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CP1021 East Meath - North Dublin Grid Upgrade

Step 4A Non-Technical Summary - Analysis of Route Options

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EirGrid



CP1021 East Meath - North Dublin Grid Upgrade

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1. Introduction

1.1 Preface

This document is the Non-Technical Summary (NTS) of the Step 4A Report (Analysis of Route Options) for the CP1021 East Meath – North Dublin Grid Upgrade project. The project is proposed by EirGrid, who develop, manage and operate the electricity transmission grid.

A copy of the Step 4A Report is available via the project website: <u>https://www.eirgridgroup.com/the-grid/projects/cp1021/related-documents/</u>

1.2 Project Need

The East Meath – North Dublin Grid Upgrade (referred to as the 'Proposed Development' in this report) will strengthen the electricity network 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 network 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 climate action targets of having up to 80% of electricity coming from renewable sources by 2030.

This project was identified as one of the candidate solutions in the Shaping Our Electricity Future Roadmap¹ which was published in November 2021.

The need for the Proposed Development has been established through a series of studies completed at Steps 1 to 3 (see Figure 1-2 below for reference). These reports are available on the project website². This series of studies identified the need for a new connection between Woodland and Belcamp substations and that an underground cable would be the best technology for this connection. The Proposed Development is a high voltage (400 kV) underground cable between Woodland and Belcamp substations and the need for the project remains robust.

1.3 Project Benefits

The project is essential to meet the Government of Ireland's Climate Action Plan 2023³ target to increase the proportion of renewable electricity to 80% by 2030, which includes transporting electricity from offshore wind energy. In addition to supporting future renewable generation, the project will improve power quality and support growing electricity demand in the north Dublin area.

The Proposed Development will strengthen the transmission network between Woodland and Belcamp substations to continue to ensure the security of the network feeding the east of Meath and the north of Dublin, between Woodland, Clonee, Corduff, Finglas and Belcamp substations. EirGrid has identified that the Proposed Development will have the following benefits:

¹ <u>https://www.eirgridgroup.com/site-files/library/EirGrid/Shaping_Our_Electricity_Future_Roadmap.pdf</u>

² <u>https://www.eirgridgroup.com/the-grid/projects/cp1021/related-documents/</u>

³ https://www.gov.ie/en/publication/7bd8c-climate-action-plan-2023/

- Security of Supply Improve electricity supply for Ireland's electricity consumers. The network can be more readily rearranged in response to an unplanned tripping or during planned outages to manage power flow;
- Sustainability Help facilitate Ireland's transition to a low carbon energy future by connecting renewable energy sources (onshore and offshore) to the network and reducing use of fossil fuels for electricity generation;
- Community Deliver community benefits in the areas that facilitate the project infrastructure including savings in electricity costs and addressing increased electricity demand in the area;
- Competition Apply downward pressure on the cost of electricity; and
- Economic Contribute to the regional economy particularly during the construction stage and support foreign direct investment.

1.4 Project Description

CP1021 is a proposed development to reinforce the network between East Meath and North Dublin. As noted above, reinforcement of this part of the network is needed to continue to ensure the security of the network feeding the east of Meath and the north of Dublin, between Woodland, Clonee, Corduff, Finglas and Belcamp substations.

The Proposed Development will add a high-capacity 400 kV underground cable electricity connection from Woodland substation near Batterstown in County Meath to Belcamp substation near Clonshaugh in north Dublin (see Figure 1-1).



Figure 1-1: East Meath – North Dublin Grid Upgrade Step 4 Study Area

1.5 Assessment Process

For any identified transmission network problem, EirGrid follows a six-step approach when they develop and implement the best performing solution option. This six-step approach is described in the document 'Have Your Say' published on EirGrid's website⁴. The six steps are shown at a high-level in Figure 1-2. Each step has a distinct purpose with defined deliverables and collectively they represent the lifecycle of a development from conception through to implementation and energisation.



Figure 1-2: EirGrid's six-step approach to developing the electricity grid

The Proposed Development is currently in Step 4, where the project team in consultation with stakeholders and the community identifies exactly where the underground electricity circuit will be built. The timeline for Step 4 can be seen in Figure 1-3.



Figure 1-3: EirGrid's six-step timeline for the Proposed Development

In Step 1, EirGrid identified the need for the Proposed Development.

In Step 2, EirGrid compiled a shortlist of best performing technical options, which went out for public consultation between October and December 2020. This included a mix of overhead line and underground cable technological solutions and the possibility of a new transmission route being between Woodland and either Corduff, Finglas or Belcamp substations. This identified a short list of four options: an underground cable or overhead line to either Finglas or Belcamp substations.

In Step 3, EirGrid re-confirmed the need for the Proposed Development and assessed the feasibility of, and constraints which may impact upon, the shortlisted technology options to strengthen the electricity network in East Meath and North Dublin. In April 2022, EirGrid identified the 400 kV underground cable option between Woodland and Belcamp substations as the best performing option to progress for this Proposed Development. This was communicated to stakeholders through a Public Engagement awareness campaign from May to June 2022, during which time feedback was encouraged through the project website, webinars and through mobile information units in the study area.

As part of Step 4, EirGrid has identified four potential underground cable route options and has consulted on these options during September to November 2022. Feedback from the public consultation and stakeholders

⁴ <u>http://www.eirgridgroup.com/the-grid/have-your-say/</u>

has been considered in our development and assessment of route options. Further details regarding the public consultation and the feedback received can be found in the Step 4A consultation report⁵.

1.6 Assessment Criteria

The four proposed route options have been assessed against five key assessment criteria:

- Environment. This criterion assesses the potential environmental impact of an option on the following: biodiversity; geology and soils; surface water and flood risk; planning policy and land use; landscape and visual impact; cultural heritage; noise & vibration; and air quality.
- Socio-economic. This criterion assesses the potential social and economic impact and level of social acceptability of an option. Relevant considerations include traffic & transport; amenity; human health; employment and economy; agriculture (including equine); and utilities and critical infrastructure.
- Technical. This criterion assesses the technical performance of an option with reference to security of supply and efficiency standards including system reliability; headroom and ratings; maintainability; operational risk; and repeatability.
- Deliverability. This criterion assesses the ability to construct and deliver an option within an acceptable period of time. Relevant considerations include design complexity; traffic disturbance; dependence on other service providers; permits and wayleaves; and implementation timelines.
- Economic. This criterion assesses economic performance which considers investment costs and lifecycle costs.



Figure 1-4: EirGrid's Five Assessment Criteria for Projects

These assessment criteria include consideration of a range of sub-criteria or sub-topics:

- Environment:
 - o Biodiversity
 - o Geology and Soils
 - o Surface Water and Flood Risk
 - o Planning Policy and Land Use

⁵ <u>https://www.eirgridgroup.com/the-grid/projects/cp1021/related-documents/</u>

- o Landscape and Visual
- o Archaeology, Architectural Heritage and Cultural Heritage
- o Noise and Vibration
- o Air Quality
- Socio-economic:
 - o Traffic and Transport
 - o Amenity
 - o Health
 - o Employment and Economy (and Tourism)
 - o Land-use (and Land Take)
 - o Agriculture (including Equine)
 - o Utilities
- Technical
- Deliverability
- Economic

1.7 Assessment Outcomes

Each of the route options have been assessed across the constraints criteria based on the ranking approach presented below.

More significant/difficult/	′risk	Less	Significant/difficult/risk	

This risk scale is clarified by text, as follows:

- High: Dark Blue
- Moderate-High: Blue
- Moderate: Dark Green
- Low-Moderate: Light Green
- Low: Cream.

A summary of the assessment outcome is provided in Chapter Error! Reference source not found. of this report.

2. Route Options

2.1 Our Approach

Our approach to route options identification and appraisal is a best practice approach to the Consideration of Alternatives for a linear infrastructure project and a key tenet of EirGrid's Framework for Grid Development.

The design of the proposed route options at Step 4 were based on the application, where reasonably practicable, of the following routing principles:

- Avoid motorways
- Maximise the use of 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
- Minimise the overall length of the route

These routing principles align with EirGrid's five key assessment criteria – Environment; Socio-Economic; Technical; Deliverability; and Economic, which are described in further detail in Section Error! Reference source not found.. By following the routing principles, improved route options were developed.

2.2 Description of Route Options

The route options are presented in Figure 2-1. The route options vary in length and location, which were determined taking into account the mapped constraints and the routing principles.

In line with the routing principles, route options have avoided going off-road, through private land and through agricultural land, where possible. The balancing with the other routing principles means that there are some route sections which do impact agricultural land. The impacts on agricultural land have been carefully considered and a balance has been sought between impacts to farming operations, the importance of field drains and hedgerows at the edges of field for their ecological value, and technical considerations. None of the route sections directly impact private dwellings and none would require demolition of dwellings or other buildings.

The off-road sections within the options are shown as refinement areas. As noted above this is because further engagement, surveys, design and assessment work is required to refine the route design in these areas. However, an indicative route within these corridors has been assumed in some cases to assist consultation and engagement. This is also to allow a comparative assessment to be undertaken at this Step of the Proposed Development. Following the identification of the Emerging Best Performing Option, further survey, design, consultation and assessment will be completed to refine the potential corridors into a specific route. This will be presented at Step 4B and further refined at Step 5.

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Figure 2-1: Route Options

2.2.1 Common to all Four Route Options

2.2.1.1 Woodland Station – all routes start here

Woodland 400kV substation near Batterstown, Co Meath is of national strategic importance within the electricity transmission grid. It already has several major circuits connected with several grid infrastructure developments planned to be connected in the coming years. The planned underground cable will connect into the existing substation, which will require the associated provision of apparatus and site development works.

There are a number of high voltage infrastructure projects which are planned to connect to the existing Woodland station, such as:

- East Meath North Dublin Grid Upgrade (the Proposed Development);
- Kildare Meath Grid Upgrade;
- North South Interconnector; and
- Woodland substation improvement works.

For this grid development project, each of the four proposed route options has a common connection point at Woodland substation.

2.2.1.2 Belcamp Substation - all routes travel to here

Belcamp 220kV substation is an existing substation in the Clonshaugh area of County Dublin around 7km from Dublin city centre. This substation is also of strategic importance in the electricity transmission grid, as it will accommodate further grid development projects in the coming years.

This 220kV substation needs to be extended and a new 400kV infrastructure needs to be developed to accommodate the planned underground cable development. The works will improve power quality and support future renewable generation, including offshore renewables, and growing demand in the North Dublin area.

Projects currently in development at Belcamp substation include:

- East Meath North Dublin Grid Upgrade (the Proposed Development);
- Kildare Meath Grid Upgrade (Associated works);
- Shellybanks to Belcamp 220kV cable;
- Finglas to Belcamp 220kV cable;
- Belcamp 220kV substation extension; and
- Offshore windfarm connection.

As with Woodland, for this grid development project, there is a common connection point at Belcamp for each of the four proposed route options.

2.2.1.3 Motorway crossings

All routes will cross the M3, M2 and M1 between Woodland and Belcamp.

It is likely these will be crossed using Horizontal Directional Drilling (HDD) to minimise disruption and impacts on existing infrastructure.

Horizontal Directional Drilling (HDD) is a method of drilling that installs underground pipelines and cables without digging trenches. It involves using a directional drilling machine to drill along the chosen path underneath the infrastructure and then installing the required pipe and cable.

2.2.1.4 Off-road corridors

The lengths of the four options range from 36km to 43km. Most of the cable route in each option can be laid in the existing road network. However, each option will require some of the cable route to be off-road. These off-road corridors will range from c.3km to c.9km of the cable route and are in locations where off-road routing is unavoidable. More detailed environmental and technical surveys will inform further assessment work in these locations in addition to ongoing engagement with landowners to refine the route design.

For this reason, we have shown an indicative route in a highlighted refinement area on each of the route maps. The off-road section may pass through any part of this corridor. We will minimise impacts on agricultural operations as far as possible by carefully routing the cable.

Following the approach and methodology described in Chapter 2, it was determined that a number of route sections would not be taken forward. These route sections are shown in Overview of Proposed Route Options

Table 2.1 provides an overview of the four underground cable options considered for this project.

Option	Estimated overall length (km)	Estimated off-road sections (km)	Key aspects
Option A (Red)	37	9	Shortest route but affects largest amount of agricultural land.
Option B (Green)	38	7	Second shortest and avoids Hollystown.
Option C (Yellow)	43	2	Longest route. Goes through Batterstown village and southern suburbs of Swords. Least agricultural land.
Option D (Blue)	41	4	Second lowest agricultural land, second highest route length.

Table 2.1: Overview of Route Options

EIRGRID E CP1021 - Cable Route A Options Legend Station Oldtown Ball Route Option A (Red) Off-Road Options Being Explored Dunshaughlin Ashbourne Option A Ratoath Drumre Step 4a Study Area 2 0 1 4 km Woodland Kilsallaghar Batterstown olquoy Swords R154 Malahid R121 🥏 🥯 **R122** Nuttstown L5026 Vesington 0 Ward Pace Kilbride R108 Cross R108 St arets R156 Mar R15 Bracetown R135 R147 R108 Belcamp Dunbo N2 vrrelstown R13 N3 Poppintree Santry Corduff Darndale 1 Ballymun N1 Kilmore Kilbarri Finglas 2 Bla Coolock Beaumont Blanchardstow Artane Glasnevin Whit hall nooth M50 Donnycarney Killester Ashtown Carp enter sto Dromcondra

2.2.2 Route Option A (Red)

Figure 2-2: Route Option A (Red)

Route Option A (Red) is the shortest of the four cable route options at 37 km but has the longest off-road portion (9km). It potentially affects the largest amount of agricultural land of the four route options but has a relatively low impact on regional and local road networks.

From Woodland, Route Option A will travel south through fields for around 3 km until it joins the R156 at Barstown Industrial Estate. From there, the route will travel east as far as Dunboyne, turning north along the R157 once it reaches the north-western outskirts of the town.

It will cross the River Tolka, Railway at M3 Parkway and M3 Motorway at Junction 5.

The motorway itself is avoided as any crossing here will likely be via Horizontal Directional Drilling (HDD) or via a tunnel. A potential off-road corridor is shown for this crossing of the motorway. The route will then briefly progress north along the R147 before travelling east once more along the L5026 and local roads.

Route Option A advances east to Kilbride, with three crossings of the Ward River along the way. At Kilbride, the route turns south. A potential off-road corridor is shown for the route at, and to the south of, Kilbride. The route will pass through this corridor and join the R121 a short distance to the west of the M2. A further off-road corridor is shown for the crossing of the M2 motorway. Following the crossing, the route continues broadly east to the Ward Cross and stays east on the R121 until this road reaches the R122.

Route Option A will then progress south via Kilreesk Lane (also known as Tobermurr Link Road) and Kilreesk Road (also known as Tobermurr Road) to the R108 and Naul Road along the northern boundary of Dublin Airport as far as Cloghran Roundabout, northeast of Dublin Airport.

From there, Route Option A will briefly use Stockhole Lane travelling east to the M1 motorway. A potential offroad corridor is shown for this motorway crossing. Once across the motorway, Route Option A remains off-road; a potential off-road corridor is shown for the onward connection south to Belcamp substation.



2.2.3 Route Option B (Green)

Figure 2-3: Route Option B (Green)

Route Option B (Green) is the second shortest of the proposed route options, with the second longest off-road portion. It shares a common route with Route Option A in multiple sections between Woodland and Belcamp but follows an alternative path for more than half of the course.

Route Option B will travel off-road in an east / southeast direction from Woodland until it reaches the L2215 in the townland of Lismahon. A potential off-road corridor is shown for this. At the L2215, the route travels south in the road to the R156. From there, the route option will advance east along the same route as Option A, avoiding Dunboyne.

It will cross the River Tolka, Railway at M3 Parkway and M3 Motorway at Junction 5.

Again, the motorway itself is avoided as any crossing here will most likely be via Horizontal Directional Drilling (HDD) or via a tunnel. A potential off-road corridor is shown for this motorway crossing.

The route will then re-join the R147 and progress south as far as Bracetown Business Park. It continues northeast along this road until it joins another shared section with Option A for the 4 km leading to Kilbride.

In Kilbride however, the proposed Route Option B travels north out of Kilbride and along a narrow road, through the townlands of Baytown, Mabestown and Irishtown.

Route Option B crosses the M2 Motorway at the flyover to the west of Coolquay, before joining the R135 in the village of Coolquay. A potential off-road corridor is shown for this motorway crossing. It travels south from there through the Ward Cross to Broughan. The route then travels east once more, joining the R122 via Broughan Lane and Newtown Cottages.

Route Option B runs close to St Margaret's and then joins the R108. Like Route Option A, the route will follow the northern boundary of Dublin Airport. From there, Route Option B will travel along Stockhole Lane before crossing the M1 motorway. A potential off-road corridor is shown for this motorway crossing. Route Option B will also remain off-road for its onward connection Belcamp. A potential off-road corridor is shown for this.



2.2.4 Route Option C (Yellow)

Figure 2-4: Route Option C (Yellow)

Route Option C is the longest of the cable route options but has the shortest off-road portion, with 2 km less off-road sections. Route Option C affects the least amount of agricultural land of the four shortlisted options.

Route Option C shares the initial 2 km route out of Woodland substation with Route Option B. A potential offroad corridor is shown for this. Upon joining the L2215, Route Option C will progress southeast to Batterstown. Here the route may pass off-road and so a potential off-road corridor is shown. Southeast of Batterstown it will travel along the R154 to the M3 motorway.

Route Option C will cross the River Tolka, then move off-road to cross the M3 Motorway to the south of the M3 Southern Toll Plaza, returning to the roadway at the roundabout to join the R147. A potential off-road corridor is shown for this motorway crossing

The route will then travel south along the R147 until the L5026 Pace, travelling east.

Route Option C will continue east through Nuttstown and into Kilbride. In Kilbride, it will pass Kilbride National School and progress south along the Kilbride Road. This route will enter Hollystown, turning northeast to join the R121 before reaching Hollywoodrath.

A potential off-road corridor is shown for the M2 motorway crossing. Following this, the route returns to the R121 and follows it through the Ward Cross until it finishes at the R122. Here, Route Option C will move east, using Kilreesk Lane (also known as Tobermurr Link Road) and then following Kilreesk Road north (also known as Tobermurr Road), then Killeek Lane eastwards, R108 southwards, Cooks Road eastwards and then northeast onto Forest Road. It will run along Forest Road next to Forrest Little Golf Club and into the southern suburbs of Swords, where the L2300 and R132 are used to return south to Cloghran Roundabout.

Route Option C will then follow Stockhole Lane, crossing the M1. A potential off-road corridor is shown for this motorway crossing. The proposed route option will then return to Stockhole Lane and turn east onto Baskin Lane which it will follow to the junction with the Malahide Road in Kinsealy. It will then move south, past Fingal Burial Ground, returning west along the R139 before turning north along the access road to reach Belcamp substation.



2.2.5 Route Option D (Blue)

Figure 2-5: Route Option D (Blue)

Route Option D is the second longest proposed route but has the second shortest off-road portion of the four options.

Route Option D will exit Woodland substation by travelling south on an off-road route to join the R156. A potential off-road corridor is shown for this. It then turns east near Barstown Industrial Estate, sharing the same route as Option A for the first 7 km, before turning north at Baytowncross towards Vesington. The route travels along this local road to join the R154 in the townland of Quarryland.

From there, the route progresses southeast to the R147, crossing the M3 Motorway south of the flyover which is to the south of the M3 Southern Toll Plaza. A potential off-road corridor is shown for this motorway crossing.

Route Option D then follows the L5026 Pace eastwards, continuing along the minor road which passes through Kinoristown, which is then shared by all four route options. Near Kilbride, a potential off-road corridor is shown for this option.

The route travels south along Kilbride Road through Hollystown to join the R121 eastwards and will then cross the M2 Motorway. A potential off-road corridor is shown for this motorway crossing., From here, it travels east until it reaches the R122, passing the Ward Cross along the way.

Like Route Option C, Route Option D follows the R122 south, then uses Kilreesk Lane (also known as Tobermurr Link Road), then following Kilreesk Road north (also known as Tobermurr Road), Killeek Lane eastwards, R108

southwards and then Cooks Road eastwards. Like Route Options A and B, Route Option D then uses Naul Road on the northern border of Dublin airport.

From northeast of the airport, Route Option D would also briefly use Stockhole Lane before crossing the M1 motorway. A potential off-road corridor is shown for this motorway crossing., From the crossing of the motorway the route will return to Stockhole Lane travelling south before joining the R139. Here it will travel east and then north into Belcamp substation via the existing access road.

3. Assessment Summary and Recommendation

3.1 Environment Assessment

Table 3.1 below summarises the findings of the environmental assessment for each of the options.

The option with the highest potential environment impacts is Option C (Yellow) which has been scored as Moderate risk due to Land Use Planning and Cultural Heritage impacts. Between Options A (Red), B (Green) and D (Blue), Option A has three environmental topics with a score of Moderate, Option B has one Moderate and one Moderate-High score, and Option D (Blue) has only two Moderate scores due to its shorter lengths of off-road sections. Overall, Option D is the emerging best performing option from an environmental perspective.

Option	Biodiversity	Soils & Geology	Surface Water & Flood Risk	Planning Policy and Land Use	Landscape	Archaeology, Architectural Heritage, & Cultural Heritage	Noise & Vibration	Air Quality	Combined Environment Score
A	Moderate	Low- Moderate	Moderate	Low- Moderate	Low	Moderate	Low- Moderate	Low- Moderate	Low- Moderate
В	Low- Moderate	Low- Moderate	Moderate	Low- Moderate	Low	Moderate- High	Low- Moderate	Low- Moderate	Low- Moderate
С	Moderate	Low- Moderate	Moderate	Moderate- High	Low	Moderate- High	Moderate	Moderate	Moderate
D	Low- Moderate	Low- Moderate	Moderate	Moderate	Low	Low-Moderate	Low- Moderate	Low- Moderate	Low- Moderate

Table 3.1: Summary of Environmental Assessment for Options

3.2 Socio-economic Assessment

From a socio-economic perspective, Options C (Yellow) and D (Blue) have the highest level of potential social impacts as they are longer routes with the greatest proportion of on-road sections.

Option A (Red) and Option B (Green) have the same overall level of potential social impacts; however, Option A (Red) has a lower potential impact on Utilities so has the lowest level of potential social impacts overall. Option A is the emerging best performing option considering socio-economic factors.

Option	Traffic and Transport	Amenity	Health	Employment and Economy (and Tourism)	Land Use (and Land- take)	Agriculture (including Equine)	Utilities	Combined Socio- economic Score
A	Moderate- High	Moderate	Low- Moderate	Low	Low	Low-Moderate	Low- Moderate	Low-Moderate

Table 3.2: Summary of Socio-economic Assessment of Options

Option	Traffic and Transport	Amenity	Health	Employment and Economy (and Tourism)	Land Use (and Land- take)	Agriculture (including Equine)	Utilities	Combined Socio- economic Score
В	Moderate- High	Moderate	Low- Moderate	Low	Low	Low-Moderate	Moderate	Low-Moderate
С	High	High	Moderate	Low	Low	Low	High	Moderate
D	Moderate- High	Moderate	Low- Moderate	Low	Low	Low-Moderate	Moderate- High	Moderate

3.3 Technical Assessment

At this stage in the Proposed Development there no technical differentiations. Other technical factors identified at later stages will have no impact on the selection of the Best Performing Option. Outlined below are the findings of the technical appraisal of each of the options.

Option	General Compliance	Headroom	Maintainability	Technology Operational Risk	Average Reliability Rates	Repeatability	Combined Technical Score
A	Low	Low	Low	Low	Low	Low	Low
В	Low	Low	Low	Low	Low	Low	Low
С	Low	Low	Low	Low	Low	Low	Low
D	Low	Low	Low	Low	Low	Low	Low

Table 3.3: Summary of Technical Assessment of Options

3.4 Deliverability Assessment

Options B (Green), C (Yellow) and D (Blue) all have an overall combined deliverability score of Moderate to High impact. However, Option C (Yellow) has three incidences of high risk, Option D (Blue) has two and Option B (Green) has one. Option C (Yellow) is the worst performing option.

Option A (Red) has no High impact criteria and a Moderate deliverability impact rating overall as compared to the Moderate to High overall rating assigned to the other route options. Option A (Red) has the largest amount of off-road sections which results in less traffic disturbance than some other options. In addition, while this also means that it will affect the largest number of landowners, landowner support is positive around the relevant sections.

Option A (Red) is therefore the emerging best performing option considering deliverability factors.

Option	Design complexity	Traffic disturbance	Dependence on other infrastructure projects	Permits and wayleaves	Implementation Timelines	Combined Deliverability Score
A	Moderate- High	Moderate- High	Moderate-High	Low-Moderate	Moderate	Moderate
В	Moderate- High	Moderate- High	High	Moderate-High	Moderate	Moderate-High
С	High	High	High	Moderate-High	Moderate	Moderate-High
D	High	High	Moderate-High	Low-Moderate	Moderate	Moderate-High

Table 3.4: Summary of Deliverability Assessment of Options

3.5 Economic Assessment

The economic assessment at this stage of the evolution of the Proposed Development is based only on the length of a route option and the number and complexity of any crossings. Option C (Yellow) is the longest route and has a larger number of crossings, and therefore has the highest potential impact. Options A (Red) and B (Green) have a relatively low number of crossings and both have a combined economic score of Low. Option A (Red) is also the shortest route and is therefore the emerging best performing option considering economic factors.

Table 3.5: Summary of Economic Assessment of Options

Option	Cable Quantity	Crossings Quantity	Combined Economic
А	Low-Moderate	Low	Low
В	Low-Moderate	Low	Low
С	Moderate	Moderate-High	Moderate-High
D	Moderate	Moderate	Moderate

3.6 Overall Summary of End-to-End Assessment

It is determined that Option A (Red) is selected as the Emerging Best Performing Option. This is due to several factors including its lowest combined impact across all topic areas compared to the other options (Table 3.6 below).

Option A has a lower environmental impact than Option C (Yellow), a lower socio-economic impact than Option C (Yellow) and Option D (Blue), a lower deliverability impact than all other options and a lower economic impact than Option C (Yellow) and Option D (Blue). This lower deliverability impact means that there will be less disruption to road users and local communities during the delivery phase compared to other options.

While Option A has the longest length of off-road sections compared to other options, there is a relatively high degree of confidence that the necessary permits and wayleaves can be arranged for these sections, and these off-road sections are primarily required for technical reasons such as avoiding impacts to existing utilities. While Option A (Red) has potentially moderate impacts on some environmental sub-criteria (biodiversity, surface water/flood risk and cultural heritage), further surveys, consultation, design, and assessment work will be undertaken to reduce or avoid these impacts.

Option	Environment Score	Socio-economic Score	Technical Score	Deliverability Score	Economic Score
Option A (Red)	Low-Moderate	Low-Moderate	Low	Moderate	Low
Option B (Green)	Low-Moderate	Low-Moderate	Low	Moderate-High	Low
Option C (Yellow)	Moderate	Moderate	Low	Moderate-High	Moderate-High
Option D (Blue)	Low-Moderate	Moderate	Low	Moderate-High	Moderate

Table 3.6: Summary of Options Assessment

3.7 Next Steps

The following actions will be completed on the Proposed Development:

- Following the publication of the Step 4A report any further feedback on the Emerging Best Performing Option (Option A (Red)) will be considered by the project team and amendments will be made where it is considered appropriate (feeding into Step 4B report referenced below).
- EirGrid will continue to engage with key stakeholders to discuss the Proposed Development. Further meetings will be held with affected landowners in addition to bodies such as Meath and Fingal County Councils, TII, Irish Rail, Waterways Ireland, and the utility providers such as Uisce Éireann and Gas Networks Ireland.
- The project team will undertake a wide range of surveys for the Emerging Best Performing Option to help to refine the design and location of the proposed cable. This will also include designing how the cable will be constructed and how traffic disturbance will be minimised through traffic management. The surveys include archaeology, ecology, agriculture, ground investigations, utilities surveys, hydrology, technical assessments, etc.
- Development of the route design will be progressed at 'refinement areas' including the off-road sections, motorway crossings and the sections of the route on approach to the substations. The surveys will inform the process and may also result in other minor changes to the route shown in this report. This is a normal part of the design process as further information is gathered; new issues can be identified resulting in changes to the route. If large scale changes are required, then the assessment will be remade, and further consultation will be undertaken.
- Further design work will be progressed at the substations to determine the works required to connect the proposed cable into the grid.
- When the proposed cable route and design have been progressed further, a subsequent report called the Step 4B report will be published on the project website. This is anticipated to be during Autumn 2023.

• Following that, the project team will prepare the planning submission for the Proposed Development. Further updates will be published by EirGrid on the project website: <u>https://www.eirgridgroup.com/the-grid/projects/cp1021/the-project/</u>