspension in the water, so that sediment is retained in settlement ponds and grassy swales.

The proposed development will require for watercourses to be crossed with proposed cable routes. Four of the watercourse crossings involve crossing natural 'surface waterbodies' mapped by the Environmental Protection Agency (EPA) in accordance with the WFD. These mapped 'surface waterbodies' are afforded extra protection which we have provided for as described below in 'Mitigation'. Along the 33 kV CNR, three of the watercourses to be crossed are WFD watercourses mapped by the EPA. These are the Toor River, to be crossed twice and the Bride River. Along the 110 kV GCR, one WFD surface waterbody is to be crossed, this is the Farran North River.

11.3 Potential Impacts

Without proper management, the construction phase could impact water quality in the following ways:

The Proposed Development will require the excavation and removal of vegetation cover and soil, and replacement with less permeable surfaces with a resulting potential to contribute to the increase in rate and volume of runoff from the Site. The increase in runoff as a result of the Proposed Development is predicted to be imperceptible. Considered cumulatively with the consented Coom Green Energy Park, the in-combination increase in runoff will not be significant.



Earthworks like excavation of trenches and stockpiling of soil and stone could result in silt entering nearby streams. These activities may release suspended solids into surface water bodies, increasing sediment loads and turbidity, which could negatively impact water quality. Potential effects could be significant if appropriate mitigation measures are not implemented.

Accidental leaks of fuel or oil from construction machinery or from storage areas could contaminate water. Another potential contaminant is cement: cement-based products are highly alkaline and can be toxic to fish if allowed to enter watercourses. Potential impacts from fuel, oil or cement pollution are not expected to be significant. Nevertheless, mitigation measures are provided as best practice.

11.4 Mitigation

A process of 'mitigation by avoidance', as informed by constraints assessment and consultation, was undertaken by the EIA team during the selection of the grid connection route (refer to Chapter 3 – Site Selection and Alternatives). The objective was to minimise the potential for significant effects on water quality and hydrology. The Site layout and drainage infrastructure have been designed to follow existing topography and preserve the natural hydrological regime. In-stream works have been avoided by proposing to either lay cables in existing bridge decks or else drilling beneath surface waterbodies by Horizontal Directional Drilling (HDD).

One of the key mitigation measures for the project is the provision of a carefully designed drainage system; and this is provided for in the SuDS drainage described above in Section 11.2.

Best practice construction methods will be used to avoid potential for effects on water quality and hydrology following the documents and guidelines listed below:

- Water Run-Off from Construction Sites - SEPA - (WAT-SG-75)
- The SUDS Manual - CIRIA C753.
- Site Handbook for the Construction of SUDS - CIRIA C698 ISBN 0 86017 698 3.
- Works and maintenance in or near water - PPG5 - (October 2007)
- Environmental good practice on site guide (fourth edition) (C741)
- Guidance for Pollution Prevention, dealing with spills: GPP 22-(October 2018)
- Temporary Construction Methods - SEPA -(WAT-SG-29)
- Guidelines on protection of Fisheries During Construction Works in and Adjacent to Waters - Inland Fisheries Ireland - (IFI 2016)
- Guidelines for the Crossing of Watercourses During the Construction of National Road Schemes - TII Publications (2008)



From these guidance documents, some of the most important mitigation measures include:

- Drainage Controls: Silt fences and check dams will be used to trap sediment before it leaves the site.
- Strict Storage Rules: No refueling will happen within 50 meters of waterbodies, and all fuels will be stored in specially bunded (contained) areas.
- Ongoing Monitoring: An Environmental Manager will oversee the works, and water quality will be tested regularly to ensure all protections are working as intended.
- An Environmental / Ecological Clerk of Works (EnCoW / ECoW) will be appointed by the Developer with responsibility for monitoring at the Site during the construction phase of the Development. The Clerk of Works will have the authority to temporarily stop works to prevent negative effects on hydrology or to ensure corrective action is taken to mitigate adverse effects.

11.5 Residual Effects

Once these protections are in place, the project is expected to have an imperceptible impact on the environment.

Risks during construction are reduced to imperceptible levels through active management. Once the cables are buried and the ground is replanted, there is virtually no ongoing risk to water quality once mitigation is in place.

When considered alongside the main Coom Green Energy Park and other local projects, no significant cumulative negative effects on water quality or flooding are anticipated.



12. MATERIAL ASSETS, TELECOMMUNICATIONS, TRAFFIC AND TRANSPORT

This Chapter describes Material Assets, Telecommunication and Traffic and Transportation that might potentially be affected by the Proposed Development. The potential effects are initially considered without mitigation, and the residual effects post mitigation are described. The assessment considers the potential effects during all phases of the development: construction, operation and decommissioning. Appropriate mitigation measures are identified to mitigate effects where necessary. This chapter assesses:

- Material Assets (Gas, Water, Electricity Cables etc.);
- Traffic and Transportation;
- Telecommunication.

12.1 Potential Effects

12.1.1 Utility Infrastructure

No major utility infrastructure associated with ESB Electricity Wires or Gas lines were identified. Based upon consultations with Uisce Éireann and application details provided, Uisce Éireann advised that the proposed build over can be facilitated.

Minor infrastructure, including telephone and electricity lines and poles were identified.

The construction of the cable trenches along public roads will have a slight, negative temporary effect on the roads during construction with some roads likely to require re-surfacing. Importation of materials and equipment will also increase shipping traffic at the ports being used and increase freight on the motorway, national primary routes and regional road network. There is potential for delivery of abnormal loads to negatively effect on major road infrastructure if unmitigated. It could potentially cause traffic disturbance and damage to road infrastructure if not properly planned and assessed. This has potential to cause significant negative effect to existing roads infrastructure if unmitigated.

Once the Proposed Development is operational, the potential for negative effects on Material Assets is minimal. Maintenance of infrastructure may require small amounts of imported fill; however, the likely effect is negative, long-term and imperceptible to slight.

No effect on existing water or gas utility infrastructure is expected due to the Proposed Development during the operational phase.

The direct effect of electricity generated by the proposed development will give rise to a reduction in the quantity of fossil fuels required for electricity generation across the State. This will give rise to a long-term slight positive impact on renewable energy resource and will contribute to reducing Ireland's dependency on imported fuel resources.

Decommissioning works will include removal of the 33kV CNR from the cable ducting that connects each turbine in the CGEP. However, the 110kV GCR and Substation will form part of the national grid and will be left in situ, which will be taken in charge of by EirGrid / ESB which will have a long-term positive effect on electricity infrastructure provision in the area and on the national grid.

There will be no likely negative impacts on utility infrastructure during the decommissioning phase.



12.1.2 Traffic and Transportation

The construction activities associated with the project will lead to additional construction related traffic on the existing public road network over the duration of the construction works. Without appropriate mitigation measures, the proposed works have the potential to lead to a negative impact on the existing road network.

The delivery of substation components including gantries, towers, transformers, etc. is a specialist transport operation owing to the oversized loads involved. These deliveries will be carried out during off-peak times and will be done using a convoy and a specialist heavy haulage company. These effects are short term in duration and slight in significance and considered likely during the construction stage.

The construction works will involve constantly moving the working area as the cable installation works progress. These works will lead to additional construction traffic associated with the cable route construction.

The construction works will require a combination of temporary road closures with traffic diversions and temporary lane closures along the Proposed 110kV GCR and 33kV CNR.

Temporary road closures will be required at specific locations for the installation of joint bays and cable pulling and jointing operations at later dates. These activities are isolated and carried out in under a day at each location. Without appropriate mitigation measures, the proposed works have the potential to lead to a negative effect.

Traffic effects associated with the operational phase of the Proposed Development will be associated with the grid network operator personnel visiting the substation, and maintenance staff.

The likelihood of significant adverse effects from the operational phase is negligible. The vast majority of traffic is minor, and the events that could cause significant effects are unlikely to pose a credible risk to the road network.

The likelihood of significant effects from the decommissioning phase is considered low. The traffic effect associated with the decommissioning phase will be significantly less than the construction phase due to the considerably lower number of vehicle movements.

12.1.3 Telecommunications

The Proposed Development will be constructed underground along public roads and private tracks. The works have potential to effect underground telecommunication services, with one underground telecom crossing transversing the route. It is unlikely that there will be a negative effect on telecommunication infrastructure along the Proposed Development

As the 110kV GCR and 33kV CNR will be operating underground, there are no operational related effects on telecommunication interests in the area.

The 110kV GCR and onsite substation will be left in situ. The 33kV CNR that connects each turbine will be removed from the cable ducting. There are no decommissioning related effects on telecommunications and broadcasting interests in the area.



12.2 Mitigation Measures

12.2.1 Utility Infrastructure

Existing services which may be impacted along the Proposed 110kV GCR and 33kV CNR will be assessed in pre-construction surveys. This will minimise the effect in terms of disruption or damage to existing utilities. Communication with service providers will be maintained for the duration of the construction works where required.

Where services are required to be interrupted to accommodate construction, residents and business in proximity to the works will be informed in advance. Additionally, the service providers will notify the public of any such interruptions or changes in water pressure, as is current practice.

Non-renewable resources of stone will be sourced locally as far as possible to minimise transportation distances, reducing CO2 emissions.

If any damage to existing footpaths or cycle lanes occurs during the construction stage, these sections will be replaced by the civils contractor as per Guidelines for Managing Openings in Public Roads, Department of Transport, April 2017 (SD12 Footways: Concrete Permanent Reinstatement).

12.2.2 Traffic and Transportation

The road works associated with the grid connection cabling will be completed in line with the requirements of a road opening license as agreed with the local authority.

In advance of the main grid connection works, an assessment will be carried out to define the precise alignment of the cable route within the corridor which has been assessed. This will include slit trenching with the aim of minimising the construction effects and avoiding existing services in the road.

Access to local houses, farms and businesses will be maintained at all times during any road closures associated with the grid connection works. The details of this will be agreed with the roads authority in advance of the grid connection works commencing.

Appropriate steps will be taken to prevent soil/dirt generated during the works from being transported on the public road. Road sweeping vehicles will be used, when necessary, to ensure that the public road network remains clean.

Trenches on public roads, once backfilled, will be temporarily reinstated to the satisfaction of the roads authority.

All roads will be reinstated expeditiously on completion of the construction works. Roads will be reinstated to their pre-works condition or better and to the satisfaction of the roads authority.

All workers will receive a comprehensive site induction which will include a section on traffic management and clear guidance on the routes to be used/not used to access the site.

A 24-hour emergency phone number will be maintained for the duration of the construction works and the number will be noted on temporary signage at each works area (for grid connection) and the site entrance for the Development site.

All necessary temporary traffic management will be planned and executed in accordance with best practice, including Chapter 8 of the Traffic Signs Manual published by the Department of Transport.



Adequate signage shall be installed on approach to the construction work advising of the presence of 'construction traffic ahead'. The above signage shall be removed following completion of the construction phase.

A detailed Traffic Management Plan (TMP) will be prepared prior to commencement of construction. This plan will address construction traffic, road safety signage, phasing of the deliveries, and emergency access (as shown in the TMP in the CEMP).

The contractor will be responsible for the implementation of all agreements between the developer and Cork County Council with the objective that the transportation needs for the Proposed Development will have a minimal effect on the road network and local communities. All vehicles hauling materials to and from the Proposed Development shall only use agreed transport routes. Outline Traffic measures are set out in the accompanying outline Construction Environmental Management Plan.

All vehicles hauling materials to and from the Proposed Development shall only use agreed transport routes. The proposed accesses will be created allowing adequate visibility sightlines in accordance with TII Standards DN-GEO-03060: Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated, and compact grade separated junctions), May 2023, DN-GEO-03031: Rural Road Link Design, May 2023, and in accordance with the County Development Plan. Required sightlines will be maintained in both directions at the site entrance and existing hedgerows will be trimmed and removed as necessary.

When necessary, banksmen will be stationed at the site entrances to ensure that construction traffic from the Proposed Development are managed accordingly so to minimise conflict with public traffic.

All construction vehicles will be parked within the works area so as not to cause additional obstruction or inconvenience to road users or residents.

Traffic movements for the construction of the development will be discussed with local community representatives and where necessary and off-peak deliveries will be accommodated where possible.

If any damage to existing footpaths or cycle lanes occurs during the delivery of components, these sections will be replaced by the awarded civils contractor as per Guidelines for Managing Openings in Public Roads, Department of Transport, April 2017 (SD12 Footways: Concrete Permanent Reinstatement).

12.2.3 Telecommunications

The Proposed 110kV GCR and onsite substation will be left in situ. The 33kV CNR will be removed from the cable ducting. There are no telecommunications related mitigation measures proposed.



13. ARCHAEOLOGY, ARCHITECTURAL AND CULTURAL HERITAGE

This chapter assesses the likely significant effects of the Proposed Development, as described in Chapter 2, on the cultural heritage resource, which encompasses heritage assets relevant to both the tangible resource, such as archaeological sites and architecture heritage structures, and non-tangible resources, including historical associations, folklore, tradition, place names.

13.1 Existing Environment

There are four recorded archaeological sites located within the boundary of the Proposed Development and each of these were identified and fully excavated in advance of the construction of the M8 motorway scheme. They comprised a charcoal-making site (CO035-118----) and three hearth sites (CO035-119----, CO035-120---- and CO035-121----). Their sensitivity to effects is, therefore, deemed to be negligible.

A study area extending for 100m from both sides of the Proposed Development contains a mass rock (CO043-009----) in Chimneyfield townland, an enclosure (CO035-042----) in Glanakip townland and a fulacht fia (CO043-005----) in Coom (Hudson) townland, none of which are located within the boundary of the Proposed Development (Table 13.1). In addition, the outer edge of the study area also encroaches into the south end of the zone of archaeological notification surrounding a levelled ringfort site (CO035-048----) in Ballynahina townland. While these archaeological constraints are considered to be of high value, as described below, they are in varying states of preservation and their sensitivity to effects on their settings range from negligible to high.

Table 13-1: Recorded archaeological sites within and adjacent to study area

Monument No.	Classification	Townland	Approx. distance from development boundary
CO035-042----	Enclosure	Glanakip	40m northwest
CO043-009----	Mass-rock	Chimneyfield	85m north
CO035-118----	Charcoal making site (excavated)	Corrin	Within
CO035-119----	Hearth (excavated)	Corrin	Within
CO035-120----	Hearth (excavated)	Corrin	Within
CO035-121----	Hearth (excavated)	Corrin	Within
CO043-005----	Fulacht fia	Coom (Hudson)	100m
CO035-048----	Ringfort	Ballynahina	150m (zone of notification)

The fulacht fia (CO043-005----) within the study area is located in Coom (Hudson) at a distance of 100m from the 33kV route. The location of this site is now occupied by commercial forestry and its sensitivity to indirect effects on its setting is deemed to be low.

The location of an enclosure (CO035-042----) in Glanakip townland is c.40m to the east of the section of road that the 110kV GCR section of the Proposed Development follows. The location of the enclosure is now occupied by a forestry plantation, and no visible surface traces of this site were observed from the adjacent roadside. Its sensitivity to indirect effects on its setting is, therefore, deemed to be low.



The mass-rock site (CO043-009----) in Chimneyfield townland remains extant and therefore retains a high sensitivity to setting effects. It is located within a wooded area c.80m from the road that the 33kV CNR follows and its location is screened from the road by the absence of a direct sightline and trees. The section of the 33kV CNR in this area also extends across a masonry road bridge, known as Bride Bridge, which is shown on the historic Ordnance Survey maps. While the bridge is not listed as a protected structure or included in the National Inventory of Architectural Heritage, it does comprise a historic structure of local (low) value/sensitivity.

There are no protected structures located within the study area, and it does not extend through any Architectural Conservation Areas. There are also no structures or gardens listed in the National Inventory of Architectural Heritage located within the study area.

A field-walking survey of the green field areas within the 33 kV CNR section of the Proposed Development within the townlands of Coom (Hudson), Mullenaboree, Knockaunalour and Knocknacaheragh was carried out as part of the site inspections. The section of the route in these townlands, which is shown as open moorland on the historic Ordnance Survey maps, is now occupied by enclosed grassland fields bound with field banks and fences indicating that this area was subject to land improvement works during the 20th century. No potential unrecorded archaeological sites or other features of cultural heritage interest were noted during the field-walking inspection of the green field section of the Proposed Development in these townlands.

13.2 Potential Effects

13.2.1 Construction Phase

The Proposed Development will entail the excavation of an underground cable within public roads and green field areas as well as the use of horizontal directional drilling (HDD) at the location of the majority of watercourse crossings and the M8 motorway. The cable trench will typically be 450 mm wide and 1250 mm deep while in areas requiring a quintuple circuit, the trench will have a width of 1550 mm and depth of 1250 mm.

There are no unexcavated archaeological sites located within or adjacent to the boundary of the Proposed Development. The boundary of the Proposed Development does contain four archaeological sites which were identified and fully excavated during the M8 motorway scheme.

The 33 kV CNR and 110 kV GCR sections of the Proposed Development will entail the excavation of a cable trench within public roads, the construction of which has reduced original ground levels. This includes one location where the route of the 110 kV GCR extends along a section of road that extends into the zone of notification surrounding a levelled enclosure (CO035-042----) in Glanakip townland. The recorded location of this enclosure is located within commercial forestry at a distance of c.40m from the road and no traces of this site are visible from the roadside. The potential for unrecorded subsurface features associated with this levelled site extending within the boundary of the Proposed Development, while low, cannot be completely discounted and this will require mitigation. The construction phase will not result in any indirect effects on the setting of this levelled enclosure site.

The construction phase works will result in temporary, negligible magnitude, indirect effect on the wider setting of the mass-rock (CO043-009----) located c.80m to the north of the 33kV CNR and this will not require mitigation

The Proposed Development will not result in any indirect effects on fulacht fiadh (CO043-005----) and ringfort (CO035-048----).



There are no recorded archaeological sites, or any designated architectural structures, located within 1km of the proposed location of Lackendarragh 110 kV substation in an area of forestry plan and the construction of this element of the Proposed Development will have a neutral effect on the known cultural heritage resource.

There are no recorded archaeological sites located within 100m of the section of the Proposed Development that extends through green field lands, and no potential unrecorded archaeological sites were identified in this area during the desktop studies and field surveys carried out as part of this assessment. The construction phase works in the green field areas will be confined to the excavation of a 1250mm wide cable trench located directly adjacent to existing field boundaries and modern farm tracks. No other construction phase works requiring ground excavations, such as access roads, compound areas, soil retention areas, will occur within green field lands. Given the small-scale nature of the proposed ground excavation works required to facilitate the 1250mm wide cable trench, the construction phase will have the potential result in low-medium magnitude, permanent, direct, negative effects of potential moderate-significant significance, on any unrecorded archaeological remains that may exist within the footprint of the cable trench, and this will require mitigation.

There are no designated architectural heritage structures located within the study area and, therefore, the Proposed Development will result in a neutral effect on this element of the cultural heritage resource.

The use of HDD at water-crossings will not require any in-channel works that will have the potential to result in negative effects on any potential unrecorded, underwater archaeological features that may exist within the watercourses.

The potential for the use of HDD at the location of Bride Bridge, within the 33kV CNR section, was explored as part of design but was deemed unfeasible due to topography and the crossing method here will involve the placement of the cables within the bridge deck. Site surveys carried out as part of the CNR design have determined that sufficient depth is present in the bridge deck and the cables can be accommodated without the need to modify the bridge. While the proposed works will not result any interventions to the historic fabric of this bridge, the excavation of the cable trench within the road fill material will require mitigation.

The 33kV CNR, 110 kV GCR and Lackendarragh 110 kV Substation elements of the Proposed Development, extend into areas of inaccessible forestry plantations. While there is a low potential for the survival of unrecorded cultural heritage constraints within Proposed Development locations in the forestry plantations, this cannot be completely discounted and works within forested areas will require mitigation.

13.2.2 Operation Phase

The operation phase will entail the presence of an underground cable located within existing roadways, green field and forested areas and this will result in a neutral effect on the cultural heritage resource. The operation phase will also include the presence of the 110kV onsite substation at Lackendarragh. There are no recorded archaeological sites or architectural heritage structures located within 1km of its location and this element of the Proposed Development will result in a neutral effect on the cultural heritage resource during the operation phase.

13.2.3 Cumulative Effects

A review of other projects within the wider environs of the Proposed Development did not identify any likely significant cumulative effects on the cultural heritage resource.



13.3 Mitigation

The Applicant will appoint a suitably qualified archaeologist to constantly monitor the excavation of the section of cable trench within all green field areas during the construction phase, and this will be carried out under licence by the National Monuments Service.

Archaeological monitoring of ground works within the public road that extends into the zone of notification surrounding levelled enclosure (CO035-042----) in Glanakip townland will also be carried out.

Archaeological monitoring of ground works within the road fill material over Bride Bridge (CHC 4) will also be carried out and in the event that any sub-surface historic bridge masonry is exposed it will be recorded and then preserved in situ.

The locations of the Proposed Development within forestry plantations will be subject to field-walking inspections by the appointed archaeologist following tree-felling works and this will include an appraisal of the extent of disturbance of underlying ground surfaces. The appointed archaeologist will then consult with the Cork County Council Archaeologist and the National Monuments Service in relation to any required additional mitigation measures within forestry plantations.

There are a number of obligatory processes to be undertaken as part of archaeological licence applications which will allow for monitoring of the successful implementation of the archaeological mitigation measures outlined above. These include the submission of method statements detailing the proposed strategy for all site investigations for the approval of the National Monuments Service as part of the licence application. A report will be compiled on all archaeological site investigations to comply with the licensing process which will clearly present the results in written, drawn and photographic formats and copies will be submitted to the National Monuments Service, the Local Authority and the National Museum of Ireland.

13.4 Residual Effects

The above mitigation measures will provide for either the preservation in situ of any currently unknown, sub-surface archaeological features by avoidance or the proper and adequate recording of this resource by full archaeological excavation. Preservation in situ shall allow for a negligible magnitude of effect resulting in a potential not significant/imperceptible significance of effect in the context of residual effect on the unrecorded archaeological resource. Preservation by record shall allow for a high magnitude of effect, albeit ameliorated by the creation of a full and detailed archaeological record, the results of which shall be publicly disseminated. This shall result in a potential slight to moderate range of significance of direct effects in the context of residual effects on the unrecorded archaeological resource.

13.5 Conclusion

The construction and operation phases of the Proposed Development will not result in any likely significant effects on any known cultural heritage constraints.

The Proposed Development will also not result in any likely significant cumulative effects on the known cultural heritage resource.



The potential does exist for the presence of unrecorded, sub-surface archaeological features within proposed construction areas. In the event that any sub-surface archaeological remains are identified during the archaeological monitoring, the Local Authority Archaeologist and the National Monuments Service will be consulted in relation to appropriate future mitigation strategies, which may entail preservation in situ by avoidance or preservation by record through licensed archaeological excavation. No likely significant effects on potential unrecorded, sub-surface archaeological features will arise following the implementation of these mitigation measures.

In conclusion, no likely residual significant effects on the cultural heritage resource will occur as a result of the Proposed Development.



14. LANDSCAPE AND VISUAL IMPACT

The landscape and visual baseline of the Proposed Development remains substantially unchanged since the landscape and visual assessment that was undertaken in respect of the permitted CGEP development (ACP Ref: 308885-20). There has been some scheduled forest felling and replanting within the wider context of the proposed development, as would be expected in a productive rural landscape comprising of rotational plantation forestry and rolling farmland. Otherwise, the landscape and visual baseline can be considered essentially the same in terms of composition, character and relevant receptors.

The current Cork County Development Plan (2022-2028) has been updated from the earlier iteration (2016 - 2022) that was relevant to the LVIA that was undertaken in respect of the permitted CGEP development. However, in respect of the relevant Cork Landscape Character Assessment, the provision of sensitive landscape designations in the form of 'High Value Landscapes' (HVL) and the schedule of designated scenic routes, there has not been any material changes brought forward into the latest CDP iteration. Consequently, the landscape and visual policy environment can be considered materially unchanged from that which existed for the original CGEP assessment.

14.1 Potential Effects

Construction and operational phase effects are assessed; however, decommissioning phase effects are screened out as the proposed 110 kV grid infrastructure will form permanent components of the national grid and not subject to decommissioning. There is no above ground infrastructure proposed as part of the 33 kV CNR and therefore will not create any potential landscape and visual effects.

14.2 Construction Phase

For the two cable route components of the proposed development (110kV GCR and 33kV CNR) there will be temporary physical land cover disturbance impacts in the form of trenching. Such effects will be barely noticeable within the context of the under-construction wind farm.

Temporary visual impacts will occur as a result of the 110 GCR and 33kV CNR from construction activities involving workers, machinery and temporary stockpiling of excavated materials and construction materials. Such effects will only be noticeable to road users and property owners adjacent to the road network that is being utilised for the underground cable.

The landscape and visual effects of the cable route components will be small scale, temporary and transient along the road network and will appear similar to any form of road upgrade work.

For the 110kV GCR there will be two instances where Horizontal Directional Drilling (HDD) will be required to take the cable under the M8 motorway and then under a watercourse near the Barrymore substation. This will involve a launch pit and a receptor pit at either end of the HDD section, which will require deeper excavation and will be the focus of worker and machinery activity for a longer period than for other sections of surface trenching. There will be slightly greater intensity and duration of visual effect in close proximity to these HDD crossings.



For the 110 kV Substation, there will be a slightly reduced area of regrading required to create a flat platform for the facility, and the orientation of the platform will be modified slightly to accommodate the alternative design and orientation of the substation now proposed. The overall, size of the substation compound will be reduced from that permitted as part of the CGEP development, which is 178m X 153m, down to 145m X 115m. The impact on landscape character will not be materially different as a result of the revised substation design.

Construction phase activities for the 110 kV Substation will involve workers, vehicles, HGV movements, machinery and temporary stockpiling of excavated materials and construction materials as well as views of bare earth. These will be at a fixed location and longer duration effects than those associated with the cable route but will be on the 12-month threshold between Temporary and Short-term duration effects.

The potential removal of the permitted Mullenaboree substation from the development will avoid construction stage vegetation clearance and landform modification at that location, which is a positive outcome for the landscape and visual impacts of the project.

For the reasons outlined above, it is considered that the construction phase landscape and visual effects of the proposed development will be of a Medium-low magnitude.

14.3 Operational Phase

There will be no operational phase landscape or visual effects relating to the cable routes as they will be buried below ground / road and with the surface above fully reinstated.

The 110 kV Substation will be of a different and reoriented design, but it has a similar appearance to the untrained eye and will occupy a slightly smaller compound in the same location as the permitted substation. The operational phase visual or landscape impacts are not deemed to be materially different to that of the permitted substation.

The potential removal of the permitted Mullenaboree substation from the development will avoid any operational phases landscape and visual effects relating to it and although these were not significant, the effect will be positive.

On the basis of the assessment outlined above, the operational phase landscape and visual effects are considered to be of a Medium-low magnitude.



15. INTERACTIONS OF THE FOREGOING

15.1 Introduction

The requirement to identify and assess interactions between the various environmental factors considered within this EIAR is set out in Article 3(1) of Directive 2011/92/EU, as amended by Directive 2014/52/EU. The Directive requires that an Environmental Impact Assessment identifies, describes and assesses, in an appropriate manner and in light of each individual case, the direct and indirect significant effects of a project on:

- population and human health;
- biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;
- land, soil, water, air and climate;
- material assets, cultural heritage and the landscape; and
- the interaction between the factors listed above.

This chapter has been prepared with regard to the Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (European Commission, 1999), the EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2022), and the European Commission Guidance on the Preparation of the Environmental Impact Assessment Report (2017).

The purpose of this chapter is to identify and assess potential interactions and inter-relationships between environmental aspects assessed throughout the EIAR, where an effect on one environmental receptor may influence another, either positively or negatively, and with varying levels of significance. The assessment addresses interactions relating to Population and Human Health; Air Quality and Climate; Noise and Vibration; Biodiversity; Soils, Geology and Hydrogeology; Hydrology and Water Quality; Material Assets, Telecommunications, and Traffic and Transportation; Archaeology, Architectural and Cultural Heritage; and Landscape and Visual.

The assessment considers the Proposed Development as described in Chapter 2.

15.2 Assessment of Potential Interactions

Environmental effects rarely occur in isolation, and interactions can arise where one effect influences, exacerbates, or mitigates another. These interactions may occur during construction, operation, or decommissioning and can include the following:

- Direct interactions, where one environmental factor directly affects another (e.g. soil disturbance influencing water quality);
- Indirect interactions, where effects occur via an intermediate pathway (e.g. air emissions affecting human health);
- Cumulative interactions, where the project acts in combination with other existing or permitted plans or projects; and
- Interactive effects, where multiple effects combine to produce a greater or lesser overall effect than might otherwise occur.



Table 15-1 presents a matrix identifying the principal interactions between the key environmental aspects of the Proposed Development. Table 15-2 provides a qualitative description of these interactions, together with reference to the relevant chapters of the EIAR and the mitigation measures proposed.

The assessment confirms that interactions between topics have been explicitly considered within individual technical chapters. By way of example, the assessment of Hydrology and Water Quality (Chapter 11) has had regard to potential effects on Biodiversity, while the assessment of Soils, Geology and Hydrogeology (Chapter 10) has considered interactions with Hydrology and Water Quality and with Traffic and Transportation arising from trenching and earthworks.

Overall, interactions are most likely to arise during the construction phase, when activities such as excavation, traffic movements, vegetation clearance and temporary noise generation occur concurrently. These interactions are generally localised, short-term and reversible, and are addressed through embedded design measures, best practice construction management, and topic-specific mitigation outlined throughout the EIAR.

15.3 Conclusion

The proposed Coom Green Energy Park development has the potential to give rise to interactions between different environmental receptors, particularly during the construction phase. This chapter has identified and assessed the principal interactions and inter-relationships between environmental aspects, drawing on the detailed assessments presented in the topic-specific chapters of this EIAR.

Potential adverse interactions have been addressed through the iterative design and routing of the development, aimed at avoiding sensitive receptors where possible, and through the incorporation of robust mitigation measures. These include the implementation of a Construction Environmental Management Plan, a Traffic Management Plan, surface water and pollution control measures, ecological supervision, archaeological monitoring, and landscape reinstatement.

With the application of these measures, it is concluded that significant adverse effects arising from interactions between environmental aspects will be avoided or reduced to a level that is not significant. In several cases, particularly in relation to climate and human health, the development results in positive interactions through its contribution to renewable energy generation and the transition to a low-carbon energy system.



**DESIGNING AND DELIVERING
A SUSTAINABLE FUTURE**

www.fehilytimoney.ie

 **Cork**

 **Dublin**

 **Carlow**

