

Nature Inclusive Design Pilots

December 2022



Foreword

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EirGrid operates and develops the electricity transmission grid in Ireland. This includes interconnection with neighbouring grids and the wholesale electricity market. The grid brings power from generators to the ESB distribution network that supplies every home, farm and business in Ireland. The grid also delivers power directly to businesses that use large amounts of electricity. EirGrid ensures electricity is always available at the most economic price – today, tomorrow and for decades to come.

Electricity can be generated from renewable sources like wind and solar power. These sources of clean energy will soon replace dirty fuels like coal and oil. To prepare for this change, EirGrid must make the electricity grid stronger and more flexible.

EirGrid's work to transform the electricity system is the foundation of the Government's Climate Action Plan; the proposed energy transition is a cornerstone of Ireland's response to climate breakdown. Our ultimate ambition is for a renewables-based power system, while maintaining an affordable, secure, and reliable power system.

EirGrid has a statutory obligation to have due regard for the environment. However EirGrid is committed to going beyond nature protection, to aim for nature restoration. In this way, as we develop projects critical to our renewable ambition, our work will respond to the twinned climate and biodiversity crises.



Michael Mahon
Chief Infrastructure Officer,
EirGrid

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Who are EirGrid – and what do we do?

EirGrid is responsible for a safe, secure and reliable supply of electricity – now and in the future. We develop, manage and operate the electricity transmission grid. This grid brings power from where it is generated to where it is needed throughout Ireland. We use the grid to supply power to industry and businesses that use large amounts of electricity. The grid also powers the distribution network and supplies the electricity you use every day in your homes, businesses, schools, hospitals and farms.

What is EirGrid Doing?

Avoids or reduces impacts on biodiversity when developing electricity transmission projects. In response to the twinned biodiversity and climate crises, we are aiming higher to restore nature. Stakeholder engagement is fundamental to the approach we take, both with our partners Electricity Supply Board (ESB), and relevant nature conservation bodies including the National Parks & Wildlife Service (NPWS), Inland Fisheries Ireland (IFI), Local Authority Heritage/Biodiversity officers, the National Biodiversity Data Centre, Birdwatch Ireland and the Chartered Institute of Ecology and Environmental Management. At international level, we engage with the Renewable Grid Initiative (RGI), and CIGRE¹ and to embed best practice from other transmission system operators globally. We are identifying best practice in marine biodiversity protection and enhancement through partners including MaREI², RGI, the Offshore Coalition for Energy and Nature (OCEaN), and Fair Seas.

In 2019 we commenced a series of nature restoration projects starting with the East West Interconnector (EWIC) Biodiversity Project, in collaboration with Hitachi Energy. Now in Year 3 of the project, we have seen significant successes including:

- Sowing native-grown yellow rattle, and a new meadow management regime involving two cuts and use of a 'chain harrow' to favour wildflowers over grasses;
- Native woodland plants appearing in existing parkland after stopping herbicide usage;
- Successful fledging of blue tits from our bird nest box.

There were inevitably some challenges including loss of planted trees to the local hare population. Details on the **EWIC Biodiversity Project**, including photographs and mapping of biodiversity actions are available on our website³.

In 2022, we established a new requirement for our consultants to implement '**Nature Inclusive Design**' proposals across our capital projects, in collaboration with our inhouse ecologist, ESB, and nature conservation bodies where appropriate.

Selected case studies of some current Nature Inclusive Design projects are summarized in this document. For instance, at Trien 110 kV substation in Co. Kerry, EirGrid and ESB have jointly developed a plan to use 'green hay' to convert an area of former hardstanding to species-rich semi-improved grassland. Our Nature Inclusive Design projects are informed by '**Before And After**' monitoring surveys, to measure success, and take remedial action if required.

¹ CIGRE is a French acronym, standing for Conseil International des Grands Réseaux Electriques; this translates as Council on Large Electric Systems.

² Science Foundation Ireland Research Centre for Energy, Climate and Marine research and innovation co-ordinated by the Environmental Research Institute (ERI) at University College Cork.

³ Biodiversity Actions (eirgridgroup.com)

On underground cable (UGC) projects, in consultation with ESB, and technical advice from arboriculturists, we are exploring **planting shallow-rooted native shrubs over certain off-road cable routes**. This is to compensate and in some cases enhance existing hedgerows. At passing bays, where road boundaries are temporarily removed to allow traffic flow during in-road cable laying, we are '**building back better**', by re-planting with locally sourced, native species (five woody species per 30 m section). We avoid species-rich hedges and mature trees wherever possible, and promote best practice TEAGASC hedgerow planting methods. In areas not already comprising species-rich hedges. In 2022 and 2023, these measures will be committed over a minimum of 154 km of cable projects in counties Mayo, Roscommon, Cork, Kildare, and Meath.

As we prepare to connect up to 7GW of offshore wind and deliver up to 80% electricity from renewable energy by 2030, we are integrating marine biodiversity enhancement into offshore cable and substation design. Measures may include artificial reef 'cubes', fish 'hotels', and cable protection materials which encourage shellfish growth while protecting the cable asset.

Why is EirGrid doing this?

The Irish Government declared a **biodiversity emergency** in 2019. Under the National Biodiversity Action Plan 2017-2022 (currently under review), public authorities such as EirGrid are obliged to move towards 'No Net Loss' of biodiversity through strategies, planning, and mitigation measures.

In 2021, the European Parliament adopted a resolution on the EU Biodiversity Strategy 2030 which established the policy basis for an **EU nature restoration plan**.

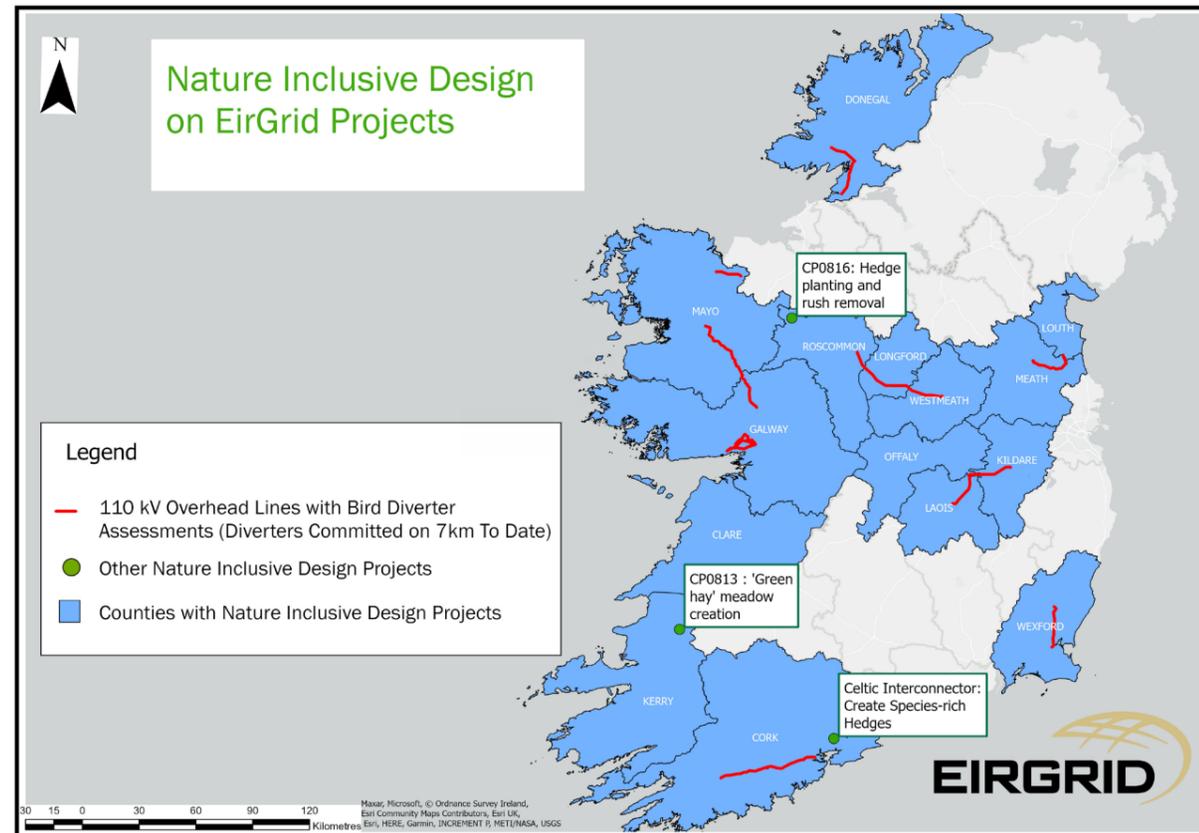
Following this, the European Commission adopted a proposal for an **EU-Wide Nature Restoration Law** in 2022 which will require all member sites (by way of an EU regulation) to take action on nature restoration.

The biodiversity and climate crises are twinned and interdependent. Enhancing natural habitats will promote nature-based carbon removal and improve the resilience of ecosystems to climate change.



Where is EirGrid doing this?

The selected pilots described in this document, across all 12 counties and all four provinces are mapped in Figure 1.



CPo813 Trien 110 kV Station Refurbishment (Co. Kerry)

In 2021, EirGrid received planning consent for the refurbishment of the Trien 110 kV station, in rural north Kerry. EirGrid stipulated within the planning application, that lands currently used for material storage would be converted to semi-natural grassland.

EirGrid has been coordinating closely with ESB engineering and ecology staff on a means to harvest local seed from a local species-rich grassland within the broader substation site. The material storage area will be first be soiled and levelled, as part of the substation refurbishment works.

EirGrid’s ecologist completed formal baseline surveys of the material storage area in August 2022, to inform ‘before and after’ monitoring of the habitat creation proposals, using the ERICA software tool⁴ to identify Irish Vegetation Classification⁵ communities. ESB will implement the initiative from 2022 onwards.

ESB have expanded the biodiversity ambition of the initiative by proposing a suite of sympathetic management measures for the broader substation site, including supplementary planting of existing defunct hedgerows. Below are photographs of the existing material storage area which is subject to the measures.



Botanical survey plot in material storage area proposed for conversion to species-rich grassland



Species-rich grassland at Trien station which will provide local seed to create the new species-rich grassland

⁴ <https://biodiversityireland.shinyapps.io/vegetation-classification/>

⁵ <https://biodiversityireland.ie/projects/ivc-classification-explorer/>

The proposed actions and objectives for the Trien Nature Inclusive Design initiative are set out below. ESB will agree the specifics of the enhancement proposals with Kerry County Council in 2022/2023.

Action	Objective	Timeline and Status
1	EirGrid complete botanical baseline survey of existing receptor site (waste storage area)	Completed August 2022
2	EirGrid jointly develops Biodiversity and Landscape Management strategy with ESB	Completed November 2022
3	ESB Consult with Kerry Council Heritage Officer on Biodiversity and Landscape Management strategy	Est. December 2022
4	ESB implement a two cut mowing regime in donor grassland site, with all arisings removed	Commenced 2022 (ongoing)
5	Prepare ground in receptor site (waste storage yard) with suitable soil specification for semi-natural grassland	Est. 2023
6	Cut and deposit arisings from donor site on prepared soil in receptor site	Est. Autumn 2023
7	Complete supplementary planting of existing and southern boundary hedge	Est. winter 2023
8	Complete post establishment botanical survey of soiled and locally seeded receptor site (Year 1)	Est. summer 2024
9	Complete establishment phase surveys of supplementary hedgerow planting to inform adaptive management if required	Est. summer 2024
10	Supplement arisings with hand sowing if required	2024-2025 as required
11	Erection of Information signage to communicate biodiversity actions to local community	2024



Uprate Projects- Retrofitting of Bird Diverters

As part of EirGrid’s programme of grid upgrades to deliver the energy transition set out in Shaping our Electricity future, EirGrid is ‘uprating’ existing overhead lines. These works will assist in achieving the government ambition of up to 80% electricity from renewable sources by 2030. Uprating improves the electrical performance of existing overhead lines by replacing existing overhead conductor wires with higher performance conductors.

The thin earth wire at the top of powerlines is widely reported as the main cause of bird collisions with High Voltage overhead lines. The uprate program presents a significant opportunity to retrofit existing lines with bird flight diverters, to reduce bird strike.

Subject to agreement with ESB, and pending consent, EirGrid proposes to implement the specific actions below.

Action	Objective	Timeline and Status (pending consent)
1	Identify existing diverter installations on existing overhead lines proposed for uprating	Commenced 2021 and ongoing
2	Identify potential high risk bird strike spans over designated bird areas and other wetlands	Commenced 2021 and ongoing
3	Agree installation scope with ESB on a project basis	Commenced 2021 and ongoing
4	ESB install diverters during uprate construction works	2023-onwards

As of November 2022, the following work is committed or completed:

- 14 no. overhead lines currently scoped for retrofitting
- 369 km of overhead lines in 12 counties have been surveyed and assessed for bird diverters
- Presence of likely hot spots for collision have been identified from survey data
- 7 km of potential collision hotspots spans have been identified for bird diverters to date
- Commitments are inserted in planning applications and/or agreed in project scopes



The Oval, 160 Shelbourne Road, Ballsbridge, Dublin D04 FW28 • Telephone: 01 677 1700 • www.eirgrid.ie



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