

Environmental Appraisal Report

Transmission Development Plan 2021-2030

September 2021



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1.0 Introduction

EirGrid plc (EirGrid) is the Irish national electricity Transmission System Operator (TSO). In our role as TSO in Ireland, we operate and maintain a safe, secure, reliable, economical and efficient transmission system. We develop key infrastructural projects which are vital for the socio-economic development of the State with due regard for the environment.

The Transmission Development Plan (TDP) 2021-2030 presents the network investment needs and the transmission projects that have been identified as required to meet the needs of the Irish transmission system over the period of the plan. The TDP is an annual rolling plan, updated each year to reflect the continuously changing nature of electricity requirements. The preparation of an annual TDP is a legal requirement under national statutory license requirements and European Regulations.

This Environmental Appraisal Report (EAR) has been prepared to ensure that the TDP 2021-2030 is in accordance with the provisions of the adopted [Grid Implementation Plan 2017-2022](#)¹ (Grid IP 2017-2022) and associated [Strategic Environmental Assessment \(SEA\)](#)². The Grid Implementation Plan (IP) details the policies and objectives that drive a sustainable approach to grid development and together with Strategic Environmental Objectives, and mitigation measures developed through SEA, ensure significant environmental impacts are avoided wherever possible.

The Grid IP 2017-2022 was subject to SEA (Directive 2001/42/EC of the European Parliament and of the Council of Ministers, of 27 June 2001, on the Assessment of the Effects of Certain Plans and Programmes on the Environment) and Appropriate Assessment under the provisions of Article 6(3) of the EU Habitats Directive (Directive 92/43/EEC). The Grid IP 2017-2022 is the second one prepared by us, the previous being for the period 2011-2016³.

A commitment of the SEA process is to conduct an environmental appraisal of each TDP. The appraisal identifies any updates to the programme of projects as set out in the IP and examines these projects against the Strategic Environmental Objectives adopted in the IP. Individual projects will be subject to environmental assessment, including screening for Appropriate Assessment (AA) under the relevant planning requirements.

The EAR assesses the new projects added to the TDP for potential impacts in the short term - construction phase, the medium term – re-establishment and initial operational phase (0-5 years post construction) and the long term – operational phase (5 years onwards).

1 <http://www.eirgridgroup.com/site-files/library/EirGrid/EirGrid-Grid-Implementation-Plan-2017-2022-Final.pdf>

2 <http://www.eirgridgroup.com/site-files/library/EirGrid/SEA-Statement-Grid-IP-2017-2022.pdf>

3 <http://www.eirgridgroup.com/site-files/library/EirGrid/Grid25-Implementation-Programme-2011-2016.pdf>

2.0 Six Step Process for Developing the Grid

A key focus in the development of our projects is on matters of proper planning and sustainable development. This requires a careful balancing of the technical need and solutions for a project with appropriate and adequate opportunities for public participation in the project development process. It must also include significant emphasis and focus on the environmental impact of the project, primarily in reference to the EU Habitats Directive, but also in terms of social impact.

We have been proactive in developing clear structured processes for the planning and development of electricity transmission infrastructure. This includes the technical development of projects in collaboration with matters of planning, environment, public affairs, administrative, financial and corporate governance.

The EirGrid Programme Delivery Unit has overall oversight of project development. It includes experienced experts in the areas of ecology, public planning, wayleaving and landowner engagement. These experts are assigned to all our projects, to advise and assist project managers and their project teams with ensuring a consistent approach to the sustainable planning and development of all our projects.

We have established a new six step approach to developing grid projects in Ireland. This is a “beginning-to-end” process, from the identification of a need to develop the grid to the eventual construction and operation of a project. This approach integrates the technical development of a project with increased and enhanced engagement with stakeholders, communities and landowners. A guide on how we develop the grid and how the public can engage in this process is published on our website in our Have Your Say document: <http://www.eirgridgroup.com/the-grid/have-your-say/>. Figure 1 below summarises our six step process.



Figure 1: EirGrid's six step process for developing the grid

3.0 Policies and Objectives

We have a statutory obligation to ensure that the operation, maintenance and development of the national transmission system has due regard for the environment. What this means in practice is that environmental issues are central to the decision making process when it comes to developing the grid. This is explicitly stated in Ireland’s Grid Development Strategy which states in respect of Protecting our Environment that “An essential part of our work is to understand how developing the transmission system might affect the environment. Consideration of the environment is central to how we work” (p.22).

A series of environmental policies and objectives were developed through the SEA process for the Grid IP 2017-2022 to ensure appropriate consideration and protection of the environment in grid development. The full suite of environmental policies and objectives can be found in the Grid IP 2017-2022.

3.1 Environmental Policies and Objectives

Environmental policies (ENVP) were compiled under the Grid IP 2017-2022 to ensure that we have due regard for existing environmental protection legislation and environmental best practice when developing projects. Environmental objectives (ENVO) have also been developed for a number of environmental topics. All of the environmental policies and objectives detailed in the [Grid IP 2017-2022](#) (refer to Section 4.4 in Part B Implementation of Grid IP 2017-2022) have been assessed against Strategic Environmental Objectives.

3.2 Strategic Environmental Objectives

The SEA of the Grid IP 2017-2022 sets out thirteen Strategic Environmental Objectives (SEOs). SEOs are methodological measures against which the potential environmental effects of the projects in the TDP can be examined. The SEOs are set out under a range of environmental topics (see Table 3.1). The SEOs guide sustainable grid development and are used as standards against which the provisions of the TDP can be evaluated. This is in order to help identify areas in which potential significant impacts may occur. The new projects as set out in the TDP 2021-2030 are evaluated against these SEOs in Section 5. These SEOs will be used as part of a Monitoring Framework for the wider Grid IP 2017-2022 with targets and indicators specified through the SEA process (see Section 3.3).

Table 3.1: Strategic Environmental Objectives as set out in the SEA of the Grid IP 2017-2022	
Theme	Objective
Population, Human Health & the Economy	PHH1: To minimise the proximity of development to concentrations of population and to mitigate potential effect of development in order to reduce actual and perceived environmental effects.

Table 3.1: Strategic Environmental Objectives as set out in the SEA of the Grid IP 2017-2022	
Theme	Objective
Biodiversity, Flora & Fauna	B1: Ensure compliance with the Habitats Directive with regard to protection of designated European Sites including Article 10.
	B2: Avoid significant impacts on protected habitats, species, environmental features or other sustaining resources in and outside designated Wildlife Sites (including but not limited to Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs)).
Landscape & Visual Amenity	L1: Avoid significant adverse impacts on landscape character and designations.
	L2: Avoid or minimise adverse visual effects on residential receptors.
Cultural Heritage - Archaeology & Architectural	CH1: Avoid impacts upon archaeological heritage (including entries to the Record of Monuments and Places (RMP)) and architectural heritage (including entries to the Record of Protected Structures (RPS) and National Inventory of Architectural Heritage (NIAHs)).
Geology and Soils	GSL1: To avoid or minimise effects on mineral resources or soils.
Land use	LU1: To avoid or minimise effects on existing land use.
Water	W1: Prevent impact upon the status of surface and groundwater in line with the objectives of the Water Framework Directive (WFD) as outlined in the River Basin Management Plans.
Material Assets & Infrastructure	MAI1: Minimise effects upon the sustainable use of the land, mineral resources or soils.
	MAI2: Minimise effects upon the existing and planned infrastructure.
Tourism & Recreation	TR1: Minimise effects upon the tourism and recreation amenities.
Climate Change	CC1: Help to facilitate the achievement of higher level targets contained in the Government's Energy White Paper, 'Ireland's Transition to a Low Carbon Energy Future 2015-2030' and targets relating to the Kyoto Protocol.

3.3 Monitoring

EirGrid has statutory obligations to monitor its plans under Article 17 of the SEA Directive. Further details on ongoing monitoring work by EirGrid are provided in Section 5.5 Monitoring.

4.0 New Projects in TDP 2021-2030

To ensure adequate security of electricity supply, further market integration, and the integration of renewable energy sources, it is necessary to provide ongoing and timely reinforcement of the Irish electricity transmission system. These reinforcement needs can be divided into the following categories:

- Reinforcements to support changes in, or connection of new, demand;
- Reinforcements required to support changes in, or connection of new, generation;
- Reinforcements related to interconnection;
- Reinforcements to facilitate inter-regional power flows; and
- Reinforcements to address the condition of existing assets.

The TDP 2021-2030 includes 145 active projects. These projects are categorised as either “New Build”⁴, “Uprate/Modify”⁵ or “Refurbish/Replace”⁶ projects. Sixteen active projects in TDP 2020 have been completed. One active project added in TDP 2020 has been removed. Fifty-one projects have been added. One project was on hold in TDP 2019-2029 and have been re-activated.

4 New Build projects: Projects that involve the construction of new stations or new circuits. This category also includes projects that involve the installation of new equipment in existing stations. An example of a new build project is the installation of new transformers or new reactive support devices within existing stations. New Build projects are segregated in two categories:

- New Build Connection: New connection projects; and
- New Build Capacity: Projects that deliver additional grid capacity.

5 Uprate/ Modify projects: Projects that involve the uprating of existing assets. An example of an uprate project is changing equipment to increase the capacity rating of circuits or busbars. This can include changing the overhead line (conductor) with a more efficient and higher ‘rated’ conductor. This category also includes projects that involve the modification of existing assets. An example of a modification project is the installation of new couplers or new bays in existing stations. Reconfiguration of existing stations is also included in this category.

6 Refurbish/ Replace projects: Projects that involve the maintenance of existing stations or existing circuits. This category also includes projects that involve the replacement of existing assets. For example, the replacement of stations at or close to the end of their useful life or replacement and upgrading of protection in existing stations.

Table 4.1: New Projects in TDP 2021-2030				
No.	CP. No	Name	Type	Region
1	CP0901	Kilbarry - Knockraha 110kV No. 2 Line Refurbishment	Refurbish/Replace	SW-MW
2	CP0841	Arva - Carrick-on-Shannon 110 kV line uprate	Uprate/Modify	B-M-W
3	CP1096	Transformer protection upgrade, 6 Stations	Refurbish/Replace	Several
4	CP1101	Mullagharlin 110 kV Station - 2 New DSO Transformer Bays	Uprate/Modify	B-M-W
5	CP0848	Castlebar-Cloon 110 kV Line Uprate/Refurb	Uprate/Modify	B-M-W
6	CP1090	Oldbridge 110 KV Station	New Build	SE-ME-D
7	CP1093	Barnageeragh 110 kV Station (Equinix)	New Build	SE-ME-D
8	CP1094	Buffy 110 kV Station	New Build	B-M-W
9	CP1087	Porterstown Battery Storage	New Build	SE-ME-D
10	CP1084	Lishdrumdoagh 110 kV Battery Storage	New Build	B-M-W
11	CP1088	Greenlink Interconnector	New Build	SE-ME-D
12	CP1117	Irishtown FlexGen-BESS	Uprate/Modify	SE-ME-D
13	CP1115	Drybridge and Connected Stations 220 - 110kV Protection Upgrade	Refurbish/Replace	SE-ME-D
14	CP1108	Dunstown Station 400/220kV Protection Upgrade	Refurbish/Replace	SE-ME-D
15	CP1105	Poolbeg BESS	Uprate/Modify	SE-ME-D
16	CP1110	Woodland Station 400/220kV Protection Upgrade	Uprate/Modify	SE-ME-D
17	CP1103	Corduff FlexGen	Uprate/Modify	SE-ME-D
18	CP1116	Tipperary, Cahir and Connected Stations 110kV Protection Upgrade	Refurbish/Replace	SW-MW
19	CP1113	Corduff 220kV Station Deep Works	Refurbish/Replace	SE-ME-D
20	CP0741	Trabeg 110 kV station - uprate 2 x 110kV transformer bays ⁷	Uprate/Modify	SW-MW
21	CP0749	Oriel Offshore Windfarm	New Build	SE-ME-D
22	CP1047	Oweninny Power 2	Refurbish/Replaced	B-M-W
23	CP1060	Loughteague 110 kV solar farm	New Build	B-M-W
24	CP1073	Oweninny 3	New Build	B-M-W
25	CP1092	New 400 kV Strategic Spare Transformer	Uprate/Modify	SE-ME-D
26	CP1099	Lisheen 3 Windfarm	Uprate/Modify	SW-MW
27	CP1102	Grangecastle South	New Build	SE-ME-D
28	CP1109	Gorman and Connected Stations 220/110kV Protection Upgrade	Refurbish/Replace	SE-ME-D
29	CP1111	Ballydine, Cahir and Connected Stations 110kV Protection Upgrade	Refurbish/Replace	SW-MW
30	CP1112	Limerick and Connected Stations 110kV Protection Upgrade	Refurbish/Replace	SW-MW
31	CP1114	Platin and Connected Stations 110kV Protection Upgrade	Refurbish/Replace	SE-ME-D
32	CP1120	Cloncreen 110 kV Station	New Build	B-M-W
33	CP1126	Mully Graffy Windfarm ⁸	New Build	B-M-W
34	CP1127	Lenalea Windfarm ⁹	New Build	B-M-W
35	CP1129	Aghada BESS 02	Uprate/Modify	SW-MW
36	CP1130	Cloghan Wind Farm- New 110 kV transformer Bay	Uprate/Modify	B-M-W
37	CP1131	Gillinstown Solar (Garballagh 110kV Station)	New Build	SE-ME-D
38	CP1132	Cow Cross New 110 kV Transformer	Uprate/Modify	SW-MW
39	CP1135	Golagh Windfarm Modification	Uprate/Modify	B-M-W
40	CP1136	Gaskinstown Solar Farm	New Build	SE-ME-D
41	CP1137	Carlow, Kellis 110 kV Protection Upgrade	Refurbish/Replace	SE-ME-D
42	CP1139	Sligo & Srananagh 220 & 110kV Protection upgrade	Refurbish/Replace	B-M-W
43	CP1140	Athy, Carlow and Connected Stations 110 kV Protection Upgrade	Refurbish/Replace	SE-ME-D
44	CP1141	Kellis Station 220 kV & 110 kV Protection Upgrade	Refurbish/Replace	SE-ME-D
45	CP1151	Ballyadam 110/MV 2x31.5MVA Station Developemnt	New Build	SW-MW
46	CP1152	Arva and Connected Stations 110 kV Protection Upgrade	Refurbish/Replace	SE-ME-D
47	CP1153	Oldstreet, Tynagh & Cashla 400 kV and 220 kV Protection Upgrade	Refurbish/Replace	B-M-W
48	CP1154	Belcamp Land Acquisition	Other	SE-ME-D
49	CP1159	Cullenagh & connected stations protection upgrade	Refurbish/Replace	SE-ME-D
50	CP1160	Coolroe, Inniscarra & connected stations protection upgrade.	Refurbish/Replace	SW-MW
51	CP1161	Cathaleen's Fall and connected stations 110 kV protection upgrade	Refurbish/Replace	B-M-W

Table 4.2 summarises the new projects into their respective categories as detailed in TDP 2021-2030. These projects are categorised as either “New Build”, “Uprate/Modify” or “Refurbish/Replace” projects. Over 50% of projects relate to existing assets i.e. Uprate/Modify or Refurbish/Replace projects.

Table 4.2: Summary of New Projects by Category in TDP 2021-2030	
Project Category	No of Projects
New Build	16

⁷ CP1079 must to be completed prior to connect CP1126.

⁸ CP1079 must to be completed prior to connect CP1127.

⁹ CP0741 was On Hold in 2020 and added in 2021.

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Uprate/Modify	14
Refurbish/Replace	20
Other	1
Total	51

Power flows on the transmission network are not contained within specific localities or counties. To help project reporting and give a regional view to the TDP we group counties together to create regions. There are three regions. Table 4.3 outlines the number of new projects in each region.

Table 4.3 Summary of New Projects by Region	
Region	No of Projects
Border, Midlands and West (B-M-W)	16
South-West and Mid-West (SW-MW)	25
South-East, Mid-East & Dublin (SE-ME-D)	9
Projects at multiple locations ¹⁰	1
Total	51

¹⁰ These involve multiple individual projects at various locations across the country.



Figure 2: Ireland's regions

5.0 Evaluation of New Projects

5.1 New Projects

The TDP 2021-2030 defines a list of 51 new projects that were added in 2021. A number of these potential projects are screened out of requiring evaluation as the works are of such a scale as not to be considered significant and / or are localised to within existing electrical transmission sites / substations. Many of these proposals that have been screened in may require future environmental studies at the project level, such as Environmental Impact Assessment under the Environmental Impact Assessment (EIA) Directive 85/337/EEC.

5.2 Evaluation of New Projects against SEOs

As detailed in tables above there are three types of new reinforcement projects in the TDP 2021-2030 – new builds, refurbishment/replacement projects and uprate/modifications projects. Several of the new build projects are related to customer connections. While these projects and their environmental appraisal are not generally within the control of EirGrid, given they are being carried out on a contestable basis, it is assumed that they will all require planning consent and thus undergo environmental appraisal and be approved by a competent authority. The competent authority will attach conditions and mitigation measures as necessary to those consents.

The integration of renewable energy sources is a key driver in new projects in all regions. This will be achieved through new build, uprate/modification and refurbishment projects. This key driver is in accordance with SEO CC1 (to help facilitate the achievement of higher government targets in relation to Energy policy) and is likely to continue to improve this SEO in the longer term.

By making improvements to the existing transmission system through uprates/modifications and refurbishment/replacements, potential impacts to the receiving environment can be minimised. Subject to the implementation of effective mitigation strategies as appropriate, the utilisation of existing assets would have a neutral impact on SEOs related to landscape (L1, L2), ecological connectivity (B2), population centres (PHH1) and sustainable land use (LU). Potential issues can arise where (existing) transmission infrastructure assets are located in sensitive areas such as sites designated for nature conservation (B2), areas of significance for cultural heritage (CH1) and or sensitive water catchments (W1). In general, these issues can be identified early in the project planning process and mitigation measures developed to ensure that no significant effects arise. Monitoring may additionally be required to verify the effectiveness of mitigation, adapt measures where required, and report back both positive and negative findings to improve future mitigation strategies (see Section 5.5 Monitoring).

The impact of any new build project is a function of the project type and the sensitivities of the environment in which it is to be developed. There is the potential for impacts on a range of environmental factors. However, with proper planning and robust environmental assessment, significant effects (and conflicts with SEOs) can be mitigated in the vast majority of cases. Certain new build projects have the potential to conflict with the SEO related to landscape. The application of mitigation through avoidance (of sensitive landscape areas), sensitive routing and screening may not be sufficient in all instances to remove significant effects on localised landscapes.

A high level review of the new projects listed in the TDP 2021-2030 indicates that there is unlikely to be any potential for significant residual impacts post mitigation for any of the new build projects which include works within existing substations and the building of new stations. Table 5.1 summarises the evaluation of SEOs against the three different types of reinforcement projects. Mitigation measures as detailed in the SEA Environmental Report¹¹ and Natura Impact Statement¹² which remain relevant for this environmental appraisal of the TDP are presented in Appendix B. A detailed evaluation of each new project is contained in Appendix A.

5.3 Completed, Combined, Changed and Cancelled Projects

Several projects have had their status or scope changed since the previous TDP. These changes are of a clerical or contractual nature and would have no material bearing on the overall SEOs. No significant effects arise.

¹¹ http://www.eirgridgroup.com/site-files/library/EirGrid/Environmental-Report_SEA-Grid-IP2017-2022.pdf
¹² <http://www.eirgridgroup.com/site-files/library/EirGrid/NIS-Grid-Implementation-Plan-2017-2022.pdf>

Table 5.1 Summary evaluation of planned network developments (new to TDP 2021-2030)														
Project Type	No. of Projects	PHH1	B1	B2	L1	L2	CH1	GSL1	LU1	W1	MA11	MA12	TR1	CC1
New Build	16	*	*	*	*	*	*	*	*	*	*	*	*	+
Uprate/Modify (Line)	14	*	*	*	*	*	*	*	*	*	+	+	+	+
Refurbish/Replace (Line)	20	*	*	*	*	*	*	*	*	*	+	+	+	+
Other	1	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	51													

Discussion

Where a modification, uprate, redevelopment or refurbishment is taking place within a station there is minimal work required and this work will typically be undertaken within the footprint of an existing station. Where a refurbishment or line uprate is taking place, there will be minimal change operationally but there is potential for some small-scale construction works. Therefore, there could be construction related impacts including but not be limited to the following:

- habitat removal or disturbance to species for access requirements;
- disturbance to local residents from construction works i.e. noise or dust emissions;
- potential pollution of nearby watercourse; and
- depending on the receiving environment, there may be potential for impacts on designated sites. Therefore screening for the need for Appropriate Assessment is undertaken for all refurbishment and uprate projects.

These refurbishment projects will be subject to the inherent mitigation and in particular the construction best practice. The adherence to this construction best practice will facilitate the avoidance and reduction of significant effects. Therefore, the likely effects associated with the construction works from these refurbishments projects are not likely to be significant. All new build projects will be subject to environmental assessment as part of the relevant planning process for these projects. Refurbishment/replacement and uprate/modification projects are generally considered to be permitted development under relevant sections of the Planning Act. Where there is potential for significant effects on a European Site, this permitted development status is lost and planning permission must be sought.

Description of Effect	Effect
Likely to have a positive effect	+
Likely to have a negative effect	-
Effects are uncertain/there is insufficient information on which to determine effect	?
Likely to have a neutral effect	*
Likely to have a mixed positive & negative effect	+/-
Likely to have a mixed negative & positive effect	-/+
Not Applicable	⊗

5.4 Mitigation

Mitigation measures have been recommended, in the SEA and AA processes, where potential negative impacts have been identified. These mitigation measures aim to prevent, reduce and as fully as possible offset any significant adverse effects on the environment due to implementation of the projects in the TDP. The mitigation measures that have arisen in the SEA and AA processes are included in Appendix B.

The principal mitigation recommendation is that the predicted negative effects should be considered further during detailed planning and design, when the specifics of the development infrastructure can be optimised through detailed feasibility studies and design in order to limit the potential impacts on sensitive receptors. Further environmental studies based on the more detailed designs and construction methodologies should be undertaken as appropriate. These studies may involve, but are not limited to, marine, aquatic and terrestrial ecology surveys, ornithological and bat surveys, fish surveys, landscape and visual assessments, WFD assessments, geotechnical investigations and heritage surveys.

Before any works are carried out, detailed method statements and management plans (construction and environmental) should be prepared, including timing of works, information on the specific mitigation measures to be employed for each works area, and mechanisms for ensuring compliance with environmental legislation and statutory consents. The timing of construction and maintenance works should be planned to avoid any potential for negative cumulative impacts or inter-relationships with other schemes, plans or projects, yet look to optimise any potential positive cumulative impacts or inter-relationships.

Contractors should be required to prepare Construction Environmental Management Plans (CEMPs), which would include a requirement for related plans to be prepared, as appropriate, for project implementation, such as Erosion and Sediment Control, Invasive Species Management, Emergency Response, Traffic and Safety Management, Dust and Noise Minimisation, and Stakeholder Communication Plans.

Works should only be carried out once the method statements have been consulted on with competent authorities. At the project level it will not be sufficient to defer the production of construction method statements. These should be completed in the detailed design stage and may be subject to further Appropriate Assessment where potential impacts have been identified. Where there may be unavoidable impacts on protected habitats and/or species the necessary derogation licences should be applied for prior to seeking planning permission or approval for a scheme.

Marine construction and in stream works have the greatest potential for negative impacts during spawning / breeding and early nursery periods for aquatic and marine protected species. No marine or instream works should occur during restricted periods for relevant species and consultation should be undertaken with the appropriate authorities in this regard. Monitoring of project-level mitigation measures should be undertaken during and after works, to ensure effectiveness. All works and planning of works should be undertaken with

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regard to all relevant legislation, licensing and consent requirements, and recommended best practice guidelines. An ecological clerk of works should be appointed for environmental management of each infrastructure development, and where specific sensitive species may be impacted, an appropriate expert should also be appointed.

5.5 Monitoring

EirGrid will be reporting the outcome of environmental monitoring of the projects constructed during the lifetime of the Grid IP 2017-2022 in 2021 (interim reporting) and 2022 (final reporting) to the Environmental Advisory Group (EAG).

In scoping the SEA of the Grid IP, EirGrid established the EAG to advise on the development of the Grid IP. The EAG comprises the Environmental Protection Agency, the National Parks & Wildlife Service, the Heritage Council, the Department of Housing, Planning, Community and Local Government and the Regional Assemblies (East and Midlands). The EAG will continue to be consulted on SEA monitoring.

The results of EirGrid's SEA monitoring will also be available to the wider public, via EirGrid's website. In support of recent guidance on SEA monitoring by the EPA¹³, monitoring locations will be mapped, and relevant spatial data will be shared on appropriate platforms. The key function of EirGrid's monitoring work, will be to incorporate process improvements into how EirGrid delivers its projects, for the next cycle of its Grid IP (2023-2028). Process improvements may include:

- Increasing the quantum of monitoring undertaken during project construction and operation (where appropriate – e.g. by requiring biodiversity monitoring and reporting in all circumstances where intrusive works are carried out within European sites)
- Articulating the commitment to increase the quantum of monitoring, in relevant policy and guidance, including forthcoming updates to EirGrid's Ecology and Cultural Heritage Guidelines
- Feeding back positive and negative monitoring outcomes to EirGrid consultants and ESB as appropriate, to improve the effectiveness of future mitigation strategies.
- Requiring consultants to include future monitoring commitments within Environmental Impact Assessment Reporting, Planning and Environmental Considerations Reporting, and/or Natura Impact Statements planning documentation, to ensure Contractors and/or their consultants provide monitoring reports to EirGrid and ESB.

¹³ <https://www.epa.ie/pubs/advice/ea/guidanceonseastatementsandmonitoring.html>

6.0 Conclusion

The TDP 2021-2030 has been examined in terms of the provisions of the SEA of the Grid Implementation Plan 2017-2022. Fifty-one new projects are detailed in TDP 2021-2030 since the adoption of TDP 2020-2029. Therefore, to ensure consistency with the provisions of the most recent SEA (2017-2022), these projects have been examined against the Strategic Environmental Objectives as detailed in the Environmental Report (2018).

These 51 new projects consist of new builds (stations, additional infrastructure within stations and cable connections), refurbishment/replacement projects and uprates/modification projects of existing assets. These three categories of projects (as they relate to the projects listed) have been assessed against the Strategic Environmental Objectives from the SEA and it has been determined that following the implementation of mitigation measures the SEOs will be achieved.

Environmental assessments, as part of Environmental Reports or Environmental Impact Assessments in respect of specific projects, will seek to minimise and where possible avoid significant effects on the natural environment and landscape.

Appendix A: Detailed Evaluation of New Projects in the TDP 2021-2030

Detailed Evaluation of New Projects in the TDP 2021-2030						
No.	CP. No	Name	Type	Region	Appraisal	Evaluation
1	CP0901	Kilbarry - Knockraha 110kV No. 2 Line Refurbishment	Refurbish/Replace	SW-MW	Very localised impacts only	N/A
2	CP0841	Arva - Carrick-on-Shannon 110 kV line uprate	Uprate/Modify	B-M-W	Very localised impacts only	N/A
3	CP1096	Transformer protection upgrade, 6 Stations	Refurbish/Replace	Several	Very localised impacts only	N/A
4	CP1101	Mullagharlin 110 kV Station - 2 New DSO Transformer Bays	Uprate/Modify	B-M-W	Very localised impacts only	N/A
5	CP0848	Castlebar-Cloon 110 kV Line Uprate/Refurb	Uprate/Modify	B-M-W	Very localised impacts only	N/A
6	CP1090	Oldbridge 110 KV Station	New Build	SE-ME-D	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
7	CP1093	Barnageeragh 110 kV Station (Equinix)	New Build	SE-ME-D	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
8	CP1094	Buffy 110 kV Station	New Build	B-M-W	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
9	CP1087	Porterstown Battery Storage	New Build	SE-ME-D	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and

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						land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
10	CP1084	Lishdrumdoagh 110 kV Battery Storage	New Build	B-M-W	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
11	CP1088	Greenlink Interconnector	New Build	SE-ME-D	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
12	CP1117	Irishtown FlexGen-BESS	Uprate/Modify	SE-ME-D	Very localised impacts only	N/A
13	CP1115	Drybridge and Connected Stations 220 - 110kV Protection Upgrade	Uprate/Modify	SE-ME-D	Very localised impacts only	N/A
14	CP1108	Dunstown Station 400/220kV Protection Upgrade	Refurbish/Replace	SE-ME-D	Very localised impacts only	N/A
15	CP1105	Poolbeg BESS	Uprate/Modify	SE-ME-D	Very localised impacts only	N/A
16	CP1110	Woodland Station 400/220kV Protection Upgrade	Uprate/Modify	SE-ME-D	Very localised impacts only	N/A
17	CP1103	Corduff FlexGen	Uprate/Modify	SE-ME-D	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and

Detailed Evaluation of New Projects in the TDP 2021-2030						
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						long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
18	CP1116	Tipperary, Cahir and Connected Stations 110kV Protection Upgrade	Refurbish/Replace	SW-MW	Very localised impacts only	N/A
19	CP1113	Corduff 220kV Station Deep Works	Refurbish/Replace	SE-ME-D	Very localised impacts only	N/A
20	CP0741	Trabeg 110 kV station - uprate 2 x 110kV transformer bays	Uprate/Modify	SW-MW	Very localised impacts only	N/A
21	CP0749	Oriel Offshore Windfarm	New Build	SE-ME-D	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
22	CP1047	Oweninny Power 2	Refurbish/Replace	B-M-W	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
23	CP1060	Loughteague 110 kV solar farm	New Build	B-M-W	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the

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						potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
24	CP1073	Oweninny 3	New Build	B-M-W	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
25	CP1092	New 400 kV Strategic Spare Transformer	Uprate/Modify	SE-ME-D	Very localised impacts only	N/A
26	CP1099	Lisheen 3 Windfarm	Uprate/Modify	SW-MW	Very localised impacts only	N/A
27	CP1102	Grangecastle South	New Build	SE-ME-D	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
28	CP1109	Gorman and Connected Stations 220/110kV Protection Upgrade	Refurbish/Replace	SE-ME-D	Very localised impacts only	N/A
29	CP1111	Ballydine, Cahir and Connected Stations 110kV Protection Upgrade	Refurbish/Replace	SW-MW	Very localised impacts only	N/A
30	CP1112	Limerick and Connected Stations 110kV Protection Upgrade	Refurbish/Replace	SW-MW	Very localised impacts only	N/A
31	CP1114	Platin and Connected Stations 110kV Protection Upgrade	Refurbish/Replace	SE-ME-D	Very localised impacts only	N/A
32	CP1120	Cloncreen 110 kV Station	New Build	B-M-W	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the

Detailed Evaluation of New Projects in the TDP 2021-2030						
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						works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
33	CP1126	Mully Graffy Windfarm[2]	New Build	B-M-W	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
34	CP1127	Lenalea Windfarm[3]	New Build	B-M-W	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
35	CP1129	Aghada BESS 02	Uprate/Modify	SW-MW	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of

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No.	CP. No	Name	Type	Region	Appraisal	Evaluation
						measures intended to avoid or reduce significant impacts may be required.
36	CP1130	Cloghan Wind Farm- New 110 kV transformer Bay	Uprate/Modify	B-M-W	Very localised impacts only	N/A
37	CP1131	Gillinstown Solar (Garballagh 110kV Station)	New Build	SE-ME-D	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
38	CP1132	Cow Cross New 110 kV Transformer	Uprate/Modify	SW-MW	Very localised impacts only	N/A
39	CP1135	Golagh Windfarm Modification	Uprate/Modify	B-M-W	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
40	CP1136	Gaskinstown Solar Farm	New Build	SE-ME-D	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
41	CP1137	Carlow, Kellis 110 kV Protection Upgrade	Refurbish/Replace	SE-ME-D	Very localised impacts only	N/A
42	CP1139	Sligo & Srananagh 220 & 110kV Protection upgrade	Refurbish/Replace	B-M-W	Very localised impacts only	N/A

Detailed Evaluation of New Projects in the TDP 2021-2030						
No.	CP. No	Name	Type	Region	Appraisal	Evaluation
43	CP1140	Athy, Carlow and Connected Stations 110 kV Protection Upgrade	Refurbish/Replace	SE-ME-D	Very localised impacts only	N/A
44	CP1141	Kellis Station 220 kV & 110 kV Protection Upgrade	Refurbish/Replace	SE-ME-D	Very localised impacts only	N/A
45	CP1151	Balladam 110/MV 2x31.5MVA Station Developemnt	New Build	SW-MW	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be any further medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level Appropriate Assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce the harmful effects of the project on European sites, as necessary, may be required.
46	CP1152	Arva and Connected Stations 110 kV Protection Upgrade	Refurbish/Replace	SE-ME-D	Very localised impacts only	N/A
47	CP1153	Oldstreet, Tynagh & Cashla 400 kV and 220 kV Protection Upgrade	Refurbish/Replace	B-M-W	Very localised impacts only	N/A
48	CP1154	Belcamp Land Acquisition	Other	SE-ME-D	Potential for Impacts	This development has the potential for short term, temporary, construction phase, slight negative impacts on biodiversity, flora and fauna, population and human health, geology, soils and land use, water, air, climatic factors, material assets, and landscape and visual amenity. There are unlikely to be medium or long term negative impacts following the completion of the works. There is the potential for medium and long term, slight positive impacts on population and human health, air, climatic factors and material assets, following the works. The AA of the Grid IP 2017-2022 has identified the potential for water quality and habitat deterioration impacts on European Sites, from similar projects. The possibility of likely significant effects cannot be discounted on these sites at the plan level assessment. Project level assessment including further evaluation and analysis, and the application of measures intended to avoid or reduce significant impacts may be required.
49	CP1159	Cullenagh & connected stations protection upgrade	Refurbish/Replace	SE-ME-D	Very localised impacts only	N/A
50	CP1160	Coolroe, Inniscarra & connected stations protection upgrade.	Refurbish/Replace	SW-MW	Very localised impacts only	N/A
51	CP1161	Cathaleen's Fall and connected stations 110 kV protection upgrade	Refurbish/Replace	B-M-W	Very localised impacts only	N/A

Appendix B: Mitigation Measures