

# **CP0982 Flagford - Srananagh Project**

Step 3 Best Performing Technology Option  
Report

March 2026

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# CP0982 Flagford - Srananagh Project

## Step 3 Best Performing Technology Option Report

March 2026

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# Glossary

<b>ACSR</b>	Aluminium Clad Steel Reinforced
<b>BnM</b>	Bord na Móna
<b>BPO</b>	Best Performing Option
<b>CP</b>	Capital Project
<b>EBPO</b>	Emerging Best Performing Option
<b>LCA</b>	Line Condition Assessment
<b>MCA</b>	Multi-Criteria Assessment
<b>NWR</b>	Northern and Western Region
<b>NWRA</b>	Northern & Western Regional Assembly
<b>OHL</b>	Overhead Line
<b>SAC</b>	Special Area of Conservation
<b>SEM</b>	Single Electricity Market
<b>SOEF</b>	Shaping Our Electricity Future
<b>SPA</b>	Special Protection Area
<b>TLAR</b>	Transmission Line Assessment Report
<b>WCD</b>	Western Development Commission

# 1 Introduction

## 1.1 Introduction

The purpose of this report is to identify the Step 3 Best Performing Technology Option, to be brought forward to the next stage of the project, Step 4, for the proposed Capital Project (CP) 0982 Flagford – Sligo Capacity Needs (hereafter referred to as the ‘Project’).

An Emerging Best Performing Option (EBPO) was identified from the two technology options assessed in the EBPO Report<sup>1</sup>. A 10-week consultation was undertaken, lasting between September and November 2025, to consult with the public and other relevant stakeholders during the decision-making process.

This report assesses feedback and other information received during the consultation period and reviews the Multi-Criteria Assessment (MCA) presented in the EBPO Report in light of same. The report identifies a Best Performing (Technology) (BPO) Option to be progressed to Step 4.

## 1.2 Overview of the Project

The Northwest region of Ireland (Mayo, Sligo and Donegal) has seen a significant increase in renewable electricity generation over the last number of years. As these connections continue to increase, the local transmission network is likely to come under increased stress.

The level of demand in the Northwest region of Ireland is forecast to be less than the generation, so the excess generation must be exported out of the area. This puts additional stress on the existing transmission circuits including the existing Flagford – Sligo 110 kV line.

Additional transmission network capacity will help ensure that continued economic growth in the area can be supported, including facilitating regional load growth.

The identified need requires additional transmission capacity to strengthen the network in the Northwest region of Ireland in order to export excess generation out of the region when needed.

CP0982 is a proposed electricity development that will help to meet this network need identified in the Northwest region of Ireland. The location of the CP0982 Flagford – Sligo Capacity Needs Project is illustrated in Figure 1.1.

Reinforcing the transmission system in the Northwest region of Ireland will enable the further integration of renewable generation in the Northern and Western Region of the country ensuring the continued economic growth of the region while also supporting efforts to meet the Government’s renewable electricity target for 2030.

The need for this Project has been published in EirGrid’s Shaping Our Electricity Future (SOEF) roadmap which supports the Government’s 80% renewable electricity target by 2030.

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<sup>1</sup> CP0982 Flagford – Sligo Capacity Needs – EBPO Report, Mott MacDonald, August 2025

**Figure 1.1: Location of CP0982 Flagford – Sligo Capacity Needs Project**



Source: EirGrid

### 1.2.1 Northern and Western Regional Context

The Strategic Framework for Grid Development in the Northern & Western Region (EirGrid, 2024)<sup>2</sup> identifies that the Northern and Western Region (NWR) “*is characterised by a strong existing and potential renewable energy (primarily wind) resource, with many requests for further connection.*” This level of electricity generation is greater than the capacity of the existing network in the NWR, resulting in local constraints related to power transfer needs. Therefore, the “*Reinforcement of the regional grid infrastructure network is mainly required to connect the forecasted significant level of renewable generation, with benefits for regional economic and social development including creating transmission capacity for increased demand.*”

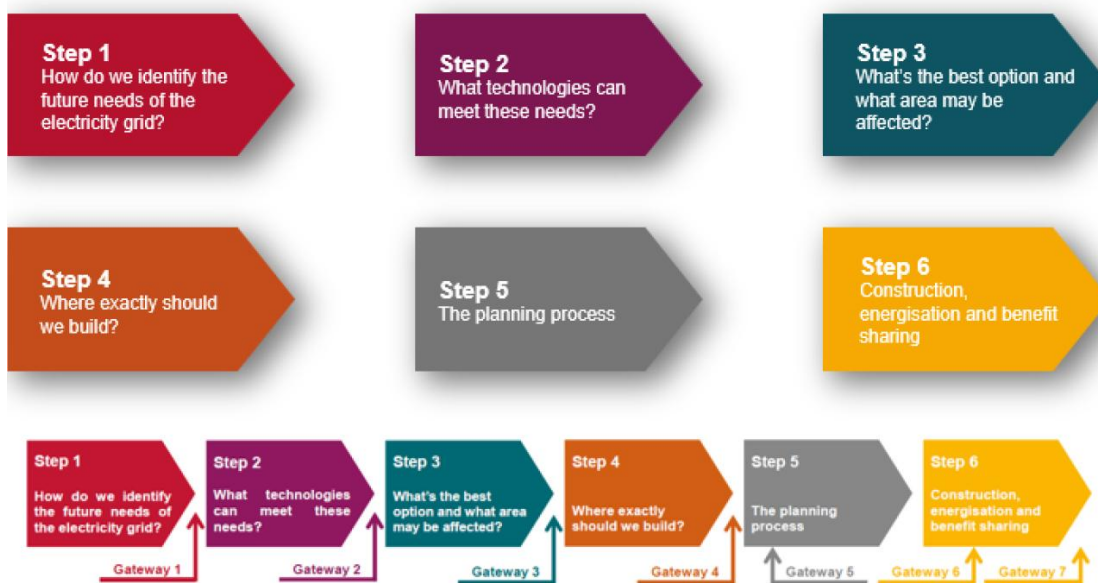
The Framework lists a number of proposed key strategic grid infrastructure projects located in the NWR, including the ‘Flagford – Sligo Capacity Needs’ Project. The projects described in this Framework “*...will enable the transmission network to accommodate more diverse power flows.*” The Framework notes that the proposed Project will help to resolve the network need in the Northern and Western Region.

## 1.3 Overview of EirGrid’s Framework for Grid Development

The proposed Project is being developed in accordance with EirGrid’s Framework for Grid Development and is currently in Step 3, as presented in Figure 1.2.

<sup>2</sup> Strategic Framework for Grid Development in the Northern & Western Region (EirGrid, 2024)

Figure 1.2: EirGrid's Framework for Grid Development



Source: EirGrid

In Step 2, EirGrid performed a technology overview where technologies were explored, and possible options were identified. The aim of Step 3 is to identify the Best Performing (Technology) Option from the options identified in Step 2. Step 3 includes the following tasks:

- Task 1 – Further develop the options brought forward from Step 2 and perform an **MCA** of the options to identify an Emerging Best Performing (Technology) Option.
- Task 2 – **Consultation** with the public and engagement with stakeholders on the EBPO.
- Task 3 – **Assess feedback** from the public consultation and stakeholder engagement.
- Task 4 – **Review the MCA** to incorporate the feedback from the consultation process.
- Task 5 – **Other considerations** including any new information that is not covered by the criteria in the MCA will be reviewed at this stage.

The outcome of Task 1 was detailed in the EBPO Report<sup>1</sup>. This report follows Task 2 and informs Tasks 3 to 5. A detailed methodology is presented in Chapter 3.

## 2 The Project

### 2.1 Introduction

The existing Flagford – Sligo 110 kV line extends from the Flagford 220 kV substation in the townland of Culleenatreen or Flagford in County Roscommon to the Sligo 110 kV substation in the townland of Tullynagracken South in County Sligo, a distance of approximately 50.8km.

This line is currently supported by intermediate wooden polesets and steel lattice towers at angle locations, which are due for replacement due to their age and condition. ESB Networks conducted a Line Condition Assessment (LCA) in 2023 and a Transmission Line Assessment Report (TLAR) in 2024. These reports indicate that approximately 70% of the wooden polesets and 40% of the steel structures along the existing Flagford – Sligo 110 kV Overhead Line (OHL) require replacement.

CP0982 aims to also facilitate this need for refurbishment/replacement works on the existing Flagford – Sligo 110 kV OHL along with the regional network reinforcement needs in the Northwest as detailed in Section 1.2.

Details of the existing Flagford – Sligo 110 kV line are provided in Table 2.1.

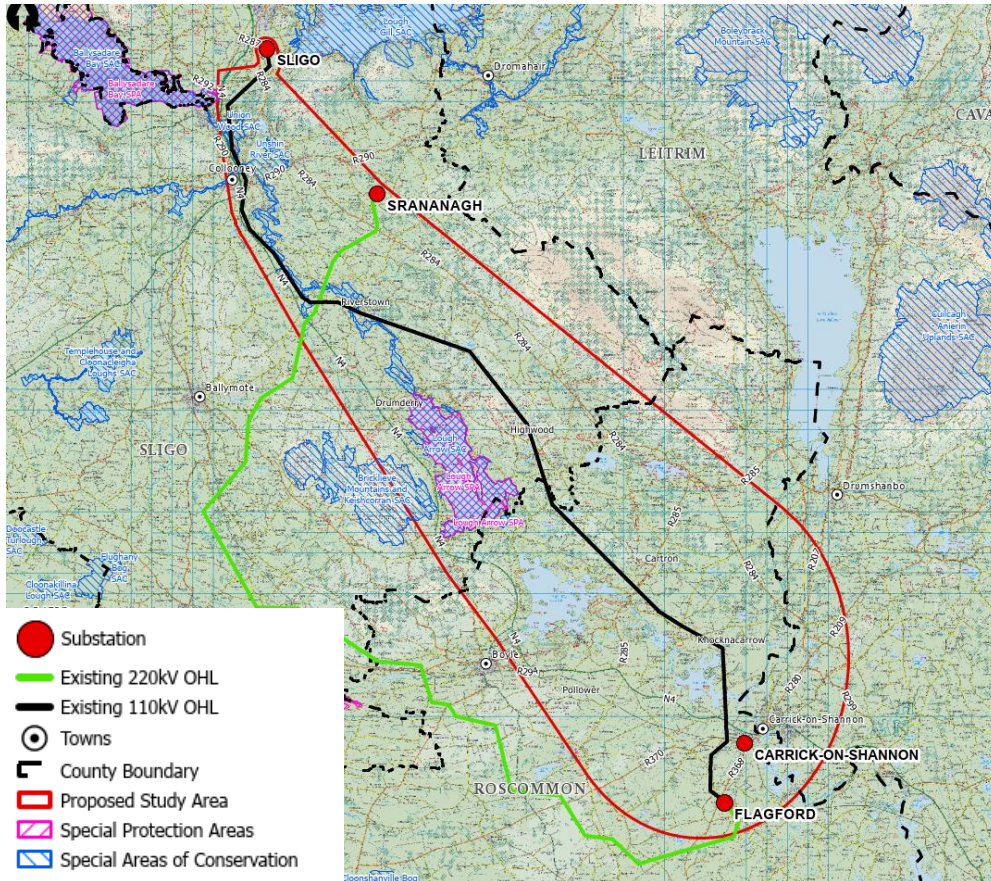
**Table 2.1: Existing Flagford – Sligo 110 kV Line Dimensions**

Existing Flagford – Sligo 110 kV Line	Dimensions
Line Voltage	110 kV
Total Length of Line	50.8km
Existing Conductor	200mm <sup>2</sup> Aluminium-Conductor Steel-Reinforced (ACSR) (Wolf)
Total Number of Structures	277
Total Number of Wooden Polesets	251
Total Number of Steel Towers	26
Line Construction Type	Single Circuit Wooden Poleset Structures Steel Lattice Strain Structures

## 2.2 Project Study Area

The study area contains the substation nodes necessary for the development of the Project namely the Sligo, Srananagh and Flagford substations, and the existing Flagford – Sligo 110kV line. Figure 2.1 presents the Step 3 project study area.

**Figure 2.1: CP0982 Flagford – Sligo Capacity Needs Project Study Area**



Source: Mott MacDonald (Drawing Reference 229101216-MMD-00-GIS-0001, provided in Appendix A)

To the north, the study area is bound by mountainous terrain and characterised by bogs which naturally delineate the study area boundary as this landscape would be challenging for potential cable routes.

To the south and west, the study area is bound by the N4, and the regional road R284 to the north and east. Flagford substation is located in the south of the study area.

Several waterbodies are within the study area, such as Lough Key, Lough Eidin (also known as Drumharlow Lake), Lough Arrow, River Shannon, River Kilukin, River Boyle and River Unshin. The following European sites are located within the study area: the Unshin River Special Area of Conservation (SAC) (site code 00198), the Lough Arrow SAC site code (001673), the Bricklieve Mountains and Keishcorran SAC (site code 001656), the Lough Arrow Special Protection Area (SPA) (site code 004050) and the Ballysadare Bay SPA (site code 004129).

The study area lies within the counties of Sligo, Leitrim and Roscommon in the province of Connacht and is predominantly rural/agricultural in nature. The main settlements within, or near the study area include Carrick-on-Shannon, Collooney, Ballygawley, Ballisodare, Riverstown, Boyle, Leitrim and Sligo.

## 2.3 Options Assessed in Step 3

Two potential solution options were brought forward from Step 2 and assessed during Step 3:

- Option 1: Voltage upgrade to 220 kV of the existing Flagford – Sligo 110 kV overhead line.
- Option 2: Thermal uprate of the existing Flagford – Sligo 110 kV overhead line plus a new Flagford – Srananagh 220 kV UGC.

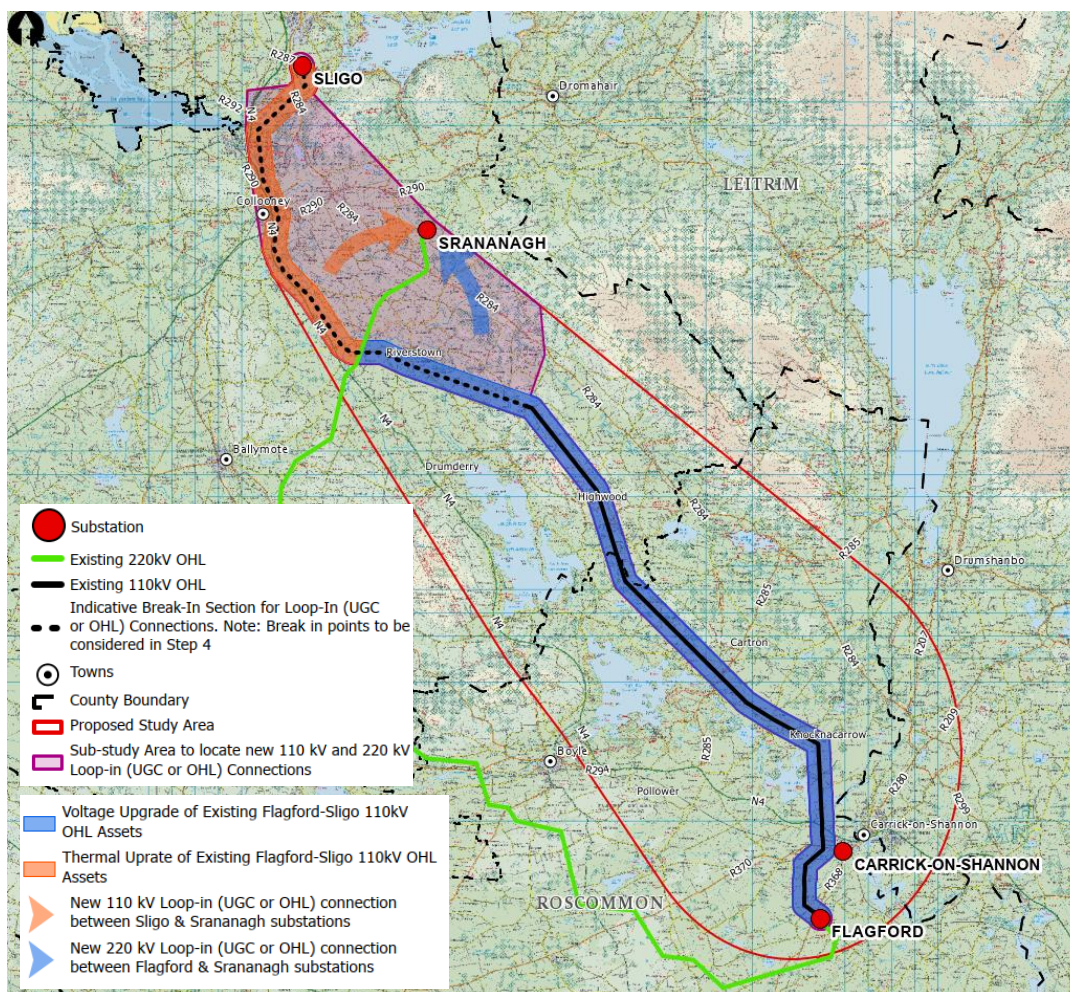
These are presented in more detail in Sections 2.3.1 and 2.3.2 respectively.

### 2.3.1 Option 1: Voltage Upgrade to 220 kV

Option 1 will include a voltage upgrade from 110 kV to 220 kV on a section of the existing Flagford – Sligo 110 kV OHL. This voltage upgrade will require new structures, and new conductors (wires) to replace the existing OHL.

Currently the Flagford – Sligo OHL is 110 kV and does not connect to Srananagh substation, which is an important node in the electricity grid. Two new sections of OHL or UGC (loop-in sections) will be required to connect the Flagford – Sligo OHL into Srananagh. Corridors for the two new loop-in sections will be developed at Step 4, should Option 1 be selected as the BPO. Figure 2.2 illustrates Option 1.

**Figure 2.2: Option 1 – Voltage Upgrade to 220 kV - Illustrative Map**



Source: Mott MacDonald (Drawing Reference 229101216-MMD-00-GIS-0019, provided in Appendix A)

Two scenarios were assessed for Option 1:

- Scenario 1
  - For the 220 kV circuit from Flagford to Srananagh substations this scenario proposes composite poles for intermediate locations and conventional steel lattice structures for angle locations; and
  - For the 110 kV circuit from Srananagh to Sligo substations this scenario proposes like for like replacement for the existing line i.e. wooden polesets for intermediate locations and conventional steel lattice structures for angle locations.
- Scenario 2
  - For the 220 kV circuit from Flagford to Srananagh substations this scenario proposes conventional steel lattice structures at all structure locations; and
  - For the 110 kV circuit from Srananagh to Sligo substations this scenario proposes like for like replacement for the existing line i.e. wooden polesets for intermediate locations and conventional steel lattice structures for angle locations.

Figure 2.3 illustrates a conventional steel lattice 220 kV intermediate structure and composite poles 220 kV intermediate structure.

**Figure 2.3: Lattice Tower (left) and a Photomontage showing Composite Poles (right)**



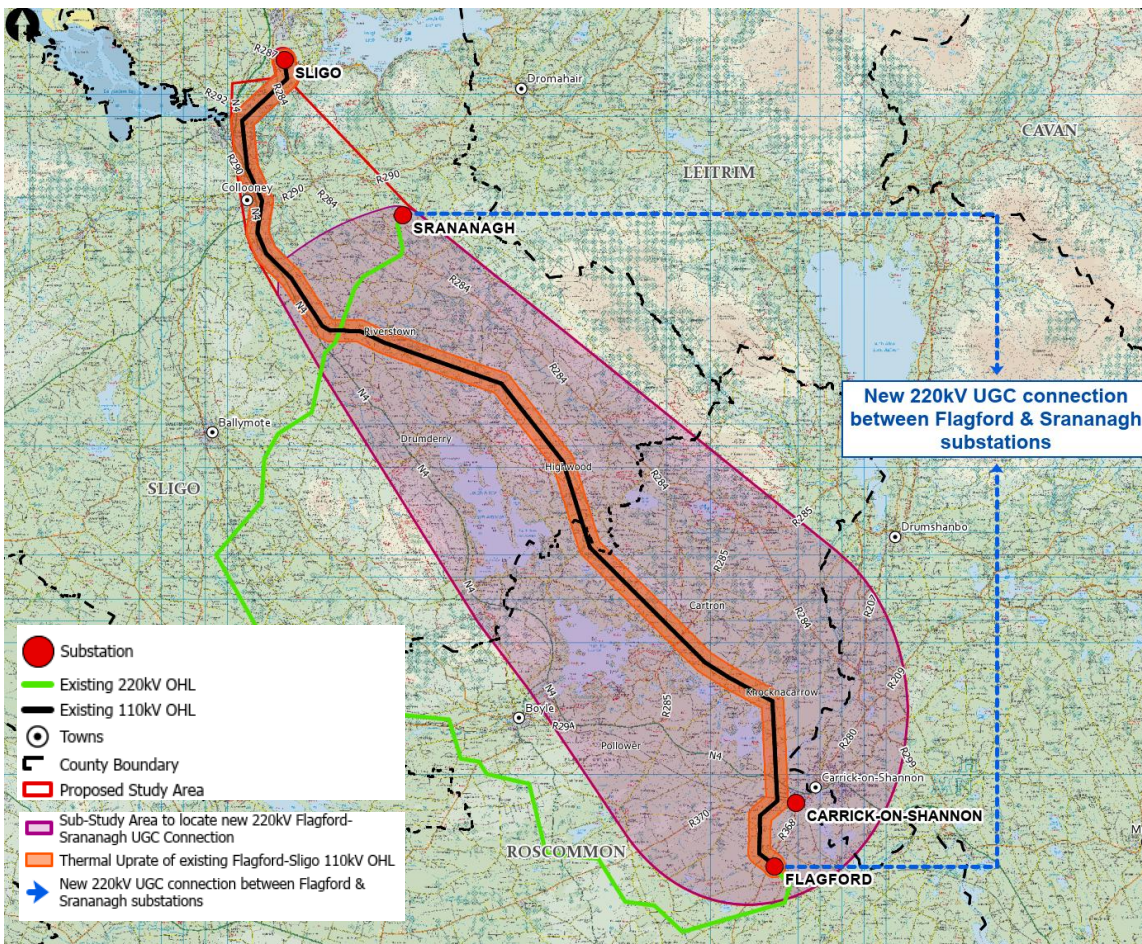
Source: Mott MacDonald

Note: The final design of the composite poles may vary.

### 2.3.2 Option 2: Thermal Uprate and 220 kV Underground Cable

Option 2 will include a thermal uprate to the existing Flagford – Sligo 110 kV OHL. This would involve replacing the existing conductor so that the circuit can operate at a higher rating (thermal uprate). This would involve the replacement of approximately 40% of the steel angle masts and 70% of the intermediate wooden polesets along the existing Flagford – Sligo 110 kV OHL. Option 2 also proposes to construct a new 220 kV UGC circuit from Flagford substation to Srananagh substation. The corridor options for the UGC will be developed at Step 4, should Option 2 be selected as the BPO. Figure 2.4 illustrates Option 2.

Figure 2.4: Option 2 – Thermal Uprate and 220 kV Underground Cable – Illustrative Map



Source: Mott MacDonald (Drawing Reference 229101216-MMD-00-GIS-0020, provided in Appendix A)

## 3 Methodology for Selection of Best Performing (Technology) Option

### 3.1 Description of Process

Section 1.3 highlights the Step 3 tasks based on EirGrid's Framework for Grid Development. The two shortlisted options brought forward from Step 2 were assessed using an MCA to identify an EBPO (Task 1 as described in Section 1.3). The assessment and evaluation of the options was documented in the Emerging Best Performing Option Report published for public consultation<sup>3</sup>. The next tasks in the Step 3 process are discussed below.

#### Task 2 – Consultation

The Step 3 assessment process provides for public participation and stakeholder engagement during the decision-making process. A 10-week consultation from 16 September 2025 to 25 November 2025 was held on the assessment and evaluation of the options which determined the EBPO. Nine public consultation events were held during this period, including six face-to-face information events, two online webinars and a roadshow in Donegal. The online consultation portal<sup>4</sup> was open during this period for online submissions.

The consultation was held for the Powering Up the North West (PUNW) Programme which includes two separate projects: CP0982 Flagford - Srananagh Project and CP1233 Srananagh - Clogher Project. The feedback presented in this report was received for the combined consultation for PUNW, however it has been applied to the proposed Project as relevant.

Further details of the consultation are provided in Chapter 4.

#### Task 3 – Assess feedback

The analysis of feedback and responses received during the consultation period was undertaken by an independent consultancy specialising in stakeholder engagement analysis and published as a consultation feedback report<sup>5</sup>. The assessment of the feedback received during the consultation period is provided in Section 5.2.

#### Task 4 – Review the MCA

This review incorporated the feedback and any other new information received during the consultation period that concerns the criteria assessed in the MCA. A clear description of the new information received is provided in Section 5.2. The MCA was reviewed in Section 5.3 based on the consultation feedback and any new information received. A clear justification is provided in Section 5.3 if the review results in a change to the previous assessment.

#### Task 5 – Other considerations

In some cases, information emerged that is not covered by the criteria in the MCA. In such cases the information is considered outside the MCA and assessed if it influences the identification of the BPO for the Project. A clear description of the new information received and a justification for any changes made to the original assessment is provided.

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<sup>3</sup> [CP0982 Flagford - Srananagh Project - Step 3 Emerging Best Performing Technology Option Report](#)

<sup>4</sup> [Powering Up the North West Step 3 Consultation Portal](#)

<sup>5</sup> [Powering Up the North West Step 3 Engagement and Consultation Report \(December 2025\)](#)

In other cases, the MCA may result in an outcome with equal performance of options and other factors may have to be used to distinguish between the options. These factors may relate to technical and/or operational issues of the transmission system, strategic decisions in terms of the developments of the Irish transmission system in a timely manner and any risks that these items may impose to the transmission system. A clear description of the further considerations influencing the decision is provided in Section 5.4

Based on the findings of Task 4 (Section 5.3) and Task 5 (Section 5.4), a BPO is identified in Section 5.5.

## 3.2 Scale used to assess each Criteria

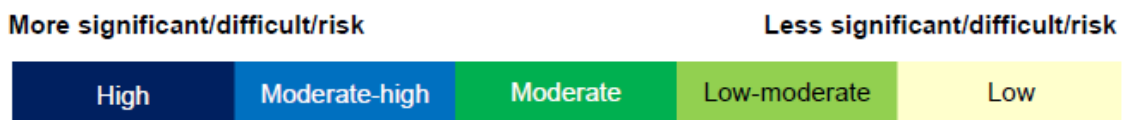
Evaluations were carried out on the two technology options as defined in Sections 2.3.1 and 2.3.2 using the following criteria: Technical, Economic, Deliverability, Environment, and Socio-economic. The criteria were further broken down into sub-criteria, as listed below, and a multi-criteria evaluation matrix was used to identify the BPO.

- Technical
  - Safety Standard Compliance
  - Expansion / Extensibility
  - Repeatability
  - Technical Operational Risk
  - Compliance with EirGrid Security and Planning Standards
  - Reliability performance
  - Headroom
- Economic
  - Implementation Costs
  - Life-cycle cost
  - Cost to Single Electricity Market (SEM)
  - Robustness test, sensitivity analysis
- Deliverability
  - Implementation Timelines
  - Project Plan Flexibility
  - Dependence on other Projects
  - Risk of Untried Construction Technology
  - Supply Chain Constraints
  - Permits and Wayleaves
  - Water Impact During Construction
  - Air Quality Impact during Construction
  - Traffic and Noise Impact during Construction
  - Design Complexity
- Environment
  - Land Use and Land Use Planning
  - Land, Soils and Hydrogeology
  - Water Resources
  - Climate, including Flood Risk
  - Biodiversity

- Cultural Heritage
- Roads and Traffic
- Designated Landscapes, Protected Views and Scenic Routes
- Aviation and Telecommunications
- Socio-economic
  - Settlements and Communities
  - Visitors and Commuters
  - Amenities, Recreation and Tourism
  - Nuisance and Disturbance
  - Visual Effects
  - Humans and Human Health

The assessment of each sub-criteria is presented along with a ranking from “more significant” / “more difficult” / “more risk” to “less significant” / “less difficult” / “less risk”. The following scale has been used to illustrate the performance ranking.

**Figure 3.1: Performance Ranking**



The MCA at Step 3 is based on the technology appropriate to each option, and the identified constraints in the study area as relevant to the consideration of the appropriate technology.

Further detail on all criteria and sub-criteria is provided in Appendix B.

## 4 Consultation

### 4.1 Public Consultation and Feedback

A 10-week public consultation process was undertaken from 16<sup>th</sup> September to 25<sup>th</sup> November 2025, seeking the public’s views and inputs on constraints which may impact the delivery of the Project and requesting feedback on the EBPO. An awareness campaign was undertaken prior to the launch of the consultation process, and the consultation period was supported by a digital media strategy (13 social media posts across two platforms) and traditional media advertising (30-second advertising on four local radios stations).

The consultation period started with a social media campaign, a project webpage<sup>6</sup> with information, an interactive map of the study area<sup>7</sup> and downloadable consultation materials. Project brochures were also distributed to residences and public spaces. Over 300 brochures were distributed at information/ pop-up events and at the roadshow, and to local businesses and shops. Notices with QR code linked to consultation materials were posted on noticeboards and distributed in public spaces, including in local supermarkets, libraries, pharmacies, and community centres. In addition, a leaflet drop was carried out to 41,200 homes within the study area.

The public engagement team collected “Frequently Asked Questions” (FAQs) during the consultation period. The responses to these questions were shared on the project webpage.

The information events as listed in Table 4.1 were advertised (via local radio, social media, and direct mail) and received local media coverage. In advance of these events, EirGrid’s Agricultural Liaison Officer and Community Liaison Officer held a total of four pop-up stands in advance of Public Information Events in the areas mentioned below, with the purpose of informing the public and promoting the upcoming events. The public information events were supported by pop-up information stands and QR codes linked to information. The information events carried out across the study area are summarised in Table 4.1, with 89 attendees overall. It is noted that two events held in County Donegal (Ballyshannon and Leghowney) were outside the study area for this Project.

**Table 4.1: Public Consultation Information Events**

County	Town	Date	No. of attendees
Leitrim	Manorhamilton	Wednesday 1 <sup>st</sup> October 2025	5
Sligo	Riverstown	Thursday 2 <sup>nd</sup> October 2025	15
Leitrim	Carrick-on-Shannon	Wednesday 15 <sup>th</sup> October 2025	29
Donegal	Ballyshannon	Thursday 16 <sup>th</sup> October 2025	11
Sligo	Sligo	Wednesday 29 <sup>th</sup> October 2025	10
Donegal	Leghowney	Thursday 30 <sup>th</sup> October 2025	19

In addition to the above, two online webinars were hosted on the 23 September 2025 (22 attendees) and the 04 November 2025 (19 attendees), with the aim of informing the public about the consultation, answering questions, and gathering indicative feedback regarding both the consultation process and the subject matter of the consultation. The webinars were attended by 41 people in total.

<sup>6</sup> [Powering Up the North West Webpage](#)

<sup>7</sup> [CP0982 & CP1233 Public Consultation Web Map](#)

An Energy Citizens Roadshow was held in Donegal on 06 November 2025, with the aim of engaging members of the community across the county about the future of the electricity grid. The roadshow was attended by 30 people. This event featured experts from Sustainable Energy Authority Of Ireland (SEAI), Electricity Supply Board (ESB) Networks, and Donegal County Council and covered topics of home energy upgrades, retrofitting grants, community energy schemes and how to achieve Ireland's energy ambitions.

The discussions and queries during public consultation events focused on following themes.

- Location of the Project
  - General location queries
  - Landowners confirming locations with relation to their residences and landholdings, and forestry in the area
- Technical & operational queries
  - Technical questions around the proposed technology
  - Curtailment issues
  - Power outages due to the Project
  - Current constraints on the grid
  - Presence of two overhead lines within a landholding
  - Safety of overhead infrastructure
  - Preference for underground technology
- Access to Project information & communication
  - General interest in the Project
  - Access to general information about the Project
  - Access to specific Project maps and reports
- Environmental and land impact
  - Impact on forestry due to the Project
  - Local disruption and impact on roads due to the Project
  - Environmental concerns (potential effects on the natural environment, birds, landscape, farmland and forestry)
  - Potential land degradation and impact on agroforestry
  - Impact of future local development following grid improvements
  - Land devaluation
  - Visual Impact of pylons
- Community
  - Concerns about potential community conflict
  - Negative local sentiment following a previous windfarm project
  - Support for the Project, noting positive direct and indirect benefits for the region and the local area
  - Acknowledging local benefit from the Project (due to grid improvements)
  - Compensation for host landowners
  - Land access during construction

Apart from the public consultation events, feedback was also received in the form of one postal submission, three email submissions (two of which were duplicates of the portal submissions) and six submissions on the online consultation portal. In addition to the concerns / queries mentioned above, these submissions focused on residential amenity, agricultural land use,

safety, climate resilience, and technical and deliverability constraints. One submission noted the presence of a fairy fort within their landholding.

## 4.2 Stakeholder Engagement Activities

In line with the HV (High Voltage) Forum Engagement Protocol and EirGrid best practice, targeted engagement took place with local authorities within the study area. EirGrid gave a presentation to Sligo County Council, Donegal County Council and Leitrim County Council providing an overview of the PUNW programme (and the two projects), reasoning for the technology selected, ongoing Step 3 public consultation, and the Step 4 consultation to be held in 2026.

The following stakeholders were represented at the public consultation events and / or webinars listed in Section 4.1:

- Donegal County Council
- Leitrim County Council
- Sligo County Council
- Transport Infrastructure Ireland / National Roads Authority
- Houses of the Oireachtas

Several stakeholders provided submissions using the online consultation portal, as summarised in Table 4.2.

**Table 4.2: Stakeholders Engaged during Consultation Process**

Stakeholders		Consultation Event	Summary of Feedback
National Stakeholders	Bord na Móna (BnM)	Consultation portal submission	<ul style="list-style-type: none"> <li>• BnM support the Project and recognise that investments in electricity infrastructure underpin Ireland’s future sustainable growth and development.</li> </ul>
Regional Stakeholders	Western Development Commission (WDC)	Consultation portal submission	<ul style="list-style-type: none"> <li>• WDC supports ‘Powering Up the North West’ Project and associated investment in transmission projects in this region.</li> <li>• Recognises the importance of providing energy infrastructure to support significant renewable energy resources in the region.</li> <li>• WDC suggest providing details on the extent of the PUNW programme and the need of the project to increase grid connection opportunities for generation and enable the achievement of Climate Action Plan 2030 renewable generation targets. Further information should be provided on future capacity increase from this project and how it links to future development of the transmission grid north of Clogher.</li> </ul>
	Northern & Western Regional Assembly (NWRA)	Consultation portal submission and submission via email	<ul style="list-style-type: none"> <li>• NWRA consider upgrading and extension of the Grid as a key strategic regional enabler for the North West.</li> <li>• The assessment of options should take into account environmental, heritage, landscape and visual constraints, and should be completed in accordance with relevant policies and legislation.</li> <li>• The ‘Powering Up the North West’ Project should provide infrastructure capacity to</li> </ul>

Stakeholders		Consultation Event	Summary of Feedback
			support the delivery of new housing targets, population targets, and renewable energy targets for the region as per the National Planning Framework (NPF).
	Donegal County Council (DCC)	Consultation portal submission, submission via email	<ul style="list-style-type: none"> <li>NWRA suggest Letterkenny is included within the study area for 'Powering Up the North West' Project. This is relevant to the Srananagh to Clogher Project and does not result in study area changes for this Project.</li> </ul>
Renewable Energy Developers	Plan Energy Developments	Consultation portal submission	<ul style="list-style-type: none"> <li>DCC provided a submission acknowledging the wider transmission capacity and needs of the region.</li> <li>Plan Energy Developments are progressing several renewable energy projects in the region and support the increase in future transmission capacity in the region.</li> </ul>

Overall, the stakeholders acknowledged that the Project is a critical investment to address long-standing grid constraints within the region. The Project will enable further renewable energy development in the region. This will help meet the increasing electricity demand in the region, driven by the population and housing growth. The importance of aligning the Project with the regional development needs and revised NPF annual housing targets was also highlighted.

Beyond the general acceptance of the need of the Project, the stakeholders noted that the route selection process should take into account environmental, cultural heritage and landscape considerations within the region. These are considered in Step 3 and will also be assessed in further detail in Step 4 of the Project. The need to adhere to national and local policies along with proposal of robust mitigation measures for sensitive areas within the study area was also highlighted.

### 4.3 Landowner Engagement

Landowners who host infrastructure related to the electricity transmission network on their land, play a significant role in the successful delivery of a project. As part of the landowner engagement process for the Project, EirGrid's Agricultural Liaison Officers (ALOs) consulted with the landowners along the existing overhead line. The ALOs provided project information, captured feedback and identified risks and opportunities for the project. This information was fed back to the project design team. This consultation followed on from the pilot landowner engagement undertaken on the CP0982 Flagford - Srananagh Project in 2025.

## 5 Selection of Best Performing (Technology) Option

### 5.1 Multi-criteria Assessment prior to Consultation

The MCA undertaken in Step 3 prior to the consultation period assessed all three technology options against EirGrid’s five criteria and identified an EBPO<sup>3</sup>. The outcome of the MCA prior to the consultation is summarised in Table 5.1

**Table 5.1: Technology Options MCA prior to Consultation**

Options	Technical	Economic	Deliverability	Environment	Socio-economic
<b>Option 1</b>					
Scenario 1					
Scenario 2					
<b>Option 2</b>					
Thermal Uprate and 220 kV UGC					

Scenario 1 was the preferred scenario of Option 1. The key differentiator was the more industrial visual presence of steel lattice towers proposed in Scenario 2 to replace wooden polesets along the section of the existing overhead line for voltage upgrade, and the resultant effects on residents/communities, visitors, commuters and recreation and tourism.

In a comparison between Option 1 Scenario 1 and Option 2, both score moderate for deliverability, environmental and socio-economic performance. Option 1 Scenario 1 was found preferable to Option 2 for technical and economic performance. Therefore, on balance, Option 1 Scenario 1 was the emerging best performing technology option.

### 5.2 Assessment of Feedback from Consultation

An independent consultancy analysed the feedback from the public consultation and stakeholder engagement and reported on the findings<sup>5</sup>. An overview of responses and discussions from the public consultation period is provided in Chapter 4.

### 5.3 Review of Multi-criteria Assessment

The MCA was reviewed in the context of the feedback received from the consultation period. Based on a review of the information received to date, no changes to the scoring of the MCA were warranted.

### 5.4 Further Considerations

In addition to the consultation period, breeding hen harrier surveys were carried out by Mott MacDonald, in the study area as part of the Project during April and June 2025. These surveys focused on finding evidence of breeding hen harrier, however other birds of conservation concern were also recorded if present. These surveys concluded that there is little evidence of breeding hen harrier within the route of the existing Flagford – Sligo 110 kV OHL and recommended that additional targeted hen harrier surveys be conducted a year prior to any construction being undertaken. The recommendations and findings of these surveys, do not

affect the scoring of the technology options at Step 3, however they will be valuable in the identification of potential corridors of the BPO at Step 4.

## 5.5 Best Performing (Technology) Option

Considering the inclusion of the feedback from the consultation process, the MCA did not warrant a change in the scoring of the options. Table 5.2 presents the result of the Step 3 MCA for the Project.

**Table 5.2: Technology Options MCA post-Consultation**

Options	Technical	Economic	Deliverability	Environment	Socio-economic
<b>Option 1</b>					
Scenario 1					
Scenario 2					
<b>Option 2</b>					
Thermal Uprate and 220 kV UGC					

In a comparison of Scenario 1 and Scenario 2, for Option 1, both scenarios score equally for technical, economic, deliverability and environmental performance.

Under socio-economic, Scenario 1 is favourable. The key differentiator is the more industrial presence of steel lattice towers proposed in Scenario 2 to replace wooden polesets along the section of the existing OHL for the voltage upgrade, and the resultant effects on residents/communities, visitors, commuters and recreation and tourism. This was evident from the public consultation feedback as well where no strong opposition to the use of composite poles was identified.

On balance between the two, Scenario 1 is the preferred scenario of Option 1.

In a comparison of Option 1 Scenario 1 with option 2, both score moderate for deliverability, environmental and socio-economic performance. It is noted, as identified during the consultation process as well that Option 2 has a lower visual effects risk compared to Option 1 Scenario 1 due to the use of UGC technology instead of OHL.

Option 1 Scenario 1 is preferable to Option 2 for technical performance due to the increased risk of expansion/extendibility, technical operational risk, reliability and compliance with EirGrid security and planning standards associated with Option 2.

Option 1 Scenario 1 is favourable under economic performance due to the increased implementation costs of UGC technology compared to OHL, and the longer linear length of UGC that would be required for Option 2.

On balance Option 1, Scenario 1 is the best performing technology option.

## 6 Conclusion

The CP0982 Flagford – Srananagh Project is a proposed electricity transmission reinforcement project which will address the need identified in the Northwest region of Ireland.

The Project is described in the Strategic Framework for Grid Development in the Northern & Western Region (EirGrid, 2024)<sup>8</sup>. The Framework identifies that the Northern and Western Region (NWR) “*is characterised by a strong existing and potential renewable energy (primarily wind) resource, with many requests for further connection*”. The Framework notes that the proposed Project will help to resolve the network need in the Northern and Western Region.

The purpose of Step 3 was to identify the Best Performing Technology Option. The following two technology options were brought forward from Step 2 for further consideration:

- Option 1: Voltage upgrade to 220 kV of the existing Flagford – Sligo 110 kV OHL
  - Scenario 1: use of composite poles for intermediate locations and conventional steel lattice structures for angle locations for the 220 kV circuit from Flagford to Srananagh substations.
  - Scenario 2: use of conventional steel lattice structures at all structure locations for the 220 kV circuit from Flagford to Srananagh substations.
- Option 2: Thermal uprate of the existing Flagford – Sligo 110 kV OHL plus a new Flagford – Srananagh 220 kV UGC.

These options have been assessed against five criteria: technical performance, economic performance, deliverability performance, environmental performance, and socio-economic performance.

Based on the multi-criteria assessment, Option 1 Scenario 1 is the best performing technology option. Option 1 Scenario 1 involves a voltage upgrade to 220 kV of the existing Flagford – Sligo 110 kV OHL using composite poles for intermediate locations and conventional steel lattice structures for angle locations for the 220 kV circuit from Flagford to Srananagh substations.

For the 110 kV circuit from Srananagh to Sligo substations this scenario proposes like for like replacement for the existing line i.e. wooden polesets for intermediate locations and conventional steel lattice structures for angle locations.

Option 1 Scenario 1 also includes new sections of OHL or UGC (loop-in sections) to connect the existing Flagford – Sligo OHL into Srananagh substation. An assessment of the loop-in technology (OHL vs UGC) and the route options will be undertaken in Step 4.

---

<sup>8</sup> [Strategic Framework for Grid Development in the Northern & Western Region \(EirGrid, 2024\)](#)

## 7 Next Steps

As described in Section 1.3, public consultation was undertaken after the identification of the EBPO to involve the public and other relevant stakeholders in the decision making process for the proposed CP0982 Flagford – Sligo Capacity Needs Project in accordance with the EirGrid Framework for Grid Development.

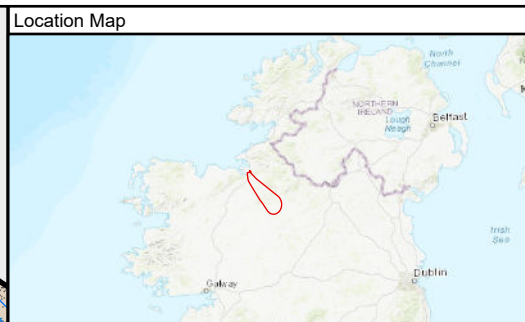
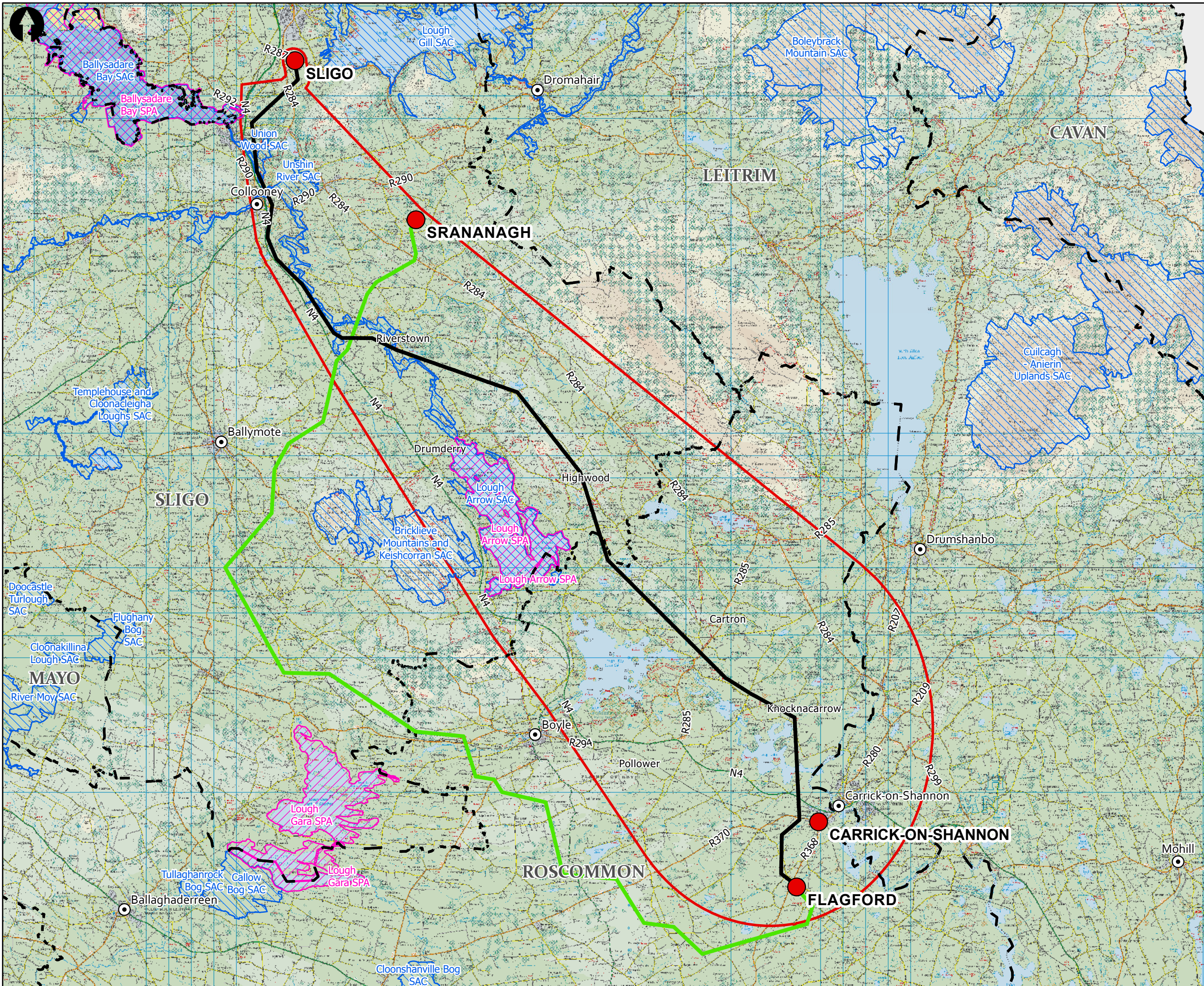
The feedback from the public consultation and stakeholder engagement was assessed and the MCA was reviewed. This, together with an assessment of any further considerations, resulted in Option 1 Scenario 1 as the Best Performing (Technology) Option. The identification of the BPO (Technology) concludes the Step 3 process as per EirGrid's Framework for Grid Development.

This option will be progressed into Step 4 of EirGrid's Framework for Grid Development. At Step 4 additional assessments will be carried out to identify route options for the BPO (Technology). Stakeholder and landowner engagement will also be undertaken to inform the assessment and the decision-making process of the route selection. EirGrid will establish a Community Forum for the Powering Up North West Programme, chaired by an independent facilitator. This forum will aim to bring together people and organisations from across the project area so that stakeholder and community views can be discussed, understood, and properly considered prior to and during project delivery.

The purpose of Step 4 is to utilise the high-level datasets used in Step 3 along with “on-the-ground” information and other local, social and environmental inputs to determine and verify local constraints and opportunities. Based on these assessments, a Step 4 BPO circuit route will be identified for the technology option selected at Step 3. A route will be developed which will specify the location of any new equipment and infrastructure.

For the loop-in circuits to and from Srananagh substation, further assessment is required to determine the technology (overhead line or underground cable) and the location of the routes. EirGrid will assess all reasonable alternatives in terms of their location, which will include off-road and in-road options, should underground cables be the best performing technology. In assessing in-road underground cables, EirGrid will engage with the Roads Sector (TII and local authorities) to ensure that potential impacts of high voltage transmission underground cable circuits on public roads and associated stakeholders' concerns are identified, considered in project optioneering and mitigated where an in-roads option is chosen. Where a road may also be a planned corridor for future public transport services or utility infrastructure, additional specific requirements will be considered and addressed through consultation.

# A. Mapping



- Key to Symbols**
- Substation
  - Existing 220kV OHL
  - Existing 110kV OHL
  - Towns
  - County Boundary
  - Proposed Study Area
  - Special Protection Areas
  - Special Areas of Conservation

**Notes**

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Rev	Date	Drawn	Description	CC	PF
09	10/02/2025	CC	Study Area	CC	PF

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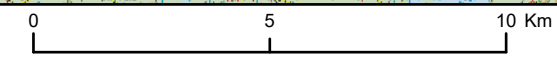
CP0982 Flagford - Sligo Capacity Needs  
Study Area

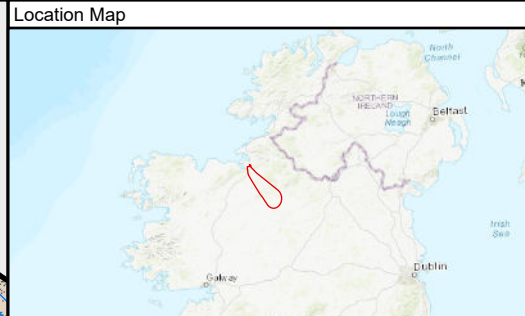
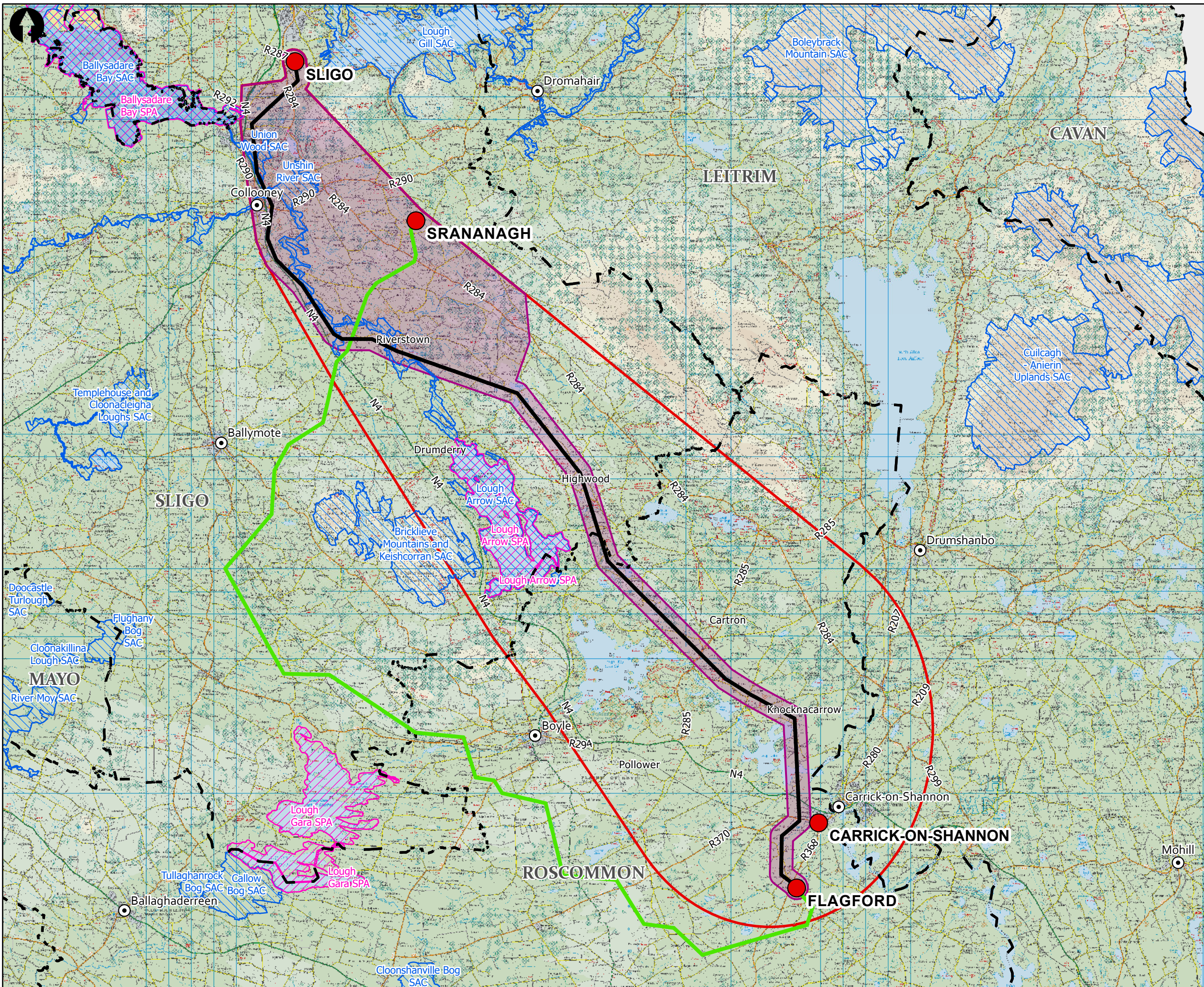
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**Key to Symbols**

- Substation
- Existing 220kV OHL
- Existing 110kV OHL
- Towns
- County Boundary
- Proposed Study Area
- Sub-study Area to locate new 110 kV and 220 kV Loop-in (UGC or OHL) Connections
- Special Protection Areas
- Special Areas of Conservation

**Notes**

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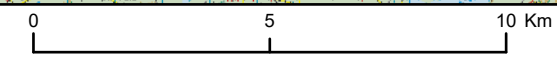
CP0982 Flagford - Sligo Capacity Needs  
Sub-Study Area Option 1 - Voltage Upgrade to 220kV

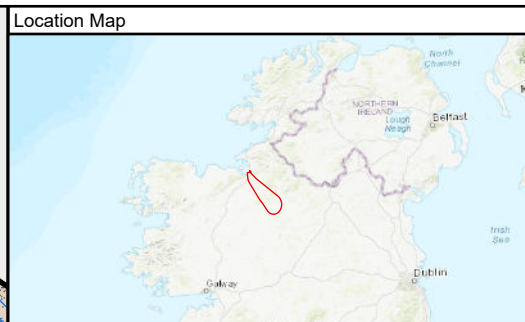
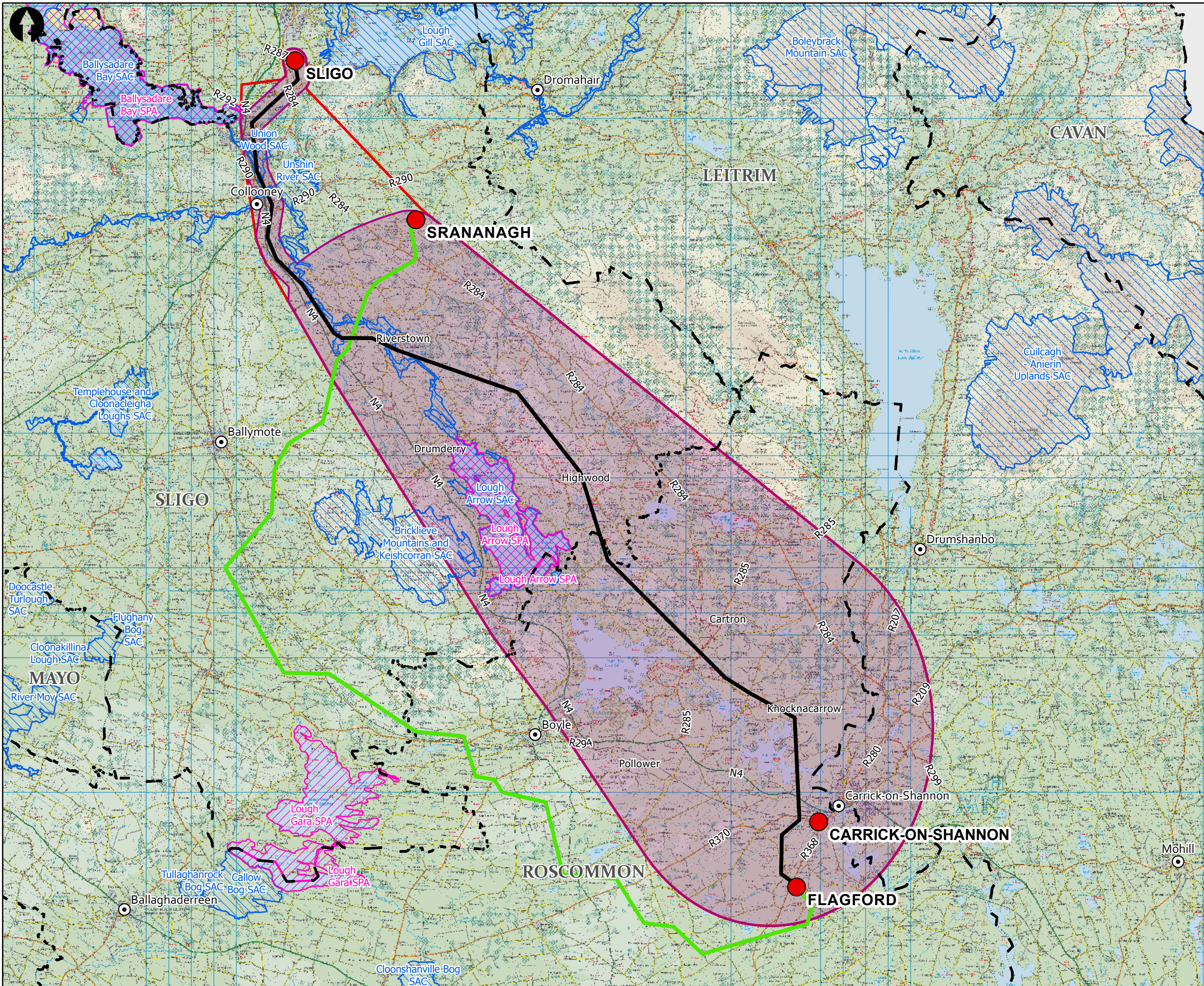
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**Key to Symbols**

- Substation
- Existing 220kV OHL
- Existing 110kV OHL
- Towns
- County Boundary
- Proposed Study Area
- Sub-Study Area to locate new 220kV Flagford-Srananagh UGC Connection
- Special Protection Areas
- Special Areas of Conservation

**Notes**

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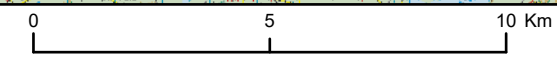
CP0982 Flagford - Sligo Capacity Needs  
Sub-Study Area Option 2 - Thermal Uprate and New 220kV UGC

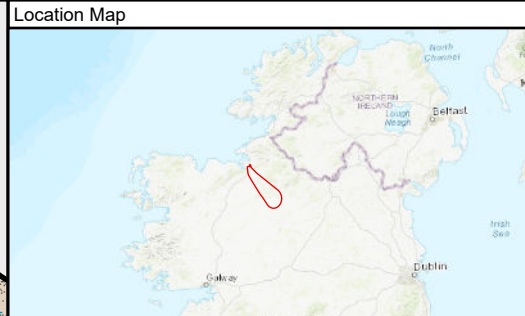
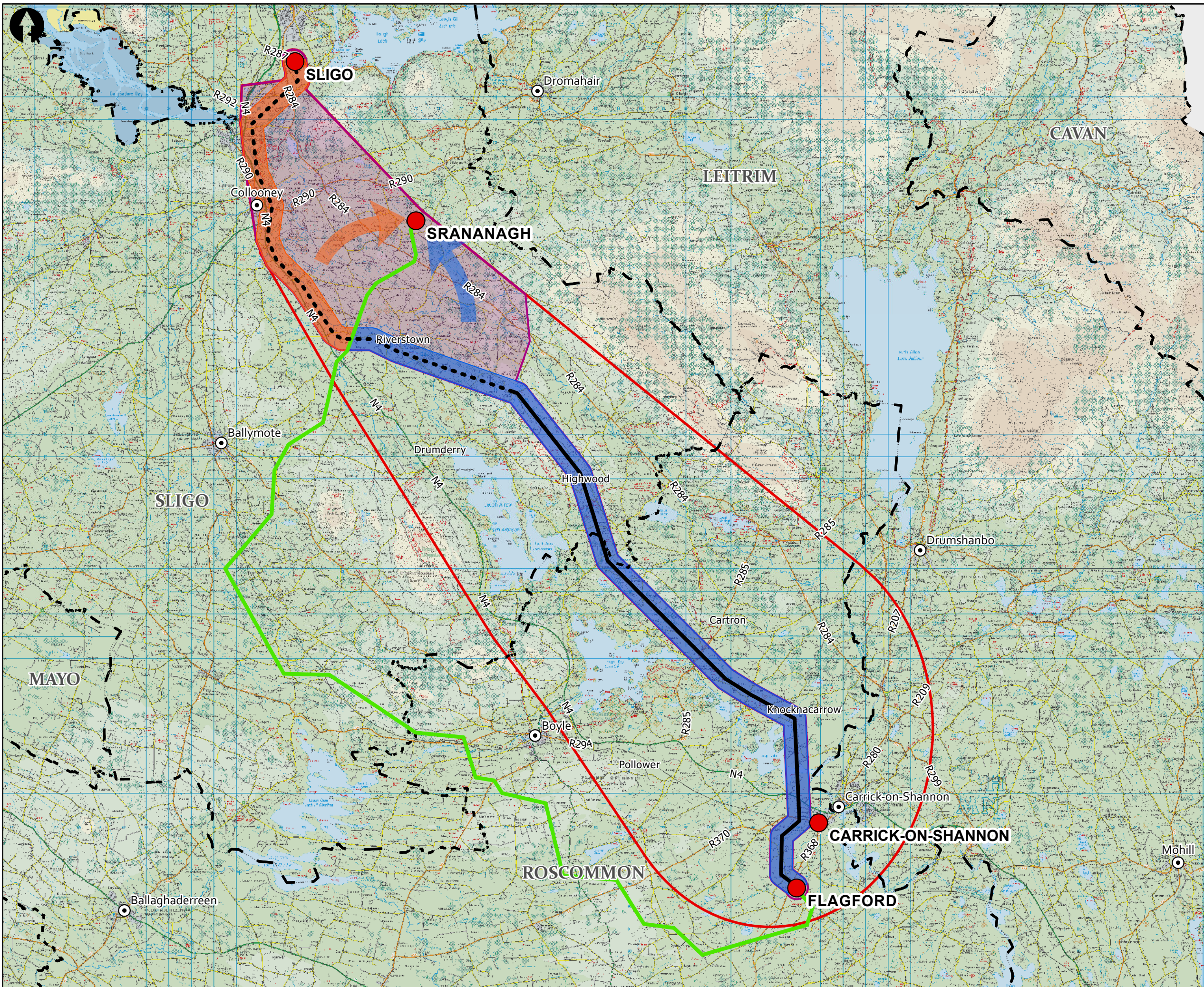
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**Key to Symbols**

- Substation
- Existing 220kV OHL
- Existing 110kV OHL
- - - Indicative Break-In Section for Loop-In (UGC or OHL) Connections. Note: Break in points to be considered in Step 4
- Towns
- County Boundary
- Proposed Study Area
- Sub-study Area to locate new 110 kV and 220 kV Loop-in (UGC or OHL) Connections
- Voltage Upgrade of Existing Flagford-Sligo 110kV OHL Assets
- Thermal Uprate of Existing Flagford-Sligo 110kV OHL Assets
- New 110 kV Loop-in (UGC or OHL) connection between Sligo & Srananagh substations
- New 220 kV Loop-in (UGC or OHL) connection between Flagford & Srananagh substations

**Notes**

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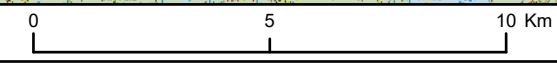
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**CP0982 Flagford - Sligo Capacity Needs**

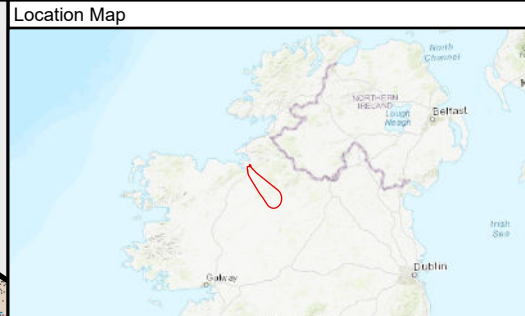
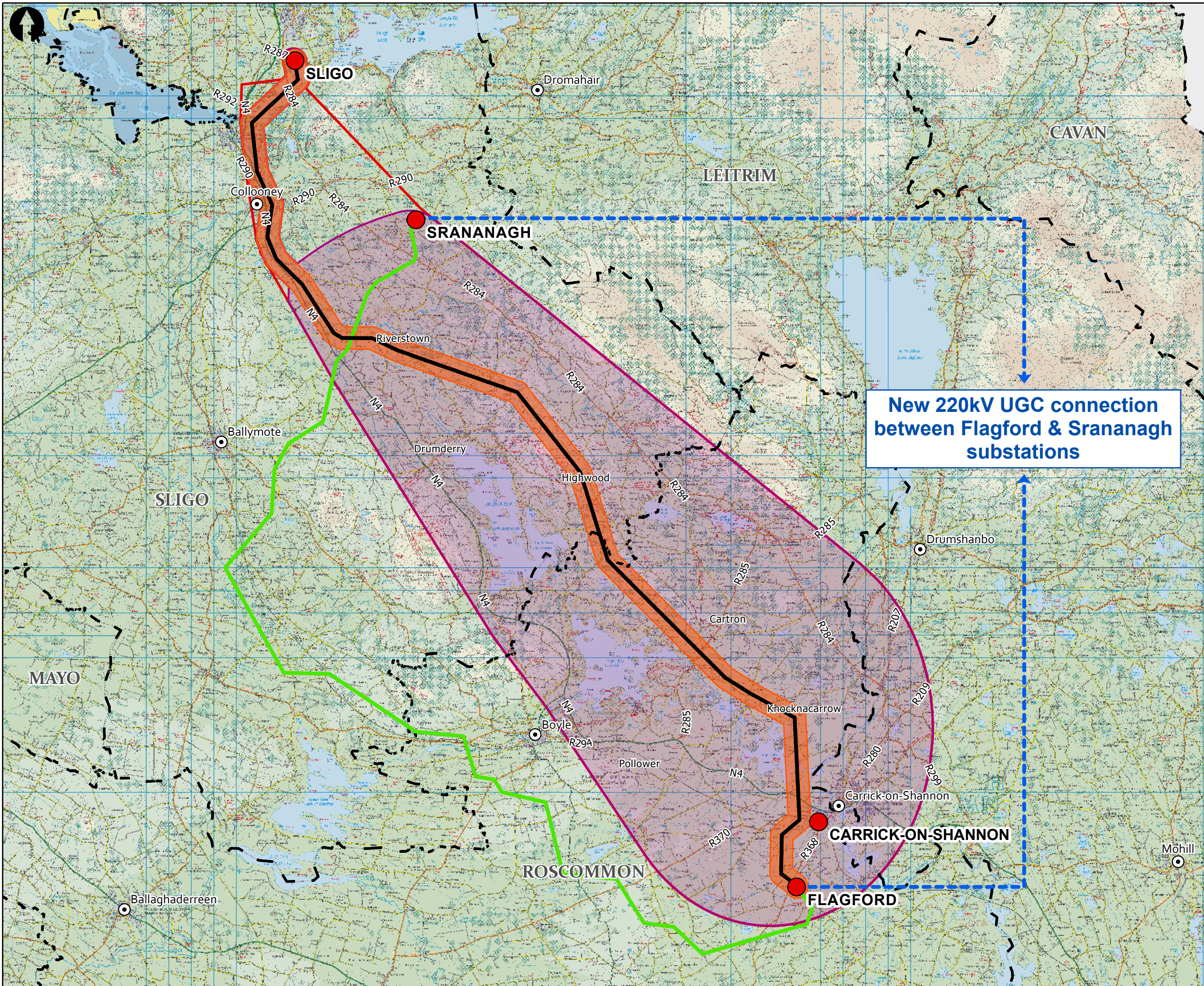
Option 1 - Voltage Upgrade to 220 kV

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- Existing 110kV OHL
- Towns
- County Boundary
- Proposed Study Area
- Sub-Study Area to locate new 220kV Flagford-Srananagh UGC Connection
- Thermal Uprate of existing Flagford-Sligo 110kV OHL
- ➔ New 220kV UGC connection between Flagford & Srananagh substations

New 220kV UGC connection  
between Flagford & Srananagh  
substations

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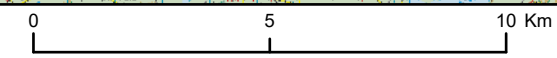
CP0982 Flagford - Sligo Capacity Needs  
Option 2 - Thermal Uprate and new 220kV UGC

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## B. Multi-Criteria Assessment Sub-Criteria

**Table B.1: Technical Sub-Criteria**

Technical Sub-Criteria	Description
Safety Standard Compliance	<ul style="list-style-type: none"> <li>This sub-criterion examines the option compliance with all relevant safety standards such as those from the European Committee for Electrotechnical Standardisation (CENELEC).</li> <li>Compliance with all relevant IEC and CENELEC standards will be required for the materials necessary to carry out the proposed works of both scenarios.</li> <li>Existing and new OHL structures will be designed to comply with the National Annex for Ireland (EN 50341-3-11) based on EN 50341-1<sup>9</sup>.</li> <li>The UGC technology will comply with EirGrid's UGC functional specification.<sup>10</sup></li> <li>The OHL technology will comply with EirGrid's OHL functional specification.<sup>11</sup></li> </ul>
Expansion / Extensibility	<ul style="list-style-type: none"> <li>This sub-criterion assesses the power carrying capability of each technology and the ease with which each technology can be expanded.</li> <li>An increase in the thermal capacity of the circuit can achieve an increase in the power carrying capability. This is generally achieved by uprating the conductor to a higher capacity one.</li> <li>For UGC, increasing the thermal rating may be difficult to achieve in the future due to the diameter of ducting and crossing of obstacles. Crossing of obstacles such as bridges, culverts, watercourses, transmission gas mains, drainage pipes or other cables can require UGC to be buried deeper, impacting its thermal rating. There also may be difficulties in accommodating larger diameter ducting or additional cables in the UGC corridors, limiting the extensibility of the UGC technology. Changing the thermal capacity of the UGC may lead to reactive power compensation requirements (i.e. installation of shunt reactors and harmonic filters on each remote end of the circuit) or existing reactive power compensation equipment becoming redundant. This may require the resizing and installation of new reactors.</li> <li>In the event that another connection along the circuit is required, this can be achieved by constructing another substation which could be connected to the circuit. This is a very common way to expand the transmission network and is normally technically feasible.</li> <li>OHL technology is considered less challenging in terms of expansion of the transmission network due to the flexibility in incorporating new substations with little or no impact to existing infrastructure. For UGC, technology expansion of the transmission network is more challenging.</li> </ul>
Repeatability	<ul style="list-style-type: none"> <li>Consideration is given to the repeatability of the technology used within the Irish Transmission System.</li> <li>Conventional OHL structures, i.e. steel lattice structures and wooden polesets, are already widely in use and in operation on the Irish transmission system. Considering system integration, operation, and maintenance there are no limits envisaged with regards to the repeatability of using steel lattice structures on the Irish transmission system.</li> <li>While an OHL option is very repeatable, a fully or partially underground cable option is less repeatable as there may be harmonic filter and reactive compensation requirements that are bespoke for each option.</li> </ul>

<sup>9</sup> BS EN 50341-1:2021, Overhead electrical lines exceeding AC 1 kV, European Standard, December 2012

<sup>10</sup> 110/220/400 kV Underground Cable Functional Specification, CDS-GFS-00-001-R1, EirGrid, 21/05/2021

<sup>11</sup> 110/220/400 kV Overhead Line Functional Specification, LDS-EFS-00-001-R0, EirGrid, 14/07/2017

Technical Sub-Criteria	Description
Technical Operational Risk	<p>The length of cable circuit that can be integrated in certain parts of the network may also be limited.</p> <ul style="list-style-type: none"> <li>● The use of composite poles at suspension locations for the 220 kV corridor (Scenario 1) is a new and innovative solution. Composite poles are a relatively new technology; however composite poles are currently used on electricity grids globally. It is acknowledged that composite poleset technology has yet to be installed in the Irish Transmission System, however this is not considered a risk, considering that 220 kV Composite polesets have gone under rigorous testing by EirGrid and ESNB. This testing enabled personnel to gain familiarity with methods of installation of this new asset and did not identify any major risks in its use.</li> <li>● Consideration is given to the risk of operating different technologies on the transmission system.</li> <li>● Overhead lines supported by lattice towers and wooden polesets are seen as a tried and tested technology.</li> <li>● UGC is also considered a tried and tested technology, however consideration must be given to the length of the UGC corridor, especially in areas where the network is relatively weak, such as the Northwest Region. Reactive power compensation will be required to keep voltage levels within acceptable margins. Additionally, large capacitance can be associated with UGC which may cause amplification of harmonics due to resonances on the network and change the harmonic impedance profile of the network in an unfavourable manner. A harmonic filter device may be required to mitigate harmonic distortion. The additional installation of reactive power compensation and harmonic filter devices increases the technical operational risk of these methods</li> </ul>
Compliance with EirGrid Security and Planning Standards	<ul style="list-style-type: none"> <li>● The technology option will comply with the network reliability and security standards defined in the Transmission System Security and Planning Standards (TSSPS)<sup>12</sup> and the Operation Security Standards (OSS)<sup>13</sup>. All options investigated will meet the minimum technical requirements set out in the above standards. Options which extend or enhance technical performance margins beyond minimum acceptable levels are favoured over others.</li> </ul>
Reliability performance	<ul style="list-style-type: none"> <li>● The reliability of transmission infrastructure is associated with two categories or type of outages, namely unplanned outages and planned outages.</li> <li>● Each technology or type of equipment is associated with faults (unplanned outages) that routinely occur. These can be represented as average failure rates usually expressed as unplanned outages/100km/year.</li> <li>● This sub-criterion also takes account of the mean time to repair. This is the time taken to return the equipment to service after a fault has occurred. The assessment is based on transmission performance statistics or industry standard reliability data.</li> <li>● This sub-criterion assesses the typical time the options would be unavailable for during planned outages. Planned outages are normally associated with annual routine maintenance and will be based on typical outage durations taken from maintenance policies.</li> <li>● The reliability for each option will be based on a combination of the above type of outages. The reliability of the station equipment associated with the options is assumed to be the same for all options and is therefore not included in this analysis.</li> </ul>

<sup>12</sup> EirGrid, Transmission System Security and Planning Standard, 2016 (<http://www.eirgridgroup.com/site-files/library/EirGrid/EirGrid-Transmission-System-Security-and-Planning-Standards-TSSPS-Final-May-2016.pdf>)

<sup>13</sup> EirGrid, Operational Security Standards, 2011 (<http://www.eirgridgroup.com/site-files/library/EirGrid/Operating-Security-Standards-December-2011.pdf>)

Technical Sub-Criteria	Description
Headroom	<ul style="list-style-type: none"> <li>This sub-criterion assesses the ability of each option to accommodate increases in renewable generation in the Northwest region.</li> <li>Each option is compared relative to the others to determine the increase in renewable generation that can be accommodated in the Northwest without further network reinforcements being required. The limit for each option can be found by increasing renewable generation in the Northwest until a TSSPS limit is reached.</li> <li>The headroom for each option is the difference between the renewable generation that can be accommodated by the network with that option included and the renewable generation that can be accommodated by the network with no option included.</li> </ul>

**Table B.2: Economic Sub-Criteria**

Economic Sub-Criterion	Description
Implementation Costs	<ul style="list-style-type: none"> <li>Consideration is given to project implementation costs. These are the costs associated with the procurement, installation and commissioning of the grid development.</li> <li>Each option is evaluated for kilometre length and used to estimate the cost of each option. These costs are indicative and used only for the purposes of comparison between options. The costs do not represent the total project costs.</li> <li>To aid the economic evaluation Transmission Standard Development Costs (TSDC), a cost estimate tool for various transmission system technologies, has been used, to enable comparison between different technology options.</li> </ul>
Life-cycle cost	<ul style="list-style-type: none"> <li>Life-cycle costs refer to the costs incurred over the useful life of the option and include the on-going cost of ensuring that it remains viable for the evaluation period. This sub-criterion includes:                             <ul style="list-style-type: none"> <li>Operation and Maintenance costs</li> <li>Replacement costs</li> </ul> </li> </ul>
Cost to Single Electricity Market (SEM)	<ul style="list-style-type: none"> <li>This sub-criterion will take account of the impact of the cost to the electricity market for the periods where the reinforcement option is not available. The technologies and equipment associated with the different options have different performance and reliability characteristics. This cost is calculated as a combination of the benefit in production cost saving (project benefit) and reliability performance of the option.</li> <li>Production cost saving benefit in relation to transmission system and its operations, expressed as savings in generation costs due to enhanced transmission capability.</li> </ul>
Robustness test, sensitivity analysis	<ul style="list-style-type: none"> <li>This sub-criterion considers sensitivity analysis, namely the option's sensitivity to changes in the reference parameters (i.e. implementation cost, and benefits).</li> </ul>

**Table B.3: Deliverability Sub-Criteria**

Deliverability Sub-Criteria	Description
Implementation Timelines	<ul style="list-style-type: none"> <li>Consideration is given to the relative length of time from the beginning of the construction phase until energisation, circuit lengths, as well as any seasonal and local constraints that may impact implementation.</li> <li>The critical path of the construction programme is the installation of the technology. As such, options with the same technology will have similar implementation timelines. The following installation rates are applied:                             <ul style="list-style-type: none"> <li>325m per week for installation of new UGC. Assume works sequenced to allow multiple crews working in parallel.</li> </ul> </li> </ul>

Deliverability Sub-Criteria	Description
	<ul style="list-style-type: none"> <li>– 1km per week for installation of OHL. Assume that works can be completed in parallel with multiple crews.</li> <li>– 1.5km per week for removal of existing OHL. Assume that works can be completed in parallel with multiple crews.</li> </ul>
Project Plan Flexibility	<ul style="list-style-type: none"> <li>● The assessment reviews the flexibility to identify the OHL and UGC corridors.</li> <li>● Making use of the existing Flagford – Sligo 110 kV route presents advantages from a planning and environmental perspective but reduces the level of flexibility to identify a route.</li> <li>● New build sections of OHL and UGC will provide certain levels of flexibility to identify corridors within the respective sub-study areas of the options in Step 4.</li> </ul>
Dependence on other Projects	<ul style="list-style-type: none"> <li>● Consideration is given to the extent a corridor may be impacted by other transmission infrastructure projects in the area, such as CP1233 Donegal-Srananagh project.</li> </ul>
Risk of Untried Construction Technology	<ul style="list-style-type: none"> <li>● Consideration is given to the frequency of utilisation within the Irish Transmission System.</li> <li>● UGC technology in 110 &amp; 220 kV levels and OHL technology with the use of traditional steel lattice towers and wooden polesets are considered tried and tested.</li> <li>● Composite poles are a relatively new technology; however it is currently used on electricity grids globally. It is acknowledged that composite technology has yet to be installed in the Irish Transmission System, however this is not considered a risk, considering that that 220 kV composite polesets have gone under rigorous testing by EirGrid and ESNB. This testing enabled personnel to gain familiarity with methods of installation of this new asset and did not identify any major risks in its use.</li> </ul>
Supply Chain Constraints	<ul style="list-style-type: none"> <li>● The assessment reviews the possible supply chain constraints for the OHL and UGC infrastructure.</li> <li>● Conventional steel lattice structures, wooden polesets and UGC are extensively used worldwide.</li> <li>● The equipment required for the substation works has been used extensively and as such, considered to be standard.</li> <li>● Several manufacturers of composite poles have been identified thus far, however a new market research study would be beneficial to identify any market entrants at the time of tender release.</li> </ul>
Permits and Wayleaves	<ul style="list-style-type: none"> <li>● Consideration is given to the potential use of the existing Flagford – Sligo 110 kV corridor, as far as practically possible, reducing the requirements of permits easements and/or wayleaves.</li> <li>● The assessment considers potential negotiation with landowners to develop new wayleave and/or new easements for the new build sections.</li> </ul>
Water Impact During Construction	<ul style="list-style-type: none"> <li>● Consideration is given to water crossings to ensure compliance with the Water Framework Directive (WFD).</li> </ul>
Air Quality Impact during Construction	<ul style="list-style-type: none"> <li>● The assessment reviews the potential air quality impacts arising from the construction works.</li> </ul>
Traffic and Noise Impact during Construction	<ul style="list-style-type: none"> <li>● Consideration is given to potential construction phase traffic and noise impacts associated with the technology options.</li> </ul>
Design Complexity	<ul style="list-style-type: none"> <li>● Consideration is given to obstacles or crossings encountered. The following constraints are considered in the assessment:                         <ul style="list-style-type: none"> <li>– Crossings such as utilities, High Voltage (HV) OHL crossings, waterbodies, railway and road crossings, etc</li> <li>– Location of OHL structures within designated sites</li> <li>– Proximity to existing dwellings</li> </ul> </li> </ul>

**Table B.4: Environmental Sub-Criteria**

Environmental Sub-Criteria	Description
Land Use and Land Use Planning	<ul style="list-style-type: none"> <li>● Existing and proposed land use zoning is reviewed. This includes land use zoning and relevant development policies and objectives as per the relevant County Development Plans.</li> <li>● Existing land use as per the Tailte Éireann Land Cover Map 2023 and historic OS mapping.</li> <li>● New OHL and UGC may impact on future land use, particularly with respect to forestation and bog rehabilitation. For any new sections of UGC, the width of the road and its ability to accommodate the required width of the cable trench, joint bays, and passing bays is considered in relation to the potential requirement of third party lands.</li> <li>● There is a proposed N4 Carrick-on-Shannon Bypass currently being developed by Leitrim County Council and Transport Infrastructure Ireland. A preferred corridor has been confirmed and this is currently in Phase 3 (design and evaluation).</li> </ul>
Land, Soils and Hydrogeology	<ul style="list-style-type: none"> <li>● Existing ground conditions, including geological and hydrogeological features as determined from publicly available mapping are reviewed.</li> <li>● Proximity to geological heritage sites, karst features, quarries and landslide events as determined from publicly available mapping are reviewed.</li> <li>● Consideration is given to particular soil types and structures, for example peat and alluvium deposits, karst features and proximity to quarries that may present construction challenges, which in turn may result in additional resource usage and the potential for increased pollution risk and nuisance effects.</li> <li>● Consideration is given to the risk of pollution to groundwater during construction works, and the potential connectivity to European sites associated with excavation of foundations for OHL structures, and trenching and excavation of joint bays for UGC.</li> </ul>
Water Resources	<ul style="list-style-type: none"> <li>● Existing hydrological features, as determined from publicly available mapping including surface water features and their WFD status, drinking water rivers/lakes, and Public Supply Protection Areas are reviewed.</li> <li>● For existing OHL and any new sections of OHL (loop-in options), the evaluation is made taking account of the scale of excavation associated with 110 kV and 220 kV OHL structures, and associated works.</li> <li>● For UGC, the evaluation considers that where the cables cannot be accommodated by existing bridges, water crossings will be facilitated by either open cut trenching, HDD or cable bridges as appropriate.</li> </ul>
Climate, including Flood Risk	<ul style="list-style-type: none"> <li>● The assessment takes account of Catchment Flood Risk Assessment and Management (CFRAM) mapping, publicly available flood extents mapping and records of past flood events.</li> <li>● The assessment considers the potential effects on surface water as a result of OHL and UGC technology. Effects are predominantly limited to the construction phase for both technologies.</li> <li>● For the existing OHL the evaluation is made taking account of the anticipated proximity of polesets / steel towers to watercourses.</li> <li>● The assessment considers the vulnerability of the proposed technology to flooding. At this stage of project development, equipment vulnerable to flooding should avoid areas of known fluvial flood risk, groundwater flood risk and / or known flood plains.</li> <li>● The further development of the design in next stage of the project development will have regard to the EirGrid's functional specification CDS-GFS-00-001-R1<sup>14</sup> on cable routing through any area likely to flood (areas classified in 1 in 100 year fluvial and pluvial events). A desktop assessment of the ground conditions will be carried out during the next</li> </ul>

<sup>14</sup> 110/220/400 kV Underground Cable Functional Specification – CDS-GFS-00-001-R1 – EirGrid, May 2021

Environmental Sub-Criteria	Description
Biodiversity	<p>stage of the project development to avoid these areas where feasible during cable routing, as appropriate.</p> <ul style="list-style-type: none"> <li>● Designated Sites of International Importance such as Special Areas of Conservation (SAC), Special Protection Areas (SPAs), Ramsar Sites and Shellfish Waters are reviewed.</li> <li>● Sites of National Importance such as (Proposed) Natural Heritage Areas and other sites/features of ecological importance are also reviewed.</li> <li>● Consideration is given to policies and objectives relating to biodiversity within the relevant development plans. The evaluation of technology options has been undertaken with regard to EirGrid’s Ecology Guidelines for Electricity Transmission Projects<sup>15</sup>.</li> <li>● The need for vegetation removal/clearance should be minimised as far as practicable. For any new sections of UGC, narrow tree lined roads should be avoided if possible due to the risk of causing root damage necessitating their permanent removal for safety reasons.</li> </ul>
Cultural Heritage	<ul style="list-style-type: none"> <li>● The assessment reviews the Sites and Monuments Record (SMR), Record of Monuments and Places (RMP) and Zones of Notification (ZoN), Local Planning Authority’s Record of Protected Structures (RPS), Architectural Conservation Areas (ACAs) and the National Inventory of Architectural Heritage (NIAH). Walls and gates that may form part of a protected demesne and garden are also considered.</li> <li>● Consideration is given to policies and objectives relating to cultural heritage within the relevant development plans.</li> <li>● EirGrid have produced a number of Evidence Based Environmental Studies (EBES) of direct and indirect relevance to Cultural Heritage – Archaeology and Architectural (EBES 2: Cultural Heritage<sup>16</sup>, EBES 9: Settlement &amp; Land Use<sup>17</sup> and EBES 10: Landscape &amp; Visual<sup>18</sup>) alongside the guidance document, Cultural Heritage Guidelines for Electricity Transmission Projects: A Standard Approach to Archaeological, Architectural and Cultural Heritage Impact Assessment of High Voltage Transmission Projects<sup>19</sup>. This guidance document provides a standardised approach for cultural heritage (including archaeological heritage and architectural heritage) impact assessment in the planning, design, construction, and operation of high voltage (110 kV, 220 kV and 400 kV) electricity transmission projects undertaken by EirGrid and is based on published national and international best practice guidance and legal obligations in relation to the identification, protection and avoidance of heritage assets. These guidelines are supported by the Code of Practice agreed between EirGrid and the then Department of Environment, Heritage and Local Government in 2009, which outlines a commitment to avoid archaeology where possible in projects undertaken by EirGrid.</li> <li>● Additionally, EirGrid’s Grid Implementation Plan 2023-2028<sup>20</sup> includes two cultural heritage policies.</li> <li>● In line with the EirGrid Cultural Heritage Guidelines<sup>19</sup>, the potential impacts to buried archaeology are considered.</li> </ul>
Roads and Traffic	<ul style="list-style-type: none"> <li>● Potential technical obstructions associated with the options under consideration are addressed in the ‘Deliverability’ criterion.</li> <li>● For the existing OHL and new sections of OHL, this sub-criterion considers potential impacts due to construction traffic and the proximity of the OHL to the existing road network.</li> </ul>

<sup>15</sup> [Ecology-Guidelines-for-Electricity-Transmission-Projects.pdf \(eirgrid.ie\)](#)

<sup>16</sup> [EirGrid Evidence Based Environmental Studies Study 2 Cultural Heritage \(EirGrid, 2015\)](#)

<sup>17</sup> [EirGrid Evidence Based Environmental Studies Study 9 Settlement and Land Use \(EirGrid, 2015\)](#)

<sup>18</sup> [EirGrid Evidence Based Environmental Studies Study 10 Landscape and Visual \(EirGrid, 2016\)](#)

<sup>19</sup> [Cultural Heritage Guidelines for Electricity Transmission Projects: A Standard Approach to Archaeological, Architectural and Cultural Heritage Impact Assessment of High Voltage Transmission Projects \(EirGrid, 2015\)](#)

<sup>20</sup> [Grid Implementation Plan 2023-2028 \(EirGrid, 2024\)](#)

Environmental Sub-Criteria	Description
	<ul style="list-style-type: none"> <li>● To minimise adverse impacts from any new sections of UGC on receptors, where possible, UGC should avoid:                             <ul style="list-style-type: none"> <li>– Known and planned settlements, residential areas, and commercial centres.</li> <li>– Joint bays at access points for residential developments and sensitive receptors.</li> <li>– Full road closures that may necessitate night-time. Consideration should also be given to the availability of diversions if full road closures are envisaged.</li> </ul> </li> <li>● Engagement with roads authorities will be undertaken if needed at Step 4.</li> </ul>
Designated Landscapes, Protected Views and Scenic Routes	<ul style="list-style-type: none"> <li>● The designated landscapes, protected views and scenic routes as per the county development plans are reviewed in the context of the technology options.</li> <li>● The county development plans' policies and objectives are also reviewed with regards to electricity transmission infrastructure.</li> <li>● Given the nature of the above ground structures in Option 1 (and the possible new sections of OHL), consideration of elevation and slope, scenic routes, protected views and landscape character areas are relevant to the evaluation of the option.</li> <li>● Given that the Option 2 entails replacement of existing structures along the existing Flagford – Sligo OHL on a like for like basis, and the installation of a new 220 kV UGC, the consideration of designated landscapes, protected views and scenic routes is unlikely to be relevant however it is included here for consistency with Option 1.</li> </ul>
Aviation and Telecommunications	<ul style="list-style-type: none"> <li>● Wireless services such as radars, radio communications, TV, flight paths, etc are reviewed.</li> <li>● Airports and airport public safety zones in vicinity are reviewed.</li> <li>● The previous Sligo County Development Plan (2017-2023) stated that in 2011, Sligo Airport ceased to operate a regional service and it currently serves as the Northwest base of the Irish Coast Guard Search &amp; Rescue Helicopter.</li> <li>● At this stage of the project development, no potential for aviation related risks and telecommunications interference has been identified and it is therefore not included in the MCA.</li> </ul>

**Table B.5: Socio-economic Sub-Criteria**

Socio-economic Sub-Criteria	Description
Settlements and Communities	<ul style="list-style-type: none"> <li>● The sub-criterion reviews the proximity of options to settlements and communities including CSO settlements.</li> <li>● The potential for requirement of third party lands is also considered.</li> <li>● Where possible, concentrations of population should be avoided in order to reduce actual and perceived effects.</li> </ul>
Visitors and Commuters	<ul style="list-style-type: none"> <li>● Transient and infrequent visitors and commuters in the study area are considered.</li> </ul>
Amenities, Recreation and Tourism	<ul style="list-style-type: none"> <li>● The evaluation considers the technology options in relation to amenities, recreation (e.g., fishing, sports) and tourism (including potential views to and from) resources within the study area.</li> </ul>
Nuisance and Disturbance	<ul style="list-style-type: none"> <li>● Consideration of potential noise and air quality (dust) impacts associated with the technology options are considered.</li> <li>● Consideration of nuisance arising from potential traffic diversions and road closures associated with the technology options are considered.</li> <li>● The likely duration of the construction phase for the technology options is considered in the context of the potential nuisance and disturbance.</li> </ul>
Visual Effects	<ul style="list-style-type: none"> <li>● Under this sub-criterion consideration is given to potential visual impacts and opportunities for visual screening in a broader sense.</li> </ul>

Socio-economic Sub-Criteria	Description
Humans and Human Health	<ul style="list-style-type: none"> <li>● For Option 1, the assessment considers the potential visual effects associated with the voltage upgrade of the existing OHL for Scenarios 1 and 2. It also considers the potential visual effects of new OHL (loop-in options).</li> <li>● Given that Option 2 entails replacement of existing structures along the existing Flagford – Sligo OHL on like for like basis, and the installation of a new 220 kV UGC, the consideration of visual effects is unlikely to be relevant however it is included here for consistency with Option 1.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>● Electric and magnetic fields (EMFs) are produced when current flows, and occur anywhere that electricity is generated, transmitted, or used. Apart from power lines, this includes electrical appliances and wiring in our homes and businesses. The EMFs from electricity are at the extremely low frequency end of the electro-magnetic spectrum. The consensus from health and regulatory authorities is that extremely low frequency EMFs do not present a health risk.<sup>21</sup></li> <li>● EirGrid operates the transmission grid to stringent safety recommendations including relating to EMFs. EirGrid requires all transmission networks to operate in line with the existing public exposure guidelines from the International Commission for Non-Ionizing Radiation Protection (ICNIRP). More information is available in the EirGrid publication ‘Your guide to understanding electric and magnetic fields (EMFs) (2024)<sup>22</sup> and on the EirGrid website<sup>23</sup>.</li> <li>● Compliance with ICNIRP Guidelines, the European Union Recommendation 1999/519/EC, and Health and Safety Standards, such as CENELEC, will be implemented regardless of the location or technology type proposed.</li> <li>● Consideration is given to potential for the Project to cause stress and anxiety. This may result from aspects relating to proximity to the Project, as well as the potential for temporary nuisance and disturbance related to factors such as traffic, disruption to commuters, construction phase noise and dust. EirGrid will always seek to locate new electricity infrastructure as far from existing dwellings and community buildings as is practicably possible.</li> </ul>

<sup>21</sup> [Electric and Magnetic Fields \(EMFs\) \(EirGrid\) \(accessed January 2025\)](#)

<sup>22</sup> [Your guide to understanding electric and magnetic fields \(EMFs\) \(EirGrid, 2024\)](#)

<sup>23</sup> [How the Grid Works \(EirGrid\) \(accessed January 2025\)](#)

