



Celtic Interconnector Project

Step 3 – Consultation Response Document

Summer 2019



Co-financed by the European Union
Connecting Europe Facility

Contents

Who are EirGrid - and what do we do?	1
What is the Celtic Interconnector?	1
Introduction	2
Consultation Outcome	2
What are the benefits?.....	4
Electricity Pricing.....	4
Security of Supply	4
Developing a Sustainable Energy Mix.....	4
How will the project be funded?	4
How will this impact on the local economy?.....	5
Will the fibre optic cable be of local benefit?.....	6
Will there be more energy infrastructure developed close to the interconnector in the years to come?	6
How will the interconnector connect to the Knockraha substation?	6
How many cables are there?	6
Why was the Knockraha substation chosen as the most suitable connection point?	7
Will the local electricity system be affected?.....	8
Will the outcomes of the studies which have been carried out to date be published?	8
Will it bring in nuclear energy from France?	8
Consultation & Planning	9
Will this project impact on planning applications in the area in the future?	11
Noise	12
Health.....	13
Electro Magnetic Fields (EMFs).....	13
Water Quality	14
Air Quality.....	14
Visual Impact.....	15
History and heritage.....	15
Farming, Land Use and Ecology	16
Are the forestry sites being considered suitable for a project of this nature?	16
Will there be any impacts on local ecology?	17
Traffic & Road Network Concerns	17
Marine	18
Will the cable be buried or laid on the seabed?	18

How many other cables will have to be crossed over in the sea?.....	18
Will the project impact on surrounding marine life?	18
Will the project affect the potential for archaeological work at Claycastle Beach? 18	
Will the project interfere with local radio signals?	19

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 would happen in around 2021. The interconnector would then go live in 2026.

Introduction

EirGrid follows a six step approach to grid development, as outlined in Figure 1 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*¹ document.



Figure 1 - EirGrid six step approach to grid development projects

EirGrid recently held a public consultation as part of our work on Step 3 of the Celtic Interconnector project. Having worked with our partners to assess, understand, and respond to the issues raised during this consultation, this document seeks to respond to some of the questions we received, and provide reassurance on the concerns raised in relation to the proposed development of the Celtic Interconnector.

The consultation ran from 11 April to 10 June 2019. Six public information meetings were held in East Cork, and we hosted a feedback form online. During this phase, over 1,000 submissions were received. We would like to thank all those who took the time to take part in the consultation process.

This document seeks to address the key themes raised during the consultation process, listed below, while also providing responses to specific, localised, or technical aspects of the project.

Any stakeholder seeking further explanation of these issues, or who has related concerns about aspects of the project not covered here, is encouraged to contact us. In addition to a dedicated community liaison team tasked with explaining and engaging with the local community, we have published a wide range of previous documentation and studies at: <http://www.eirgridgroup.com/the-grid/projects/celtic-interconnector/related-documents/>

¹ http://www.eirgridgroup.com/_uuid/7d658280-91a2-4dbb-b438-ef005a857761/EirGrid-Have-Your-Say_May-2017.pdf

Consultation Outcome

All submissions received were examined by the project team and a detailed report on the consultation process, with an analysis of the quantity and content of submissions received from residents and local stakeholders have also been published on the project website.

The consultation provided a lot of useful information about the shortlist of converter station location zones, and landfall locations. The feedback received through the submissions ranged significantly from general commentary on the project to a more detailed, localised level of analysis. As a result of the consultation, EirGrid has undertaken to deliver additional studies in Step 4. These studies will seek to explore in more detail the main issues raised by respondents to our consultation and we will place additional emphasis on the assessment of these issues.

A number of common themes were raised in the majority of submissions, which we have commented on in this report. More detailed analysis will be available on these themes during Step 4. The themes are:

- Noise,
- Health,
- Visual impact,
- Farming and land use,
- Traffic and road network.

The volume of response varied significantly from zone to zone, ultimately however no information was received that would rule out any of the shortlisted options at this time.

We would like to thank all of the communities, organisations, groups and individuals who have taken the time to engage with us to date. The volume and detail of feedback has meant it has taken time to process the content of submissions. We thank you for your patience. While we have now completed our consultation for Step 3, we strongly encourage anyone with comments or concerns to continue to engage with us as the project progresses.

The information gathered will assist us in the ongoing process of project development as we commence Step 4, asking '*Where exactly should we build?*' In this step, we will build on the work carried out to date in order to identify an emerging best performing option for each element of the project in Ireland. We expect to publish our next stage of assessments and hold a public consultation on the emerging best performing option later this year.

The Celtic Interconnector

What are the benefits?

The Celtic Interconnector will deliver a wide-ranging package of benefits to consumers and businesses in both Ireland and France, with positive impacts on electricity pricing, Ireland's security of electricity supply, and our national transition to a low-carbon economy.

Electricity Pricing

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, should the UK leave the 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.

How will the project be funded?

In Ireland development of the transmission system and interconnectors is not paid for by the State through budget allocations.

For the Irish part of the Celtic Interconnector project funding would be secured by EirGrid in a mix of EU grants and self-financing (equity and debt).

EirGrid and its project partner Réseau de Transport d'Électricité (RTE) have carried out detailed analyses of the project costs and benefits. These details formed the basis of an Investment Request for the project which was submitted to Ireland's Utility Regulator, the Commission for Regulation of Utilities (CRU) and La Commission de Régulation de l'Énergie (CRE) in France.

The CRU and CRE concluded that the Celtic Interconnector would drive benefits both in Ireland and France, and would have a cost benefit at the European level. The CRU and CRE agreed that 65% of the project's estimated investment costs will be allocated to Ireland and 35% to France, based upon the breakdown of benefits to each country².

The CRU and CRE also consider that the project should benefit from substantial EU financial assistance in order to ensure that the project does not present a burden for consumers in Ireland and France. On this basis, the CRU and CRE have agreed that the project may be included in the national electricity tariffs. The revenues earned by the interconnector itself will be used to pay for the costs of its financing and operation.

In approving the inclusion of the project in the tariffs, the CRU and CRE have committed that where the revenues are less than the costs in a given period then any shortfall can be recovered once approved by the CRU through the transmission tariffs paid by all consumers. Likewise should the revenues exceed the costs in a given period then the excess would be returned to consumers in future tariffs.

The CRU has stated that any burden on Irish consumers will be small when contrasted with the overall scale of project benefits.

The project has been designated a European Project of Common Interest (PCI) putting it alongside projects that are considered important in completing the European energy market and helping the EU achieve its energy policy and climate goals. Because of their strategic importance, projects such as the Celtic Interconnector can benefit from specific regulatory conditions and EU financial assistance from the Connecting Europe Facility (CEF).

Following the decision of the CRU and CRE, in June 2019 EirGrid and RTE submitted an application for a grant from the Connecting Europe Facility to cover the detailed design and construction of the Celtic Interconnector. A decision on the grant application is expected in October 2019.

How will this impact on the local economy?

The Celtic Interconnector will have a positive impact on the local economy. In the short term opportunities for employment will arise during the construction of the project. These jobs will arise directly out of the works associated with the need for construction workers to build the project, as well as indirectly through increased demand from the hospitality sector, in the provision of meals and accommodation for the construction workers and support staff.

² <https://www.cru.ie/wp-content/uploads/2019/05/CRU19051-Celtic-CBCA-decision.pdf>

In the longer term, the Celtic Interconnector will facilitate the continued integration of renewables, and will strengthen the grid in the south. This enhanced security of supply as well as the integration of sustainable energy sources will enhance the appeal of the region for future investment and development.

Will the fibre optic cable be of local benefit?

The Celtic Interconnector will provide a strategic opportunity to provide a direct fibre link to Europe. The world's largest Internet based companies require reliable, secure, high capacity international connectivity. The Celtic Interconnector would improve latency and enhance resilience between Ireland and mainland Europe. It would provide strategic benefit to the Cork region with potential to attract new investment.

Will there be more energy infrastructure developed close to the interconnector in the years to come?

EirGrid has no plans or proposals for further energy infrastructure associated with the Celtic Interconnector project, other than the plans and proposals that will form part of the planning process for which we are currently preparing.

How will the interconnector connect to the Knockraha substation?

EirGrid intends to construct the Celtic Interconnector as an underground cable project, via the road network.

The submarine portion of the project, will import and export electricity between Ireland and France, along a direct current (DC) cable. The cable will come on shore at a landfall location, yet to be decided. There it will connect to the DC land circuit by way of an underground transition joint. The DC land circuit will then be installed in underground ducts primarily along the road network towards a converter station. There the power will be converted from DC to alternating current (AC). An AC land circuit between the converter station and the connection point at Knockraha will complete the connection to the existing grid.

How many cables are there?

For both the submarine direct current (DC) circuit and the land DC circuit there will be two electrical cables plus a fibre optic cable. For the land AC circuit there will be six electrical cables plus a fibre optic cable.

Will additional equipment be required at Knockraha?

Additional equipment will be required at the converter station and at the connection point if the AC land circuit length is longer than approximately 4.5 km. There are further specific routing studies which will need to be carried out during Step 4, and the availability of suitable routes for the AC land circuit may influence the ultimate location of the converter station.

Why was the Knockraha substation chosen as the most suitable connection point?

Studies undertaken in Step 2 of the project found that the two strongest potential connection points for the Celtic Interconnector were the substations at Knockraha in County Cork and Great Island in County Wexford³. This was based on their connectivity in the transmission system and their geographic location along the south coast of Ireland. Technical studies were carried out to assess the implications of connecting the Celtic Interconnector at each of these connection points. The analysis undertaken concluded that the national transmission system can accommodate the potential power flows from the Celtic Interconnector significantly better using the connection point at Knockraha.

The marine route for the cable on the seabed was also an important consideration when choosing the connection point for this project. A study was commissioned by EirGrid and RTE in order to identify and assess viable offshore route options which considered matters including the distance of the route between the two countries, potential engineering and environmental constraints, and accessing the territorial waters of neighbouring countries⁴.

The study identified options from the Cork and Wexford coasts. The best performing route was found to be one of the routes from Cork and while not the shortest, it was found to be least constrained overall and also avoids UK territorial waters, which would introduce additional time and enduring cost to the project. A detailed marine survey of this route was then undertaken. This mapped and sampled the seabed, and analysed the environmental habitats along the route. It confirmed that this route to East Cork was feasible with no major constraints identified.

At the conclusion of Step 2 in early 2018, EirGrid published the findings of these assessments and confirmed Knockraha in East Cork as the best performing connection point for the project in Ireland.

³ <http://www.eirgridgroup.com/site-files/library/EirGrid/Celtic-Interconnector-Feasibility-Phase-Network-Analysis.pdf>

⁴ <http://www.eirgridgroup.com/site-files/library/EirGrid/Celtic-Interconnector-Marine-Route-Investigation.pdf>

Will the local electricity system be affected?

There is no anticipated impact on the local electricity system during the construction or operation of the Celtic Interconnector. The route design and construction activities will take all existing electricity transmission and distribution circuits, both underground and overhead, into consideration and ensure that all construction activities in the vicinity of these circuits are managed and co-ordinated correctly to ensure no local electrical supplies are impacted.

Will the outcomes of the studies which have been carried out to date be published?

EirGrid has published a range of studies carried out to date as part of the investigation into the feasibility of the project, which are available on the project website. EirGrid will continue to publish further studies associated with the project's development as the project progresses. Seeking feedback on the output of our studies is a key element of our consultation process.

Will it bring in nuclear energy from France?

Electricity generated from nuclear facilities will be part of the imported electricity mix, in the same way that it is currently imported, as part of the electricity mix, from the UK through the East West and Moyle Interconnectors. In the case of the Celtic Interconnector, the nuclear fuel used in the process of generating electricity, remains in France.

The Celtic Interconnector will facilitate the increased integration of Irish renewable generation sources by allowing the export of this energy produced from renewable sources from Ireland to France at times where Ireland has excess supply of electricity. This will reduce dependence in France (and the wider European Union) on nuclear generation sources therefore contributing to a reduction in the use of nuclear generation plants in France (and in wider Europe) and an increase in their use of energy derived from renewable and other generation sources.

Consultation & Planning

In April 2019 EirGrid held an eight-week consultation with regard to confirming proposed shortlists for landfall locations and converter station location zones. This process is designed to ensure that public participation in decision making is facilitated at an early stage in the project development process. The objective was to engage with communities, inform our own process and understand the concerns of the community.

We wrote to residents and landowners within each of the converter station location zones and in proximity to the landfall locations, using records of the local area, held by the Property Registration Authority of Ireland. In our correspondence we briefed landowners, on the consultation on Step 3 of the Celtic Interconnector project and let them know that we would be holding public information days in their local area. In these communications we provided a project brochure, contact details for the project team, and outlined how people could participate in the consultation process.

Letters were also sent to community organisations, sports clubs, groups associated with the Public Participation Network and other local community groups whose contact details were available publicly. Advertisements were placed in local and national newspapers, on EirGrid's own social media platforms and on local community run social media outlets, and via posters to make stakeholders aware of the six public information days that were being held in prominent locations in East Cork. Online, we provided a bespoke feedback form hosted on the EirGrid website where people could participate in the consultation process.

Some respondents mentioned that EirGrid did not hold enough events, and that the events that were held were not sufficiently publicised. We are always working to improve on how we publicise our events, and we want to ensure that as many people as possible are aware of our projects. Where possible we have incorporated the suggestions received during this process to ensure that communities are better informed.

Currently our approach to publicity on consultation on infrastructure projects includes, where appropriate:

- Advertisements in regional and national newspapers
- Radio promotion
- Posters
- Website notifications
- Social media notifications
- Direct letters
- Dedicated email address for project enquiries
- Dedicated Community Liaison team
- Dedicated website pages
- Briefing the Municipal District Councils of East Cork and Cobh.

In Step 4 we will seek to confirm where exactly we should build. Following this, our objective in Step 5 is to conduct detailed environmental assessments and complete the draft application file, before entering the planning process in summer 2020. Consultation and engagement will continue to be a part of the project development process throughout.

Once the project enters into the formal planning process the public will also be able to participate with all parties in accordance with the planning process.

No decision has been made yet to build the Celtic Interconnector. Should the project proceed, a final decision to build the interconnector would happen in late 2021. It is unlikely that construction would commence before 2023, with the interconnector then going live around 2026.

Further information on the next steps for the project is outlined below.



Step 4

Step 4 is planned for completion in early 2020 with the identification of the best performing option for the location of the converter station, landfall and underground cable routes in Ireland.

This step will involve further assessments of the shortlisted options, along with landowner and community engagement during the process of site and route identification. A public engagement campaign will take place during Step 4 to inform project stakeholders about the project's development and the identification of potential site and route options.

Once an emerging best performing option has been identified by EirGrid, the detailed set of assessments will be published, and a further round of consultation will be held in East Cork to seek feedback on the assessment process and the emerging best performing option. This round of public consultation will be similar in format to that carried out in Step 3. EirGrid will consider and analyse all consultation feedback received before confirming the best performing option for the project, which will form the basis of the planning application to be developed in Step 5.

Step 5

Step 5 will commence in 2020 with the completion of the environmental assessment of the confirmed best performing option and the preparation of the consent application file for submission to the consenting authorities in mid-2020. The completion of the statutory permit granting phase and receipt of the Project of Common Interest (PCI) Comprehensive Decision is therefore anticipated before the end of 2021. EirGrid will continue to consult and engage with project stakeholders and keep the public informed throughout the development of Step 5.

Step 6

Step 6 will commence in 2022 with the commencement of the manufacturing process and subsequent construction of the project, which is likely to take place from 2023-2026. EirGrid will continue to consult and engage with project stakeholders throughout this step to ensure that any impacts to local communities during construction are minimised as far as possible and that they are carried out in accordance with all relevant planning consent conditions.

Will this project impact on planning applications in the area in the future?

EirGrid intends to construct the Celtic Interconnector as an underground cable project and therefore assessment at this stage has considered an underground cable installed in the road network for both the AC and DC cable routes.

As such there would be no planning restrictions placed on future developments away from the public road network. Any proposed development in close proximity to existing underground services (e.g. gas, electricity, water, sewerage) would require consultation with the asset owner to ensure that sufficient clearance is maintained from buried services.

EirGrid does not intervene in the planning process and if planning permission is granted for applications in close proximity to the underground cable route or the converter station, EirGrid will engage with the successful applicant to jointly determine the most appropriate course of action.

Noise

Over the course of the consultation, we received several submissions which referenced concerns around noise pollution that could potentially be associated with the project, both during the construction phase and while the converter station is operational. Respondents have raised concerns about the effect that noise pollution could have on the operation of local farms and business, on the health of livestock and other animals. EirGrid will ensure that noise levels are within acceptable limits and that there will be no significant effects on livestock from the operation of the converter station.

The delivery of a project of this scale will inevitably involve a certain level of noise during the construction phase. We intend to take all necessary and appropriate measures to prevent excessive or harmful levels of noise arising from the construction and operation of the Interconnector.

We are presently commissioning noise studies to better inform our assessment of the performance of potential site locations that will be identified in Step 4. The assessment will consider indicative locations and potential noise sources within the short-listed converter station location zones, relative to the location and type of sensitive receptors, including homes and businesses, relative to the final converter station site.

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

We are fully committed to minimising the impact of noise on local communities and will work closely with our contractors and the local communities to ensure strict adherence to planning conditions, working hour limitations and any local requirements specific to the chosen location.

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 optimizing 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.

Health

Over the course of our consultation, we received a number of submissions about the potential impact of the proposed converter station on human or animal health. In particular, a number of submissions referenced concerns that the construction of the converter station could expose residents to unsafe levels of electromagnetic radiation. Related questions referred to the impact that the station could have on local air quality and pollution of the environment.

Electro Magnetic Fields (EMFs)

The most common concern is related to the potential impact of electro-magnetic fields (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.

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.

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 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.

Further information on electro-magnetic fields and the guidelines which EirGrid adhere to are contained in our brochure “The Electricity Grid and Your Health” which can be found on our website at the following link:

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

Water Quality

Once feasible development sites within the shortlisted converter station location zones have been identified site specific studies can commence to comprehensively evaluate location specific hydrology and hydrogeology (including water quality and supply), so that significant impacts can be mitigated.

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

Once construction is finished, 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.

Air Quality

There will be no air quality issues arising from the operation of the converter station, as the station will not produce any emissions.

During the construction phase of the project there will be dust from construction traffic and construction activities. EirGrid will prepare a construction management plan, to manage all elements of potential temporary disruption during the project. This plan will seek to mitigate the impact of dust. These plans will be location and activity-specific to ensure that varying terrain, seasonal and weather conditions are fully considered in advance of construction activity commencing. Monitoring of the effectiveness of the processes will take place throughout construction. Where necessary the construction management plan will be amended to ensure air quality levels are maintained to the required standard.

Visual Impact

Many of the concerns raised by respondents relate to the effect on the area's aesthetic character and rural location. We appreciate these concerns and understand the importance of preserving the unique character of the local area. 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. We are committed to fully investigate the feasibility of all zones in order to identify the best performing option, which includes consideration of visual impact.

The landfall location which is ultimately chosen 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.

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 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 is not yet known.

The exterior can be carefully considered through further design work. The site can also avail of a suitable screening strategy. In addition to this, novel design approaches can be considered in order to arrive at the most suitable design solution for any final location. To help communities visualise the infrastructure, a simulation or illustration of the proposed converter station will be published.

History and heritage

Respondents have expressed concern that the historical heritage of the locality could be negatively impacted by the project. Residents have raised the issue of sites of archaeological and historical interest, ranging from the remains of a grenade casing foundry in Knockraha, to a number of Celtic ringforts and other sites of historical relevance in the region.

Where appropriate, following information brought to us during consultation, we have commissioned additional independent surveys of areas of historical heritage. Additional surveys will be completed as and when appropriate to ensure the project develops in a manner sensitive to the local historical heritage.

Farming, Land Use and Ecology

There will be no restriction on land use once construction is complete. The land surrounding the converter station site will remain available for use by the landowner. Any interruptions to normal traffic flows during construction will be time-limited and temporary. These restrictions will be short term and will be 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.⁵ 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.

Are the forestry sites being considered suitable for a project of this nature?

It is noted that some of the forestry sites within the area are elevated and exposed. Areas of forestry and the surrounding topography could potentially offer good screening potential to mitigate potential visual impacts, although this will require more detailed investigation as part of the next stage of project investigations. It is also noted that stakeholders raised the importance of ownership and long-term management of any implicated forestry. We have noted this as important to any future considerations in regard to forestry sites.

The nature of roadways through forestry has also been raised and this would need to be assessed as part of the next stage of project investigations.

⁵ EirGrid, Evidence Based Environmental Studies Study 9: Settlement and Land Use (May 2016)

Will there be any impacts on local ecology?

One of the criteria for the site selection process for the converter station is the avoidance of significant effects on biodiversity. The footprint of the converter station compound will however, 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. EirGrid works to the highest national and European standards and regulatory requirements.

Traffic & Road Network Concerns

Over the course of our consultation, significant numbers of respondents expressed concerns 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 the 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 project will be substantially 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 local 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.

Marine

Will the cable be buried or laid on the seabed?

Where possible the cable will be buried to a sufficient depth to protect it from external influences such as fishing equipment and dropped anchors. Where the seabed is too rocky the cable will be laid on top of the surface and covered with external protection, called a rock berm. Environmental assessment will be carried out in line with required permits and statutory obligations to investigate this further.

How many other cables will have to be crossed over in the sea?

In total we will need to cross over approx. 20 existing live cables.

Will the project impact on surrounding marine life?

Environmental assessment will be carried out in line with required permits and statutory obligations.

Based on a marine ecological report from a similar project, the Viking Link (UK – Denmark 1400 MW HVDC interconnector), the effects of heat dissipation from the cable to the surrounding marine environment was analysed and found to be negligible⁶.

EirGrid will work in consultation with the communities impacted by any final proposal on a landfall location to ensure any disturbance to marine habitats and species and commercial use of the marine environment for fishing or tourism is kept to a minimum.

We are in contact with fishing associations in the proposed areas and are willing to meet with any group who has any particular concern. Any activity will be subject to the required permits and statutory obligations and consultation with all interested parties is critical to the development of the project.

Will the project affect the potential for archaeological work at Claycastle Beach?

We have been undertaking archaeological assessments at the potential landfall locations since 2014. These have involved walkover and geophysical surveys as well as physical investigations including boreholes and trial pits.

⁶ <https://www.commissiener.nl/projectdocumenten/00002753.pdf?documenttitle=Appendix%20I%20-%20Cable%20Heating%20Effects%20Report.pdf>

These assessments identified peat deposits in the intertidal zone at Claycastle Beach.. While peat has archaeological potential, these deposits generally form part of an extensive landscape, so the potential impact of a relatively small linear cable trench is considered to be of minor significance.

Any disturbance would be fully investigated both from archaeological and paleo-environmental perspectives to potentially contribute to our knowledge of the earliest inhabitants of Ireland.

If the Claycastle option is ultimately brought forward, and the peats cannot be avoided, mitigation measures will be put in place to ensure that any impact is kept to a minimum.

Will the project interfere with local radio signals?

The design of the Celtic Interconnector will ensure that there will be no interference to any radio, broadcast, or communication services resulting from the operation of the Celtic Interconnector.

High frequency signals generated during the electrical conversion process will be blocked using shielding within the converter station building. Any high frequency emissions on the AC side of the conversion process will be minimised through the use of tuned high frequency filters.

All applicable international standards will be incorporated in the design process and compliance with these will be verified through measurements upon energisation of the interconnector.

Note: The most applicable standard is CISPR 11. This standard covers emission in the frequency range 9 kHz to 1 GHz. Group 1 and Class A are relevant for the HVDC converter with its housing.