Welcome

Welcome and thank you for visiting this public exhibition for the **Knockodhar 132kV Connection Project**.

In normal circumstances, we would engage with communities face-to-face through drop-in public exhibitions, however, given current COVID-19 social distancing restrictions this is not possible. Therefore, we have prepared this consultation material to replicate an in-person village hall experience.

We hope you enjoy your visit and we would encourage you to get in contact with SP Energy Networks should you wish to discuss the project further or have any questions.

Through this consultation, you will have the opportunity to:

- Learn about SP Energy Networks;
- Learn about the project background;
- Read about the proposals and the methods used to identify route options;
- View the preferred route; and
- Learn about the next steps and how you can provide feedback.

These exhibition boards and a copy of the Routeing and Consultation Report (2021) are also available for download.

This consultation will run for four weeks between 17th May until 14th June 2021. However, the information will remain accessible online and available to download in a pdf format after the 14th June 2021 from

www.spenergynetworks.co.uk/KnockodharOHL

About us

SP Energy Networks is part of the ScottishPower Group of companies and owns three regulated businesses in the UK. These businesses are ‘asset-owner’ companies holding the regulated assets and Electricity Transmission and Distribution licenses of ScottishPower. As part of this, SP Energy Networks operates, maintains and develops the network of cables, overhead lines and substations which transport electricity to connected homes and businesses in Southern and Central Scotland.

SP Energy Networks has a legal duty to keep its network up-to-date to safeguard electricity supplies. SP Energy Networks also has a duty to provide a connection for new generation to the wider electricity transmission network.

Climate Emergency and Project Need

The impacts of climate change are widely recognised as being one of the greatest global, economic, environmental and social challenges facing the world today. A major cause of climate change is a rise in the concentration and volume of greenhouse gases in the atmosphere, a significant contributor to which, is the use of fossil fuels to generate electricity, provide heat and to fuel transport.

One of the primary aims of the Scottish Government is to move towards a low carbon economy, with climate change targets to reduce net emissions of greenhouse gases by 100% relative to 1990 levels by 2045. Doing so would make Scotland a 'net zero' emitter. This relates to all sectors of business and industry and all policy frameworks that affect the public in general and there is a recognition from the Scottish Government that renewable energy technologies will play a key role in the delivery of the emission reduction targets to achieve 'net zero'.

Net zero refers to the balance between the amount of greenhouse gas produced and the amount removed from the atmosphere. We reach net zero when the amount we add is no more than the amount taken away.

The Climate Change Plan (CCP) Update 2020, states that

> "renewable energy generation in Scotland will account for the equivalent of 50% of our energy demand across electricity, heat and transport" by 2032, and also by 2032, that "our electricity system will have deepened its transformation for the better, with over 100% of Scotland's electricity demand being met by renewable sources".

In 2019, South Ayrshire Council adopted its first Sustainable Development and Climate Change Strategy. The strategy aimed to further reduce the Councils greenhouse gas emissions. In 2020, the Council updated their strategy to formally adopt the national targets of reducing the Council's emissions by 75% by 2030 with net zero emissions by 2045.

At SP Energy Networks, we recognise that the electricity network is the backbone of the energy system sitting at the heart of this net zero transition. We are currently at the forefront of decarbonising our energy system, having already connected approximately one quarter of all onshore wind in Great Britain to the distribution network. We recognise our key role in helping the government meet its climate change targets.

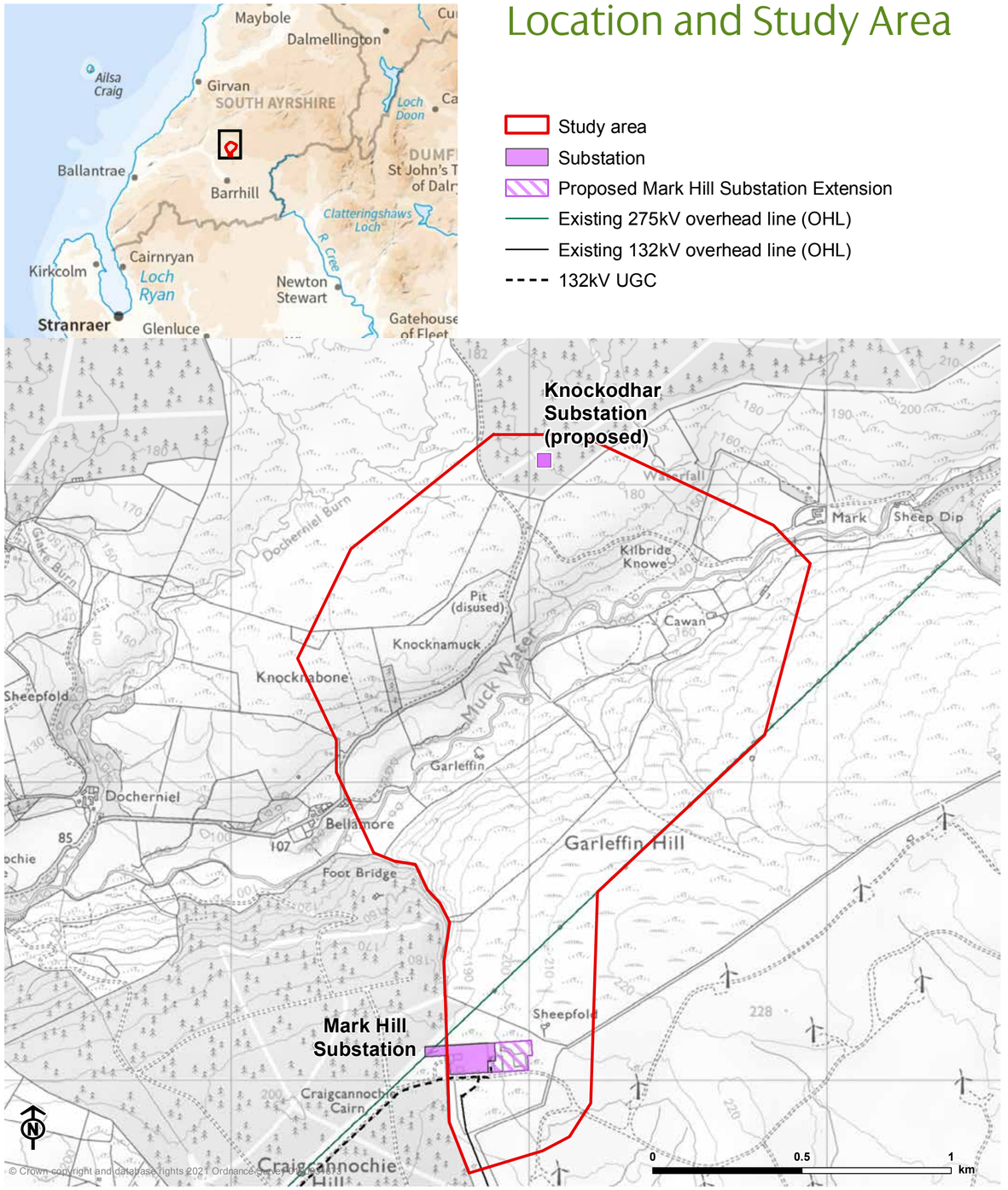
Background to the Knockodhar 132kV Connection Project

The proposed Knockodhar Wind Farm by REG Knockodhar Limited is located in a commercial forestry plantation approximately 3.5 kilometres (km) south west of Barr in South Ayrshire. It comprises 32 wind turbines of up to 200 metres (m) to blade tip height with an overall capacity to produce up to 120 megawatts (MW) of generation. The developer's application for the proposed Knockodhar Wind Farm is currently at early stages with a scoping request submitted to the Energy Consents Unit (ECU) in October 2020.

To meet our licence obligations to connect the Knockodhar Wind Farm to the grid, SP Energy Networks is proposing a new 132 kilovolt (kV) overhead line (OHL) to connect the proposed Knockodhar Wind Farm to the transmission grid system at the Mark Hill substation in South Ayrshire.

The new 132kV connection will be approximately 2km in length and the overhead line would be supported on wood poles. Wood poles are used to maintain the statutory clearances required for conductor height, which is determined by the voltage of the OHLs and the span length between the wood poles.

Location and Study Area



What will the Overhead Line look like?

The overhead line will be supported on Trident wood poles (H pole design) which average between 11 metres to 16 metres in height above ground. Opportunities to use single poles will be taken where possible, subject to further technical assessment.

The section of overhead line between the wood poles is known as the ‘span’. Span lengths between the wood poles will average between 80 metres and 110 metres.

The Trident wood poles are dark brown in colour when newly constructed and weather over the years to a light grey.

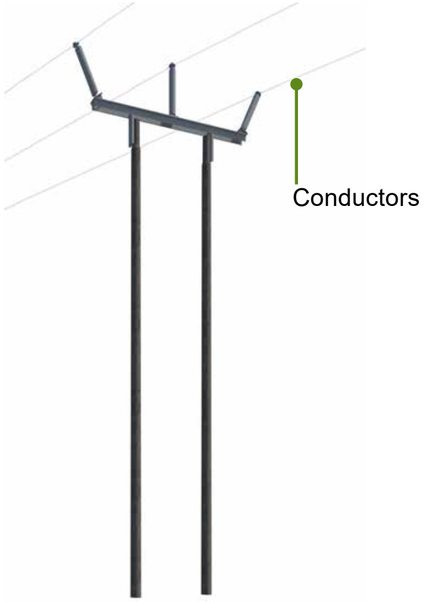
For technical reasons, a section of underground cable approximately 500 metres in length will also form part of the connection as it enters Mark Hill substation.

The final design/types of poles to be used on this overhead line will be confirmed through a detailed design/technical review process which will follow the closure of this public consultation.

In terms of operation and maintenance, whilst most OHL components are maintenance free, exposed elements which suffer from corrosion, wear, deterioration and fatigue may require inspection and periodic maintenance.

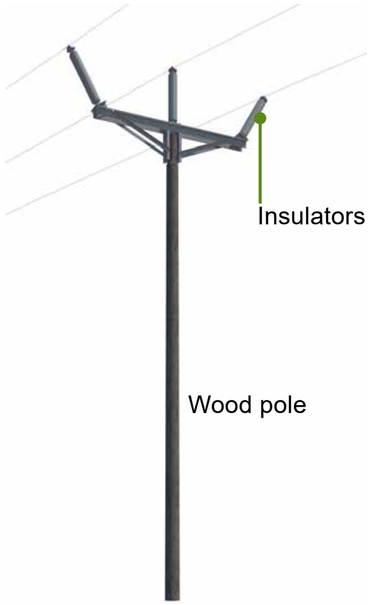
When the operational life of the proposed Knockodhar OHL comes to an end, it is possible that the line may be re-equipped with new conductors and insulators and refurbished. Alternatively, the OHL may be decommissioned fully.

Typical Wood Pole Structures



Component parts of 132kV ‘Trident’ design wood pole: Intermediate (H pole)

Component parts of 132kV ‘Trident’ design wood pole: Angle (H pole)



Component parts of 132kV ‘Trident’ design wood pole: Intermediate

Component parts of 132kV ‘Trident’ design wood pole: Angle

Component parts of 132kV ‘Trident’ design wood pole: Terminal (H pole)

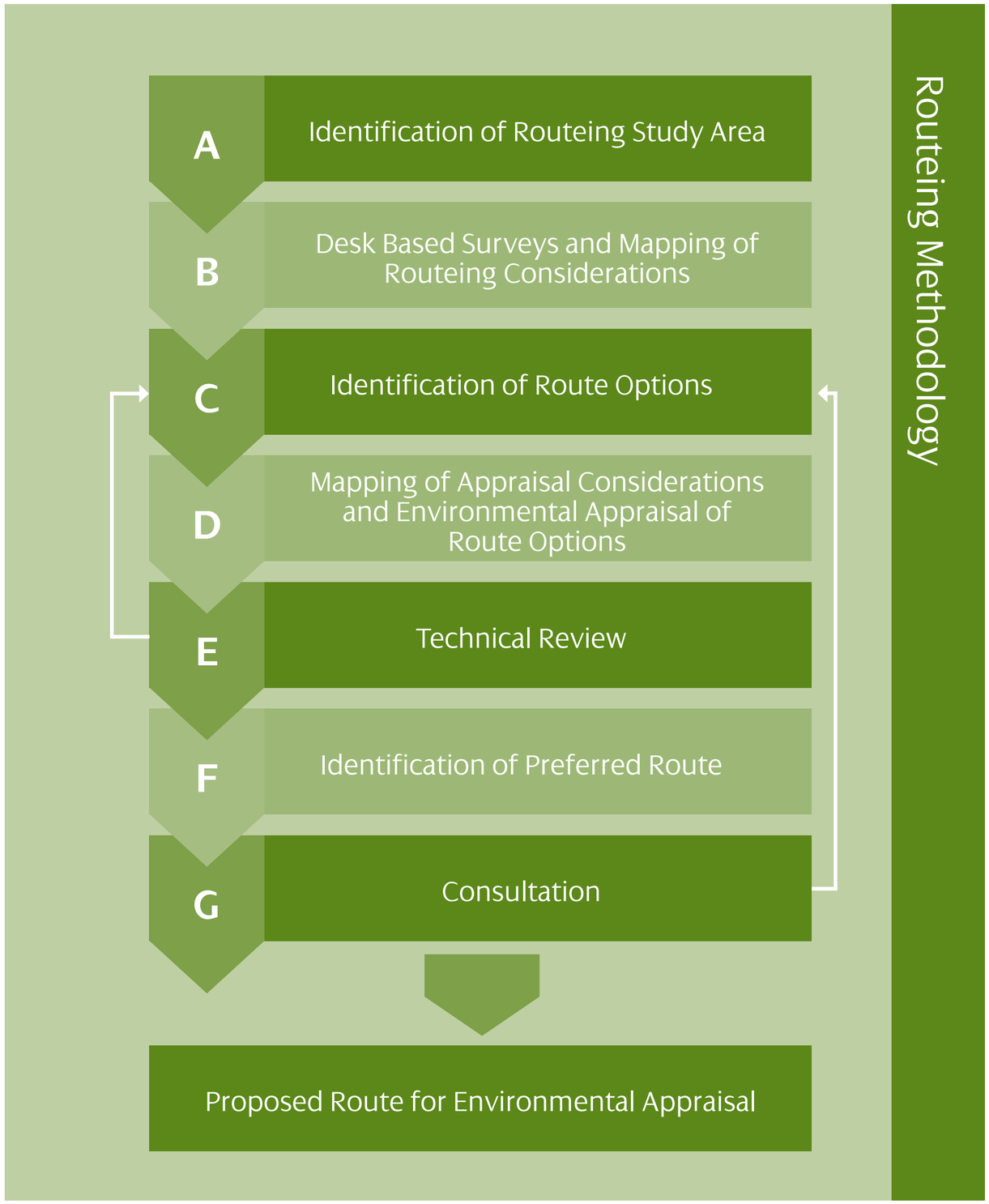
Typical Trident 132kV ‘H’ wood pole

Routeing Methodology

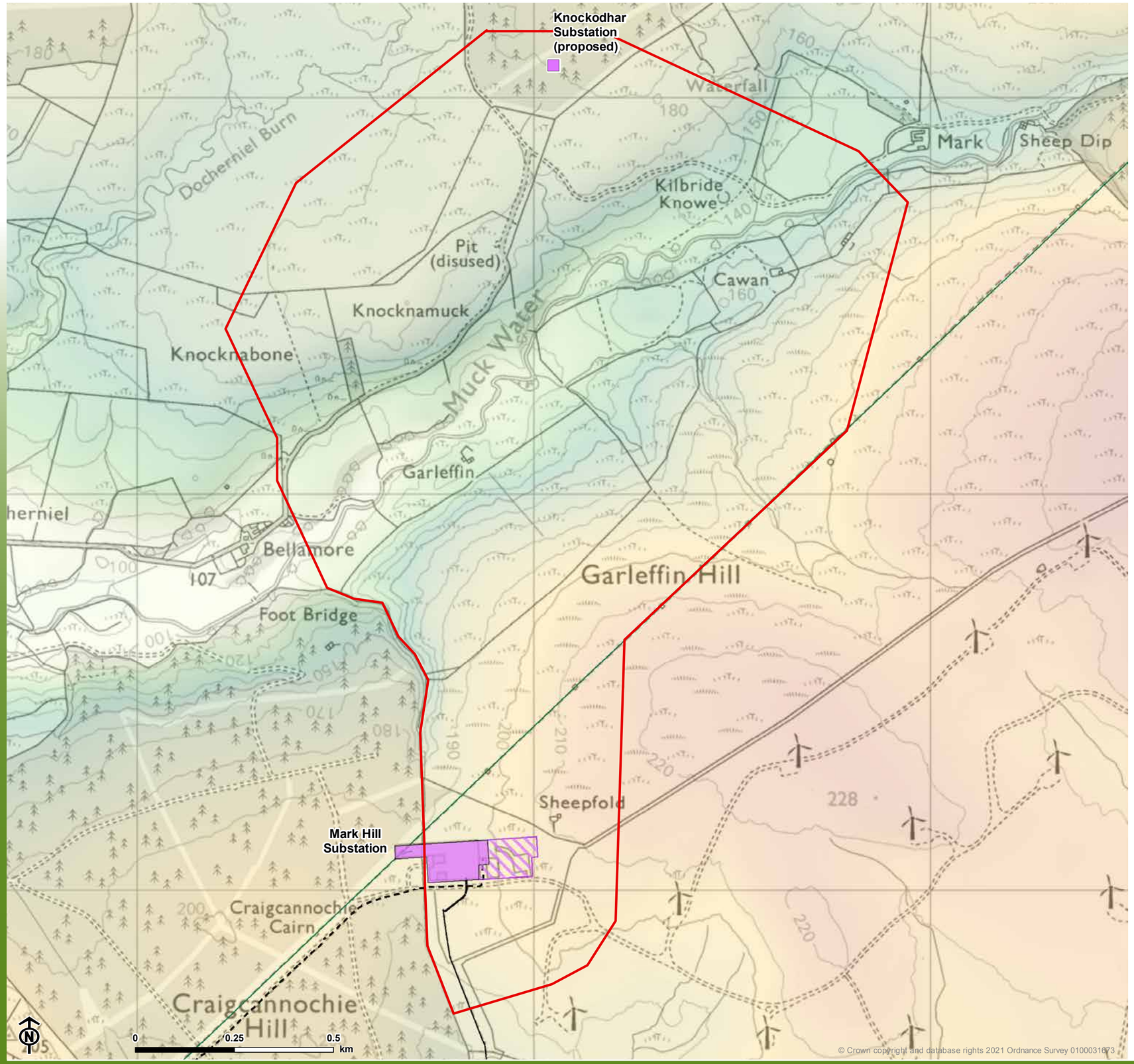
We have been working with independent consultants to identify potential route options for the proposed overhead line. Our objective is to identify a route for the overhead line which meets the technical requirements of the electricity system, which is economically viable and causes, on balance, the least disturbance to the environment and the people who live, work and enjoy recreation within it.

An overview of the routeing methodology for the Knockodhar 132kV Connection Project is illustrated here.

The routeing methodology follows a linear iterative process of steps. The first step (Step A) involves the identification of a study area, which is large enough to accommodate all likely route options, taking account of the technical requirements (i.e. connection points) and factors such as topography.



The study area for the Knockodhar 132kV Connection Project



- Study area
- Substation
- Proposed Mark Hill Substation Extension
- Existing 275kV overhead line (OHL)
- Existing 132kV overhead line (OHL)
- 132kV UGC

Topography AOD

High : 400

Low : 50

Routeing Considerations

Following the identification of the study area, areas of natural and cultural heritage value designated at a national, European or international level (areas of 'highest amenity value') are mapped and avoided where possible in the identification of route options.

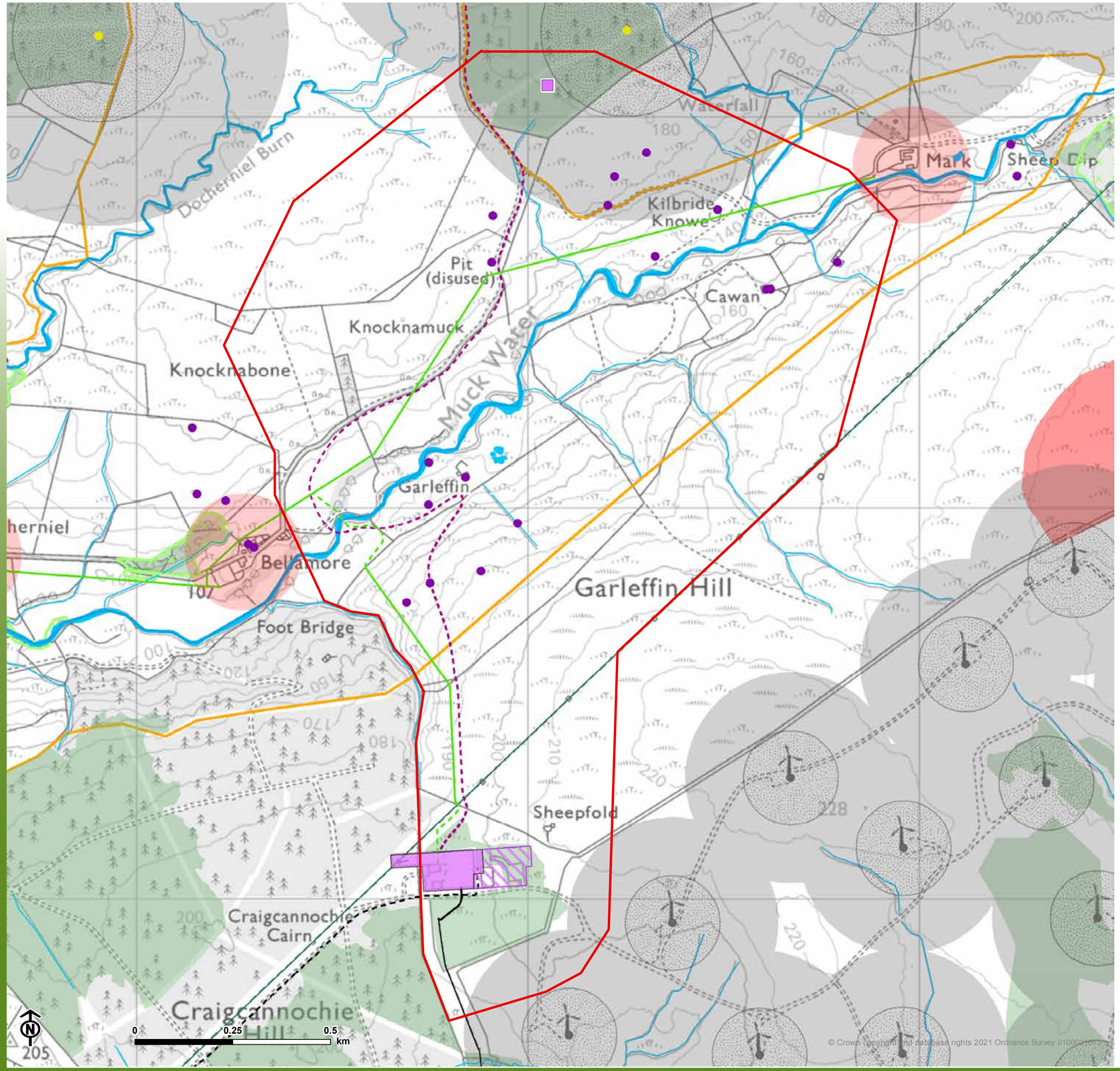
Given the limited nature of areas of highest amenity value within the study area, the mapping of routeing considerations also includes areas that are of more regional or local importance and/or are smaller in scale.

These routeing considerations include areas of National Forestry Inventory (NFI), Native Woodland of Scotland (NWS), Local Nature Conservation Sites (LNCS) and non-designated heritage assets alongside residential properties, wind turbines, existing and proposed overhead and underground lines, waterbodies and peatland. The study area also includes consideration of routeing matters such as altitude and slope gradients, over which technical limitations would mean a route was unachievable.

There are no 'areas of highest environmental value' located within the study area, and therefore International, European and national level designations have not been considered during the routeing process.

The above routeing considerations are illustrated on the map below.

Routeing Considerations



- Study area
- Substation
- Proposed Mark Hill Substation Extension
- Existing 275kV overhead line (OHL)
- Existing 132kV overhead line (OHL)
- 132kV UGC
- 33kV UGC (Existing Tralorg Line)
- 11kV OHL
- 11kV UGC

Routeing Considerations

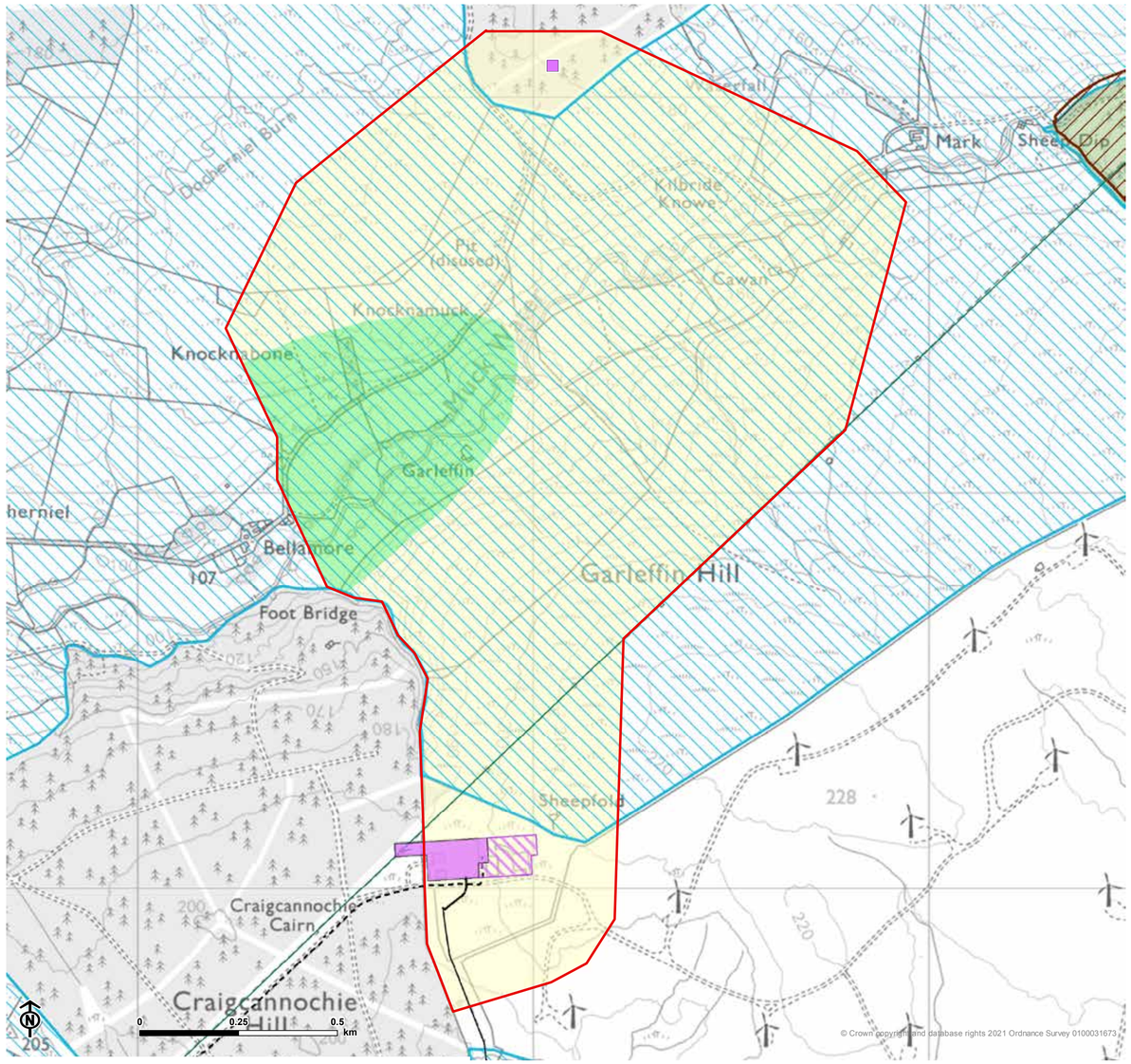
- Historic Environment Record
- Carbon Peatland - Category 1
- Local Nature Conservation Site
- Native Woodland Survey of Scotland (NWSS)
- National Forest Inventory (NFI)
- Residential trigger for consideration 150m buffer
- Wind Turbine - Operational
- Wind Turbine - Design/Scoping
- Turbine Topple Distance - Tip Height + 10%
- 3 x Rotor Diameter (Wake Effect)
- Watercourse

Routeing Considerations: Landscape Character & Designations

Landscape character and landscape designations have also been considered in this process. Again, there are no national level designations in this area, and so regional and local designations have been considered through the routeing process. The South Ayrshire Scenic Area covers the entire study area and the entire study area lies within the Western Southern Uplands Environmentally Sensitive Area (ESA). It is therefore not possible to avoid the Scenic Area or the ESA, however the routeing considerations have ensured that the objectives of the designation are not significantly affected.

Please note that the ESA is excluded from this image.

Local Landscape Character and Designations



- Study area
- Substation
- Proposed Mark Hill Substation Extension
- Existing 275kV overhead line (OHL)
- Existing 132kV overhead line (OHL)
- 132kV UGC

Local Landscape Designations

- Scenic Areas South Ayrshire
- Galloway Forest Park
- Dark Skies Park - Dumfries and Galloway

Local Landscape Character Type (LUC)

- 1. Lower Pastoral Valley
- 2. Upper Valley and Plateau Moorland Fringes

The Route Options

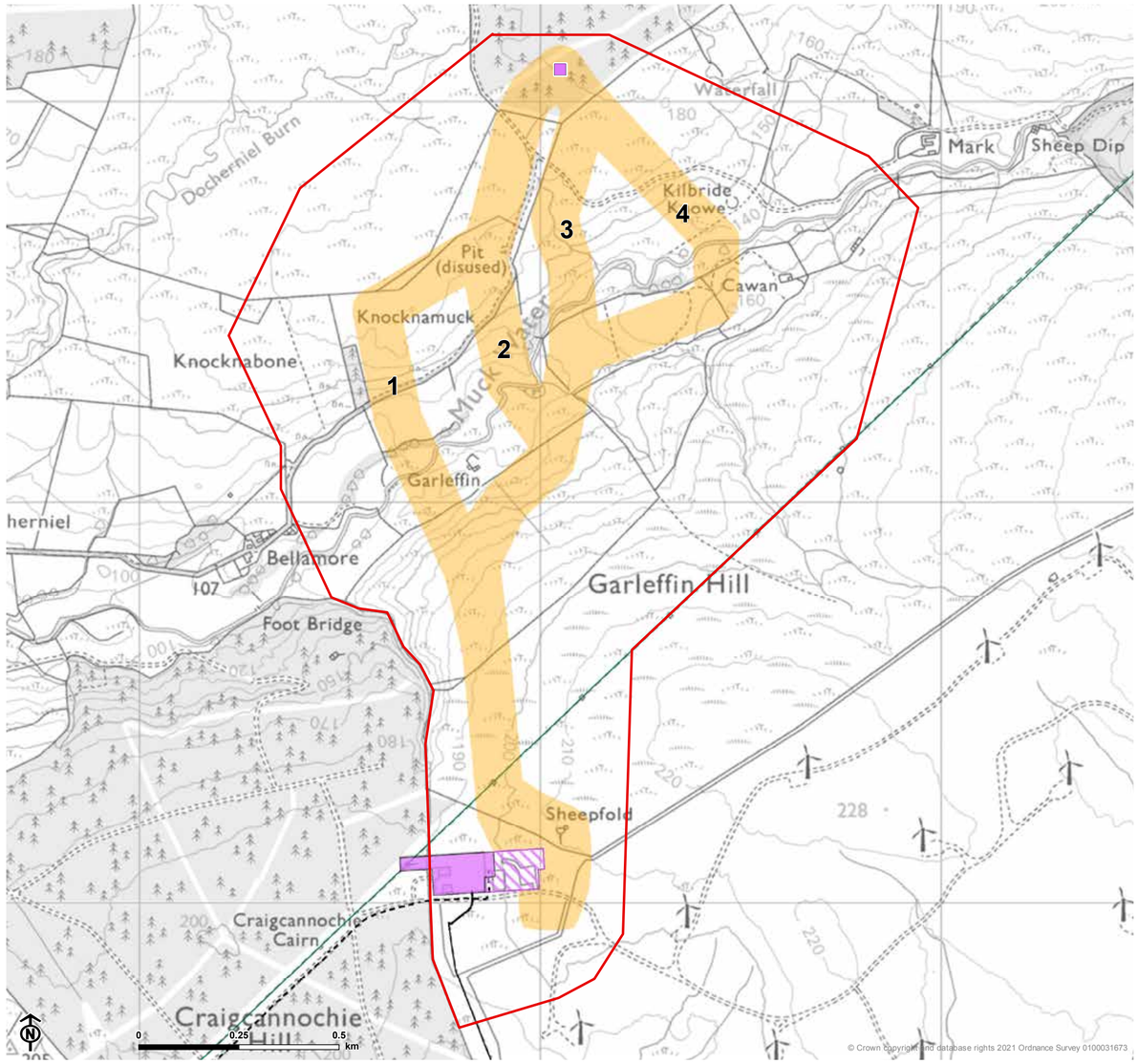
Given the nature of overhead transmission lines, the primary environmental effects are likely to be landscape and visual effects. The best way to limit adverse effects on landscape and visual amenity is to have a landscape led approach to routeing, reflecting the Holford Rules and taking account of the routeing considerations.

Informed by the mapped routeing considerations, four route options were identified for the proposed Knockodhar 132kV Connection Project following a landscape led approach which included a site visit in August 2020 to further refine the route options.

Each of the route options was given a numerical reference: 1-4. All route options have the same connection points commencing at the proposed Knockodhar Wind Farm substation and terminating at Mark Hill substation.

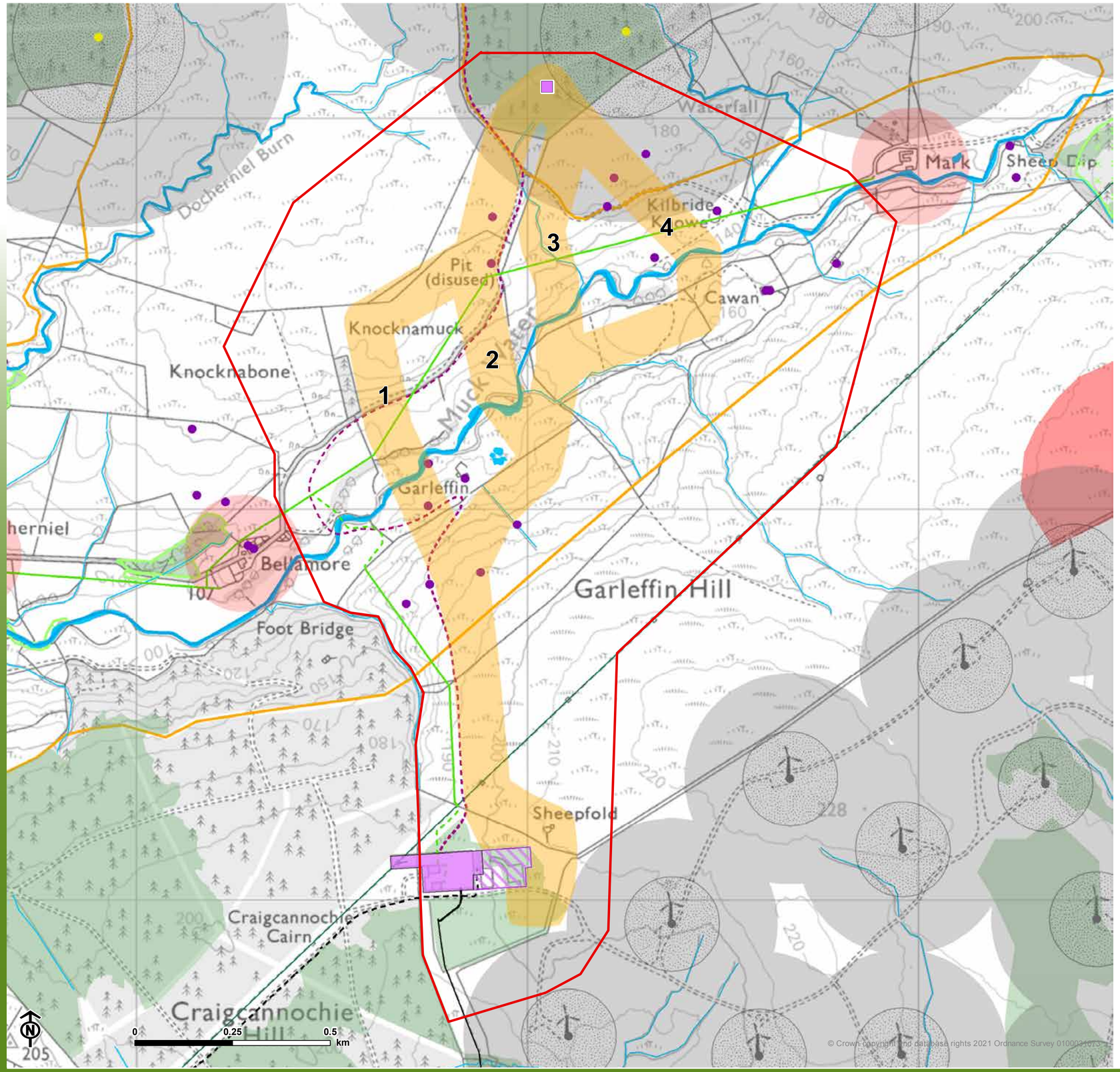
The route options shown are approximately 120m wide at present but the eventual alignment will be a 60m wide wayleave corridor within the preferred route area.

Route Options 1 to 4



Study area
Substation
Proposed Mark Hill Substation Extension
Existing 275kV overhead line (OHL)
Existing 132kV overhead line (OHL)
132kV UGC
Route Options

Route Options/ Routeing Considerations



- Study area
- Substation
- Proposed Mark Hill Substation Extension
- Existing 275kV overhead line (OHL)
- Existing 132kV overhead line (OHL)
- 132kV UGC
- 33kV UGC (Existing Tralorg Line)
- 11kV OHL
- 11kV UGC
- Route Options

Routeing Considerations

- Historic Environment Record
- Carbon Peatland - Category 1
- Local Nature Conservation Site
- Native Woodland Survey of Scotland (NWSS)
- National Forest Inventory (NFI)
- Residential trigger for consideration 150m buffer
- Wind Turbine - Operational
- Wind Turbine - Design/Scoping
- Turbine Topple Distance - Tip Height + 10%
- 3 x Rotor Diameter (Wake Effect)
- Watercourse

The Preferred Route

To identify the preferred route, each identified route option was appraised using the following criteria, which continue to reflect the key considerations of the routeing methodology:

Length of Route

Landscape and Visual Amenity

Forestry

Current Land Uses

Hydrology

Biodiversity and Geological Conservation

Cultural Heritage

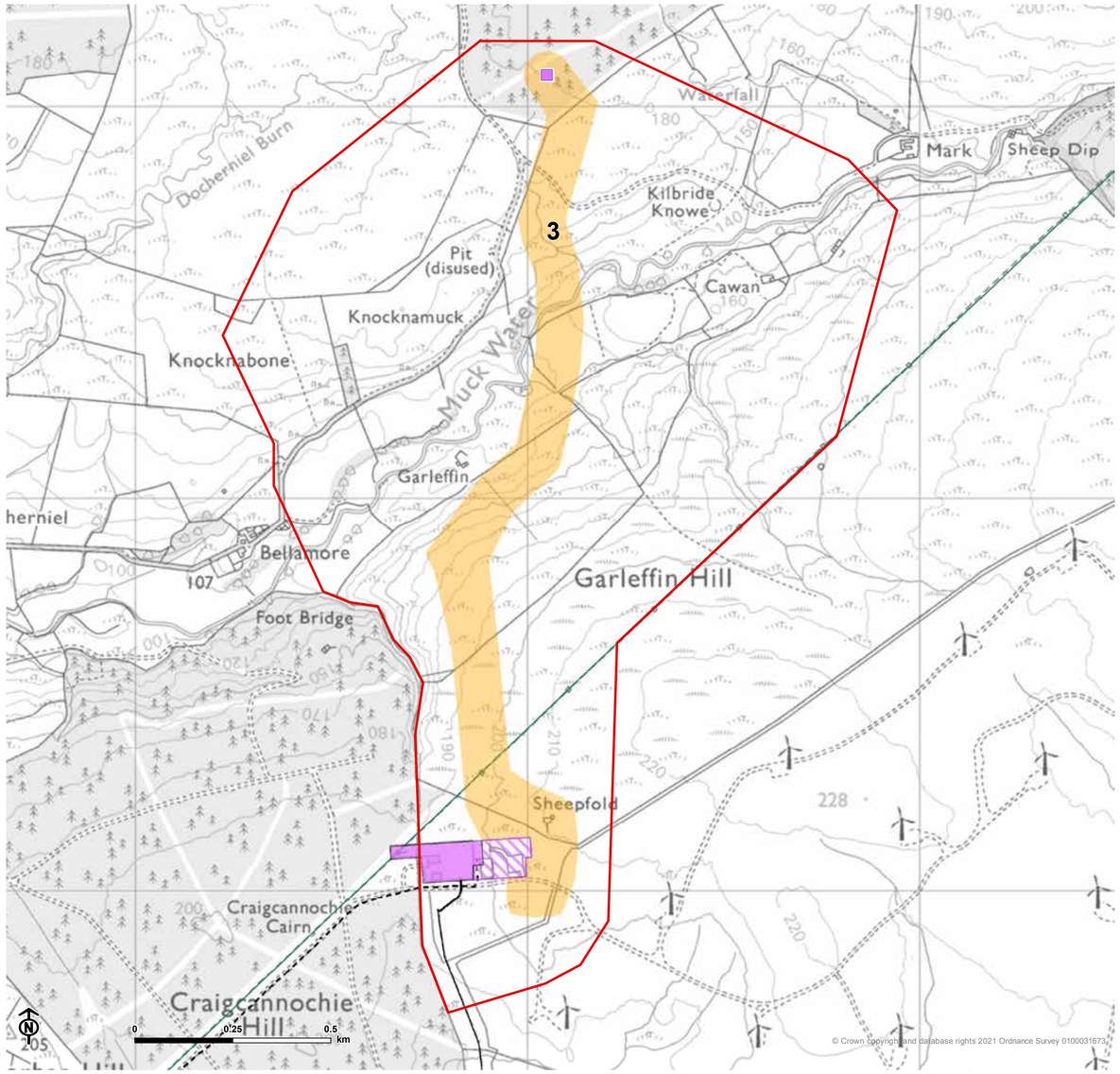
The preferred route is the one which achieves the best overall balance between limiting impacts on the environment and people, whilst also meeting SP Energy Networks technical requirements.

Route Option 3

Taking account of environmental and technical considerations, the preferred route for the Knockodhar 132kV Connection Project is **Route Option 3**.

Route Option 3 is the shortest route and has the best potential to minimise visual effects on residential receptors and effects on the wider landscape during the route alignment stage. Route Option 3 also has the potential, relative to the other options, to minimise effects on biodiversity and land use and is of equal preference in terms of cultural heritage and forestry.

Route Option 3



- Study area
- Substation
- Proposed Mark Hill Substation Extension
- Existing 275kV overhead line (OHL)
- Existing 132kV overhead line (OHL)
- 132kV UGC

Preferred Route

- Route Option 3

The Consultation Process

Your feedback is an important part in helping SP Energy Networks to finalise the proposed route which considers technical, economic and environmental issues along with public opinion.

We would be grateful if you could spare five minutes to complete our online questionnaire.

Our consultation will run for four weeks from May 17th and June 14th 2021. The closing date for you to provide your response to us is midnight on Monday 21st June 2021.

Below are the best ways to find out more or to talk to us.

On our dedicated website you can view or download all the project documents at the link below.

www.spenergynetworks.co.uk/KnockodharOHL

Email us: KnockodharOHL@spenergynetworks.co.uk

Your Views

As part of the consultation we would particularly like your views on:

1. The preferred route for the Knockodhar 132kV Connection Project
2. Any of the alternative route options we considered during the routeing process
3. Any other issues, suggestions or feedback you would like us to consider. We would particularly like to hear your views on your local area, for example areas you use for recreation, local environmental features you would like us to consider, and any plans you may have to build in proximity to the preferred route.

Please note comments at this stage are informal comments to SP Energy Networks and are made to allow us to determine whether changes to the preferred route are necessary. An opportunity to comment formally to the Scottish Government Energy Consents Unit will follow at a later stage in the process following submission of the Section 37 application.

What happens next?

SP Energy Networks places great importance on the effect its work may have on the environment and local communities and is keen to hear the views of local people to help develop the project in the best way.

Informed by the consultation responses, we will confirm the proposed route for the Knockodhar 132kV Connection Project.

Reflecting the proposed route, we intend to submit a Screening Opinion request to the Energy Consents Unit in Summer 2021 to confirm whether or not the proposed development requires an Environmental Impact Assessment (EIA). The proposed route will then progress to identification of an overhead line alignment, including individual wood pole positioning which will be informed by the Environmental Appraisal, detailed engineering ground surveys and discussions with landowners.

This alignment, including all ancillary temporary development e.g. temporary access tracks, will be included in the application for Section 37 Consent and deemed planning permission which we anticipate being submitted in Summer 2022. The Section 37 application will be submitted to the Scottish Ministers via the Energy Consents Unit; South Ayrshire Council will be notified as a statutory consultee to the proposed development as well as being asked to comment on the application prior to submission via the Simplified Notification process.

We will consult fully with affected landowners and occupiers on all aspects of the Knockodhar 132kV Connection Project and will give them an opportunity to comment on proposals as they progress.

Thank you for taking the time to visit this public exhibition.