



Celtic Interconnector Project

Step 4 – Project Update Document

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Introduction

This Celtic Interconnector project is currently in Step 4 of EirGrid's Six Step approach to Grid Development. We are continuing with our assessments of the Step 4 project options that we published in November 2019¹ with particular focus on the site options for the converter station. We are however publishing the Step 4 Consultation Report now and at this stage will respond to as many of the issues raised as we are able to at this point in time.

We would like to thank all of the communities, organisations, groups and individuals who took the time to take part in the consultation process. We will continue to engage with stakeholders and communities as the project develops

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 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. This supplies the electricity you use every day in your homes, businesses, schools, hospitals and farms. As part of our role we are also mandated to explore and develop opportunities to interconnect the transmission grid with the transmission grids in other countries.

What is the Celtic Interconnector?

The Celtic Interconnector is a proposed electrical link which will enable the movement of electricity between Ireland and France. We have been working with our counterpart in France, Réseau de Transport d'Électricité, to investigate the feasibility of an interconnector between our two countries. The European Commission views interconnection as key to a more integrated European electricity system and to this end they have designated the Celtic Interconnector as a Project of Common Interest (PCI).

At this stage, no decision has been made to build the Celtic Interconnector. Should the project proceed, a final decision to commence construction is anticipated in 2022. The interconnector would then go live in 2026, as outlined in Figure 1 below.



Figure 1 – Celtic Interconnector Project Timeline

¹ <http://www.eirgridgroup.com/site-files/library/EirGrid/EirGrid-Celtic-Interconnector-Project-Update-4-Proof-07-DOWNLOAD.pdf>

What are the benefits?

The Celtic Interconnector will deliver a wide-ranging package of benefits to consumers and businesses in both Ireland and France, by applying downward pressure on the cost of electricity, enhancing Ireland's security of electricity supply, and facilitating our national transition to a low-carbon economy.

Competition

By facilitating electricity flows throughout Ireland, France and continental Europe, the Celtic Interconnector will enable Irish consumers to benefit from a more open electricity market. This increased competition in the Irish electricity market will apply downward pressure on the cost of electricity, leading to lower prices for consumers.

Security of Supply

The Celtic Interconnector will strengthen the security of electricity supply to Ireland. With interconnection to the European electricity system the Irish system can rely on France and the wider interconnected European grid, and vice versa, to maintain electricity supply in the case of unexpected events and interruptions to supply, such as technical incidents, or unforeseen spikes in consumption. Furthermore, following the United Kingdom's departure from the European Union (EU), the proposed interconnector will provide Ireland's only direct energy connection to another EU member state.

Developing a Sustainable Energy Mix

The Celtic Interconnector will contribute to the European objective of a low-carbon energy future. This means facilitating increased levels of renewable energy in both the Irish and the European electricity system. The project is also part of plans for a European-wide electricity network and will enable Ireland to benefit directly from the integrated European electricity market. The Celtic Interconnector will increase the amount of renewable generated electricity that can come onto the system and therefore reduce overall CO2 emissions in both Ireland and France.

The Grid Development Process

EirGrid follows a six step approach to grid development, as outlined in Figure 2 below. This approach facilitates engagement and consultation with stakeholders and the public, which helps us to fully explore the options, and make more informed decisions. Our approach is outlined in more detail in EirGrid's *Have Your Say*² document.



Figure 2 – EirGrid's six step approach to grid development projects

To date we have completed Steps 1 - 3 of the process and the resulting documentation can be viewed on our website at:

<http://www.eirgridgroup.com/the-grid/projects/celtic-interconnector/related-documents>

Assessment Criteria



At EirGrid we apply 5 assessment criteria to project decision making. The assessment criteria are:

- deliverability;
- technical;
- economic;
- environment; and
- socio-economic.

Feedback gathered during consultations influences the assessment decision making process.

² <https://bit.ly/EirGridHaveYourSay>

Step 4

The Celtic Interconnector is currently in Step 4 of the Grid Development process. Our objective in Step 4 is to work through our assessment process to assess exactly where the most appropriate place to build the project is. At this step stakeholder feedback can have a significant influence on where exactly we build. We work closely with local people who may be directly affected to understand how the project could affect them and how we can locate and design it to minimise this. Our objective is to collaborate and we encourage people to get involved.

Step 4 Consultation

As part of our work on Step 4 of the Celtic Interconnector project a public consultation was held from 11 November 2019 to 2 February 2020. Options presented for the Step 4 consultation were:

Project Element	Options
Landfall Location	Claycastle Beach, Youghal, Co. Cork
Converter Station Site	Site 1 - Ballyadam, Co. Cork
	Site 9B - Knockraha, Co. Cork
	Site 12 - Kilquane, (Meeleen), Co. Cork

In addition, Direct Current (DC) and Alternating Current (AC) cable routes were proposed for each of the options. The assessments that support this shortlist of options are detailed within the *Step 4A Consultant's Development Options Report*³.

During this time seven public information meetings were held in East Cork. Feedback was collected via a feedback form which was hosted online in addition to responses being received by post, email and delivered directly to our offices. Over 1,000 submissions were received during the Step 4 public consultation.

We would like to thank all of the communities, organisations, groups and individuals who took the time to take part in the consultation process. The consultation provided a lot of useful information about the areas which had been shortlisted for the converter station, the landfall location and the cable routing options. The feedback received ranged significantly from general commentary on the project to a more detailed, localised level of information

Feedback was captured in a clear manner through comments submitted by stakeholders expressing in turn their concern and their support for the project as well as suggestions for additional work they would like us to complete as part of our Step 4 activities, which is detailed in the *Step 4 Consultation Report*⁴.

³ <http://www.eirgridgroup.com/site-files/library/EirGrid/Celtic-Interconnector-Step-4A-Consultants-Development-Options-Report.pdf>

⁴ <http://www.eirgridgroup.com/site-files/library/EirGrid/Celtic-Interconnector-Step-4-Consultation-Report.pdf>

Step 4 Update

We are continuing with our assessments of the Step 4 project options with a particular focus on the site options for the converter station. Support for additional work to assess Site 1 in further detail was communicated to us over the past months. A number of respondents to our recent public consultation supported Site 1 - Ballyadam as the most appropriate location for the new station given the existing industrial and commercial activity in the area. Feedback was also received from both local and national elected representatives also recommending that full consideration should be given to Site 1.

We indicated at the start of the consultation that work to determine a suitable location within Site 1 - Ballyadam would continue. Work has progressed on this and having reviewed available studies and site investigations previously carried out in the Ballyadam area, we have established that more focused site investigations should be carried out over the coming months.

This further work is required before a final decision can be made on the best performing converter station option to take forward to Step 5. We expect to be in a position to make the decision towards the end of 2020 and will issue a further update at that time.

We are however publishing our Step 4 consultation report at this time and will respond to as many of the issues raised as we are able to at this point in time. We will issue a further update along with additional findings made during our assessments once a final decision has been made on the best performing option for the project.

As this project develops we will continue to be available to engage with stakeholders and communities. On confirmation of the options being progressed, we will set up a Celtic Interconnector Community Forum so we can work together with local communities to reduce impacts and maximise benefits for those living and working in the area.

Step 5

Step 5 will commence on completion of Step 4, with an environmental assessment of the confirmed best performing project option being undertaken and the preparation of the consent application file for submission to the consenting authorities. The completion of the statutory permit granting phase and receipt of the Project of Common Interest (PCI) Comprehensive Decision is therefore anticipated in 2022. EirGrid will continue to consult and engage with project stakeholders and keep the public informed throughout the Grid Development process.

Step 4 Consultation Response

The *Step 4 Consultation Report*⁵ contains information on all responses submitted and can be reviewed on the project website.

Common Questions

The Step 4 consultation responses featured a number of questions, some of which had previously emerged from the Step 3 consultation. These common questions included:

- How will this project impact on the local economy and local benefits?
- Will the fibre optic cable be of local benefit?
- Will there be more energy infrastructure developed close to the interconnector in the years to come?
- Will additional equipment be required at Knockraha?
- Why was the Knockraha substation chosen as the most suitable connection point?
- Will the local electricity system be affected?
- Will it bring in nuclear energy from France?
- Will this project impact on planning applications in the area in the future?

The *Step 3 Consultation Response Document*⁶ containing responses to these concerns can be accessed online under Step 3 documentation on the project website.

Step 4 Consultation Themes

Respondents to the Step 4 consultation emphasised themes of particular relevance to this stage of project development and the site options proposed. Some of these themes were also raised in Step 3 in addition to new themes being presented. Themes which featured in Step 4 responses included:

- Noise,
- Health and safety,
- Visual impact and light pollution,
- Impact on the community and the community fund,
- Impacts on local water quality,
- Recreational land use, ecology and wildlife,
- History and heritage,
- Traffic and the road network.

⁵ <http://www.eirgridgroup.com/site-files/library/EirGrid/Celtic-Interconnector-Step-4-Consultation-Report.pdf>

⁶ <http://www.eirgridgroup.com/site-files/library/EirGrid/Celtic-Interconnector-Step-3-Consultation-Response-Document.pdf>

Noise

Noise has been an ongoing concern amongst stakeholders. Over the course of the Step 4 consultation, we received submissions which referenced concerns around noise pollution while the converter station is operational.

In response to this concern it is important to note that we are fully committed to minimising the impact of noise on local communities during the construction and operation of the interconnector. EirGrid will own and operate the converter station and will remain responsible for any noise mitigation and issues arising at the station. Once the converter station is operational, the main sources of noise will relate to the cooling of the transformers and of the converter valves. The impact of this noise will be mitigated and minimised at the design phase of the project through a number of methods. Measures that could be taken may include:

- Optimising the layout of the converter station to provide noise screening, taking account of prevailing wind conditions and location of receptors within/close to the station.
- Placing all direct current (DC) equipment within buildings.
- Placing all transformer tanks within housings with noise damping ability.
- Acoustically optimising the air conditioning units to be used onsite.
- All relevant ventilation openings of the facades of the buildings will be designed to limit noise emissions.
- Installation of noise screening walls and acoustic barriers at the station perimeter.
- Using very low noise type fans for the converter transformer cooling and the valve cooling system.

In order to address some of the concerns outlined in stakeholder feedback received and to further inform the project development EirGrid commissioned WSP to carry out a *Preliminary Acoustic Study*⁷ of potential noise impacts from the operation of the converter station. This study has been carried out based upon indicative locations for each of the three shortlisted converter station site options to facilitate the pre-planning consultation process and inform the project team. It is important to note that these studies are preliminary only and were carried out on predicted data only.

Notably the study indicated that noise levels at Noise Sensitive Locations (NSLs) around the three site options are likely to be able to meet the most stringent noise limit of 30 dB as set out in the Environmental Protection Agency's Noise Guidelines 4 (NG4), should it be needed. This could be achieved with mitigation applied to equipment within the site compound whilst maintaining the preliminary site layout and orientation. The 30 dB noise limit equates to the noise limit for areas of low background noise during the night time set out in NG4 and includes a 5 dB penalty to account for the possibility of tonal character exhibited from noise sources within the compound. It is important to note that the study has been undertaken in the absence of baseline noise measurements at sites and as such, the results should be read as preliminary and indicative for use at the consultation stage only.

Mitigating the potential for significant noise impacts continues to form a key part of our decision making process and will be an important consideration in the final evaluation process that we will apply to each potential converter station site.

⁷ <http://www.eirgridgroup.com/site-files/library/EirGrid/Celtic-Interconnector-Preliminary-Acoustic-Study-Report.pdf>

Health and Safety

Over the course of the Step 4 consultation, we received a number of submissions about the potential impact of the proposed converter station on human health. Similar concerns were shared during the Step 3 consultation.

Specific concerns were raised about health issues for people living near any of the supporting infrastructure for the Celtic Interconnector Project.

The most common concern is related to the potential impact of EMFs on human health. The question of personal health is obviously a deeply personal and highly sensitive issue and EirGrid is committed to engaging with residents on this topic.

The electromagnetic fields emitted by transmission infrastructure are at an extremely low frequency, and are at the non-ionising end of the electromagnetic spectrum. EirGrid operates the transmission grid in accordance with stringent safety recommendations which are made by national and international agencies. Several of these recommendations come from the International Commission for Non-Ionizing Radiation Protection (ICNIRP). This is an independent body, funded by public health authorities around the world. ICNIRP has investigated the safety of EMFs for decades, and provides guidance on safe levels of exposure. The Department of Communications, Climate Action and Environment (DCCAE) recommendation is that ICNIRP guidelines are followed to protect the health of the public.

EirGrid want to assure communities that the Celtic Interconnector will be designed to make sure that public exposure to electromagnetic fields is compliant with these guidelines.

In Ireland the following bodies are responsible for policy and provision of guidance relating to EMF;

- The Department of Communications, Climate Action and Environment (DCCAE) is responsible for national policy regarding electromagnetic fields.
- The Environmental Protection Agency (EPA) is responsible for the provision of advice and guidance in relation to public exposure to electromagnetic fields.
- The Health & Safety Authority (HSA) regulates exposure to electromagnetic fields in the workplace.

Further information on electro-magnetic fields and the guidelines which EirGrid adhere to are contained in our brochure *The Electricity Grid and Your Health*⁸ which can be found on our website.

In relation to safety, concern was raised about the ability of emergency services to respond to incidents, specifically at Sites 9b and 12.

⁸ <http://www.eirgridgroup.com/site-files/library/EirGrid/EirGrid-The-Electricity-Grid-and-Your-Health.pdf>

With regard to this we can advise that regardless of final location, the facility will be designed in accordance with best engineering practice and will comply with the requirements set out in IS EN 61936 in relation to protection against fire.

The design will include detection systems that provide an early warning in the unlikely event of fire. Mitigation measures such as transformer fire walls and fire suppression gratings will also be installed to limit the spread of fire.

Given that there will be no significant sources of toxic fumes or materials that would cause a chemical run-off to surrounding lands the proposed development doesn't meet the thresholds required to apply the Control of Major Accident Hazards (COMAH) Regulations for storage of hazardous materials.

In addition to this, the facility will comply with fire protection regulations and a fire safety certificate will need to be issued by the local authority prior to any construction works taking place. This certificate will ensure that the facility complies with the regulations and does not pose a threat to the local population or amenities.

Visual Impact and Light Pollution

Concerns were raised by respondents to the Step 4 Consultation in relation to the effect of the project on an area's aesthetic character and rural location in regard to visual impact and light pollution.

We continue to incorporate these concerns in our assessments and understand the importance of preserving the unique character of local areas. EirGrid is committed to a sensitive, respectful approach to this project, which takes account of the scenery and the overall character of the region.

The converter station location zones brought forward to Step 4 each feature their own particular aesthetic character and resulting constraints in regard to project development.

With regard to the landfall location, works carried out will have no lasting visual impact on the area. At the landfall location, the DC cable will come ashore and connect to the onshore DC cable underground. The DC cable route will continue underground to the converter station, following the path of the existing road network where possible.

The converter station will be the element of the project with the potential for a lasting visual impact. The station will include an AC switchyard, transformers, a generator, a cooling system, a control building, a converter building and landscaping. The overall dimensions of the site area would typically be in the order of 300m x 150m (approx. 11 acres). Typical height for a converter building of this kind is up to 25m at one point although it is anticipated that this may be lower with recent advancements in converter station design. EirGrid already operates a converter station of this kind at Portan in Co. Meath, as part of the infrastructure for the East-West Interconnector. The main converter building at Portan has dimensions of approx. 80m x 40m and is situated on a site of approx. 300m x 150m.

While this building will be a new feature in any landscape, we are committed to minimising the visual impact, as much as possible. This can be achieved through a combination of appropriate site selection and design. The final height and distribution of buildings has not yet been determined.

The exterior can be carefully considered through further design work. The site can also avail of a suitable screening strategy.

Impact on the Community and the Community Fund

Most respondents to the Step 4 consultation made positive suggestions regarding the community fund and investing in the local community. We have noted the suggestions made by respondents in relation to how the community fund might be most effectively used. We have also taken note of the suggestions regarding the local advisory groups.

A small number of respondents felt that the fund was inappropriate.

When EirGrid develop or expand our grid, the work can have an effect on nearby communities. For example the construction of infrastructure can sometimes cause a period of disruption such as road closures.

In 2012, to address this, the Government recommended that EirGrid should provide a direct benefit to surrounding communities when it builds new transmission infrastructure. EirGrid welcomed this recommendation.

This is why, in January 2014, EirGrid developed a Community Support Fund policy. This policy is updated on a regular basis to reflect EirGrid's evolving work in developing transmission infrastructure.

On confirmation of the options being progressed for the Celtic Interconnector, we will set up a Celtic Interconnector Community Forum so that we can work together with local communities to reduce impacts and maximise benefits for those living and working in the area. This forum would help us shape a Community Support Fund that would be appropriate for the Celtic Interconnector project.

Impacts on Local Water Quality

In Step 4 some respondents communicated concerns about the impact of the project on the quality of local water courses and the water table.

Potential for the development to be at risk of flooding, and the potential for the development to result in off-site flood risk, remain factors in the selection of the best performing option for the converter station location and associated underground cable routes as appropriate.

Once the project options are confirmed site specific studies on feasible development sites will be carried out to comprehensively evaluate location specific hydrology and hydrogeology (including water quality and supply), so that significant impacts can be mitigated.

An appropriate set-back distance from water courses will be maintained for all works. Additional mitigation measures will be identified where required based on an evaluation of site and project specific characteristics, informed by site visits.

Once construction is complete, the only discharges of water which will occur are clean rainwater from hard surfaces (such as pathways and roofs) and treated wastewater from toilet and welfare facilities. We are committed to all necessary mitigation measures at every stage of the development in relation to water quality.

Recreational Land Use, Ecology and Wildlife

Over the course of the consultation a number of respondents expressed concern about land use, including loss of recreational use, and ecology. We can reconfirm that land surrounding the converter station site will remain available for use by any landowner.

With regard to traffic flows and resulting disruption to land any interruptions to normal traffic flows during construction will be time-limited and temporary. Restrictions would be short term and managed proactively through construction management plans, traffic management plans and local public engagement during the construction phase.

With regard to the converter station construction there may be a requirement to temporarily use areas of land for equipment set down, site clearance, vehicular transport and site welfare facilities. Any use of land for these activities will be temporary and limited to the construction phase. This land will be reinstated back to its original condition after construction without any restriction on its future use.

It is worth noting that prior research has considered the actual effects of the construction and presence of high voltage transmission infrastructure on patterns of settlement and land use in Ireland, including agriculture as outlined in the *EirGrid Evidence Based Environmental Studies Study 9: Settlement and Land Use*⁹. Widespread coexistence between agricultural land use and transmission infrastructure was identified across the country. The study concluded that there is no evidence of any significant impact arising from the construction or existence of transmission infrastructure in terms of patterns of settlement and land use.

⁹ <http://www.eirgridgroup.com/site-files/library/EirGrid/EirGrid-Evidence-Based-Environmental-Study-9-Settlement-and-Landuse.pdf>

Local ecology and wildlife

Reflecting concerns raised during the Step 3 consultation, respondents shared concerns about potential impacts on local ecology and wildlife, in particular impacts on biodiversity and protected species, habitat loss and impacts on ancient and protected woodlands. The impact any work could have on recreational use of local areas and enjoyment of the local environment as an amenity was also raised as a concern.

At EirGrid environmental surveys occur throughout the project's development with detailed environmental assessments taking place in Step 5 when we complete and prepare the consent application file for submission to the consenting authorities. With regard to the site selection process for the converter station, the avoidance of significant effects on biodiversity is a key factor for consideration.

The reduction, minimisation and mitigation of any negative effect of the project is paramount to EirGrid's planning and design and continues to be central to the project's development.

It needs to be reconfirmed that the footprint of the converter station compound will require clearance of vegetation and site preparation works. Clearance of vegetation may also be required to facilitate installation of the underground cables and for access and laydown areas. In all instances EirGrid works to the highest national and European standards and regulatory requirements.

History and Heritage

Respondents to the Step 4 consultation expressed concern that the historical heritage of their locality would be negatively impacted by any construction work related to the Celtic Interconnector project.

Many of these concerns were also raised in Step 3 consultation and resulted in the commissioning of Rubicon Heritage Services Ltd to prepare an Archaeological, Architectural and Cultural Heritage Constraints Report for the six Converter Station Location Zone (CSLZs) options proposed at that time, as zones containing potential sites for the converter station, a critical component of the proposed project. This report is available as an Appendix to the *Step 4A Consultant's Development Options Report*¹⁰.

Additional surveys will be completed as and when appropriate to ensure the project develops in a manner sensitive to the local historical heritage.

All site investigations and construction works will also be monitored by a cultural heritage specialist.

¹⁰ <http://www.eirgridgroup.com/site-files/library/EirGrid/Celtic-Interconnector-Step-4A-Consultants-Development-Options-Report.pdf>

Traffic & Road Network Concerns

Respondents raised particular concerns about the suitability of the local road network around converter stations for heavy traffic and reflected similar concerns to Step 3 that the Celtic Interconnector would impact local road and traffic networks.

Several residents indicated a concern that the construction phase could cause disruption to the local road network, impacting access to residential areas, farms and businesses. Concern was also expressed that the rural nature of their local area means that the road network lacks the capacity to handle construction on this scale.

During the operational phase, the need for occasional maintenance work on the underground cables along the route has raised similar concerns from respondents.

EirGrid is keenly aware of these concerns. At the outset, we can confirm that once installed and operational, the Celtic Interconnector should have no noticeable impact on traffic management and road use. As the cables for the project will be entirely routed underground, there is likely to be temporary disruption to roads and traffic during construction. The relative levels of disruption with each option identified in Step 4 will be assessed and considered in the evaluation process.

In general, subject to the local road network, the closer the converter station is to the Knockraha substation, the shorter the high voltage alternating current (HVAC) cable route will be, and the less potential there will be for significant traffic impacts, associated with the HVAC cable route. Construction of the route along roadways will be carried out in sections. This will minimise disruption to local communities and road users through which the cables will be routed. Ducts will be laid in the roads and open trenches will be kept to a minimum. Trenches will be backfilled and reinstated to road authority requirements following completion of works.

We will work closely with residents, communities and local authorities at all times throughout the project's construction and are committed to mitigating any disruption to traffic, through the development of a detailed traffic management plan. This plan will explain the construction details on public roads and vehicle movements and will be agreed with Cork County Council before construction starts.

Any disruption to traffic patterns will be localised and temporary and will be managed proactively during the construction phase.

Engagement and Communications

Celtic Interconnector Community Forum

The purpose of the Celtic Interconnector Community Forum is to ensure that stakeholder and community views are heard and considered during project delivery. The group will provide a forum for dialogue between EirGrid and community stakeholders with an interest in communities impacted by this project.

The group will be facilitated by an independent party and under terms of reference, agreed by members and will be convened in Step 5 of the project development.

Ongoing Engagement

At EirGrid we follow a step by step approach to planning the grid. This approach facilitates engagement and consultation with our stakeholders and the public which helps us to explore options fully and make more informed decisions. We will continue to engage with stakeholders and communities as the project develops and encourage stakeholders to contact us directly with queries and to keep connected by referring to our website for project updates. The best way to receive regular updates on the project is by email. If you would like to receive email updates please email the team at: celticinterconnector@eirgrid.com

Project Documentation

Any stakeholder seeking further explanation of the project, or who has related concerns about aspects of the project not covered in this update, is encouraged to contact us. In addition to a dedicated community liaison team being available to engage with the local community, there is also a wide range of previous documentation and studies on the project available for review at:

<http://www.eirgridgroup.com/the-grid/projects/celtic-interconnector/related-documents>