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East Meath-North Dublin Grid Upgrade

Capital Project CP1021
Step 4 Update - March 2023
Emerging Best Performing Option

Who are EirGrid and what do we do?

EirGrid develops, manages, and operates Ireland's electricity grid.

We are leading the secure transition of Ireland's electricity grid to a low carbon, renewable future. We are responsible for the safe, secure, and reliable supply of Ireland's electricity.

The grid brings power from where it is generated to where it is needed throughout Ireland. It supplies power directly to industry and businesses that use large amounts of electricity. The grid also brings power from generators to the domestic network that supplies the electricity you use every day in homes, businesses, schools and hospitals.

This critical infrastructure underpins our societal and economic development. Work carried out now will help create a more sustainable future for the next generation.

Key findings in this update

This update aims to keep you informed about the East Meath-North Dublin Grid Upgrade. This document provides information about what this project is, and the outcome of our recent public consultation on four route options. This consultation took place from 7 September 2022 to 30 November 2022.

During this consultation, we invited stakeholders to provide feedback on a shortlist of four route options for the East Meath-North Dublin Grid Upgrade. **Based on our assessments and your feedback to date, we have identified Option A: The Red Option as the Emerging Best Performing Option (EBPO).** We will now bring this to the next step of the project.

We will continue to engage with landowners, community and statutory stakeholders, and expect to confirm the best performing route during the summer of 2023. This document provides information on the project to date, including:

- What is the East Meath-North Dublin Grid Upgrade;
- Our six-step approach to developing the electricity grid;
- What has happened with this project so far;
- The Emerging Best Performing Option;
- What underground cable construction looks like;
- Next steps and how to keep up to date.

What is the East Meath-North Dublin Grid Upgrade?

The East Meath-North Dublin Grid Upgrade is a high-capacity 400 kV (kilovolt) underground electricity cable connection from Woodland substation, near Batterstown in County Meath, to Belcamp substation, near Clonshaugh, in north Dublin.

This upgrade will strengthen the electricity grid in the east of Meath and the north of Dublin to improve the transfer of power across the existing transmission network.

We need to upgrade and strengthen the grid to:

- address the increased electricity demand in east Meath and north Dublin due to economic development and population growth;
- reduce the use of, and reliance on, fossil fuels for electricity generation;
- facilitate further development of renewable energy generation, onshore and offshore; and
- assist in achieving the target of 80% of electricity coming from renewable sources by 2030.

Benefits of the East Meath-North Dublin Grid Upgrade

Competition
Apply downward pressure on the cost of electricity

Sustainability
Help Ireland's transition to a low carbon energy future

Security of Supply
Improve security of electricity supply for Irish homes and businesses

Economic
Contribute to the regional economy and support increased investment in the area

Community
Deliver community benefit in the areas that facilitate the project infrastructure

EirGrid's Six-Step Approach to Developing the Electricity Grid

Our 'Have Your Say' publication outlines our commitment to engage with, and listen to you, our stakeholders. Our public engagement strategy explains how we engage with stakeholders in developing projects like this. You can read both publications at www.eirgrid.ie.

This project is currently in Step 4. During the summer of 2023, we plan to confirm where we propose to build the underground electricity cable circuit.

Figure 1: EirGrid's six-step approach to developing the electricity grid

What's happened so far?

Step 1: In 2017, we confirmed the need for the East Meath-North Dublin Grid Upgrade.

Step 2: In 2020, we compiled a shortlist of seven technical options for this upgrade. We assessed these options further, under the multi-criteria assessment categories (see page 8). This resulted in shortlisting four technical options to examine further in Step 3. These were:

- Woodland to Finglas 400 kV overhead line.
- Woodland to Finglas 400 kV underground cable.
- Woodland to Belcamp 400 kV overhead line.
- Woodland to Belcamp 400 kV underground cable.

Step 3: In 2021, we reconfirmed the project need and carried out feasibility studies for the four best-performing technology options. The studies found that three of the four technical options involved significant challenges. The remaining option emerged as the best performing option and was progressed with. In April 2021, we identified the 400 kV underground cable option from Woodland to Belcamp as the **Best Performing Technical Option** to progress for this project.

Step 4: We identified four potential underground cable route options from Woodland to Belcamp substations and consulted with you, our stakeholders, on these.

Step 4 Consultation Outcomes

As part of this step, we committed to reaching a number of milestones, including:

Commitment We Made	Action We Took
Consult with you on the four route options.	We undertook a 12-week public consultation period from 7 September to 30 November 2022.
Publish a consultation report on the feedback received.	The consultation report is published on our website: www.eirgrid.ie/eastmeathnorthdublin.
Announce an emerging best performing option in the Spring of 2023.	This consultation update brochure and the detailed 4A multi-criteria assessment report outline our findings to date, determining the emerging best performing option. Both reports are available at www.eirgrid.ie/eastmeathnorthdublin.
As further studies and engagement continues, we will be able to announce the Best Performing Option (BPO) in the summer of 2023. Further studies and assessments will continue as the project progresses into Step 5, when planning permission is sought.	

Table 1: Summary of commitments we made and actions we took

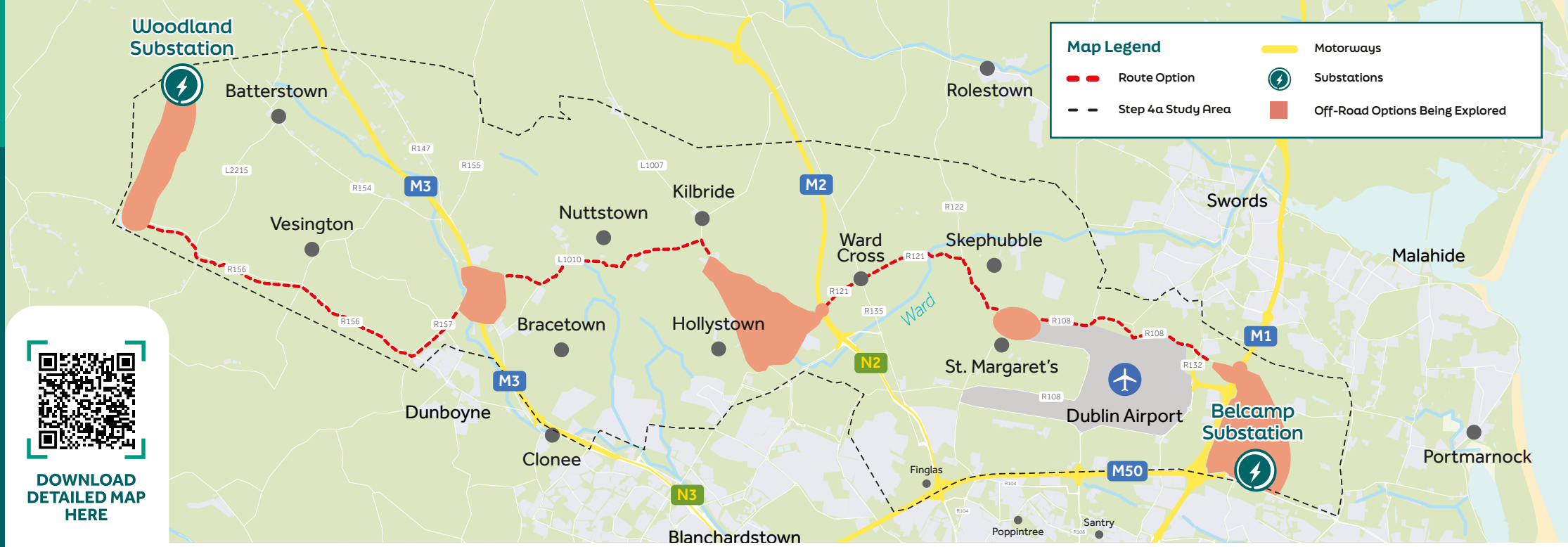
Step 4 Studies and Assessment Criteria

How do we assess route options?

As part of Step 4, we are continuing with further investigations, building on those we completed in Steps 1, 2 and 3. We are assessing and comparing these investigations under five categories:

- **Technical aspects:** compliance with electricity standards and other operational aspects.
- **Economic factors:** project implementation costs.
- **Environmental factors:** topics including biodiversity, landscape, archaeology, and water quality.
- **Socio-economic factors:** such as the local economy and local amenities.
- **Deliverability factors:** such as timeline and potential risks.

Figure 2: EirGrid assessment criteria



DOWNLOAD DETAILED MAP HERE

What is the Emerging Best Performing Option?

The emerging best performing option is Option A: The Red Option.

The majority of the route, shown as a red line on these maps, follows existing roads. The wider bubble areas are off-road corridors where we are continuing to investigate an exact off-road route. We continue to engage with all stakeholders associated with these off-road corridors.

When planning routes, we follow a set of guidelines called routing principles. Our routing principles for this project, where possible, are to:

- Avoid motorways;
- maximise the use of national, regional and local roads;
- avoid town centres and industrial estates;
- avoid going off-road, through private land and through agricultural land where possible;
- avoid sensitive natural and built heritage locations;
- minimise impact on communities where possible; and
- minimise the overall length of the route.

We also consider constraints. Examples of constraints are:

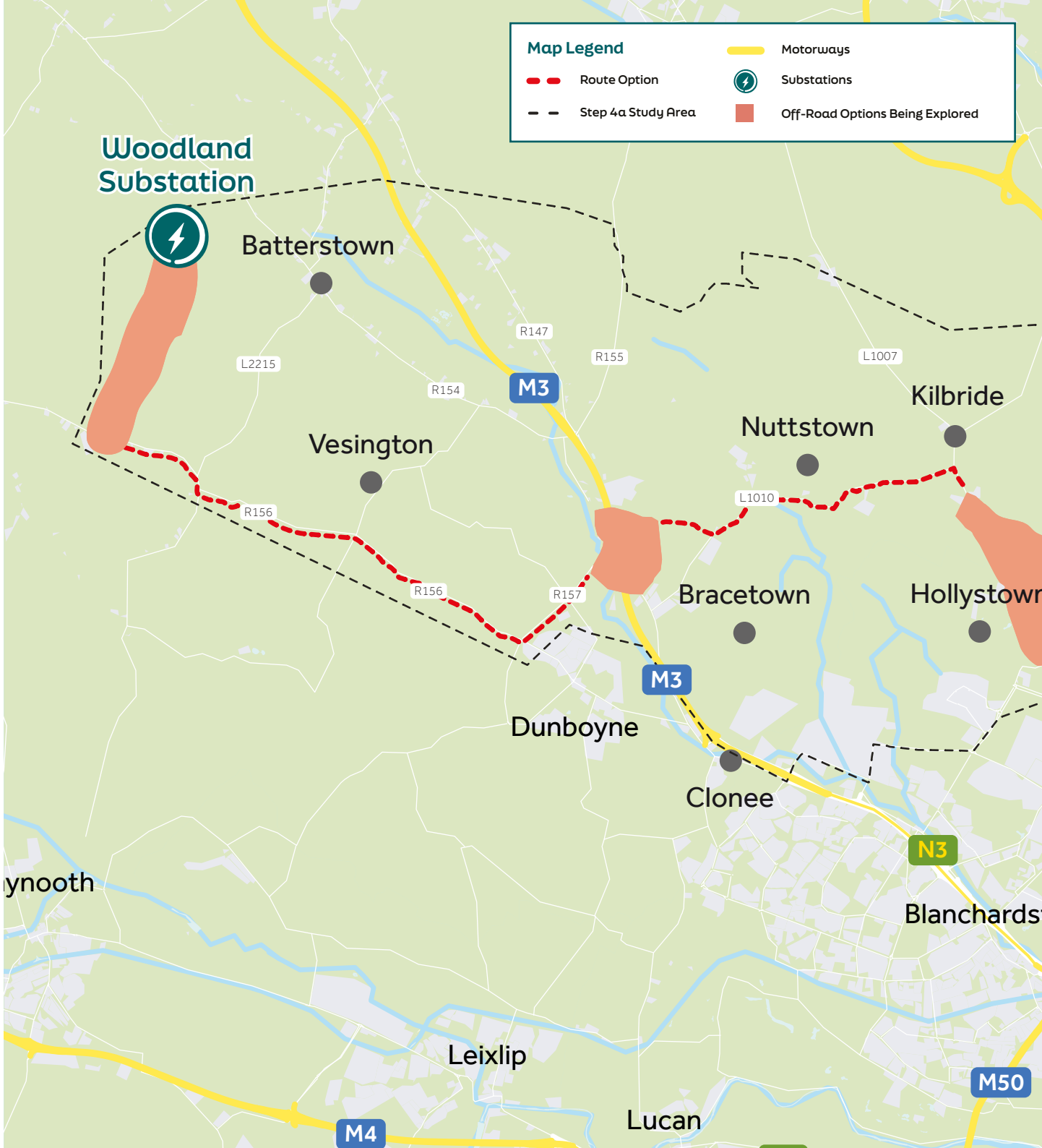
- The width and quality of the road;
- other services in the road such as water, gas and drainage;
- impact on the environment, including European and national protected areas for biodiversity, invasive and protected species and other important biodiversity areas (including undesignated habitats);
- city and County Development Plans and Local Area Plans; and
- areas of high amenity and ongoing works.

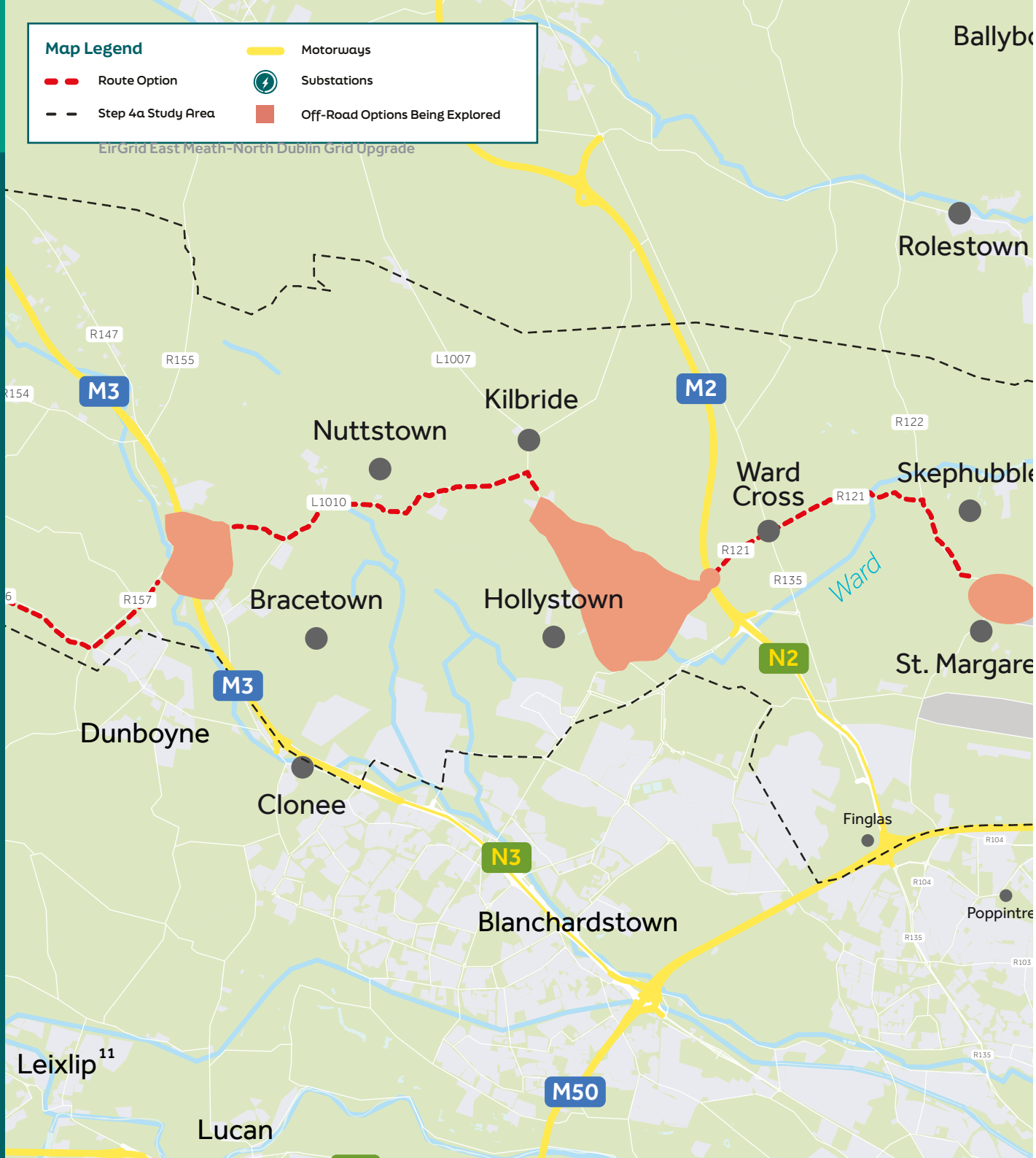
Option A: The Red Option in more detail

Woodland to Dunboyne

From Woodland substation, Option A follows an off-road corridor, before turning south-east to travel along the R156 towards Dunboyne.
It then turns north-east along the R157 towards Junction 5 (Dunboyne) on the M3 Motorway.
The route will need to cross:

- the river Tolka
- the railway at M3 Parkway, and
- the M3 motorway





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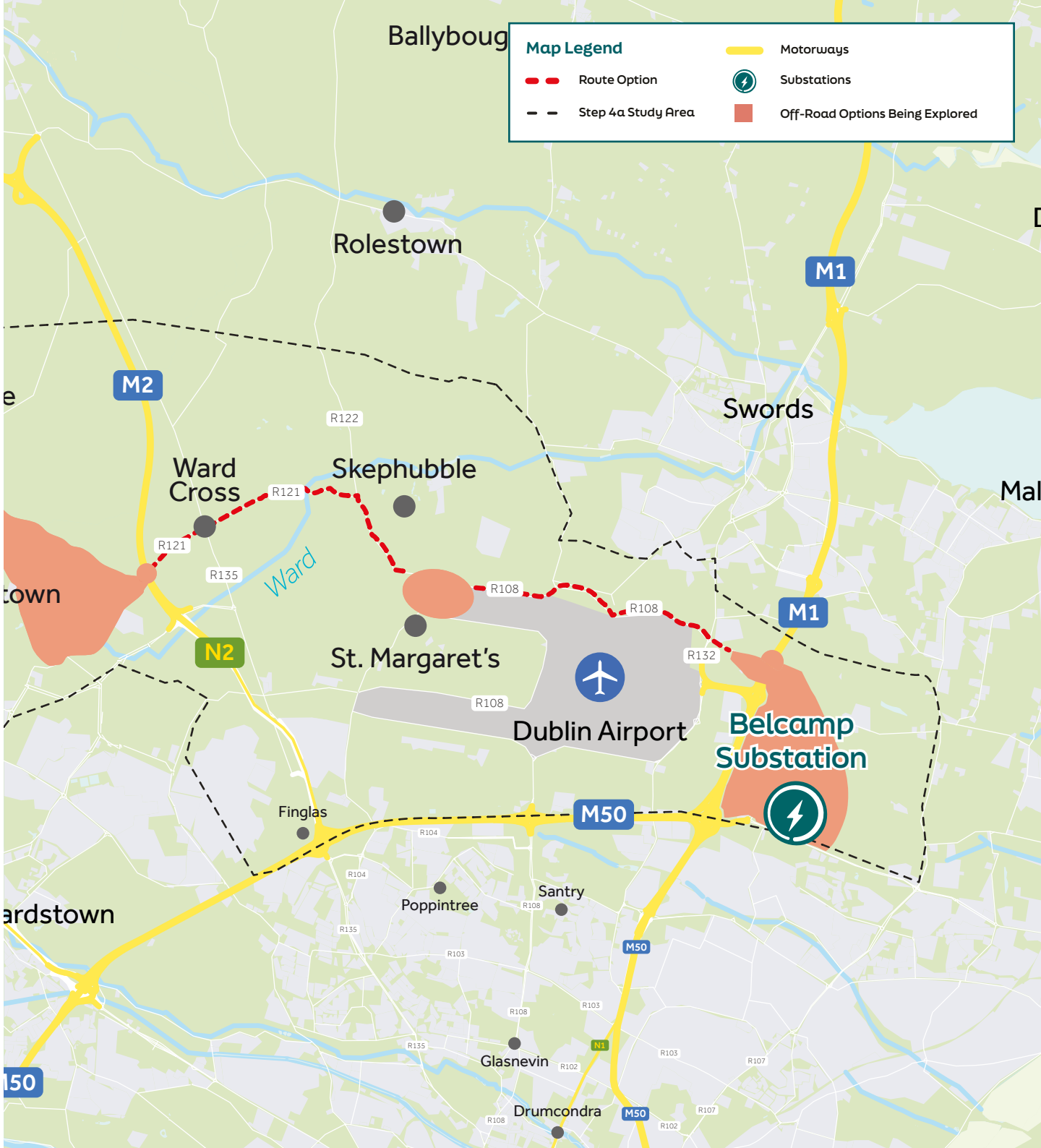
Dunboyne to Ward Cross

To the east of the M3 motorway, Option A travels north-east along the R157, L5026 and other local roads passing Nuttstown. At Kilbride, it turns south-east, crossing the Ward River, before a potential off-road corridor near Hollystown. It then joins the R121, turning north-east and crosses the M2 Motorway to the north of Junction 2 (St. Margaret's) and towards Ward Cross.

Ward Cross to Belcamp

Option A continues to follow the R121 to the east of Ward Cross, turning in a south-west direction onto the R122 at Skephubble. To the north of St. Margaret's, this route follows a potential off-road corridor, before joining the R108 heading east along the Naul Road to the south of Swords. Following the junction with the R132, it crosses the M1 motorway to the north of Junction 2 (Dublin Airport) following Stockhole Lane, before turning south across a potential off-road corridor to Belcamp substation.

We are now undertaking further engagement with stakeholders, including landowners and local communities, before confirming a best performing route in the summer of 2023.



About the 400kV underground cable

The East Meath-North Dublin Grid Upgrade will use High Voltage Alternating Current (HVAC). This form of electricity transmission is used in electricity grids, internationally and in Ireland. Our studies show a 400 kV underground cable between the Woodland and Belcamp substations is the most viable option for this project. The cable will be buried about 1.3 metres below the road surface.

Once planning consent is received during Step 5, the project will move to Step 6; the final stage of the project. During Step 6, the proposed grid upgrade will be constructed and delivered.

During the construction phase disruption to road users, landowners and communities will be minimised through ongoing engagement and consultation.

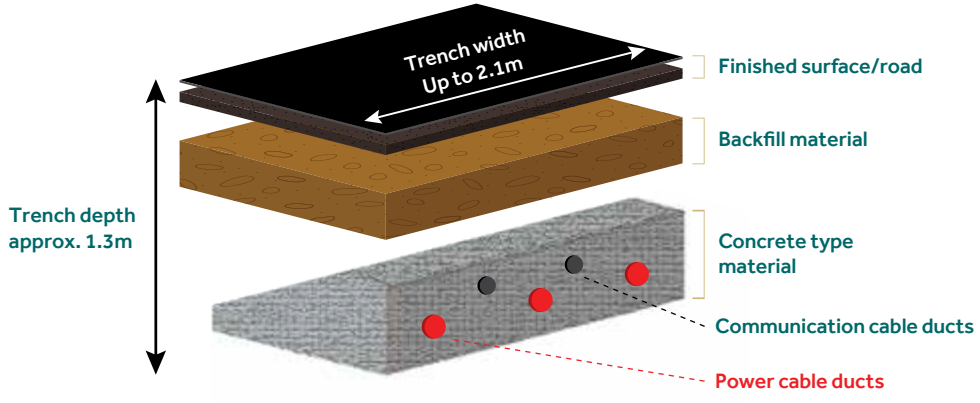


Figure 3: Typical HVAC underground cable duct arrangement

What does underground cable construction look like?

Figure 4: A typical cable duct installation in the road

Figure 5: A typical jointing bay where cables are connected

Figure 6: Cables being pulled into the ducts and jointing bay

Figure 7: A typical passing bay in operation during cable jointing

Consultation Themes

The responses to the Step 4 consultation allowed us to understand the recurring themes and topics that people raised, and to assess new information about the four proposed options. We carefully analysed this information when deciding which of the four proposed options to take forward. All consultation responses can be viewed on the consultation portal consult.eirgrid.ie.

Respondents' feedback included some common themes:

1. General

- General support for the project.
- Some respondents accepted the need for the development, due to increasing national demand for electricity.

2. Congestion and Disruption

- Concerns about disruption, particularly traffic disruption and access during construction.
- Concerns about the impact on traffic due to narrow roads that might require road closures.
- Concerns about general traffic management.

3. Design

- Some respondents requested the choice of a route which does not impact their land.

4. Environmental

- General support for the project for its role in enabling environmental dialogue. Concerns about possible impacts of the project on cultural and heritage sites.
- Concerns relating to previous issues with flooding of the river Boyne and river Tolka.

5. Utilities

- Queries raised as to whether there had been consideration given to joined-up thinking around other ongoing local utilities and renewable projects.

6. Health

- Queries about the EMF (electromagnetic field) impacts, and further information was requested on potential health impacts.

Consultation Themes Responses

General

Overall, stakeholders expressed broad support for the project throughout the consultation and engagement period. Some commented that they understood the need for the grid development due to the increasing electricity demand nationally.

Many praised the information provided at the in-person engagement days and appreciated the opportunity to have their questions answered. Respondents expressed support for the approach taken at the events and EirGrid's willingness to engage with the public.

While there was general praise for the information given, some expressed an interest in finding out more about the nature of the project – in particular, the construction process and the timeline. We were also asked for further information about how feedback received to date had been considered. People requested that EirGrid keep them updated, and asked for accurate communication throughout the project.

We will continue to engage with all stakeholders in relation to this project through the remaining two steps of our six-step grid development framework over the coming years.

Congestion and Disruption

For a project of this size, some disruption to traffic will occur during construction. The cable installation along the route is likely to take about 2 to 3 years to complete. However, we will work closely with local authorities, community groups and individual stakeholders to sequence these works and put traffic management plans in place to ensure local access to homes and businesses is maintained.

The works are expected to progress up to approximately 100 metres a day, meaning people can reasonably expect to have work directly outside their home, business or place of work for limited periods of time only. There may be times when the work period may be longer due to the installation of a joint bay (a joint bay is the housing within which the joint is located and is permanently installed underground).

The traffic management plan will outline the construction details and vehicle movements on public roads. This plan will be agreed with both County Councils before construction starts. Any disruption to traffic patterns will be temporary and confined to local areas. Traffic will be managed proactively during the construction phase.

A short video about the installation of underground cables can be viewed on the EirGrid Youtube channel: Installation of Underground Cables – EirGrid Group – YouTube

Design

We aim to install underground cables like this in the public road network rather than going cross-country or through private lands. This allows for easier access if the cable needs repair or maintenance. However, we do consider routing the cable cross-country if using the public road network would cause problems or impact badly on the area. If this is the case, our project team will meet directly with relevant landowners and stakeholders to work out an acceptable option.

Environmental

We will examine the possible impact that options may have on an area. We assess the current situation in the area with regard to health, noise, ecology, visual amenity, air quality, flora and fauna and other relevant topics. We then examine the possible impact an underground cable might have on each of these. Where impacts do arise, we will always incorporate measures to avoid or reduce these effects to acceptable levels.

Utilities

We engage with all necessary associated technical stakeholders throughout our six-step grid development process. Our engagement with statutory bodies such as Local Authorities, Uisce Éireann, Transport Infrastructure Ireland (TII), ESB Networks, Bord Gáis and others, is ongoing throughout the project. This helps to ensure that all projects – both theirs and ours – happening in any particular area, can be managed in a safe and secure manner.

Health

A common query relates to the potential impact on human health of electro-magnetic fields (EMFs) from grid infrastructure. The EMFs emitted by transmission infrastructure are at an extremely low frequency and are at the non-ionising end of the electromagnetic spectrum. Non-ionising radiation is very low-energy radiation that doesn't have the power to alter cell structures or DNA. We design and operate the transmission grid in accordance with stringent safety recommendations put in place by national and international agencies. When we manage and develop the grid, we always follow all applicable health and safety standards. We prioritise the protection of our workers and those who live or work near our infrastructure.

Among the research completed by independent health and scientific bodies on this topic, there is no evidence that an EMF from underground cables has any adverse effects on human, plant or animal health.

Further information on EMFs and the guidelines which we adhere to are contained in our brochure "The Electricity Grid and Your Health" which can be found on our website at the following link:

https://www.eirgridgroup.com/about/health-and-safety/

East Meath-North Dublin Community Forum

The East Meath-North Dublin community forum was established by EirGrid. This group aims to make sure that the voices of the local communities, and those impacted most by our infrastructure, are listened to. The forum provides for open dialogue between the project team and stakeholders interested in the project.

The forum engages with us on key project developments such as:

- how we communicate and engage with the public;
- what we need to consider in developing the project; and
- how we can deliver meaningful community benefit to the area where our infrastructure is hosted.

The forum acts as a consultative body and does not replace any other engagement and consultation we carry out.

The forum is Chaired by independent facilitator Dr. Harriett Emerson. The forum was setup in August 2022 and has met six times since. The meetings have been, and will continue to be, a way to inform the group of the latest developments on the project, ensure two-way communication is ongoing, and to raise any new information from the community.

To be kept informed of forum activity throughout this grid development, please visit our website at www.eirgrid/eastmeathnorthdublin

Community Benefit

We recognise the importance of local communities and businesses who facilitate the upgrading of the electricity transmission network and the community benefit fund reflects this. While the East Meath-North Dublin Grid Upgrade is being built, we will work to support communities as part of our community benefit policy.

A dedicated fund for the East Meath-North Dublin Grid Upgrade area will be made available to provide direct benefits to communities who are closest to the cable. This fund, which is proportional to the scale of the project, supports local good causes and helps communities transform their area. The overall aim is to leave a positive legacy in the communities where the electrical infrastructure is in place.

Work on the community benefit scheme commences when a project receives planning permission.

The first step is the appointment of an independent community benefit fund administrator who will work with the EMND CF and EirGrid to co-develop a community benefit strategy.

The fund will then be released in 3 phases, which align with the development of the infrastructure:

Phase	Percentage of funding released
1. Construction	40%
2. Cable Installation	30%
3. Energisation	30%

Table 2: Phased release of community benefit funding

(Energisation means electricity flowing through the cables and around the transmission and distribution network).

These funds will provide support to local community groups, not-for-profit organisations and social enterprises that operate or service communities near the new infrastructure.

Examples of projects include:

- heritage projects supporting a historical or archaeological association;
- community projects such as creating walkways, or support for retrofitting of local community halls;
- education initiatives such as providing IT equipment to enhance digital learning;
- environmental initiatives – for example, installing beehives;
- youth facilities such as a playground;
- sports facilities such as providing equipment or a playing pitch, or supporting sporting groups to reduce energy consumption and become more sustainable.

What are the next steps and how to keep up to date?

Step 4 EBPO at a glance

What's happening now?

Following public consultation on four proposed route options to upgrade the electricity grid between east Meath and north Dublin, we have identified the EBPO – Option A: The Red Option. This route is approximately 37 kilometres in length, with an estimated off-road section of 9 kilometres.

How long will this take?

As the environmental and technical surveys continue and refinement on our EBPO route option develops, Step 4 is planned to conclude in the summer of 2023, with the announcement of the Best Performing Option (BPO). The project will then progress towards submission of a planning application to An Bord Pleanála in Step 5.

Until then, we will continue to:

- engage with residents, landowners, community groups and other stakeholders along the red route.
- carry out more technical studies and onsite investigations; and
- engage with local authorities, elected representatives, specialist representative groups, the community forum, and environmental and planning agencies.

You can get involved in many different ways:

- ask for more information,
- share your views,
- register to receive update emails,
- give feedback on this project,
- attend an in-person engagement event or a webinar online: details available at www.eirgrid.ie/eastmeathnorthdublin.

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Get in touch

www.eirgrid.ie/eastmeathnorthdublin

EastMeathNorthDublin@eirgrid.com **or**

Contact your Local Community Liaison Officers:

Grainne Duffy - 085 887 4798
Eoghan O'Sullivan - 087 247 7732

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