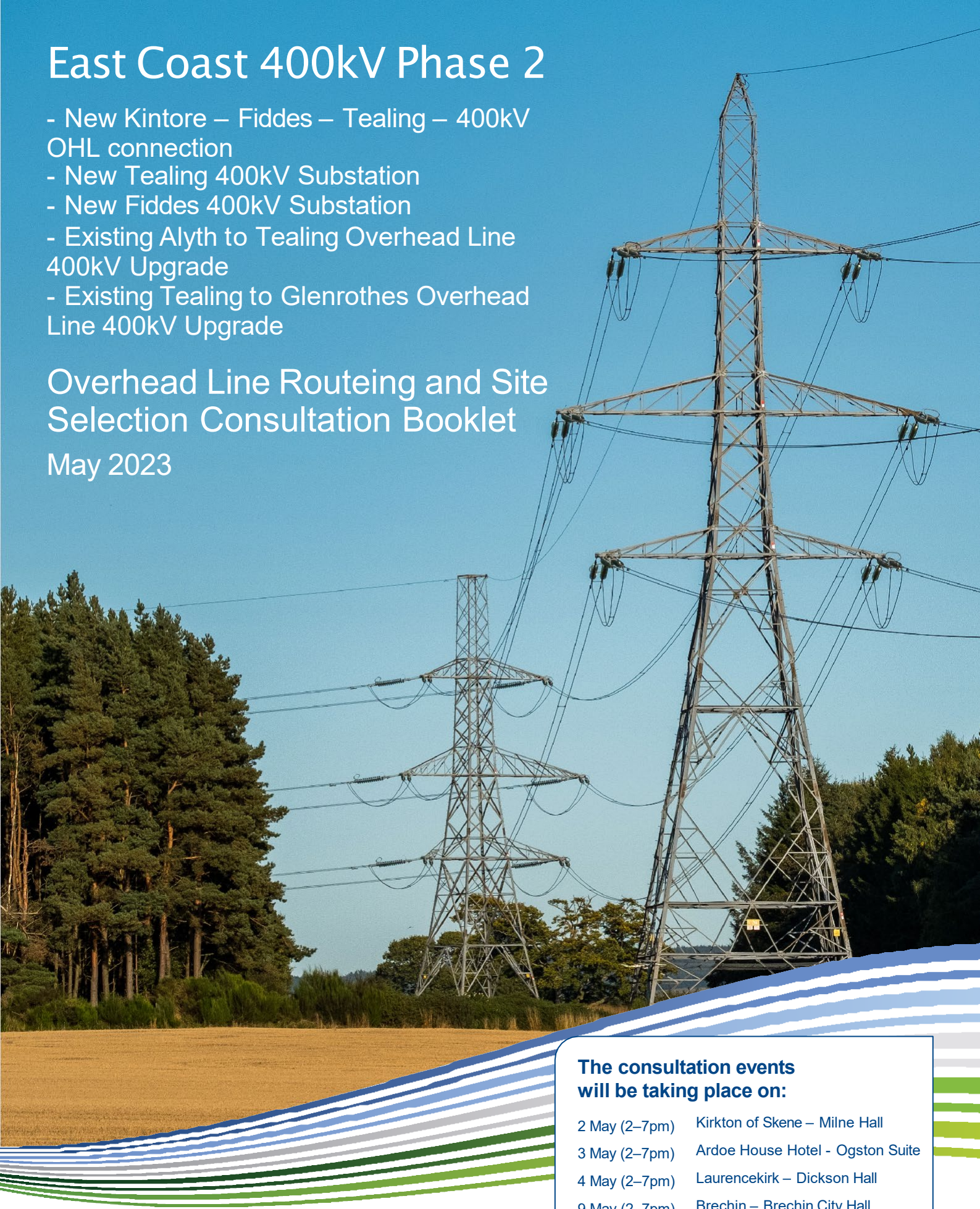
East Coast 400kV Phase 2

- New Kintore – Fiddes – Tealing – 400kV OHL connection
- New Tealing 400kV Substation
- New Fiddes 400kV Substation
- Existing Alyth to Tealing Overhead Line 400kV Upgrade
- Existing Tealing to Glenrothes Overhead Line 400kV Upgrade

Overhead Line Routeing and Site Selection Consultation Booklet

May 2023



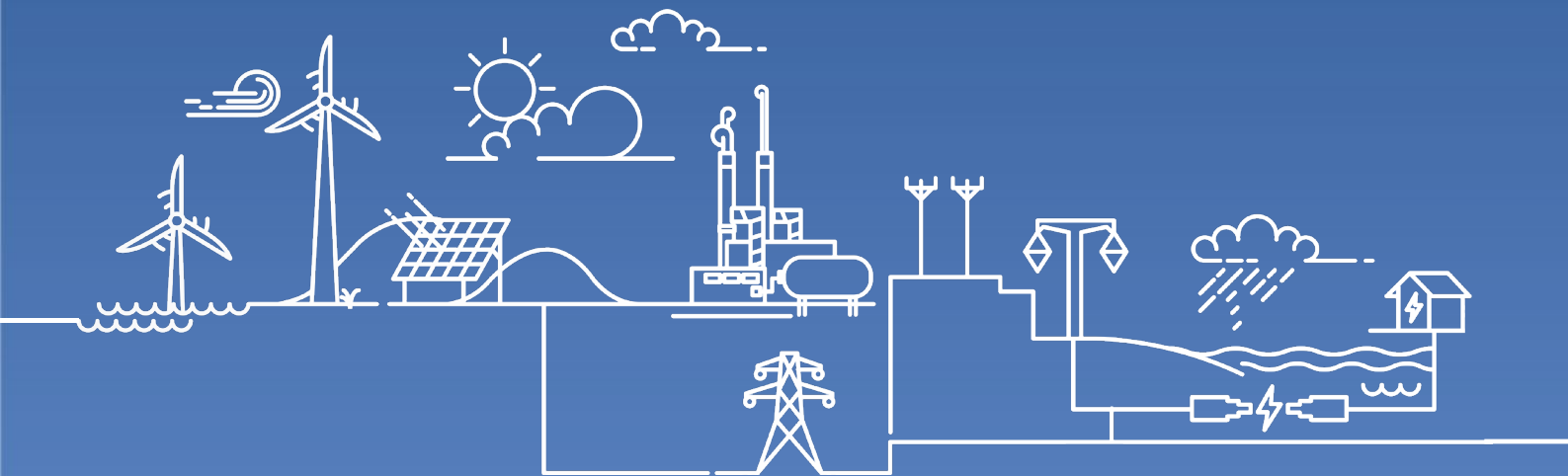
The consultation events will be taking place on:

2 May (2–7pm)	Kirkton of Skene – Milne Hall
3 May (2–7pm)	Ardoe House Hotel - Ogston Suite
4 May (2–7pm)	Laurencekirk – Dickson Hall
9 May (2–7pm)	Brechin – Brechin City Hall
10 May (2–7pm)	Kirriemuir – Westmuir Hall
11 May (2–7pm)	Tealing – Tealing Village Hall
17 May (4–6pm)	Virtual event (joining details available on website)

Scottish & Southern Electricity Networks

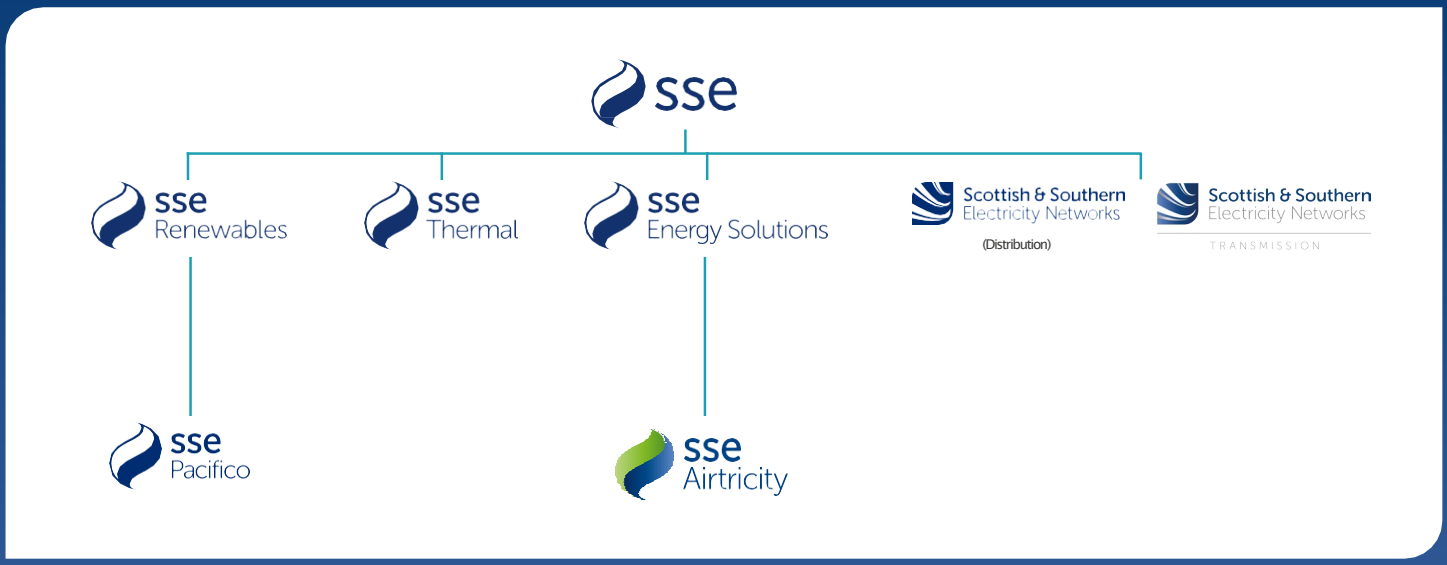
TRANSMISSION

Contents



Who we are

We are SSEN Transmission, the trading name for Scottish Hydro Electric Transmission. We are responsible for the electricity transmission network in the north of Scotland, maintaining and investing in the high voltage 132kV, 220kV, 275kV and 400kV electricity transmission network.



Our network consists of underground and subseacables, overhead lines on wooden poles or steel towers, and electricity substations. It extends over a quarter of the UK's land mass, crossing some of its most challenging terrain.

Our first priority is to provide a safe and reliable supply of electricity to our communities. We do this by taking the electricity from generators and transporting it at high voltages over long distances through our transmission network for onwards distribution to homes and businesses in villages, towns and cities.

Our operating area is home to vast renewable energy resources and this is being harnessed by wind, hydro and marine generation. Working closely with National Grid, the GB transmission System Operator, we also enable these electricity generators to connect to the transmission system by providing their connections and allowing the electricity generated by them to be transported to areas of demand across the country.

Scotland's transmission network has a strategic role to play in supporting delivery of the UK and Scotland's Net Zero targets. We're already a mass exporter of renewable energy, with around two thirds of power generated in our network area exported to demand centres further south. By 2050, the north of Scotland is expected to need 40GW of low carbon energy capacity to support net zero delivery. For context, we currently have around 8GW of renewable generation connected in the north of Scotland.

As a natural monopoly, we are closely regulated by the GB energy regulator, Ofgem, who determines how much revenue we are allowed to earn for constructing, maintaining and renovating our transmission network in the north of Scotland. These costs are shared between all those using the transmission system, including generation developers and electricity consumers.

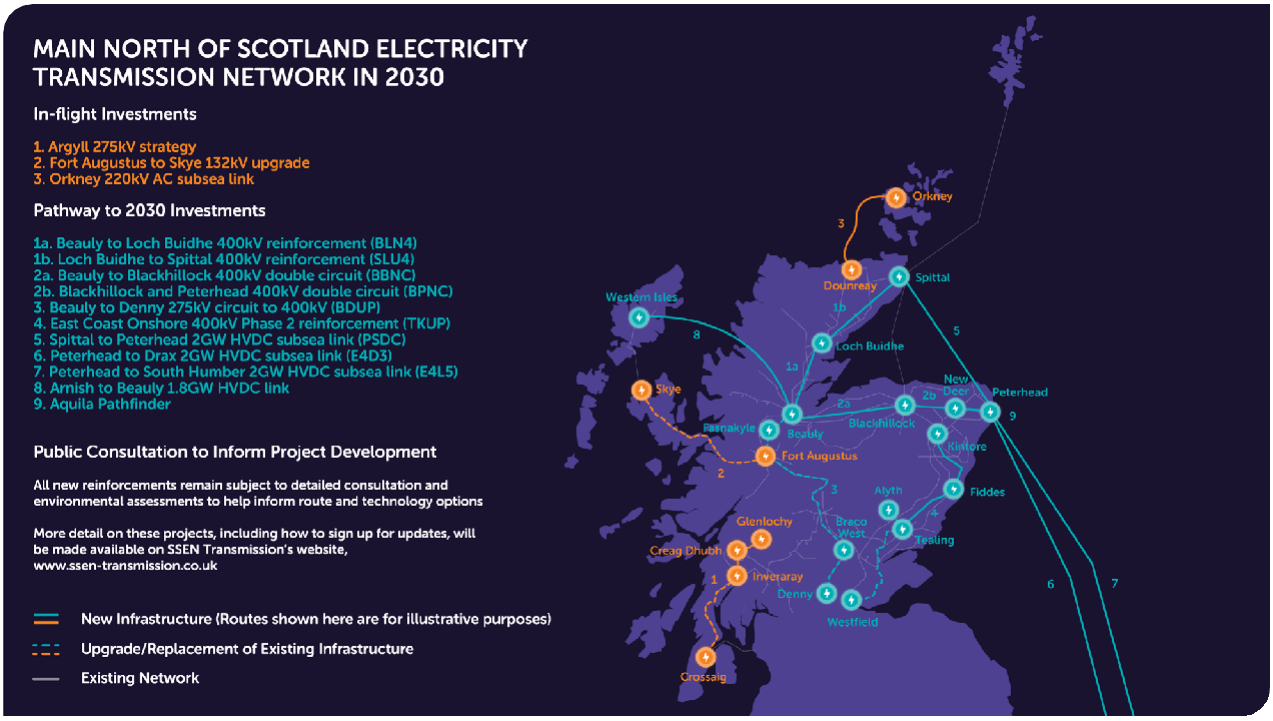
Following a minority stake sale which completed in November 2022, we are now owned 75% by SSE plc and 25% by Ontario Teachers' Pension Plan Board.

As a stakeholder-led business, SSEN Transmission is committed to inclusive stakeholder engagement, and we conduct this at an 'Advanced' level as assessed by AccountAbility, the international consulting and standards firm.

The Pathway to 2030 Holistic Network Design

Achieving Net Zero

In July 2022, National Grid, the Electricity System Operator (ESO), published the Pathway to 2030 Holistic Network Design (HND), setting out the blueprint for the onshore and offshore electricity transmission network infrastructure required to enable the forecasted growth in renewable electricity across Great Britain. This includes the infrastructure required to meet the UK and Scottish Governments 2030 offshore wind targets of 50GW and 11GW. For Scotland, this confirms the need for a significant and strategic increase in the capacity of the onshore electricity transmission infrastructure to deliver 2030 targets and a pathway to net zero. This infrastructure will require accelerated development and delivery to meet the 2030 completion date. The need for this infrastructure has been further underlined within the recent British Energy Security Strategy. This sets out the UK Government's plans to accelerate homegrown power for greater energy independence. The strategy aims to reduce the UK's dependence on and price exposure to global gas wholesale markets via the deployment of homegrown low carbon electricity generation supported by robust electricity network infrastructure.



What does this mean for the East of Scotland?

The extensive studies completed to inform the ESO's Pathway to 2030 HND confirmed the requirement to increase the power transfer capacity of the onshore corridor from Kintore to Tealing. This requires a 400kV connection between these sites to enable the significant power transfer capability needed to take power from onshore and large scale offshore renewable generation connecting on the East Coast of Scotland before then transporting power to areas of demand.

SSEN Transmission is proposing to establish a new 400kV overhead line (OHL) between Kintore and Tealing via Fiddes. This also requires two new 400kV substations to be constructed at Fiddes and Tealing to enable future connections and export routes to areas of demand. In addition, two of the existing 275kV overhead lines out of the existing Tealing Substation to Alyth and Westfield require upgrades to 400kV operation and to be connected to the proposed new Tealing 400kV site.

These five projects, collectively called East Coast 400kV Phase 2, have been determined as critical to enable the delivery of the UK and Scottish Government's targets.

ssen-transmission.co.uk/projects/2030-projects/East-Coast

About the East Coast Phase 2 projects

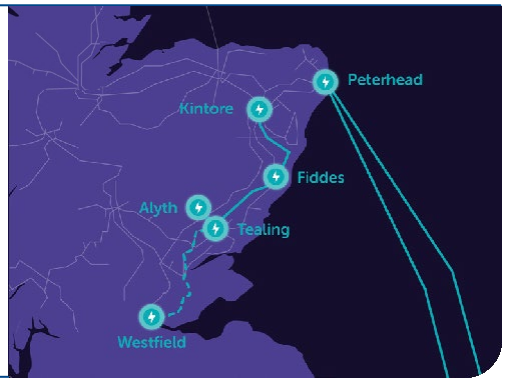
The East Coast 400kV Phase 2 scheme consists of five key onshore projects comprising of works to develop new infrastructure and upgrade existing infrastructure in both SSEN Transmission and Scottish Power Transmission's areas.

Due to the criticality of these works, there is a requirement for accelerated development and delivery to meet the 2030 connection dates.

Kintore – Fiddes – Tealing 400kV connection

This requires the construction of a new 400kV OHL approximately 106km in length. This is split into two sections:

- Approximately 40km between the 400kV substation currently under construction at Kintore and the proposed new 400kV Fiddes substation
- Approximately 66km between Fiddes and the proposed new 400kV Tealing substation.



New Tealing 400kV substation

A new 400kV substation is essential to enable the connection of the proposed Kintore – Fiddes – Tealing 400kV OHL as well as allowing the upgraded Alyth – Tealing and Tealing – Westfield OHLs to connect at 400kV. Tealing has been selected as the preferred area as it reuses existing infrastructure via Westfield and Alyth down to Kincardine that can be upgraded to 400kV operation. A new substation site at Tealing, near to the existing substation, minimises the requirement for new infrastructure.

New Fiddes 400kV substation

A new 400kV substation is required near the existing 132kV substation at Fiddes to provide a connection for the new proposed Kintore – Fiddes – Tealing 400kV OHL. Fiddes also provides an onshore landing point for the proposed Co-ordinated Offshore Network being developed under the Holistic Network Design 2 (HND2) which is intended to deliver offshore connections more efficiently.

Upgrade to 400kV for Alyth – Tealing and Tealing – Westfield OHL

To support the increased capacity from the proposed Kintore – Fiddes – Tealing 400kV OHL, the export routes to areas of demand must be upgraded to 400kV. This means the existing Alyth – Tealing and Tealing – Westfield OHLs, which currently operate at 275kV need to be upgraded to operate at 400kV.

This is termed 'reconductoring' and is achieved by replacing the existing conductors with larger capacity conductors. Once upgraded these lines will connect into the proposed new 400kV Tealing substation.

What we are consulting on

At SSEN Transmission, we are committed to delivering a meaningful consultation process underpinned by inclusion and accessibility. As a stakeholder led business, we understand the importance of involving communities and key stakeholders throughout each stage of our development process to deliver better outcomes for projects.

We are keen to hear your feedback regarding our preferred overhead line corridor and route, the preferred substation sites and the reconductoring proposals. We would welcome further information and other considerations you believe need to be taken into account as we progress with the development process.

During this consultation, we are presenting our approach to developing the projects listed below. This includes the technical, environmental and cost considerations that have been appraised as part of the overhead line (OHL) and substation site selection process. Maps are provided which aim to give a visual representation of the corridor, routes and sites under consideration.

Stakeholder engagement in the development phase is vital in shaping our proposals. To do this effectively we need to capture consultation feedback and harness local knowledge to identify challenges and explore potential community benefit and opportunities.

Kintore– Fiddes – Tealing 400kV overhead line (pages 12–39)

We are consulting on our preferred corridor and preferred route. These have been identified through consideration of environment, technical and cost factors and surveys.

New Fiddes 400kV substation (pages 45–48)

We are consulting on our preferred site for the proposed new substation to be located near the existing 132kV Fiddes substation. This has been identified through consideration of environment, technical and cost factors and surveys.

New Tealing 400kV substation (pages 41–44)

We are consulting on our preferred site for the proposed new substation to be located near the existing 132/275kV substation at Tealing. This has been identified through consideration of environment, technical and cost factors and surveys.

Upgrade to 400kV for Alyth – Tealing and Tealing – Westfield OHL

We are in the early stages of development with these upgrade works and will undertake further, detailed consultation on the proposals later in 2023. We have included an introduction to the projects within this consultation and welcome early feedback on the information provided.

Working with landowners

We recognise landowners and occupiers as key stakeholders in the development of our projects and are committed to consultation and engagement with all parties likely to have an interest in our proposals.

Due to the size and scale of the projects, we have not been able to identify and contact all landowners/occupiers at this stage that may be affected, but we will endeavour to contact all who are directly impacted as soon as we can.

If you are a landowner who is affected by the proposals and have not yet had contact from SSEN transmission, please get in touch via the contact details for the dedicated project land managers found on the relevant webpages: **ssen-transmission.co.uk/projects/2030-projects/ East-Coast**

As the project design develops, we will work with landowners and occupiers to mitigate the effects of our infrastructure on properties. Our team of dedicated land managers will be on hand to answer queries and address concerns throughout.

We will be required to carry out various engineering and environmental surveys to inform the design process. Consent will be sought from affected landowners and occupiers in advance for these surveys.

Once we have finalised the design of the overhead line infrastructure and associated works, we will be required to secure the appropriate land rights from landowners and occupiers in order that appropriate consents can be sought from Scottish Ministers. Our land managers will endeavour to reach a voluntary agreement with landowners and occupiers, however, as a statutory undertaker, we may require to underpin voluntary discussions with an application to Scottish Ministers for a Necessary Wayleave or Compulsory Purchase Order. Ultimately this is to ensure nationally significant infrastructure projects are delivered on time and in line with our licence obligations. We also have a duty to protect the interests of the UK bill payer. Statutory powers are not used lightly as we aim to work with landowners and occupiers to secure the necessary land rights voluntarily.

All potentially affected landowners and occupiers have the opportunity to provide feedback at our in-person consultation events and by submitting a feedback form. We would encourage all those with an interest to submit their views through this consultation.

Biodiversity net gain

We recognise that as we seek to develop the transmission network in the East of Scotland we have a significant interaction with the environment. We have a responsibility to design and build our projects to protect and enhance the environment by minimising the potential impacts from our activities and achieving Biodiversity Net Gain (BNG).

We are committed to protecting and enhancing the environment by minimising the potential impacts from our construction and operational activities on biodiversity. We have committed to no net loss of biodiversity for all of our projects gaining consent from 2020 onwards, and a net gain of biodiversity on all projects gaining consent from 2025. This means that during the development, construction and operation of our projects, we will leave the environment in a measurably better state than before development started; leaving a positive environmental legacy at all of our SSEN Transmission sites.

As this project progresses through the development process, we will actively seek ways to avoid and minimise impacts on biodiversity, through careful routeing and site design to avoid areas of highest biodiversity value. Where avoidance is not possible, our impacts are mitigated through the implementation of habitat creation and restoration efforts. These can be achieved within the boundary of the development site, or by providing support to local groups involved with habitat restoration or creation projects, within the locale of the development site.

Please let us know if you have ideas for biodiversity improvement projects in your local area that SSEN Transmission could get involved with. Contact details for the Community Liaison Manager can be found on page 54.

Example project: Argyll Coast and Countryside Trust (ACT) woodland planting collaboration:

Argyll's rainforest is a unique and rare habitat of ancient and native woodland. This collaboration with ACT will help deliver SSEN Transmission's compensatory tree planting and BNG commitments in Argyll while helping towards ACT's woodland planting ambitions, supporting its charitable objectives including biodiversity gain, health and wellbeing, improvement for local people, outdoor learning opportunities and climate change workshops.

Example project: Thurso South substation:

Creation of approximately 10 hectares of pollinator habitat to support the rare endemic great yellow bumblebee and contribute to wider conservation efforts for this species.

A collaboration with The Bumblebee Conservation Trust facilitated research on food availability for bumblebees, identifying the need for a diverse seed mix containing key flowering species to enhance early, main and late food supply to support the full lifecycle of bumblebees.

The planning process

The key legislation underpinning the consenting of the proposed new transmission infrastructure and upgrade works forming the East Coast Phase 2 Projects are the Electricity Act 1989 and the Town and Country Planning (Scotland) Act 1997.

SSEN Transmission works to develop projects that have considered technical, environmental and cost factors to arrive at a design that can be taken forward through the planning process.

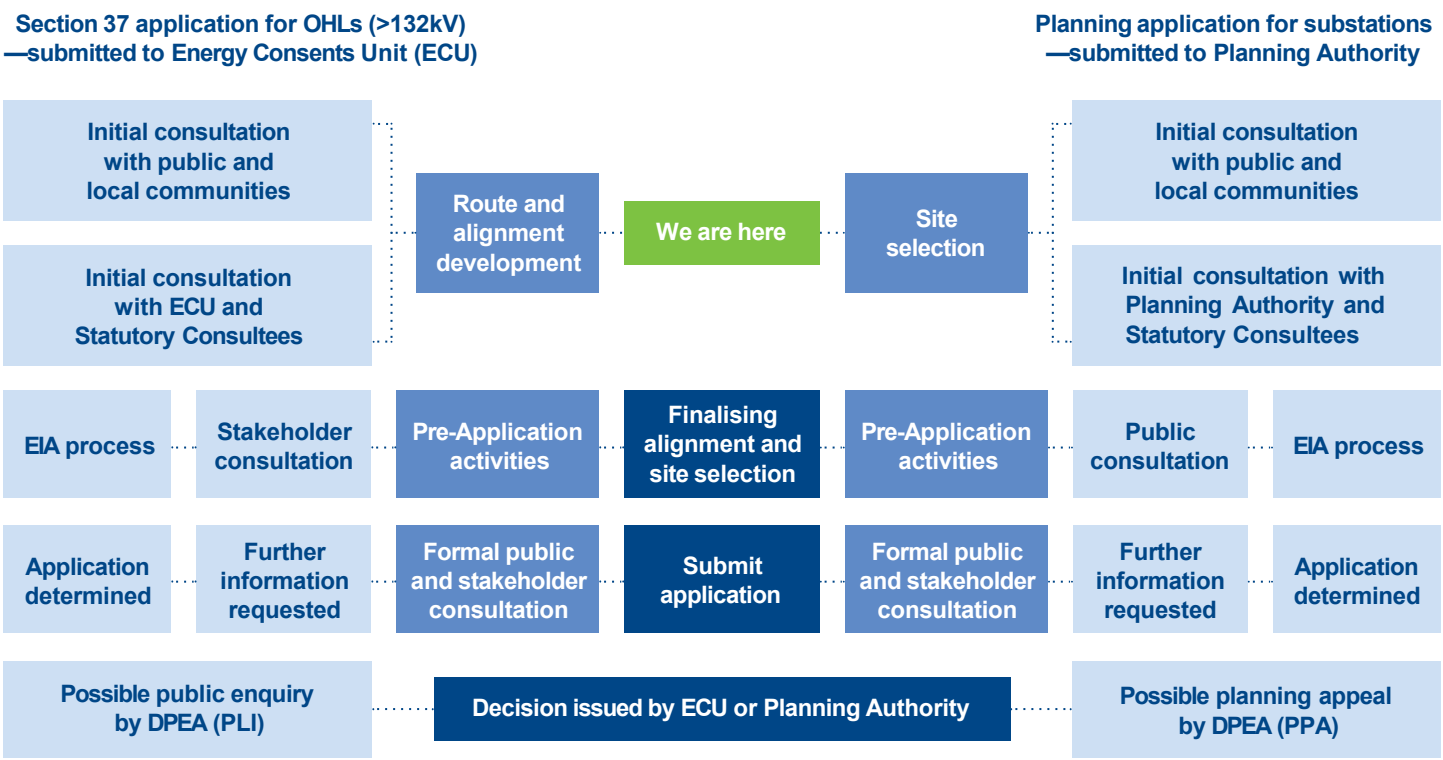
We engage with the Energy Consents Unit (ECU) and Local Planning Authorities to establish the planning pathway our proposed projects must take. This involves confirming whether projects will require Environmental Impact Assessments (EIAs). Should the proposed development be deemed non-EIA (due to its scale or potential environmental impacts), a voluntary Environmental Appraisal (EA) may be produced by SSEN Transmission to support the consent application. Our applications are supported with consultation and robust mitigation proposals.

Summary of information included in consent applications for OHLs:

- Final proposed OHL alignment.
- Limits of Deviation (LOD) either side of the alignment, to allow for micrositing of towers and access tracks.
- An access strategy.
- Stakeholder consultation and feedback.
- Ancillary works such as tree felling, laydown areas.

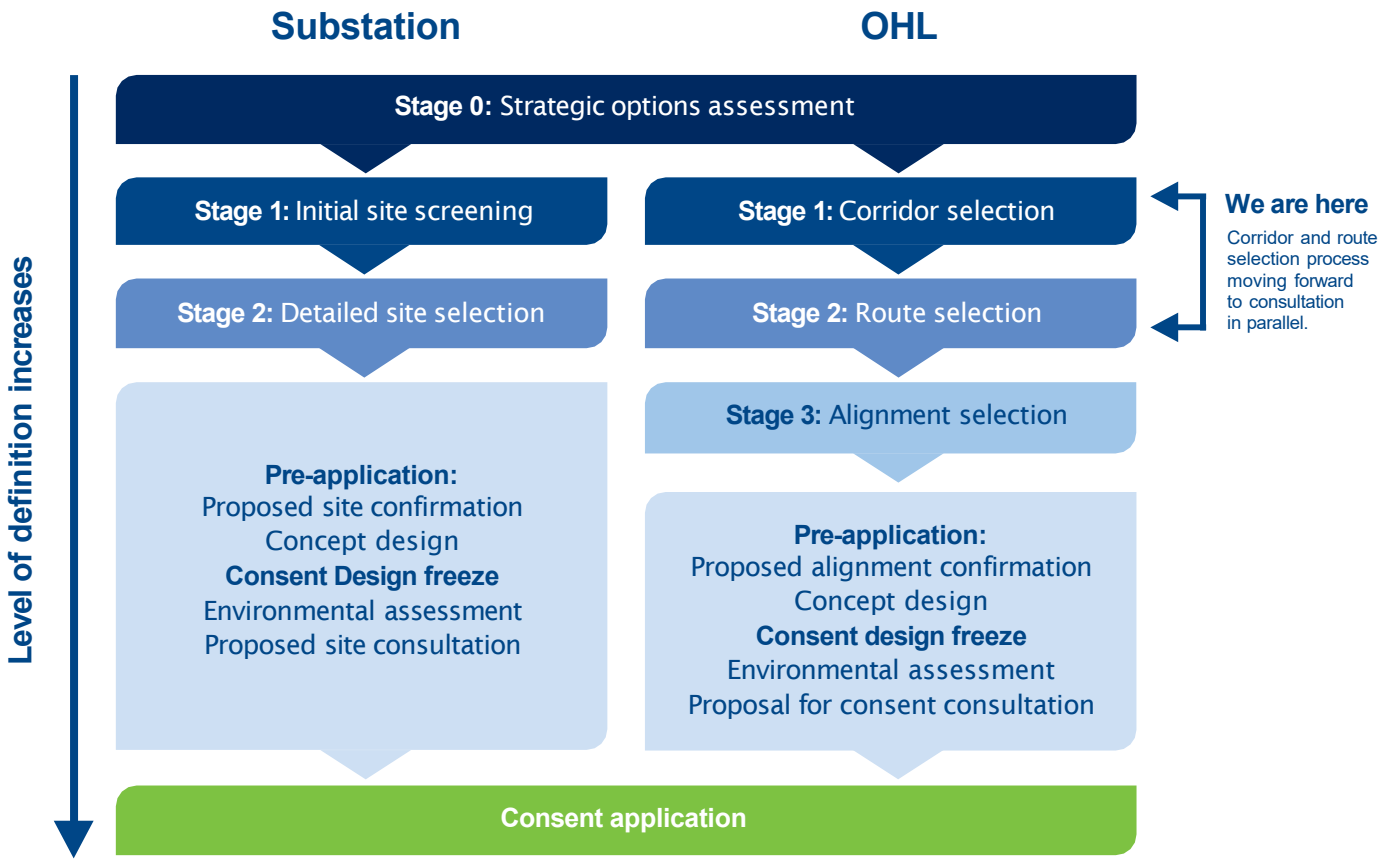
Summary of information included in substation consent applications:

- Site boundary clearly shown in red (the Red Line Boundary) including any permanent and temporary access routes and junctions onto public highways.
- The proposed development in relation to the site boundary with dimensions of all permanent and temporary works including structures, buildings, perimeter fencing, drainage features, key electrical equipment, construction compounds and laydown areas.



Our optioneering process

We follow an optioneering process to enable us to consistently and rigorously select alignments and sites for new OHLs and substations. The approach has a number of key stages, each increasing in detail and definition and bringing technical, environmental and cost considerations together in a way which seeks the best balance in accordance with our Transmission Network Operator's Licence and the Electricity Act 1989.



Stage 1 - Corridor and substation site screening - current project stage

This stage seeks to identify an initial preferred OHL corridor and identifies a number of substation sites within a wide search area. An appraisal of the OHL corridors and substation sites is completed to identify a preferred Corridor and preferred substation sites to be taken forward for further appraisal. Please see page 11 for information on the approach to appraisal.

Stage 2 - Route and site selection - current project stage

This stage seeks to identify an initial preferred OHL route and substation site from shortlisted options, which minimise where practicable technical, environmental and cost constraints, are likely to be acceptable to stakeholders and are viable. The connections into new and existing assets forms a crucial part of this assessment to reduce the need for additional new infrastructure.

For the overhead line consultation we are consulting on both corridor and route selection. These two have been combined due to the accelerated development and delivery requirements to meet 2030 connection dates. This approach of combining the consultation process does not alter the approach advocated by our internal guidance. The preferences that we have presented have been arrived at following our internal guidance document and appraisal process (see page 11).

Approach to Appraisal

The appraisal process has been designed to provide a consistent approach to the overhead line routeing and substation site selection processes to reach a balance of technical, environmental and cost considerations.

This process allows a preferred corridor, route and sites to be identified, which are economically viable, technically feasible, minimise impacts on important resources or features of the environment and reduces disturbance to those who live, work or visit the area in which they are proposed. The corridor, route and sites (and ultimately overhead line alignment) chosen also have to be capable of being granted consent by the relevant Local Authorities and Scottish Government (Energy Consents Unit).

The Red-Amber-Green (RAG) scoring criteria (below) is applied to reflect potential impacts across topic areas (e.g. landscape and visual, natural and cultural heritage, flooding, land use, ground conditions) identifying how constrained each corridor, route and site is for each element considered. RAG scoring does not rank the options, but can reflect challenging sections where specific sensitives exist.

Performance	Comparative appraisal
Most preferred	Low potential for the development to be constrained
↓	Intermediate potential for the development to be constrained
Least preferred	High potential for the development to be constrained

Overhead line technology

Technology considerations

Initially the suitability of both onshore and marine technology options were considered to provide the reinforcement between Kintore, Fiddes and Tealing. National Grid's subsequent 'Pathway to 2030' Holistic Network Design (HND) study concluded that an onshore overhead line solution was required, to be provided in parallel to the currently planned offshore works to connect Peterhead to Drax and South Humber via two proposed 2GW HVDC (High Voltage Direct Current) subsea links delivered under the Eastern Link programmes. The onshore upgrades are required in addition to the offshore cables to enable growth in onshore connections and also enable the network to export power offshore via Fiddes and Westfield. Suitable onshore 400kV AC (Alternating Current) technology options are limited to overhead lines (OHL) and underground cables (UGC). The table below presents a summary of the respective advantages and disadvantages of both technologies.

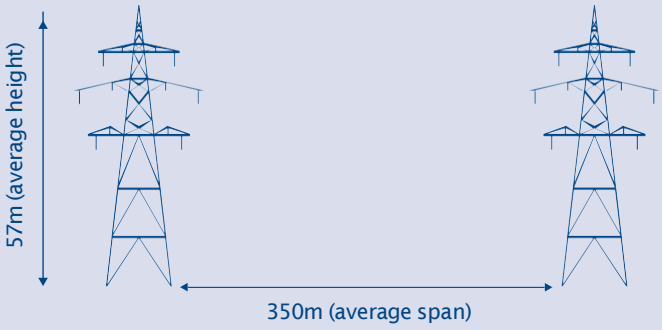
OVERHEAD LINES	UNDERGROUND CABLES
• Easier to cross challenging terrain like glens, hills, rivers, lochs, railways, roads and other utilities.	• Routing is more challenging as there is no option to cross challenging terrain.
• Quicker, easier and cheaper to identify and repair faults compared to underground cable.	• Fault detection of long cable sections is challenging, and repairs can take a substantial amount of time and cost.
• Can travel long distances with no requirement of additional equipment/expansion of substations to aid in stability of network.	• Over long distances cables require additional equipment at substations to maintain stability of the network, resulting in larger substations and higher costs.
• Lowest cost option when compared to underground cables.	• Cable is much greater cost than overhead line to install and operate.
• Easier and less expensive to maintain than underground cables.	• Minimal landscape and visual impact from cables once construction has been completed.
• Potential for significant landscape and visual impacts.	• Due to being underground not subjected to same weather elements as overhead line.
• Overhead lines are exposed to possible weather damage.	• Construction corridor can be up to 50m wide and can potentially result in greater habitat destruction and ecological damage.
• Capacity can be increased, within limits, by replacing or increasing the number of conductors. For UGCs, whole lengths of new cables would have to be installed.	• UGCs at voltages 33kV and below are generally less complex and expensive to install. UGCs at 400kV are very complex and expensive to install. Due the limits on cable capacity, we would be required to install 2 cables per phase to meet requirements. This would double the circuit length and impact the width of both the construction and operational corridor.

Our preferred technology

Our preferred technology for the proposed new 400kV OHL Connection between Kintore – Fiddes - Tealing is a new double circuit 400kV HVAC (High Voltage Alternating Current) overhead line.

Although this has been identified as the preference, this does not mean that short sections of underground cable would not be considered where there are challenges in the consenting, construction and/or operation of an overhead line.

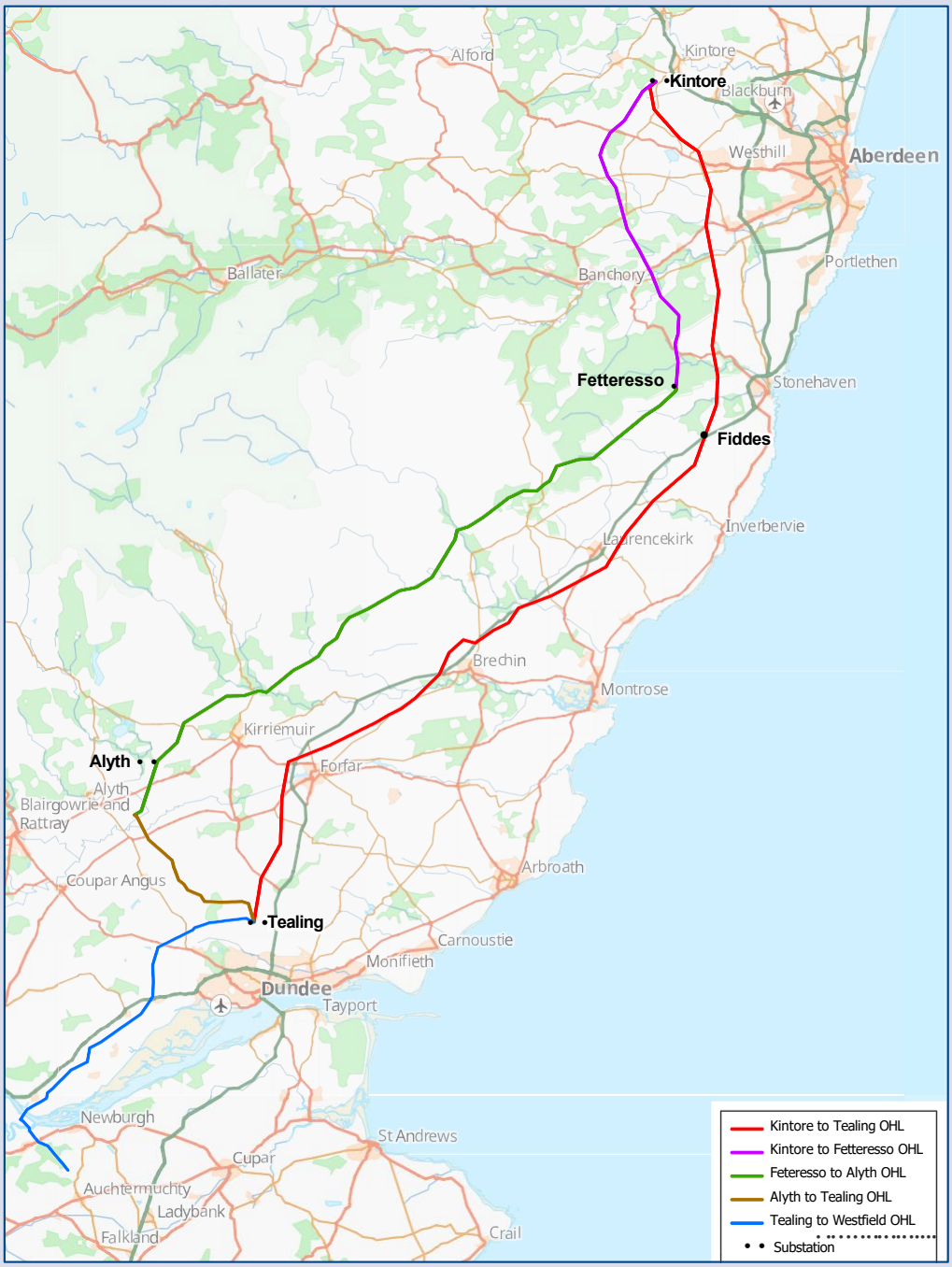
Each tower (often referred to as a pylon) will have six cross arms (the 'arms' coming off the centre of the tower) and a peak for lighting protection/ground wire. Each arm will support three conductors (the long metal lines that travel from tower to tower). The conductors will be strung on the cross-arms with glass insulators. All the overhead line materials are currently being designed and the specification may vary considering terrain/environmental challenges may vary considering terrain/environmental challenges.



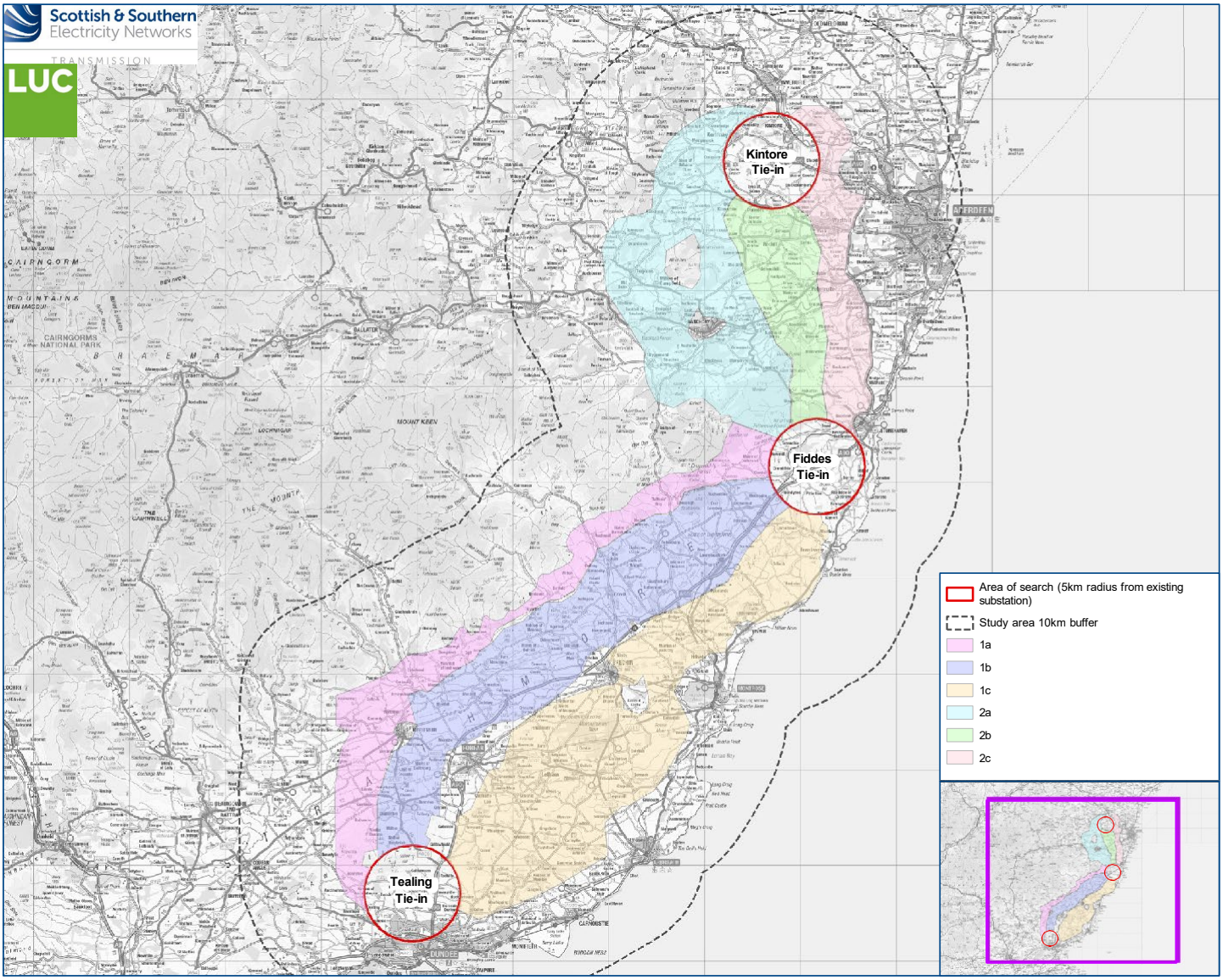
New Kintore – Fiddes – Tealing – 400kV overhead line connection

Project need

The proposed OHL is critical to the delivery of the UK and Scottish Government's 2030 targets. The proposed new 400kV connection between Kintore – Fiddes – Tealing will transmit electricity generated by renewables in the North East of Scotland to areas of demand on the GB transmission network. It will connect the proposed 400kV substations at Tealing, Fiddes and the new 400kV substation at Kintore which is currently under construction. The existing transmission infrastructure on the East Coast between Kintore, Tealing, Alyth and on to the SPT license area is shown below.



New Kintore – Fiddes – Tealing – 400kV overhead line connection corridor selection



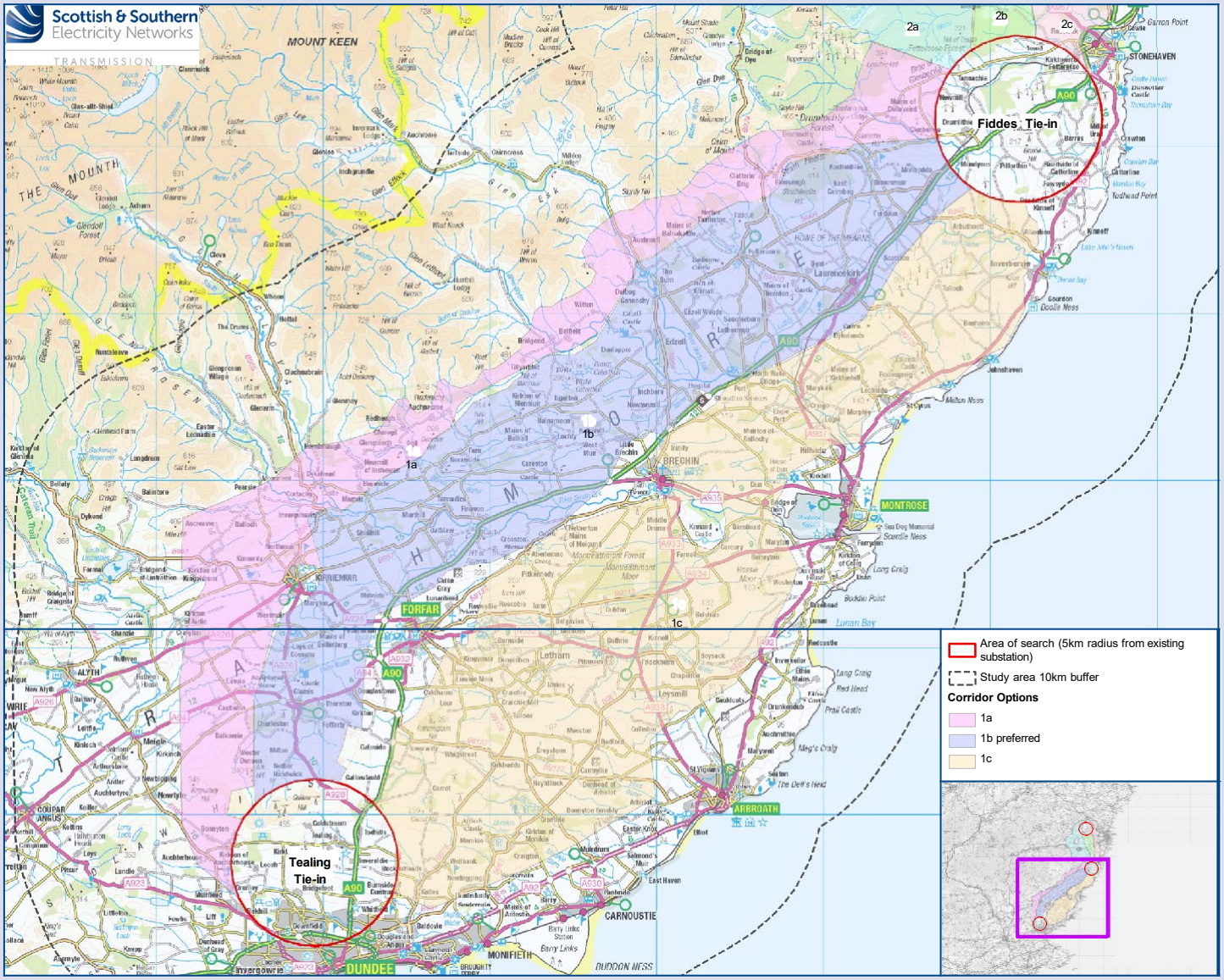
A digital routeing toolkit was used to help identify corridor options based on connection points at the new Kintore substation (currently under construction) and the proposed new 400kV substations at Fiddes and Tealing.

The corridors were primarily defined by the hilly/mountainous terrain to the west and a number of constraints including large settlements, the North Sea, airport restricted zones, Montrose Basin, existing transmission OHL infrastructure, the A90 and A92 carriageways to the east.

The Corridors that were selected were split into Section 1 Tealing - Fiddes (corridors 1a, 1b and 1c) and Section 2 Fiddes – Kintore (corridors 2a, 2b and 2c), as shown on the above map. A high level appraisal of the corridor options was completed and involved a systematic consideration against environmental, engineering and cost topic areas.

New Kintore – Fiddes – Tealing – 400kV overhead line connection corridor selection - Section 1

Section 1 - Tealing to Fiddes



New Kintore – Fiddes – Tealing – 400kV overhead line connection corridor selection - Section 1

Environmental and technical constraints

The high level environmental and technical constraints identified in Section 1 included scattered residential dwellings along with villages and towns (e.g. Letham, Edzell and Laurencekirk). There are existing high voltage OHLs, gas pipelines, road and railway infrastructure, watercourses including the River South Esk, international, national and local designated sites for nature conservation (e.g. Montrose Basin), and the presence of scheduled monuments (e.g. Brown and White Caterthuns) including Category A Listed Buildings, Garden and Designed Landscapes (e.g. Glamis Castle) and Conservation Areas. Woodland listed in the Ancient Woodland Inventory (AWI) is present and the land use largely comprises farmland, using the Land Capability for Agriculture (LCA) classification, lower elevation ground is predominantly classified as LCA 3.1 and 3.2 with large areas of LCA Class 2. This land is capable of supporting a wide range of crops and mixed agriculture. The nature of the landscape, topography and land use varies across the three corridors considered, with landforms of a more upland character to the west (corridor 1a) down to coastal lowlands in the east (corridor 1c).

RAG impact rating - Engineering

Corridor	Infrastructure crossing		Topography				Ground conditions	Construction/ Maintenance	Proximity				
	Major crossings	Road crossing	Elevation	Atmospheric pollution	Contaminated land	Flooding	Terrain	Access	Wind farms	Communication masts	Urban environments	Metallic pipelines	Route length
1a	H	L	H	L	L	M	H	H	H	L	L	L	H
1b	H	H	L	M	M	M	M	L	H	H	H	H	M
1c	H	H	L	H	M	H	M	M	H	H	H	H	L

RAG impact rating - Environmental

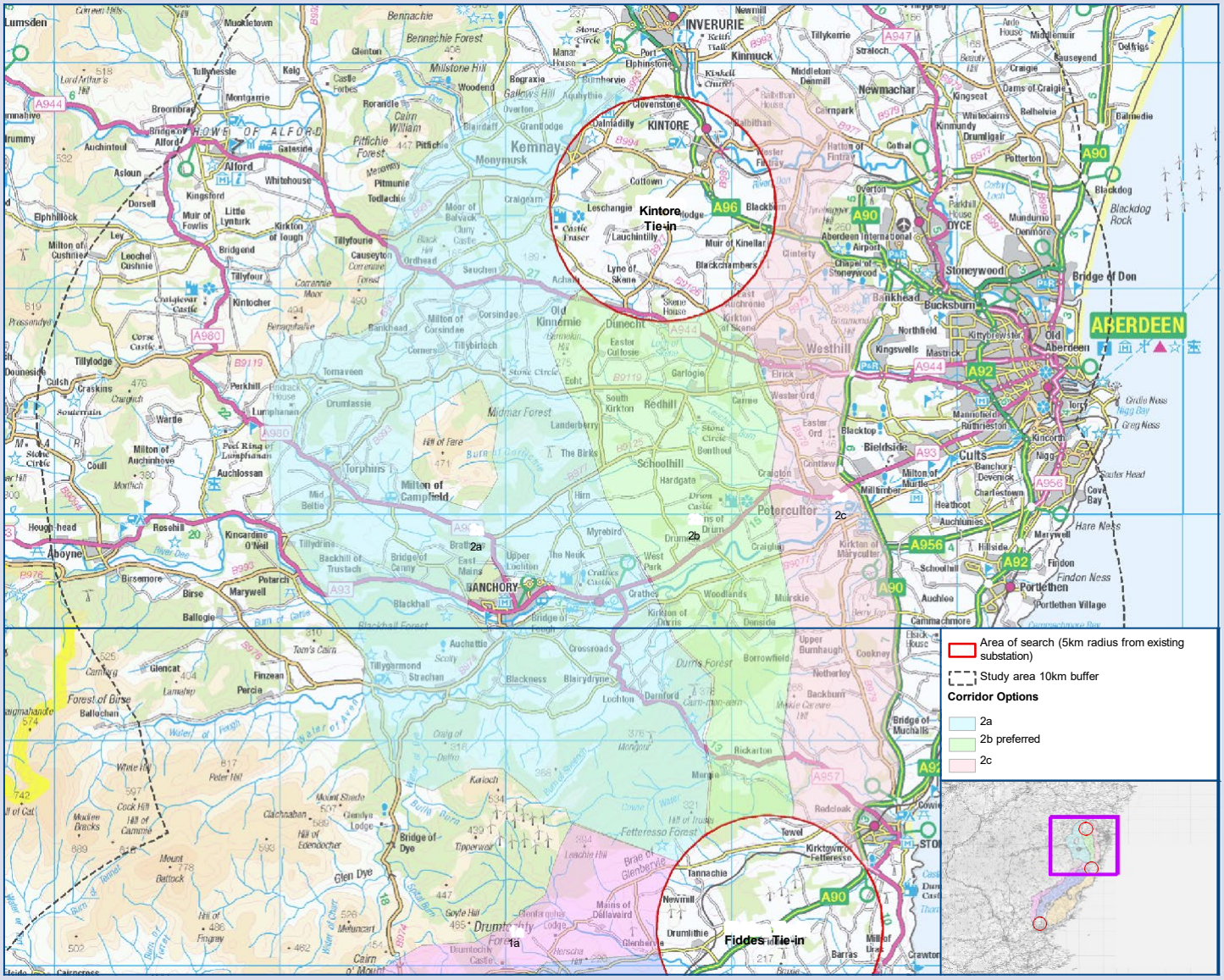
Corridor	Natural heritage					Cultural heritage		People	Landscape and visual			Land use		Planning	
	Designations	Protected species	Habitats	Ornithology	Geology, hydrology and hydrogeology	Designations	Cultural heritage designations	Proximity to dwelling	Designations	Landscape character	Visual	Agriculture	Forestry/	Recreation	Proposals
1a	M	M	M	H	M	M	M	M	H	H	H	M	L	L	L
1b	M	M	M	M	M	M	M	H	M	M	M	M	M	L	L
1c	L	L	L	H	H	M	M	H	M	M	M	M	L	L	M

RAG impact rating - Cost

Corridor	Capital	Operational	
	Construction	Inspections	Maintenance
1a	H	M	H
1b	L	L	L
1c	L	L	M

New Kintore – Fiddes – Tealing – 400kV overhead line connection corridor selection - Section 2

Section 2 - Fiddes to Kintore



New Kintore – Fiddes – Tealing – 400kV overhead line connection corridor selection - Section 2

Environmental and technical constraints

The high level environmental and technical constraints identified in Section 2 included scattered residential dwellings and large settlements such as Westhill and Peterculter, existing high voltage OHLs, gas pipelines, road and railway infrastructure (including A90 and A93) and existing or planned wind farms (e.g. the existing Meikle Carewe Wind Farm). There are large watercourses (e.g. River Dee and River Don) international, national and local designated sites for nature conservation (e.g. Loch Skene), presence of scheduled monuments including Category A Listed Buildings, Garden and Designed Landscapes (e.g. Dunecht House) and Conservation Areas. Woodland listed in the Ancient Woodland Inventory (AWI) is present and the land use largely comprises commercial forestry and farmland, using the Land Capability for Agriculture (LCA) classification, lower elevation ground is predominantly classified as LCA 3.2, with localised areas of LCA class 3.1. This land is capable of supporting a wide range of crops and mixed agriculture. The nature of the landscape, topography and land use varies across the three corridors considered, with rising land towards the Cairngorms in the west and urban areas to the east such as Aberdeen and Stonehaven.

RAG impact rating - Engineering

Corridor	Infrastructure crossing		Topography				Ground conditions	Construction/ Maintenance	Proximity				
	Major crossings	Road crossing	Elevation	Atmospheric pollution	Contaminated land	Flooding	Terrain	Access	Wind farms	Communication masts	Urban environments	Metallic pipelines	Route length
2a	H	L	H	L	L	M	H	H	H	L	L	L	H
2b	H	H	M	M	L	M	M	L	H	H	H	H	L
2c	H	H	L	H	L	M	M	M	H	H	H	H	M

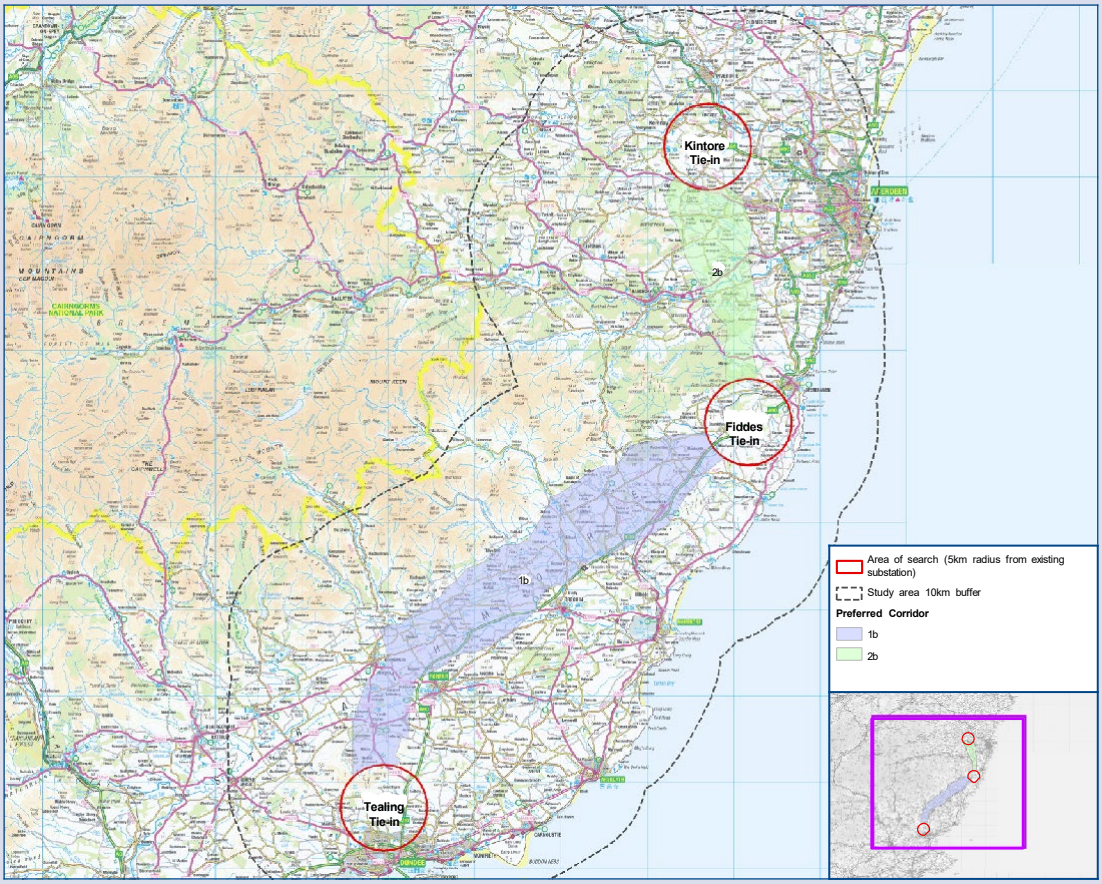
RAG impact rating - Environmental

Corridor	Natural heritage					Cultural heritage		People	Landscape and visual			Land use		Planning	
	Designations	Protected species	Habitats	Ornithology	Geology, hydrology and hydrogeology	Designations	Cultural heritage designations	Proximity to dwelling	Designations	Landscape character	Visual	Agriculture	Forestry/	Recreation	Proposals
2a	L	L	L	H	M	M	M	M	H	H	H	L	M	L	L
2b	M	M	M	H	M	M	M	H	M	M	M	L	L	L	M
2c	M	M	M	H	M	M	M	H	M	M	M	L	L	L	L

RAG impact rating - Cost

Corridor	Capital	Operational	
	Construction	Inspections	Maintenance
2a	H	M	H
2b	L	L	L
2c	M	L	H

New Kintore – Fiddes – Tealing – 400kV overhead line connection preferred corridor 1b and 2b



Reasoning for the preferred corridor selection

The east and west boundary of the Preferred Corridor 1b and 2b is defined by two existing OHL's comprising:

- The Kintore - Fetteresso - Alyth currently operating at 275kV and being upgraded to 400kV, forming the west boundary; and
- The Kintore Tealing 275kV OHL, forming the east boundary.

Preferred Corridor 1b and 2b will avoid crossing the above existing high voltage OHLs (except possibly at the connection points to Tealing and Kintore substations). The corridor also largely avoids densely populated areas and is considered marginally less sensitive to the introduction of new OHL infrastructure due the existing OHLs throughout the corridor. The terrain is relatively flat and there are likely to be fewer technical challenges, during construction and operation, due to the existing road and access network.

Each corridor option has areas where environmental designated sites may represent pinch points. It is considered that Corridor 1b and 2b offers opportunities to avoid and mitigate potential impacts and more detailed consideration of the designated sites will be undertaken at the routeing stage.

Corridor 1a, 1c, 2a and 2c require crossing of existing electricity transmission insfrastructure which represents a significant capital cost and additional maintenance requirements.

The Preferred Corridor 1b and 2b has been taken forward to Stage 2 Routeing.

New Kintore – Fiddes – Tealing – 400kV overhead line connection route selection

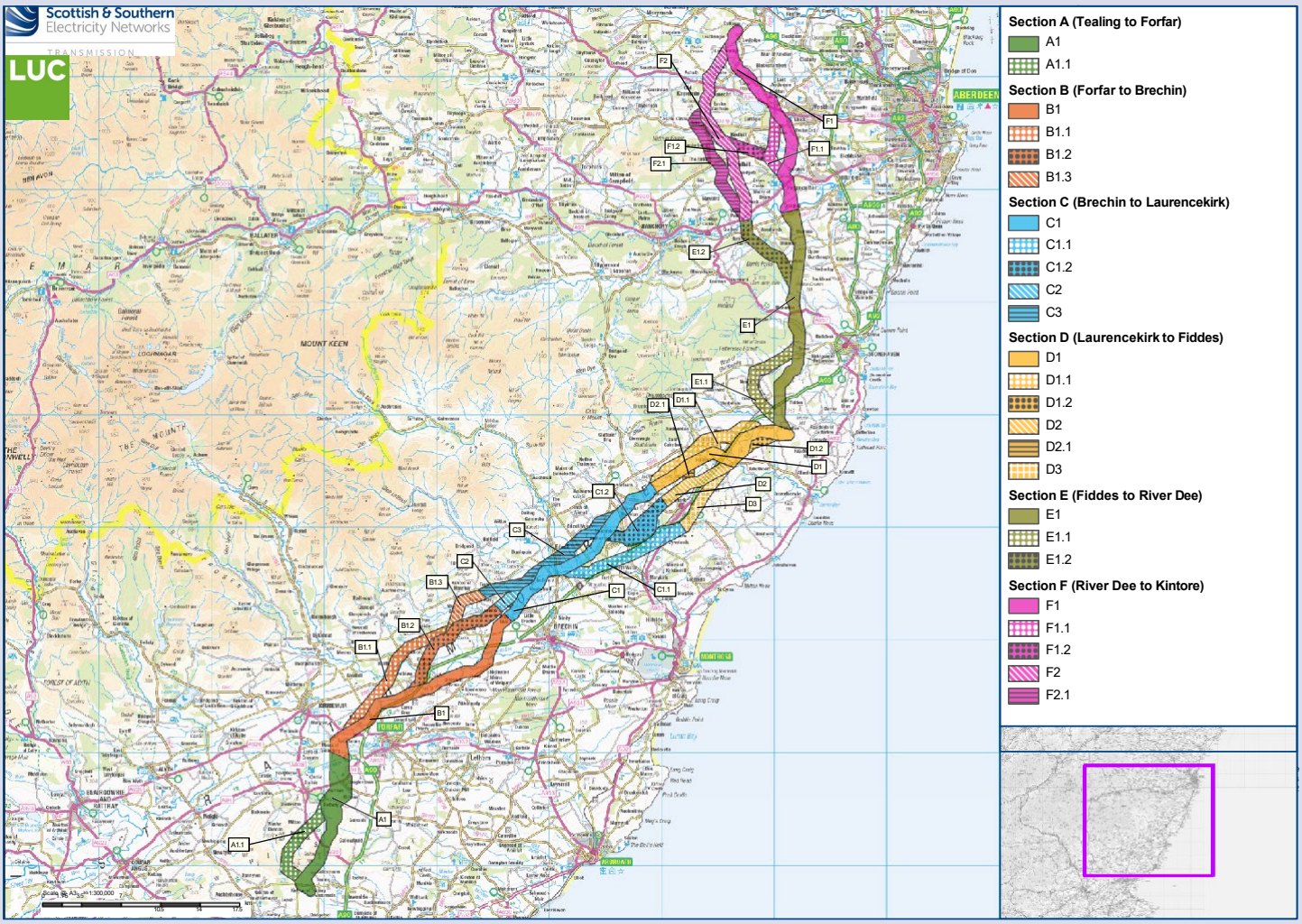
Route selection

Following the corridor selection we then carried out a systematic routeing process within the Preferred Corridor 1b and 2b. This ensures the final route meets technical requirements, is cost effective, causes the least impact on the environment, and least disturbance to those living, working or visiting the area.

A selection of 1km wide routes have been identified, along with a preferred route option, which are provided in the following pages for consultation. After this consultation and consideration of feedback a Preferred Route will be confirmed. SSEN Transmission then develops a series of alignment options and identifies a preferred alignment (within the Preferred Route) and further undertakes alignment consultation.

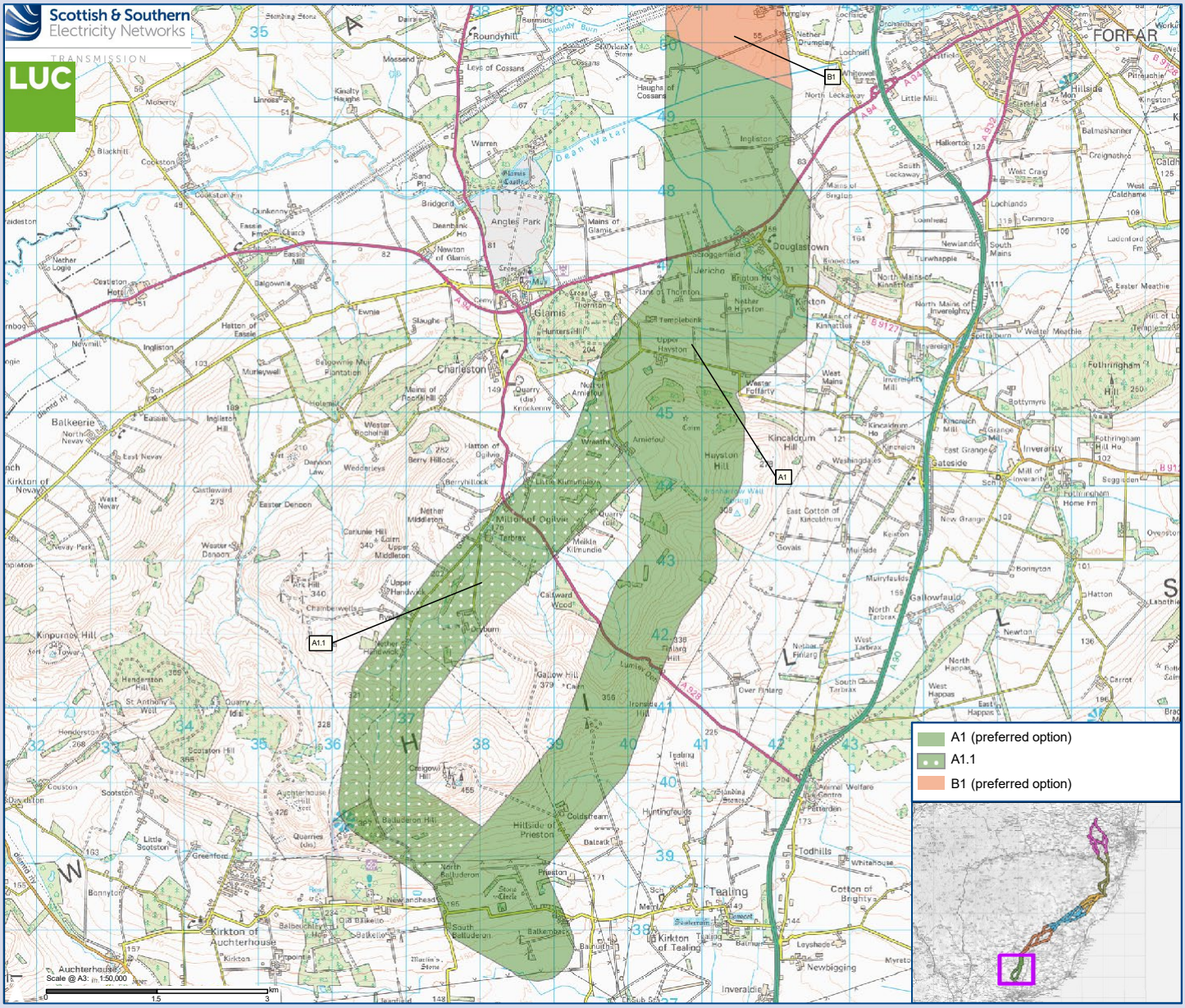
This consultation seeks views on the approximate 1km wide route options identified below. We have divided each part of the route options into six sections (Section A – Section F).

For each section, the project team have chosen a preferred route which tries to strike a balance between all considerations, these are highlighted in the pages that follow. However, early engagement and feedback at this stage in the routeing process will be crucial to help determine any factors which may require further consideration.



Section A: Tealing to Forfar

Route options A1 and A1.1

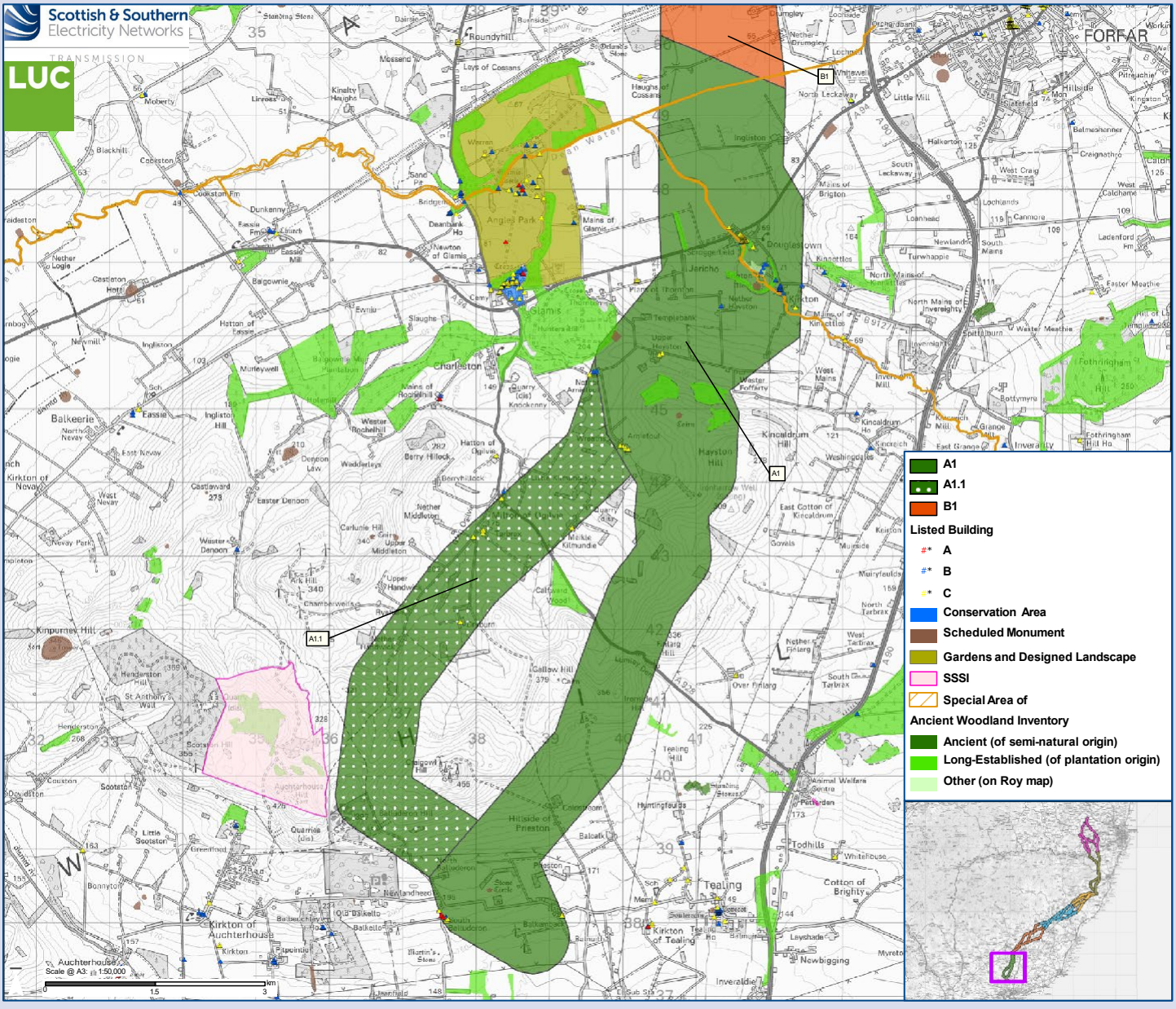


Section A: Tealing to Forfar

Section A starts at the proposed new substation at Tealing and continues to the west of Forfar. It comprises two route options, both which pass through predominantly rural agricultural areas with individual properties and farmsteads located along minor roads. The village of Douglastown is located within the route option.

Environmental constraints within or near this section include Auchterhouse Hill Site of Special Scientific Interest (SSSI) and stretches of the River Tay Special Area of Conservation (SAC), primarily designated for its salmon, lamprey and otter populations. There is a range of cultural heritage features such as Listed Buildings, the majority of which are clustered around Douglastown and Kirkton, towards the north end of the section and a number of Scheduled Monuments including Arniefoul Cairn and heritage assets of regional significance such as Wyton Wood cropmark site (ring ditch) and South Balluderon Farm. Glamis Castle Garden and Designed Landscape is located to the west outside of the route section.

There is a tall communication mast South of Gallow Hill and the National Grid gas pipe network within the vicinity which need to be avoided and the wide flood plain associated with the Dean Water requires consideration. There is challenging terrain and elevated ground on both route options.



ssen-transmission.co.uk/projects/2030-projects/East-Coast

Section A: Tealing to Forfar

For Section A, there are limited route options that can extend from the connection point at the proposed new Tealing 400kV Substation and head north whilst avoiding the various constraints identified. As such, Route A1 was identified with one deviation Route A1.1 and these were assessed against each other.

RAG Impact Rating - Environmental

Options	Natural heritage					Cultural heritage		People			Landscape		Land use		
	Designations	Protected species	Habitats	Geology, hydrology and hydrogeology	Ornithology	Designations	Cultural heritage designations	Settlements	Visual	Physical effects	Designations	Character	Agriculture	Forestry	Recreation
A1	M	L	M	M	M	M	M	L	M	L	L	M	L	L	L
A1.1	L	L	M	M	M	M	M	L	M	L	L	H	L	L	L

RAG Impact Rating - Engineering

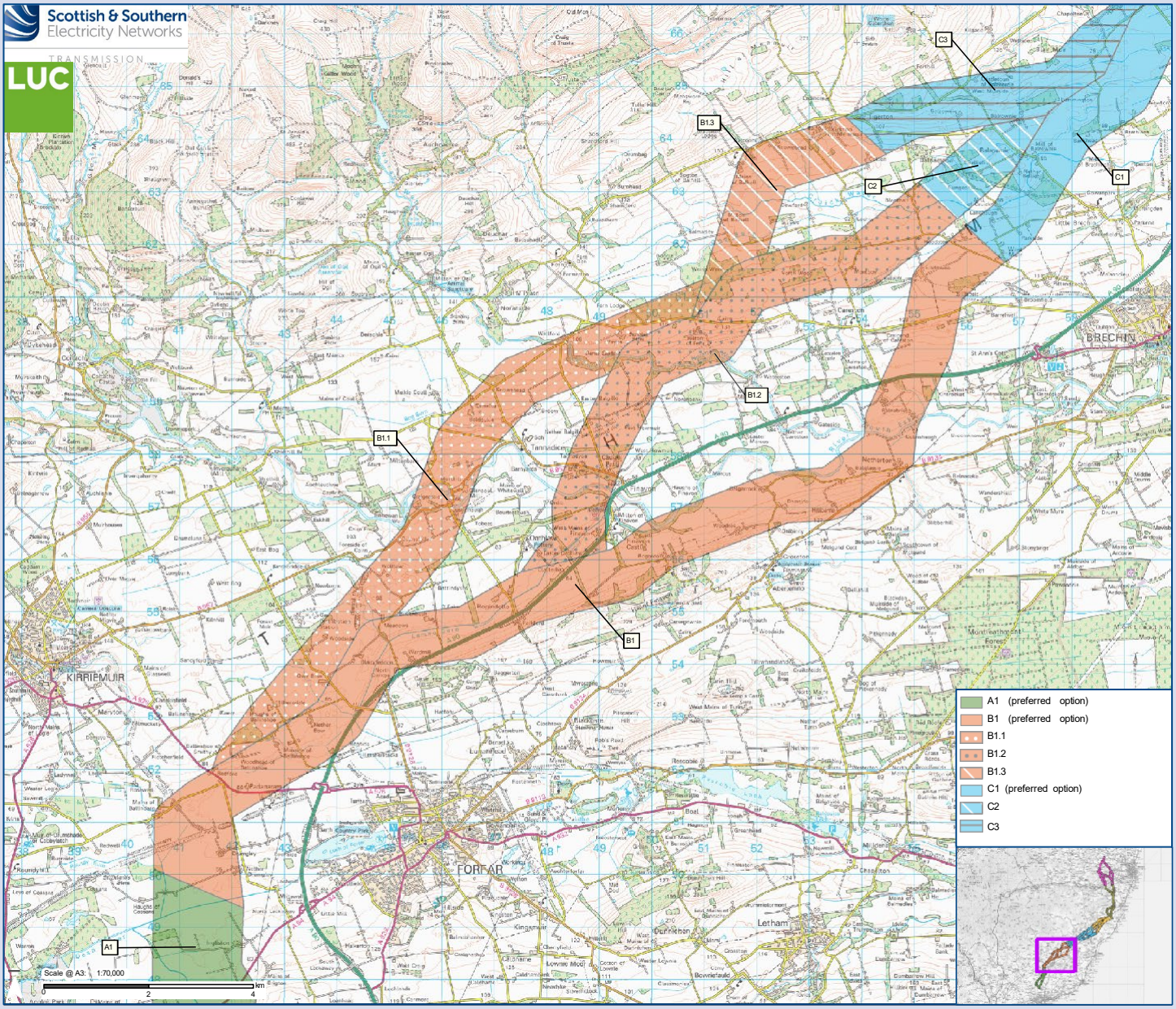
Options	Major crossings	Minor roads	Elevation	Slope	UXO	Flooding	Peatland	Access	Angle supports	Wind farms	Communication masts	Urban areas	Metallic pipes	Lengths
A1	H	L	M	L	L	M	L	L	L	L	M	L	M	L
A1.1	H	M	M	M	L	M	L	L	M	L	L	L	M	M

Our preferred route - Option A1

The key considerations for Section A related to engineering and environmental issues. A1 is likely a lower cost option than A1.1 but not significantly. From an engineering perspective both route options require a number of major crossings, would span elevated areas and areas of flood risk, and need to navigate existing infrastructure, including gas pipelines. Route A1.1 has additional challenges including related to slope and minor road crossings, but not to such an extent that they would influence the decision on a route. On the environmental considerations, while A1 has a greater level of constraint in so far as cultural heritage designations are concerned, A1.1 has the potential to lead to more adverse landscape and visual impacts than A1. The conclusion of each appraisal has arrived at A1 as the preferred route on the basis of the balance of issues and because it is the shorter route. Option A1 is the preferred route option in Section A.

Section B: Forfar to Brechin

Route options B1, B1.1, B1.2 and B1.3

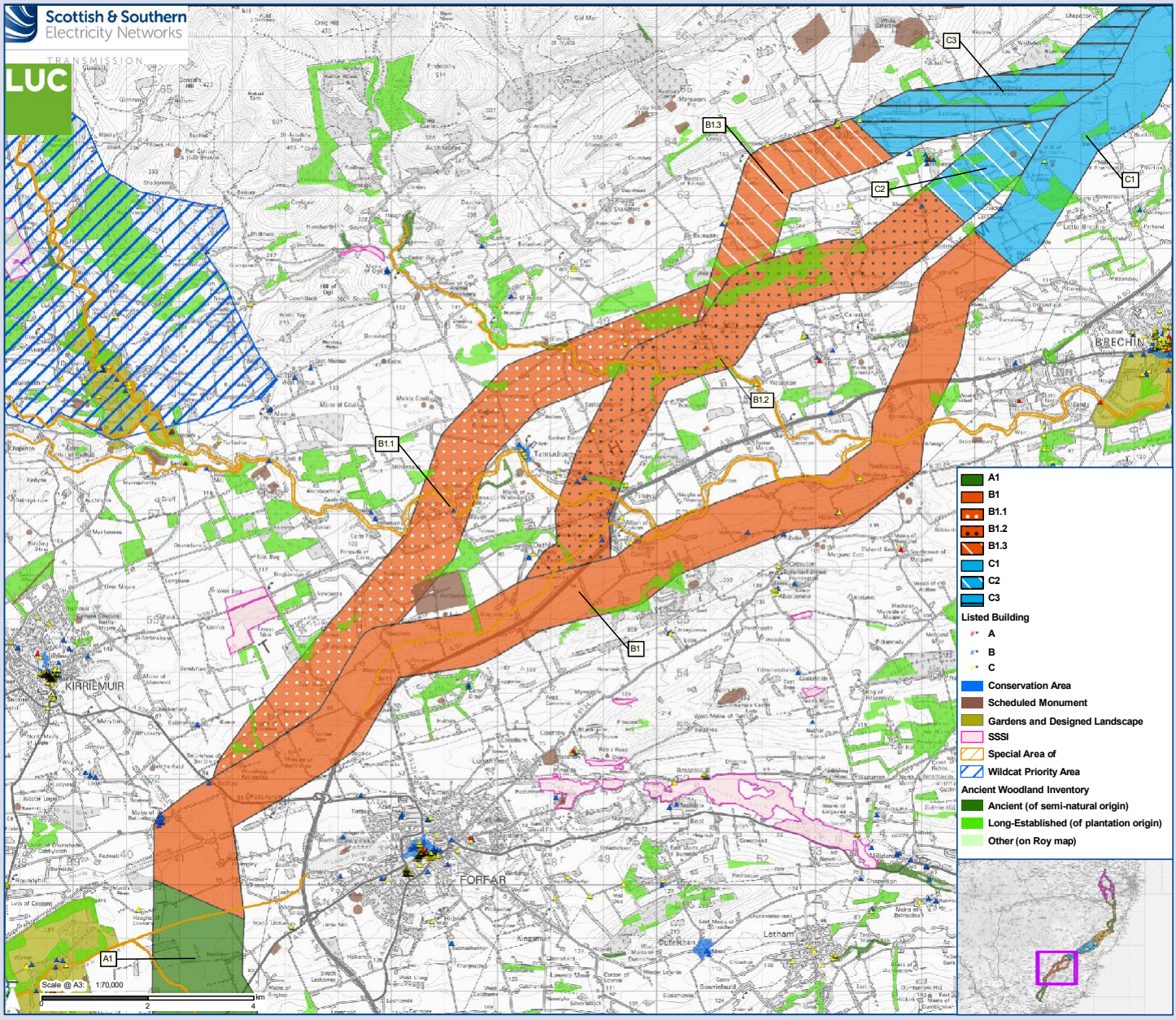


Section B: Forfar to Brechin

Section B starts to the west of Forfar and continues to the west of Brechin. It comprises four route options, which pass through predominantly rural and agricultural areas with individual and clusters of residential properties and farmsteads located largely along minor roads such as Mosside of Ballinshoe, Padanaram, Bogindollo, Hill of Finavon, West Mains of Finavon, Mains of Balhall and Knowehead and Kirkton of Menmuir. Larger settlements of Kirriemuir, Forfar and Brechin are located outwith the route options.

Environmental constraints within or near this section include Finavon Castle (Category C Listed Building), River South Esk Special Area of Conservation (SAC) and a series of Scheduled Monuments (SM) including Battledykes Roman Camp, Battledykes, Cairn, Finavon Fort and the Brown and White Caterthun Hillforts. Areas of Ancient Woodland the majority of which is of long established planation origin also sit within the route section. A short stretch of the River Tay SAC and longer stretches of the River South Esk SAC sit within the route options.

Physical constraints such as the National Grid gas pipeline and A90 dual carriageway need to be avoided or crossed.



Section B: Forfar to Brechin

For Section B, the main route identified was route option B1 with deviations comprising B1.1, B1.2 and B1.3. These have been assessed against each other.

RAG Impact Rating - Environmental

Options	Natural heritage					Cultural heritage		People			Landscape		Land use		
	Designations	Protected species	Habitats	Geology, hydrology and hydrogeology	Ornithology	Designations	Cultural heritage designations	Settlements	Visual	Physical effects	Designations	Character	Agriculture	Forestry	Recreation
B1	M	L	L	M	M	M	L	L	M	L	L	M	M	L	L
B1.1	M	L	L	M	M	L	L	L	M	L	L	M	M	M	M
B1.2	M	L	L	M	M	M	M	L	M	L	L	M	M	M	M
B1.3	M	L	L	M	M	M	L	L	M	L	L	M	M	L	M

RAG Impact Rating - Engineering

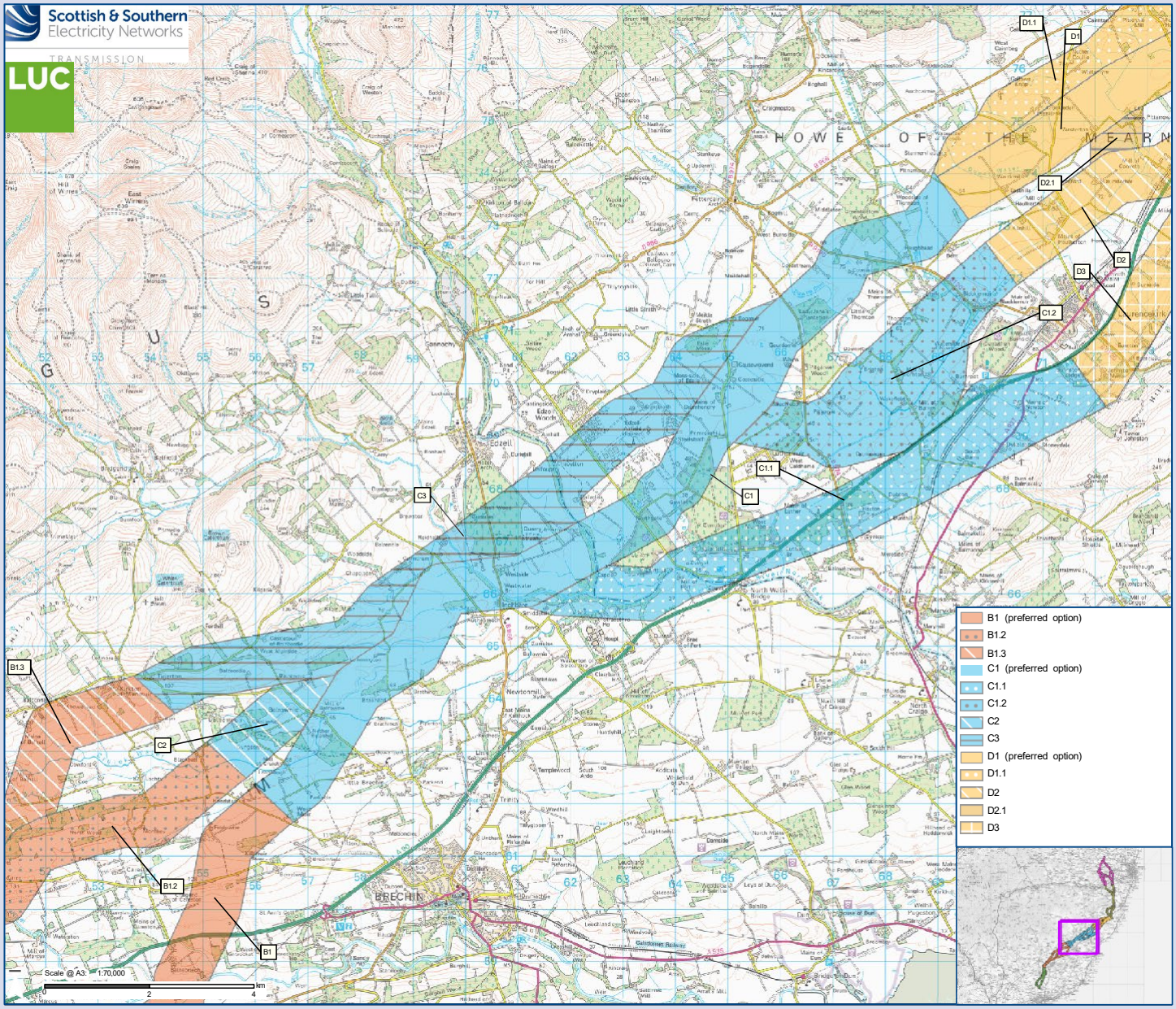
Options	Major crossings	Minor roads	Elevation	Slope	UXO	Flooding	Peatland	Access	Angle supports	Wind farms	Communication masts	Urban areas	Metallic pipes	Lengths
B1	L	M	L	L	L	M	L	L	M	L	H	L	M	M
B1.1	L	M	L	L	L	L	L	L	L	L	L	L	M	L
B1.2	L	M	L	L	L	L	L	L	M	L	L	L	M	M
B1.3	L	L	L	L	L	L	L	L	M	L	L	L	M	M

Our preferred route - Option B1

The key considerations for Section B related to engineering and environmental issues, as no strong differentiation was made between the route options on cost. From an engineering perspective no clear preference was identified from the appraisal, with no significant issues that cannot be technically resolved identified. The engineering appraisal concluded that on balance and based on a lower potential impact to residential and commercial properties B1 is preferred. The environmental appraisal found little to distinguish between the options, with a slight preference being expressed for specific options in several of the assessments, but none that was conclusive overall. On balance the environmental appraisal concluded that route option B1 is preferred in this section, particularly given the preference to enter section C away from the Brown and White Caterthun Hillforts SM and to optimise back clothing opportunities to better allow the OHL to integrate into the landscape. Option B1 is the preferred route option in section B.

Section C: Brechin to Laurencekirk

Route options C1, C1.1, C1.2, C2 and C3

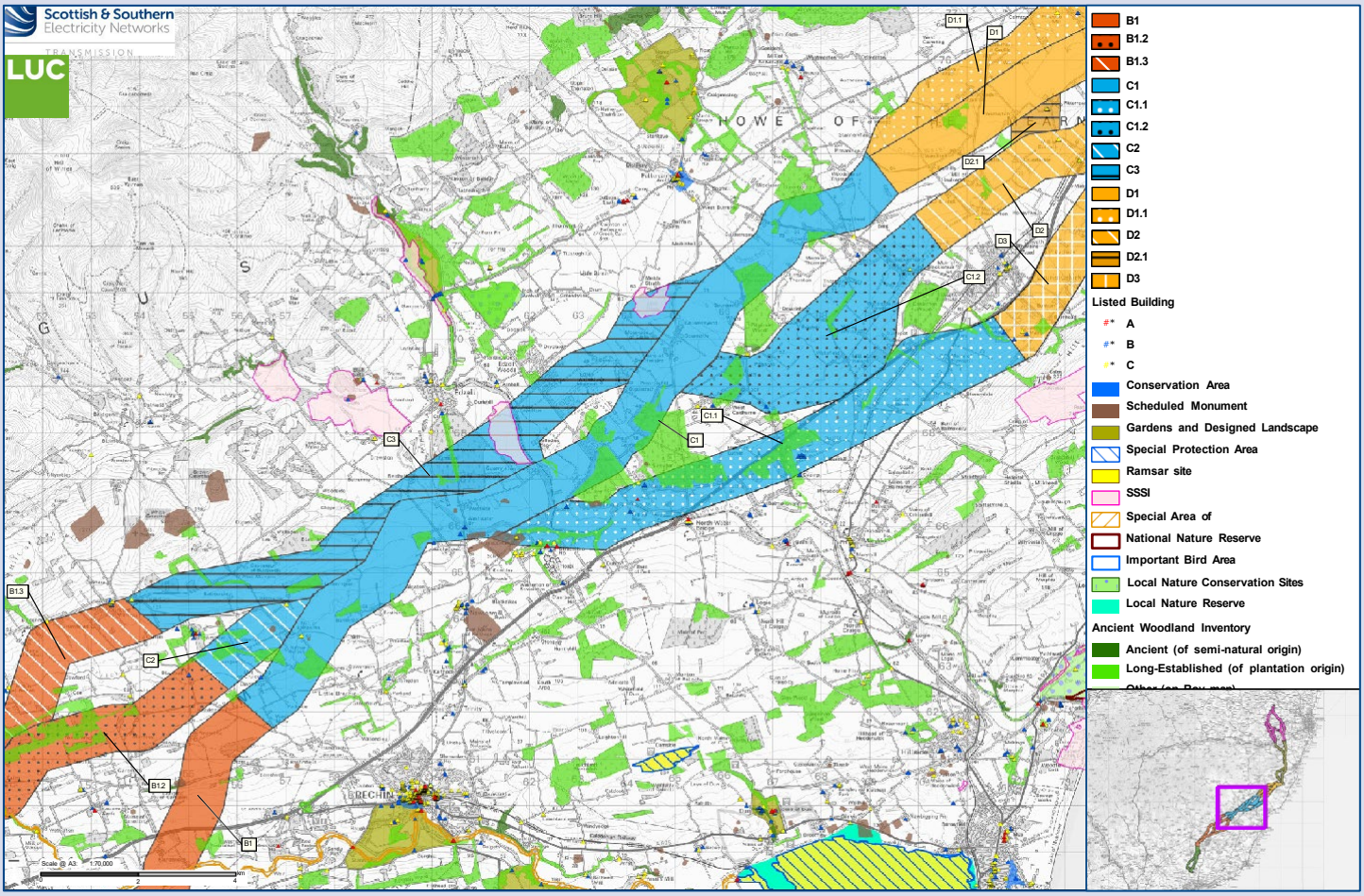


Section C: Brechin to Laurencekirk

Section C starts to the west of Brechin and continues to Laurencekirk. It comprises five route options, which pass through predominantly rural agricultural areas with individual and clusters of residential properties and farmsteads located along minor roads. The small village of Inchbare is located within the routes and the larger village of Edzell is located outwith the route options.

Environmental constraints within or near this section include the North Esk and West Water Palaeochannels Site of Special Scientific Interest (SSSI), to the south of Edzell. Areas of Ancient Woodland of long established planation origin also sit within the routes. Clusters of Scheduled Monuments (SM) such as the cropmark sites north of Inchbare are present and there is potential to impact the setting of Fasque House and designed landscape west of the route along with the setting of the Brown and White Caterthun Hillforts, at the southern end of Section C.

Physical constraints such as the National Grid gas pipeline passes through the southern area of the route and the East Coast railway main line must be considered. In addition, there are areas of potential unexploded ordinance (UXO) and contaminated land due to World War II around Edzell RAF airbase.



Section C: Brechin to Laurencekirk

For Section C, the main route identified was C1 with deviations off this route comprising C1.1 and C1.2. Two further route options were identified these are C2 and C3. All the route options and the deviations have been assessed against each other.

Options	RAG Impact Rating - Environmental														
	Designations	Protected species	Habitats	Geology, hydrology and hydrogeology	Ornithology	Designations	Cultural heritage	Settlements	Visual	Physical effects	Designations	Character	Agriculture	Forestry	Recreation
C1	M	L	L	M	M	M	L	L	M	L	L	M	M	L	L
C1.1	M	L	L	M	M	M	M	L	M	L	L	M	M	M	M
C1.2	M	L	L	M	M	L	L	L	M	L	L	M	M	L	M
C2	M	L	L	M	M	M	L	L	M	L	L	M	M	L	L
C3	H	L	L	M	M	M	L	L	M	L	L	M	L	M	M

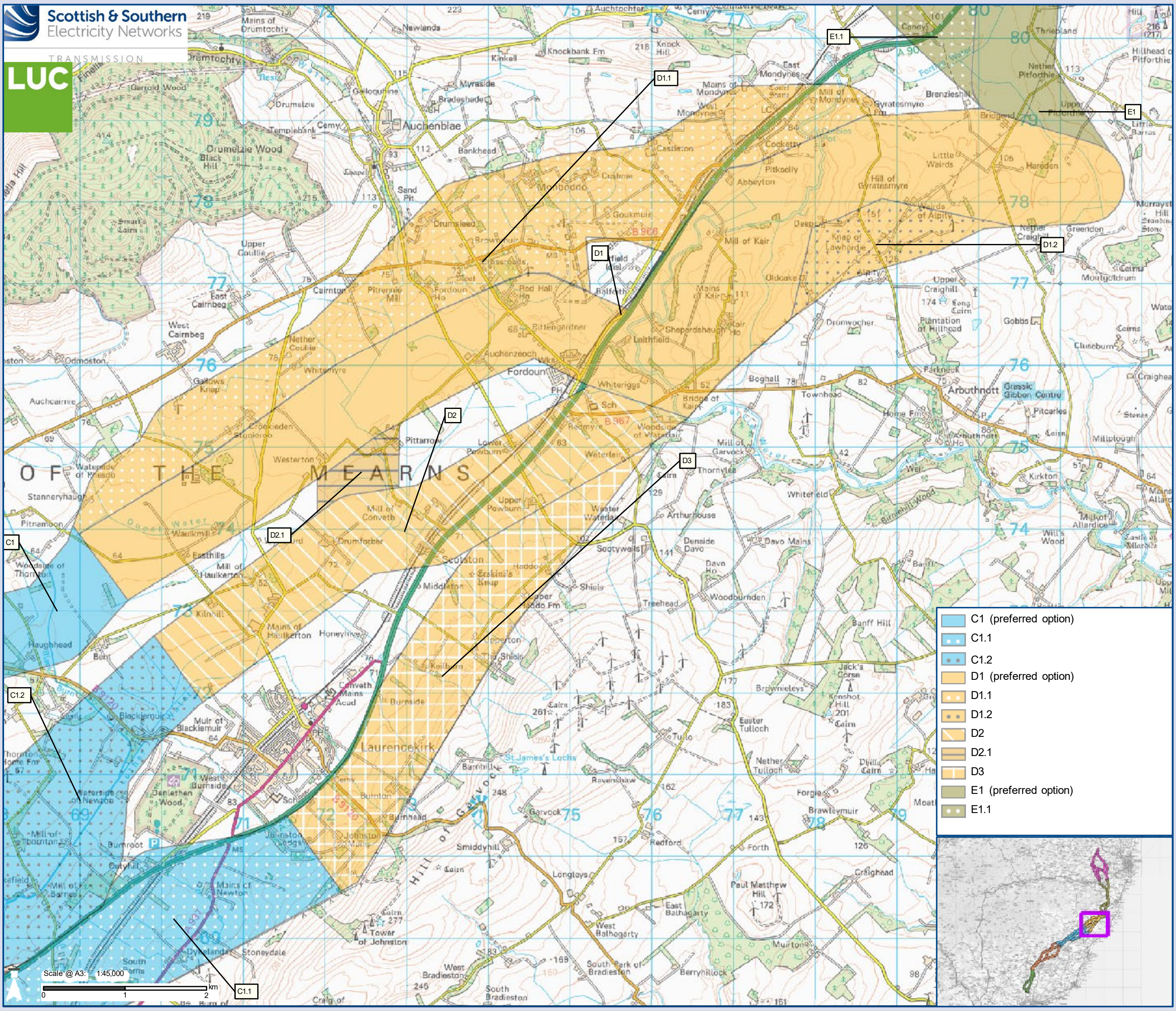
Options	RAG Impact Rating - Engineering													
	Major crossings	Minor roads	Elevation	Slope	UXO	Flooding	Peatland	Access	Angle supports	Wind farms	Communication masts	Urban areas	Metallic pipes	Lengths
C1	L	M	L	L	M	L	L	L	M	L	L	M	M	L
C1.1	H	M	L	L	L	M	L	L	L	L	L	M	M	M
C1.2	L	M	L	L	M	L	L	L	M	L	L	M	M	M
C2	L	M	L	L	M	L	L	L	M	L	L	M	M	M
C3	L	L	L	L	M	L	L	L	M	L	L	M	M	M

Our preferred route - Option C1

The key considerations for Section C related to engineering and environmental issues. C1 is likely a lower cost option when compared to the other options, but not significantly. From an engineering perspective issues around major crossings were identified for route C1.1 given it's proximity to the East Coast Railway Main Line. There was little to differentiate the route options against the technical factors, with C1 being preferred as the shortest route. Environmental considerations expressed a strong preference to avoid route C3 to ensure a geological SSSI is not impacted and concluded that C1 is preferred as it is furthest from the Brown and White Caterthun Hillforts (SM) and provides the shortest likely alignment and avoids a crossing of the A90; it also takes the route away from the settlement at Laurencekirk. Option C1 is the preferred route option in Section C.

Section D: Laurencekirk to Fiddes

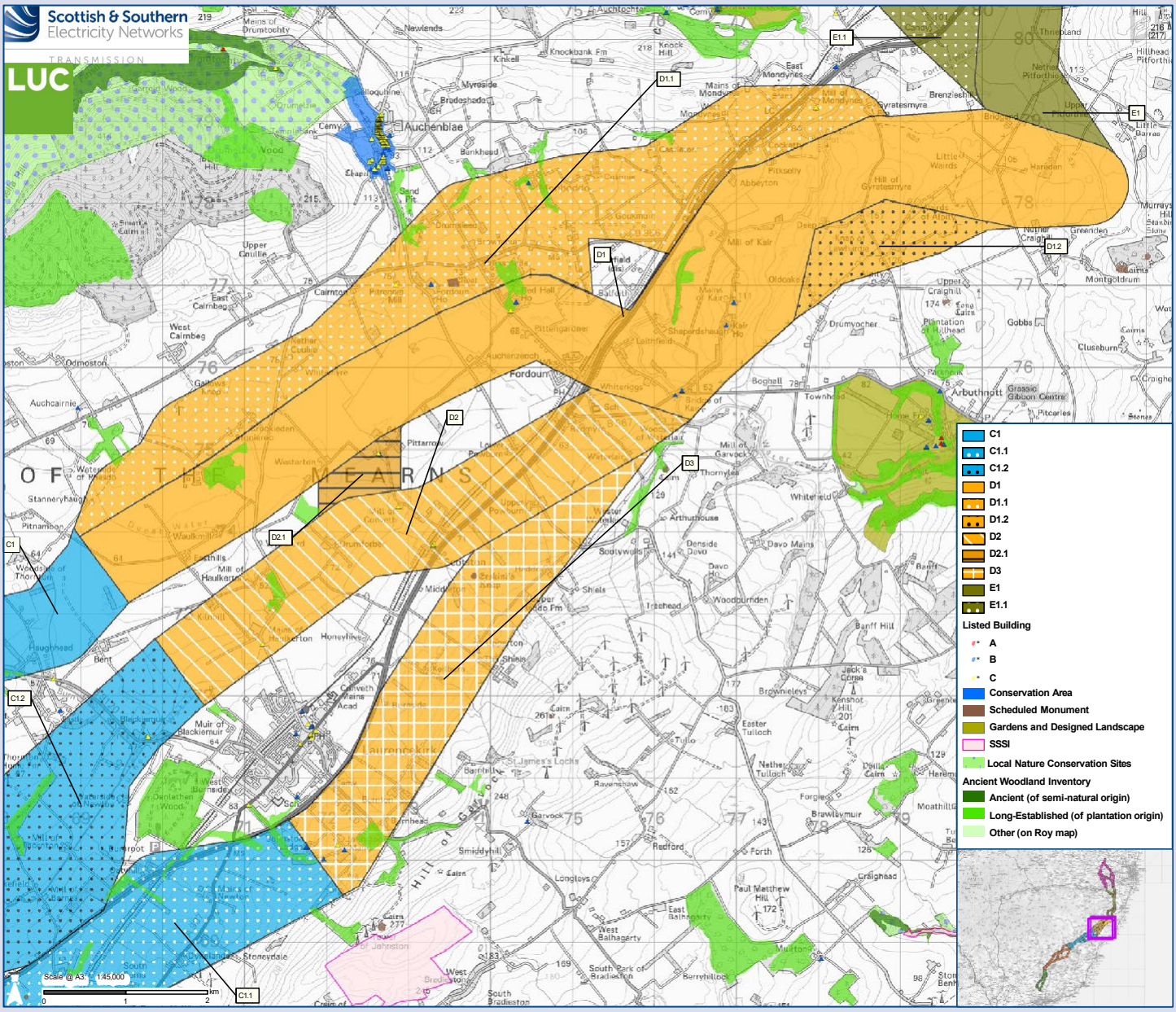
Route options D1, D1.1, D1.2, D2 and D2.1, D3



Section D: Laurencekirk to Fiddes

Section D starts to the west of Laurencekirk and continues to Harden, west of Fiddes. It comprises six route options, which pass through predominantly rural and agricultural areas with individual and clusters of residential properties and farmsteads located largely along minor roads. Environmental constraints within or near this section include a very small part of one area of Ancient Woodland of Long Established Planation Origin (LEPO) and the potential for an adverse impact on the settings of Scheduled Monuments such as Erskine's Knap Burial Mound and Cairn of Arthurhouse and Arbuthnott House Garden and Designed Landscape.

Physical constraints include the Bervie Water, the A90 carriageway and the East Coast Railway Main Line, the existing 275kV OHL and National Grid St. Fergus to Lochside gas pipeline. In addition, there are areas of potential Unexploded Ordnance (UXO) and contaminated land due to World War II around Fordoun.



Section D: Laurencekirk to Fiddes

For section D, the main route identified was D1 with deviations D1.1 and D1.2. Another main route identified is option D2 with deviation D2.1 and a further route D3. These have been assessed against each other.

RAG Impact Rating - Environmental

Options	Natural heritage					Cultural heritage		People			Landscape		Land use		
	Designations	Protected species	Habitats	Geology, hydrology and hydrogeology	Ornithology	Designations	Cultural heritage designations	Settlements	Visual	Physical effects	Designations	Character	Agriculture	Forestry	Recreation
D1	L	L	L	M	M	L	L	L	M	L	L	M	M	L	M
D1.1	L	L	L	M	M	L	L	L	M	L	M	M	M	L	M
D1.2	L	L	L	L	M	M	L	L	M	L	L	M	M	L	M
D2	L	L	L	L	M	L	L	L	M	L	L	M	M	L	M
D2.1	L	L	L	M	M	L	L	L	M	L	L	M	M	L	M
D3	L	L	L	L	M	M	L	L	M	L	L	M	M	L	L

RAG Impact Rating - Engineering

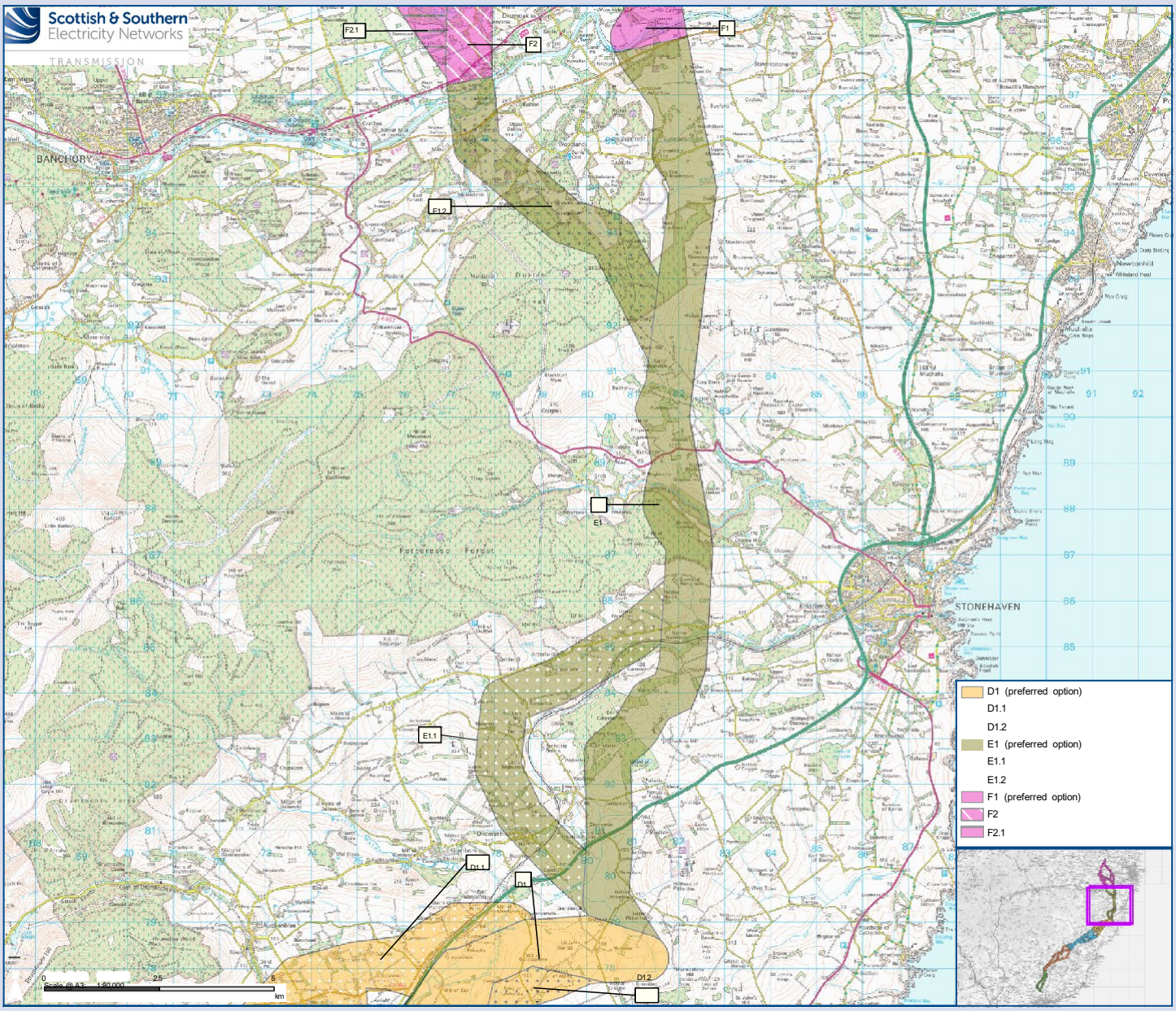
Options	Major crossings	Minor roads	Elevation	Slope	UXO	Flooding	Peatland	Access	Angle supports	Wind farms	Communication masts	Urban areas	Metallic pipes	Lengths
D1	H	M	L	L	L	L	L	L	M	L	L	M	M	M
D1.1	H	M	L	L	L	L	L	L	M	L	L	L	M	M
D1.2	H	M	L	L	L	L	L	L	M	L	L	M	M	M
D2	H	M	L	L	L	L	L	L	M	L	L	M	M	L
D2.1	H	M	L	L	L	L	L	L	M	L	L	M	M	M
D3	H	L	L	L	L	L	L	L	L	L	L	M	M	M

Our preferred route - Option D1

The key considerations for Section D related to engineering and environmental issues, as no strong differentiation was made between the route options on cost. From an engineering perspective no clear preference was identified from the appraisal, with no differentiating significant issues that could not be technically resolved identified. No technical preference was determined and ultimately it was concluded that D1 is preferred due to a lower impact on residential and commercial properties. Environmental considerations found that on balance D1 is preferred, over other options as it keeps the development away from the sensitive Cultural Heritage assets in D3 and allows a more direct crossing of the A90 and railway whilst keepings the OHL away from concentrations of settlements. Option D1 is the preferred route option in Section D.

Section E: Fiddes to River Dee

Route Options E1, E1.1, E1.2



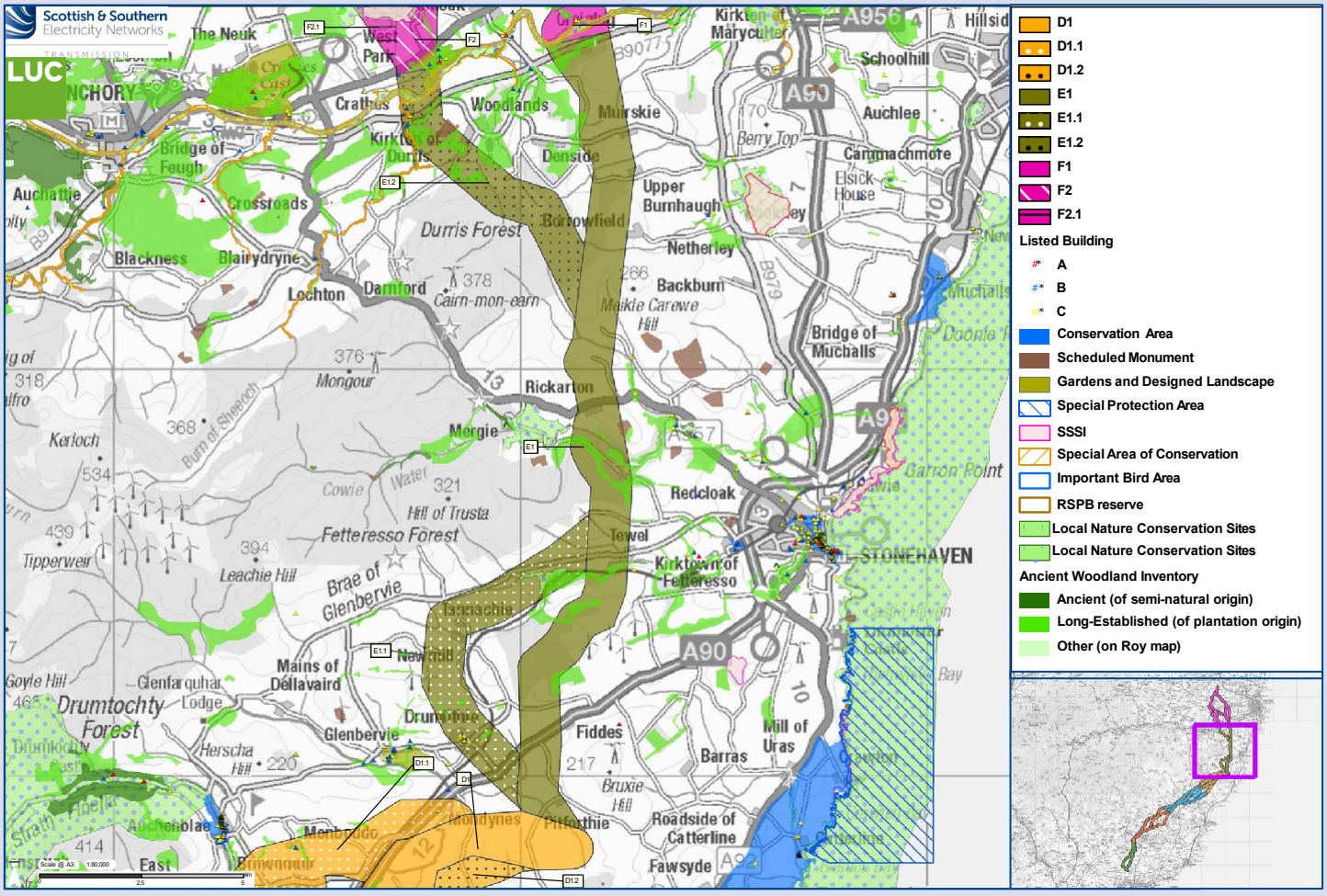
Section E: Fiddes to River Dee

Section E starts to the west of Fiddes and continues to the River Dee in the vicinity of Craiglug and Nether Park. It comprises three route options, which pass through predominantly rural agricultural areas with individual and clusters of residential properties and farmsteads located largely along minor roads. Some commercial forestry is present in this section. The town of Stonehaven is located to the east of the section.

Environmental constraints within or near this section include stretches of the River Dee Special Area of Conservation (SAC), primarily designated for its freshwater pearl mussel, salmon and otter populations and a number of areas of Ancient Woodland of long Established Planation Origin. Furthermore, the northern end of this section enters into the Dee Valley Special Landscape Area (SLA), which forms a sensitive section of the route due to potential effects on the special qualities of the SLA and views within it.

There are a range of heritage assets of regional significance within this section, including the remains of hut circles and field system, the remains of St Gongalls Church, Durris House and Park House Garden and Designed Landscape. There are also a number of Scheduled Monuments and Category B and C Listed Buildings which must be considered.

Physical constraints include the crossing of the existing 275kV double circuit and 132kV single circuit OHLs, paralleling of the National grid pipeline and proximity of the Meikle Carewe Wind Farm.



Section E: Fiddes to River Dee

Limited route options were considered available for Section E due to the presence of high ground to the west and settlements and major road infrastructure to the east (including A90, AWPR). For section E, the main route identified was E1 and two deviations are proposed E1.1 and E1.2. These options have been assessed against each other.

RAG Impact Rating - Environmental

Options	Natural heritage					Cultural heritage		People			Landscape		Land use		
	Designations	Protected species	Habitats	Geology, hydrology and hydrogeology	Ornithology	Designations	Cultural heritage designations	Settlements	Visual	Physical effects	Designations	Character	Agriculture	Forestry	Recreation
E1	M	L	L	L	M	L	L	L	M	L	M	M	L	M	M
E1.1	M	L	L	L	M	L	L	L	M	L	M	M	L	L	M
E1.2	L	L	L	M	M	H	H	L	M	L	M	M	L	M	M

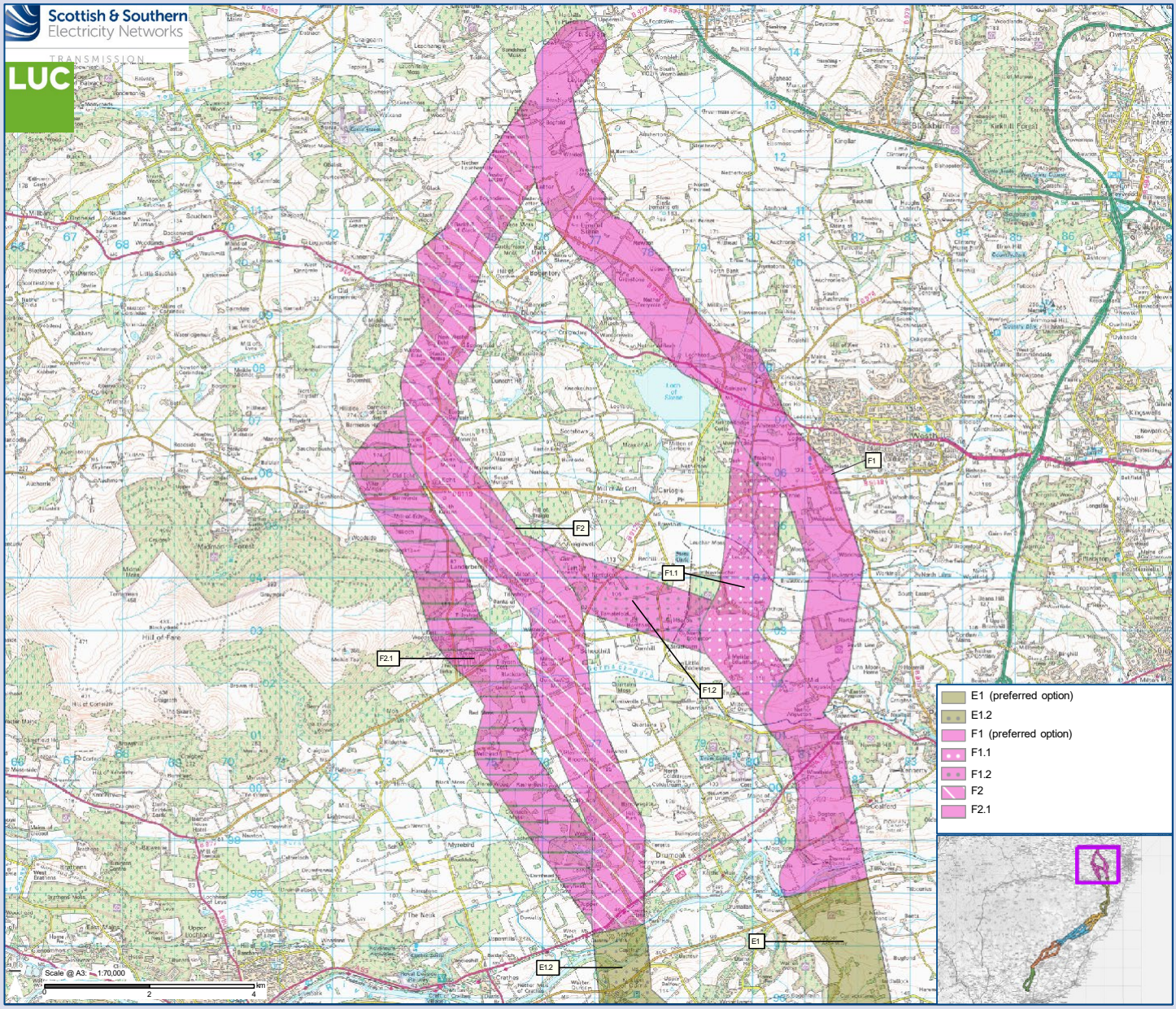
Options	RAG Impact Rating - Engineering													
	Major crossings	Minor roads	Elevation	Slope	UXO	Flooding	Peatland	Access	Angle supports	Wind farms	Communication masts	Urban areas	Metallic pipes	Lengths
E1	H	M	L	M	L	L	L	L	M	M	L	L	M	L
E1.1	H	M	L	M	L	L	L	L	M	M	L	M	M	M
E1.2	H	L	M	M	L	L	L	L	L	M	L	M	M	M

Our preferred route - E1 with potential sub option E1.1

The key considerations for Section E related to engineering and environmental issues. E1 is likely a lower cost option when compared to the others with E1.1 estimated to be 10% more than E1. From an engineering perspective no clear preference was identified from the appraisal with all route options requiring a number of major crossings (e.g the River Dee), there are areas of flood risk, and need to navigate existing infrastructure, including gas pipelines. The engineering assessment concluded that E1 was least constrained and therefore preferred. The environmental appraisal concluded that E1 is less constrained than the E1.1 and E1.2. There is a strong preference for E1 over E1.2 in the north given the presence of an area of peat, which would be avoided, and a preferable crossing point on the River Dee, it also avoids potential landscape and visual issues that would be presented by deviation E1.2. E1 is the preferred route option in Section E.

Section F: River Dee to Kintore

Route Options F1, F1.1 and F1.2, F2 and F2.1

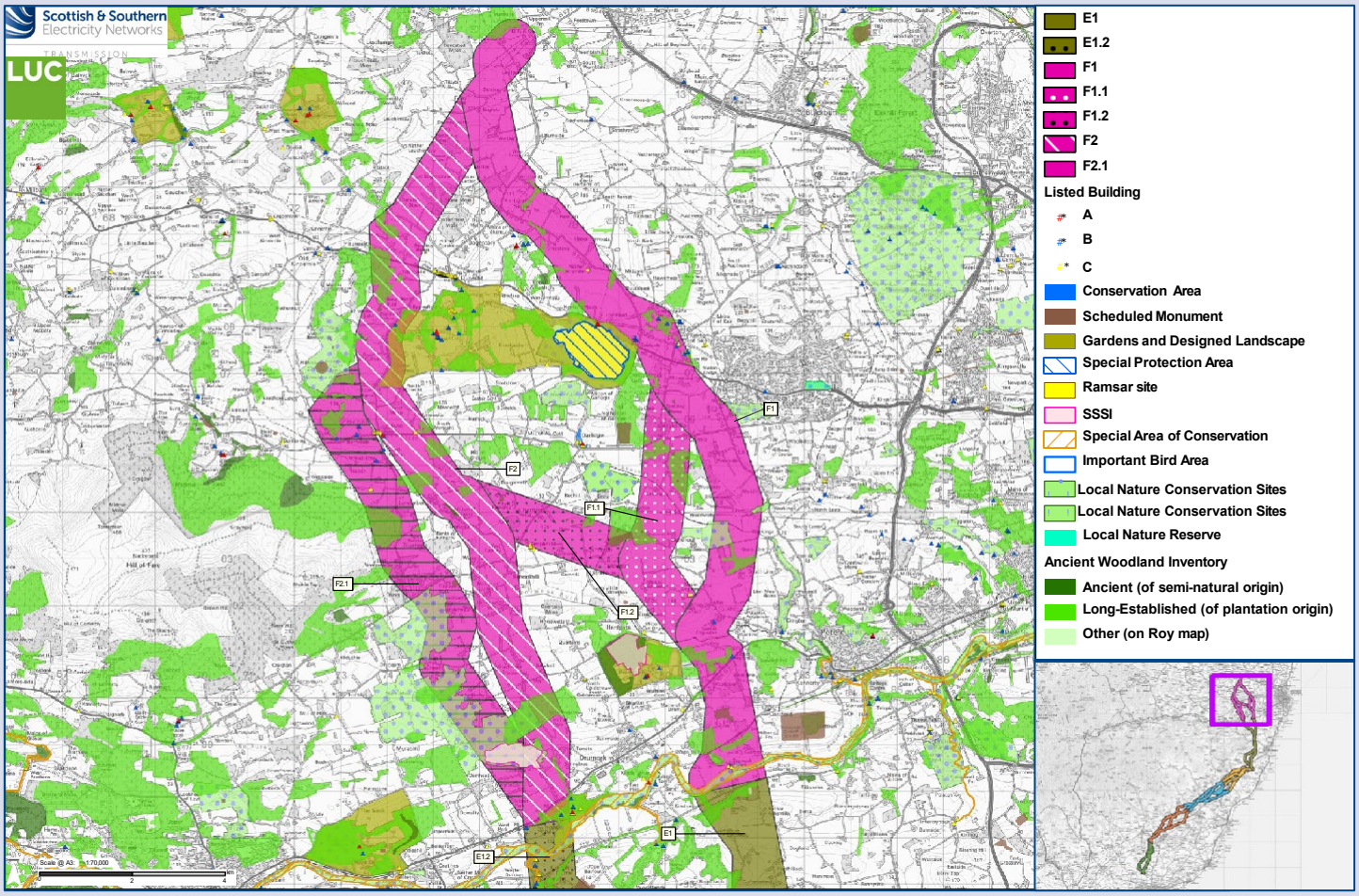


Section F: River Dee to Kintore

Section F starts at the River Dee and continues north to Kintore substation. It comprises five routes, which pass through small villages including part of Kirkton of Skene, Lynne of Skene and Echt and numerous small clusters and individual residential properties and farms particularly along minor roads located throughout the route options. The larger settlements of Peterculter and Westhill are located to the east of the section and outwith the route options.

Environmental constraints within or near this section include Loch Skene Special Protection Area (SPA) and Ramsar site, Loch of Park SSSI, Old Wood of Drum SSSI and several Ancient Woodlands of Long Established Plantation Origin. A small number of Ancient Woodland Inventory sites lie between potential routes within this Section. There are several heritage assets of regional significance, including standing stones, a Mesolithic findspot and two churches (Skene Parish Church and Drumoack Church) both of which are also Listed Buildings. Two Designed Landscapes, along with Skene House and Easter Skene House. There are also several Scheduled Monuments, Category A, B and C Listed Buildings and two Inventory Gardens and Designed Landscapes namely Park House and Dunecht House all of which need to be considered.

Physical constraints include National Grids pipe network, local roads and existing OHLs.



Section F: River Dee to Kintore

For Section F, two main routes were identified comprising F1 with its deviations F1.1 and F1.2 and then F2 and its deviation F2.1. To note that F1.2 would be necessary to allow the proposed OHL to run from Section E into Section F and access Route option F2 and F2.1.

RAG Impact Rating - Environmental

Options	Natural heritage					Cultural heritage		People			Landscape		Land use		
	Designations	Protected species	Habitats	Geology, hydrology and hydrogeology	Ornithology	Designations	Cultural heritage designations	Settlements	Visual	Physical effects	Designations	Character	Agriculture	Forestry	Recreation
F1	M	L	L	L	H	M	M	M	M	L	M	M	L	L	M
F1.1	M	L	L	L	H	H	L	M	M	L	M	M	L	L	L
F1.2	L	L	L	L	M	H	L	M	M	L	M	M	L	L	L
F2	M	L	L	L	M	H	L	M	M	L	M	M	L	L	M
F2.1	H	L	L	L	M	M	L	M	M	L	M	M	L	M	L

RAG Impact Rating - Engineering

Options	Major crossings	Minor roads	Elevation	Slope	UXO	Flooding	Peatland	Access	Angle supports	Wind farms	Communication masts	Urban areas	Metallic pipes	Lengths
F1	H	L	L	L	L	L	M	L	M	L	L	M	M	M
F1.1	H	L	L	L	L	L	M	L	M	L	L	M	M	L
F1.2	H	L	L	L	L	L	M	L	L	L	L	M	M	M
F2	H	L	L	L	L	L	L	L	M	L	L	M	M	M
F2.1	H	L	L	L	L	L	L	L	M	L	L	M	M	M

Our preferred route - F1

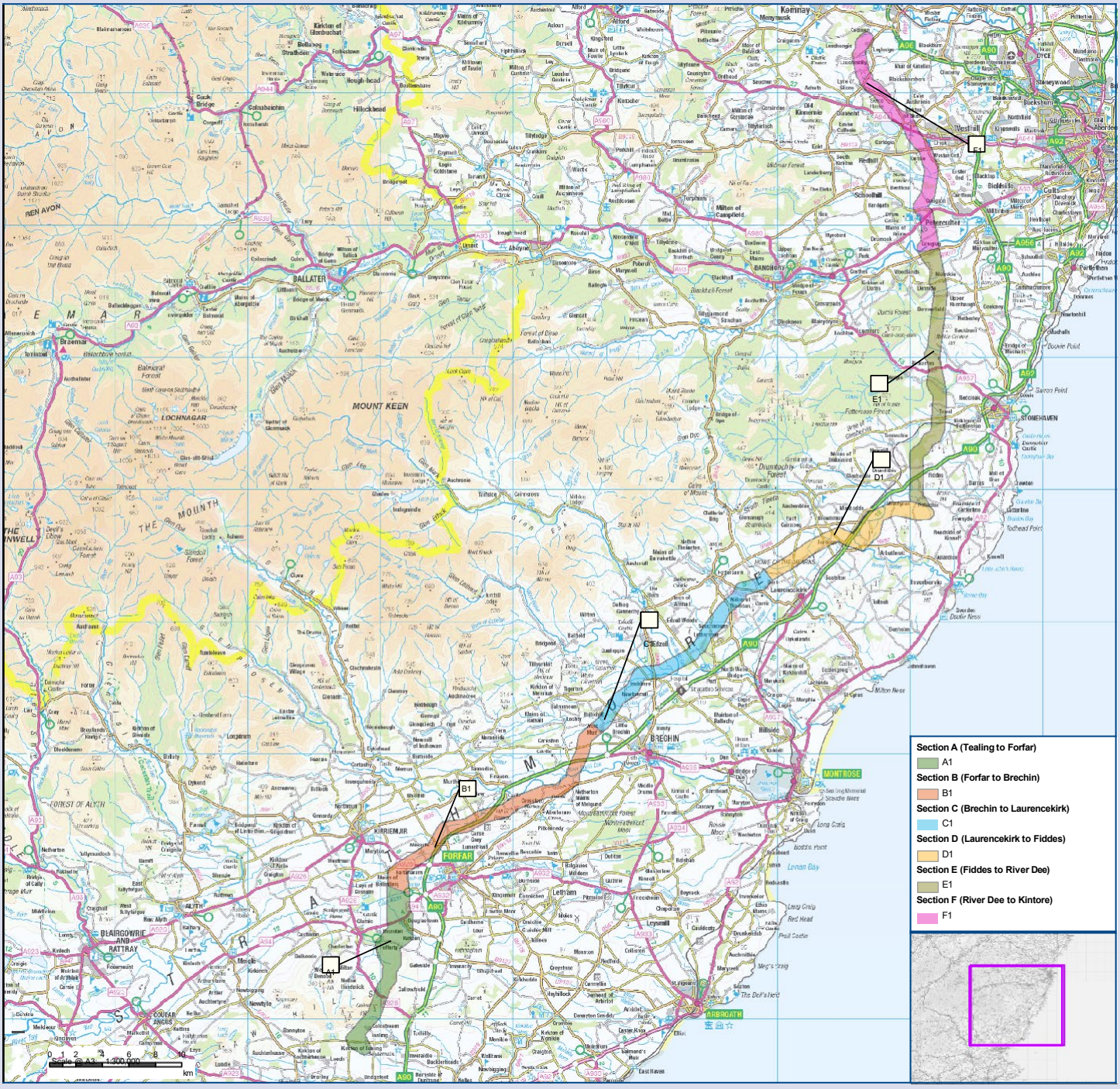
The key considerations for Section F related to engineering and environmental issues, as no strong differentiation was made between the route options F1 and F1.1 on cost. All other options were likely to be higher cost than F1 and F1.1. From an engineering perspective no clear preference was identified from the appraisal with all route options requiring a number of major crossings, and need to navigate existing infrastructure, including gas pipelines and wind farms. The engineering assessment concluded that F1 was least constrained and therefore preferred.

The environmental appraisal concluded that potentially significant issues are present in all route options and particularly relating to ornithology, ecology and cultural heritage designations. These designations cannot be avoided completely, and detailed consideration was made, particularly of the area around Loch of Skene to determine the preferred route in this area. F1 is preferred in terms of cultural heritage and marginally also for landscape. The cultural heritage position is complex around the Loch of Skene area with Dunecht House GDL, Barmekin Hillfort SM and other SMs and Listed Buildings in the area. In ornithological terms this area is also complex, given the presence of the Loch of Skene SPA. Initial bird data suggests qualifying interest species are predominantly flying out to the south and west. Across these key environmental issues route F1 was preferred. F1 is the preferred route option in Section F.

New Kintore – Fiddes – Tealing – 400kV overhead line connection preferred route

Following the route options appraisals undertaken and a consideration of the engineering, environmental and cost topic areas, the Preferred Route has been identified and comprises the following Route Options, as shown on the map below:

- A1
- B1
- C1
- D1
- E1
- F1



Substations

The proposed new Kintore – Fiddes – Tealing 400kV OHL Connection is required to connect the proposed two new 400kV substation sites at Fiddes and Tealing in to the existing transmission network. These new substations are required to enable new high capacity offshore connections and provide 400kV capability to manage increased capacity on the network.

What is a substation?

An essential component in the energy network, substations connect sources of generation and demand, such as wind farms, power stations and end users. They connect overhead and underground circuits. Substations manage electricity flows within the network, which can include connection and disconnection of circuits to direct the flow, transform voltages to higher or lower ratings (step-up or step-down—for example 132kV stepping-up to 275kV), manage the frequency of the electricity and increase efficiency and reliability of the power supply.

Other key substation functions

Substations are critical in maintaining an efficient and healthy energy network, as they monitor and report back to operators on statistics and events to provide live information on our network. This allows for the following functions:

- Fault monitoring and identification which allows for isolation to protect the network and allow repairs.
- Allow for redirection and disconnection of energy to allow for demand/maintenance.
- Provide data such as voltage, current and power flow to allow for efficient running and future predictions.

Types of substations

The 275kV AIS substation at Tealing

Air Insulated Switchgear substation (AIS)

An AIS substation is constructed with switchgear which relies on open air components, which can require large clearance areas for operation and safety, which takes up a larger area of land than Gas Insulated Switchgear (GIS).

Pros: Traditionally lower cost and typically less construction time with less components required and easier maintenance.

Cons: Larger area of land required, exposed to elements, not recommended for coastal environments.

Gas Insulated Switchgear (GIS) substation

A GIS substation is constructed with switchgear with gaseous reliant components which allows operation and safety clearances to be reduced compared to AIS.

Pros: Reduce footprint requirements.

Cons: High costs, specialised maintenance required, longer outage repair times.

The GIS substation at Peterhead

New Tealing 400kV substation

Project need

To support the wider connection of both onshore and offshore renewables promoted as part of the UK's commitment to delivering green energy targets and the transition to a low carbon energy network, SSEN Transmission proposes a new 400kV substation adjacent to the existing 275/132kV Tealing substation. The new 400kV substation is needed because the current 275kV network is at capacity and no further renewable energy can be connected without significant reinforcement of the North of Scotland electricity transmission network. This new substation will connect to the existing transmission network at Tealing, allowing existing and proposed renewable generators to transmit electricity to areas of demand on the GB transmission network.

Tealing 400kV substation overview

The project will see the construction of a new 400kV substation close to the existing 275kV substation site at Tealing.

The works will comprise:

- Construction of a new outdoor, AIS, 400kV substation complete with 400kV double busbar arrangement. Installation of 2 or 3 new super grid transformers (SGT) depending on network requirements.
- A new substation control building.
- Installation of underground cables or reuse of the existing OHLs to connect the new 400kV substation to the existing 275kV substation.
- New terminal towers to facilitate incoming 400kV connections.
- Space provision to allow for connection of future renewable energy generation projects.

This substation is required in line with the delivery of the Kintore – Fiddes – Tealing 400kV Overhead Line (OHL) Connection. This proposed new OHL and both the upgraded lines to Alyth and Westfield will be connected to the proposed new Tealing 400kV substation. The project is located approximately 7km north of Dundee. The existing 275kV AIS substation at Tealing is shown below.

The existing Tealing 132/275kV substation

The currently proposed substation footprint is approximately 645m x 280m utilising outdoor air insulated switchgear (AIS).

The existing Tealing 132/275kV substation

New Tealing 400kV substation

Site requirements

The following key requirements were identified for the new sites:

- Proximity to the existing 275kV network to minimise the amount of new overhead lines or cabling required to connect to the network.
- Large enough to accommodate the proposed individual substation footprints, together with associated landscaping, contractor compounds, access and new connection routes.
- Additional space for future expansion.
- In areas which do not contain environmental designations and minimise impacts on local environmental receptors.
- Enables connection routes for the proposed new 400kV overhead line including the existing lines upgraded to 400KV operation.

Stage 1: Initial site screening

A total of nine feasible site options were identified within an approximately 5km search radius of the existing Tealing 132/275kV substation using publicly available data and multi criteria analysis (MCA) to provide high level constraints information. This allowed the team to identify areas which were too sensitive, constrained or technically challenging for the construction of a new substation.

Assessment of the nine options was undertaken against the key requirements (engineering, environment and cost topic areas) and using the Red, Amber, Green (RAG) criteria. This resulted in seven options being discounted from further assessment based on access constraints, land use impacts and environmental sensitivities. **Site Options 4 and 7 were taken forward to Stage 2 Detailed Site Selection.**

Stage 2: Detailed site selection

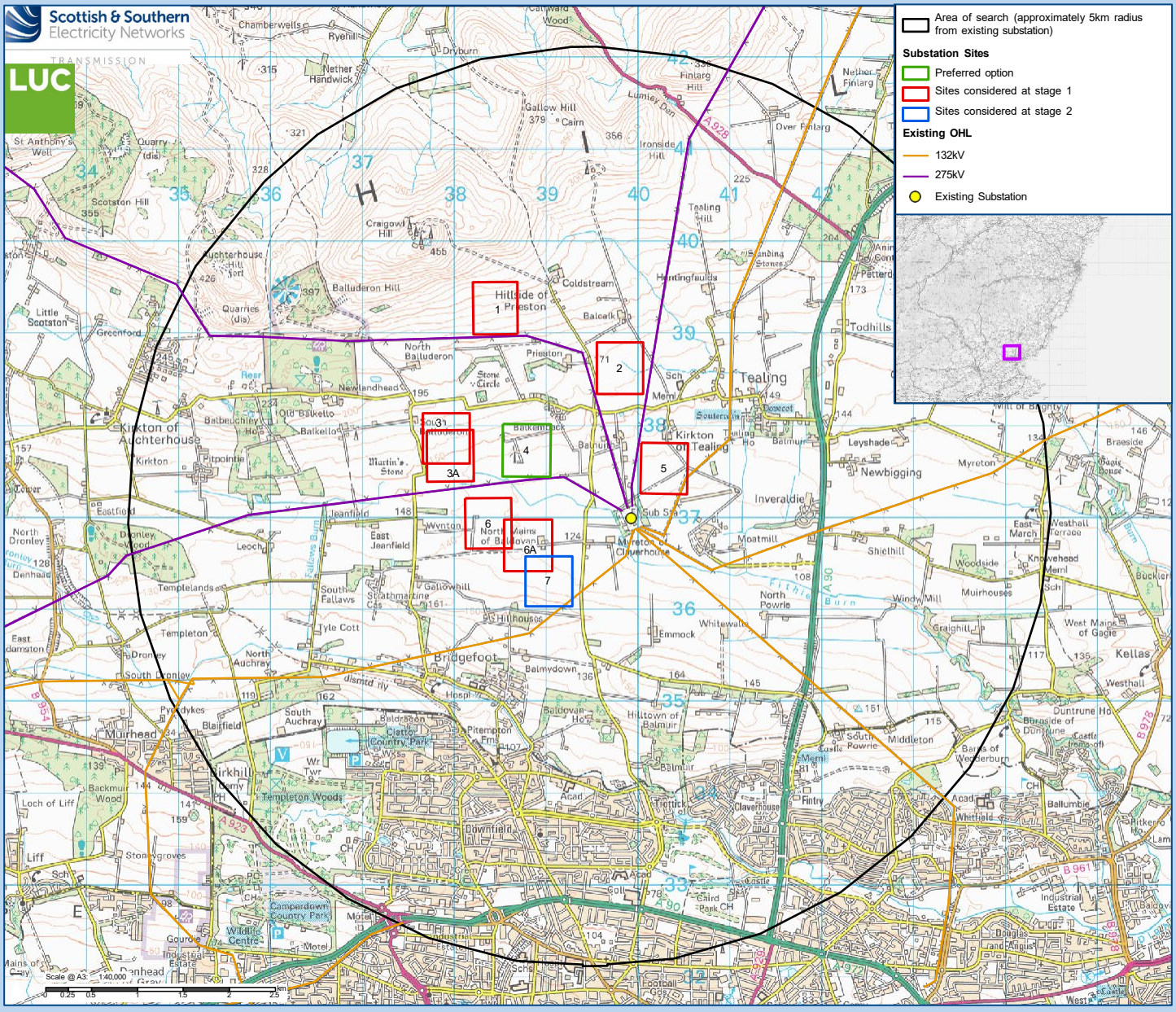
Further appraisal and comparison of the two shortlisted options was undertaken based on the RAG matrix criteria within our Site Selection Guidance as set out below.

RAG Impact Rating - Engineering

Sites	Access and connectivity						Footprint requirements			Hazards		Ground conditions		Environmental conditions						
	Construction access	Operation and maintenance	Existing circuits/ networks	Future development possibilities	Interface with SSEN Distribution and Generation	DNO Connection	Technology	Adjacentl land use	Space availability	Unique hazards	Existing hazards	Topography	Geology	Elevation	Salt pollution	Flooding	Carbon footprint	SF6	Contaminated land	Noise
4	L	L	L	M	L	L	L	L	L	M	L	L	L	M	L	L	L	L	L	M
7	L	L	M	M	L	L	L	L	L	M	L	L	L	M	L	L	L	L	L	M

New Tealing 400kV substation

RAG Impact Rating - Environmental/Consent																	
	Natural heritage					Cultural heritage		Landscape and visual			Land use			Planning		Cost	
Sites	Designations	Protected species	Habitats	Ornithology	Hydrology/geology	Designations	Cultural heritage assets	Designations	Landscape character	Visual	Agriculture	Woodland/orestry	Recreation	Policy	Proposals	Capital	Operational
4	L	M	L	M	L	M	M	L	M	R	M	L	L	L	L	L	L
7	L	M	L	M	L	L	L	L	M	R	M	L	L	L	L	M	M



ssen-transmission.co.uk/projects/2030-projects/East-Coast

New Tealing 400kV substation

Environmental

Visual Amenity: Sites 4 and 7 are in close proximity of views from nearby properties. Site 7 is closer to more properties than Site 4 and there is more space within Site 4 to accommodate landscape mitigation which may lessen impacts to visual amenity than at Site 7.

Cultural Heritage designations and assets: Site 7 lies furthest from the Scheduled Monuments (SM) and Category A Listed Buildings compared to Site 4. Site 7 is considered unlikely to be within the immediate setting of any heritage assets. The impact of the setting of Balkemback Cottages Stone Circle (SM) and Martin's Stone Cross Slab (SM) is considered to be greater for Site 4 due to wide views which are an important aspect of these heritage sites.

Ornithology: Schedule 1 bird species, including qualifying interest species associated with nearby SPAs have the potential to use Sites 4 and 7. Further surveys will be required as part of the next stage.

Protected Species: Both Sites 4 and 7 have been identified as potentially having protected species present on site. Site 4 has a lower potential for Protected Species given the absence of structures with potential to host roosting bats. Further surveys will be required as part of the next stage to confirm this.

Engineering

Connection access, operation and maintenance: Both Sites 4 and 7 would make use of existing public highways and each require a new bellmouth to be created.

Terrain: Both Sites 4 and 7 are situated on relatively flat and open terrain.

Existing circuits/networks: Site 4 is well positioned to allow the connections of the proposed Kintore – Fiddes – Tealing 400kV Overhead Line (OHL) Connection and the existing circuits that are to be upgraded and likely require minimal new infrastructure. In addition it is able to reuse the existing infrastructure to more easily connect the proposed new Tealing substation to the existing Tealing 132/275kV Substation. Site 7 will require more new infrastructure to enable these connections.

Future development possibilities: Both sites are currently used for agriculture and both provide extension possibilities.

Unique hazards: Option 7 is within close proximity to a high risk flood plain. Both Site 7 and Site 4 would likely require the removal of the wind turbines at Balkemback Farm.

Our preferred site

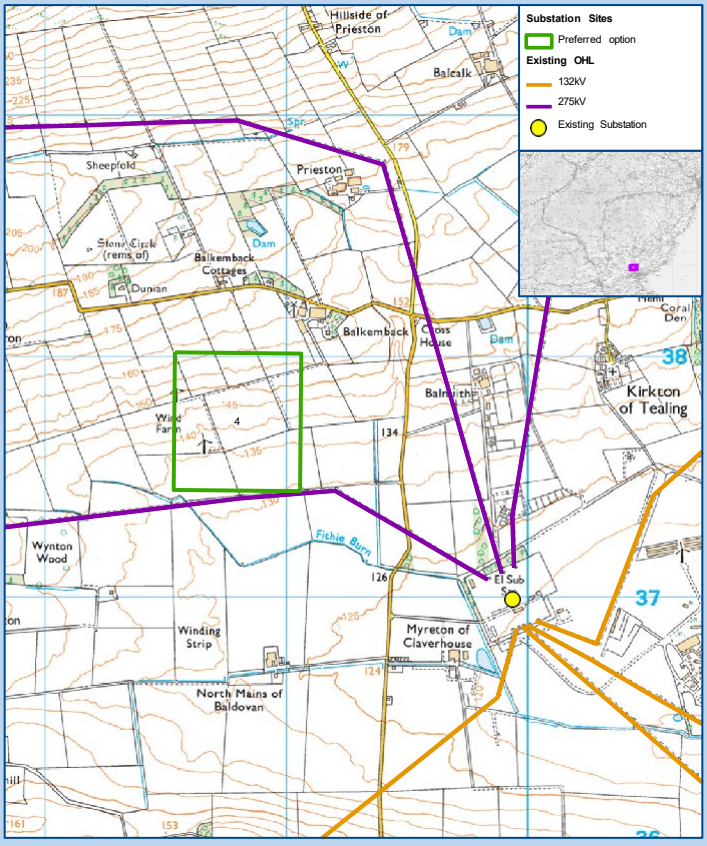
A detailed engineering, environmental and cost appraisal was undertaken for Sites 4 and 7 to reach a balanced conclusion across all topics as to the preferred option.

Environmental: From an environmental perspective Site 7 is the preferred option. This preference is marginal but Site 7 is preferable with respect to cultural heritage assets as it lies furthest from the Scheduled Monuments and Category A Listed Buildings and also presents the lowest risk with respect to flooding as it is located furthest from any fluvial flood risk noted by SEPA Flood Maps for the Fithie Burn. Both Sites 4 and 7 would present visual impacts to nearby residential properties.

Engineering: Site 4 is the preferred option as it is anticipated to have the least disruption to the OHL network with fewer constraints between the point of connection and the site.

Cost: Site 4 is the preferred option as it is in closer proximity to the required OHLs and so the capital cost to construct the new connections will be less.

Conclusion: On balance Site 4 is the preferred option, however further assessment on the setting impacts to the Scheduled Monuments and residential properties in proximity will be carried out to ensure proportionate mitigation, together with reviewing the fluvial flood risk.



New Fiddes 400kV substation

Project need

The new 400kV substation is needed because the current 275kV network is at capacity and no further renewable energy can be connected without significant reinforcement of the North of Scotland electricity transmission network. In addition, as part of the HND2, developing the offshore network more efficiently is being reviewed as part of the Offshore Integrated Network. Fiddes 400kV substation is included in that development. Fiddes offers a location in relative proximity to the coast to enable offshore connections but within a reasonable distance to the existing 275kV and proposed 400kV OHL network. This new proposed substation will be connected to the existing transmission network at Tealing and Kintore substations via the proposed new Kintore – Fiddes – Tealing 400kV Overhead Line (OHL) Connection Project, allowing existing and proposed renewable generators to transmit electricity to areas of demand on the GB transmission network.

New 400/275/33kV substation overview

The project will see the construction of a new 400/275/33kV substation close to the existing 132kV Fiddes substation site.

The works will comprise of:

- Construction of a new outdoor, AIS, 400kV substation complete with 400kV and 275kV double busbar arrangement.
- Installation of 2 new super grid transformers (SGT) and 2 new Grid Transformers (GT).
- Network stability equipment.
- New substation control buildings.
- Possible connection to the existing Fiddes substation.
- New terminal towers to facilitate incoming 400kV connections.
- Space provision to allow for connection of future renewable energy generation projects.
- Reconfiguration of the existing 275kV OHL to enable the new 400kV OHL to connect to the new site.

The project is located approximately 5km to the east from A90 dual carriageway.

The existing 132kV substation at Fiddes

The currently proposed substation footprint is 700m x 700m utilising outdoor air insulated switchgear (AIS).

New Fiddes 400kV substation

Site requirements

The following key requirements were identified for the new sites:

- Proximity to several key areas for catering the load demand including the Renewable Power Generation. This location is close to the transmission network and in relative proximity to the coast to enable future offshore connections.
- Large enough to accommodate the proposed substation footprint, together with associated landscaping, contractor compounds, access and new connection routes.
- In areas which do not contain environmental designations and minimise impacts on local environmental receptors.
- Enables connection routes for the proposed new 400kV overhead line and future offshore connections.

Stage 1: Initial site screening

A total of 14 feasible site options were identified within a 5km search radius of the existing Fiddes 132kV substation using publicly available data and multi criteria analysis (MCA) to provide high level constraints information. This allowed the team to identify areas which were too sensitive, constrained or technically challenging for the construction of a new substation.

Assessment of the 14 options was undertaken against the key requirements (engineering, environment and cost topic areas) and using the Red, Amber, Green (RAG) matrix in our Site Selection Guidance. This resulted in a number of options being discounted from further assessment based on access constraints, land use impacts and environmental sensitivities. The majority of sites initially identified were ruled out due to the presence of transmission gas pipelines. **A total of three sites, 5A, 5B and 8B were taken forward to Stage 2.**

Stage 2: Detailed site selection

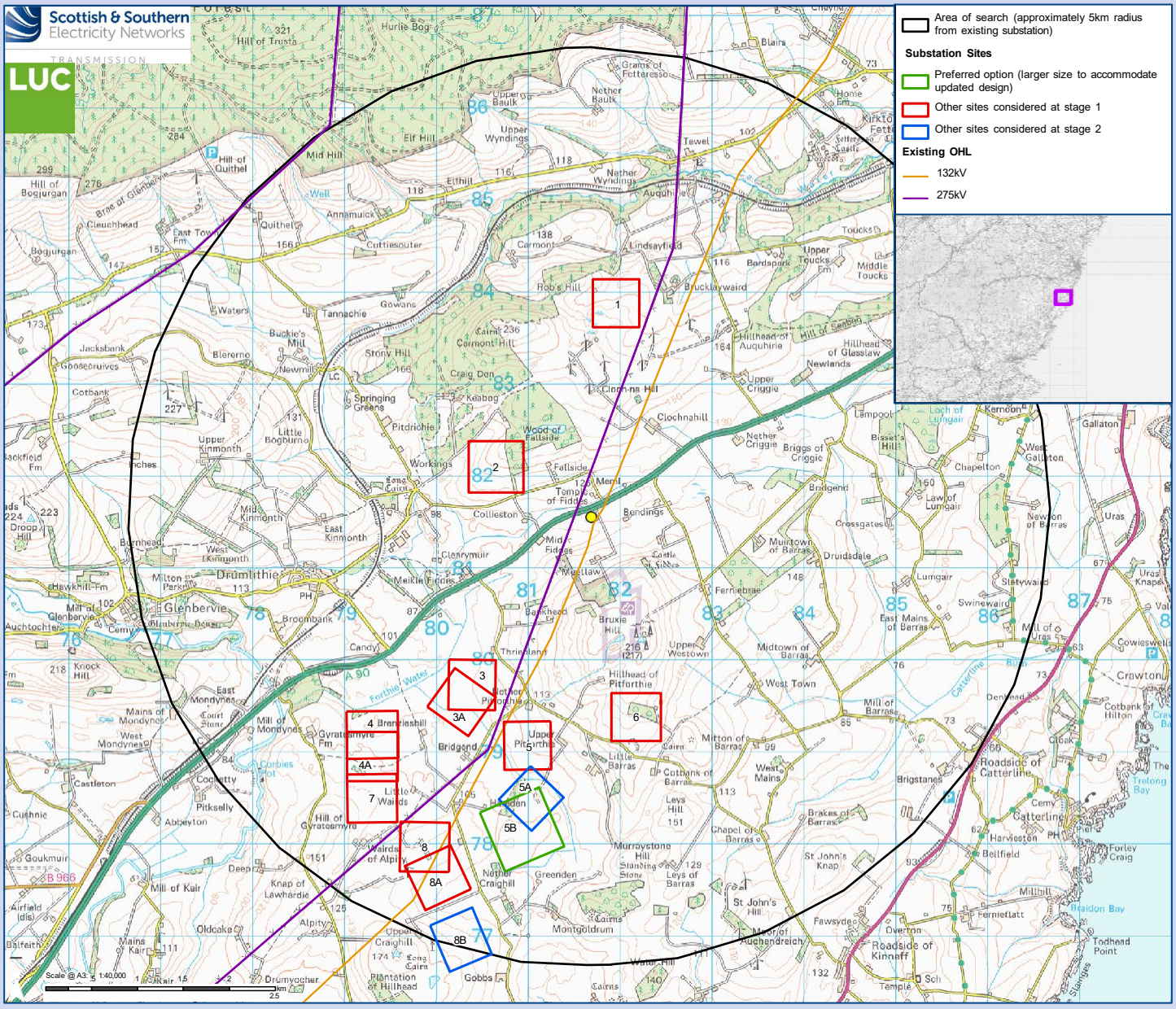
Further appraisal and comparison of the two shortlisted options was undertaken based on the RAG matrix criteria within our Site Selection Guidance as set out below.

RAG Impact Rating - Engineering

Sites	Access and connectivity						Footprint requirements			Hazards		Ground conditions			Environmental conditions				
	Construction access	Operation and maintenance	Existing circuits/ networks	Future development possibilities	Interface with SSEN Distribution and Generation	DNO Connection	Technology	Adjacentl land use	Space availability	Unique hazards	Existing hazards	Topography	Geology	Elevation	Salt pollution	Flooding	Carbon footprint	Contaminated land	Noise
5A	M	L	L	M	M	L	L	M	M	M	L	L	L	M	M	H	L	L	H
5B	M	L	L	M	M	L	L	M	M	M	L	L	L	M	M	M	L	L	M
8B	M	L	L	L	M	L	L	M	M	M	L	H	L	M	M	L	L	L	M

New Fiddes 400kV substation

RAG Impact Rating - Environmental/Consent																	
	Natural heritage					Cultural heritage		Landscape and visual			Land use			Planning		Cost	
Sites	Designations	Protected species	Habitats	Ornithology	Hydrology/geology	Designations	Cultural heritage assets	Designations	Landscape character	Visual	Agriculture	Woodland/orestry	Recreation	Policy	Proposals	Capital	Operational
5A	L	M	L	M	R	M	M	L	M	M	M	L	L	L	L	M	L
5B	L	M	L	M	M	M	M	L	M	R	M	L	L	L	L	L	L
8B	L	M	L	M	M	R	R	L	M	R	M	L	L	L	L	R	M



New Fiddes 400kV substation

Environmental

Hydrology: Site 5A spans the Bridgend Burn watercourse and a high-risk flood zone identified on SEPA Flood Maps. The watercourse would have to be diverted and flood mitigation measures considered. Further advice from specialist hydrologists has indicated this would not be feasible. Site 5B moves away from the watercourse and high risk flood zone. However, there will still be connectivity with the Bridgend Burn via the open field drains present onsite. Drainage considerations will need to include appropriate controls during construction and future SUDS design will likely be needed.

Visual Amenity: Residential receptors are in proximity to all of the sites and would have visibility and a mix of open views. There is a lack of existing screening, such as woodland, at Sites 5B and 8B, however, these sites offer the opportunity to establish screening as part of potential mitigation.

Cultural Heritage: There are three Scheduled Monuments (SM) close to Sites 5A, 5B and 8B including Bruxie Hill long cairn, Hillhead long cairn and Montgoldrum, cairns and hut circle. There are a number of Category A Listed Buidlings around Arbuthnot including a designated Garden and Designed Landscape. Site 8B would likely have the greatest impact to the setting of the SMs.

Ornithology: Schedule 1 bird species, including qualifying interest species associated with nearby SPAs have the potential to use the sites. Further surveys will be required as part of the next stage.

Engineering

Connection access, operation and maintenance: All sites considered would make use of existing public road network and each require a new bellmouth to be created and likely widening the roads in some locations and adding passing places.

Terrain: Site 5B is on relatively flat and open terrain. 8B is located on a gradual slope that would require more significant earthworks and a larger footprint to achieve a level platform.

Existing circuits/networks: Site 5B is well positioned to allow the connections of the proposed new Kintore – Fiddes – Tealing 400kV OHL. Site 8B is more challenging to achieve the new 400kV tie-ins due to the site being located on a slope. Both sites require diversion works on the existing 275kV OHL to over sail in to the proposed new substation.

Future development possibilities: Both sites are currently used for agriculture and both provide extension possibilities.

Unique hazards: Site 5B moves further from the Bridgend Burn and high risk flood zone than Site 5A. However, there will still be connectivity with the Bridgend burn via the open field drains present on site. Site 8B, according to historical borehole records has a high water table and could present drainage challenges. Site 8B requires significant earthworks and the batter slope on the south west boundary could present a significant technical challenge. Site 5A spans Bridgend Burn and further discussions with a hydrology specialist has confirmed that it is not likely to be feasible to divert the watercourse. Both sites are in close proximity to gas pipelines and will require special mitigations in place to minimise any impact.

Our preferred site

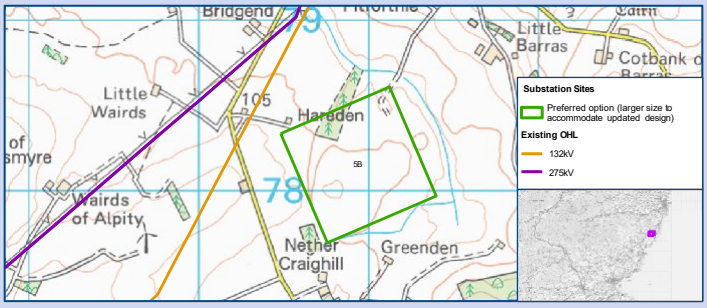
A detailed engineering, environmental and cost analysis was undertaken for Site 5A, 5B and 8B to reach a balanced conclusion across all topics as to the preferred option.

Environmental: Site 8B is the least preferred option as it lies closest to the Scheduled Monuments and Category A Listed Buildings. Mitigation for heritage assets at Site 8B are likely to be more difficult to resolve. Site 5A has the greatest risk of flooding. The flood risk issues associated with site 5A outweigh the visual issues associated with Site 5B, and therefore Site 5B is the preferred site from an environmental perspective.

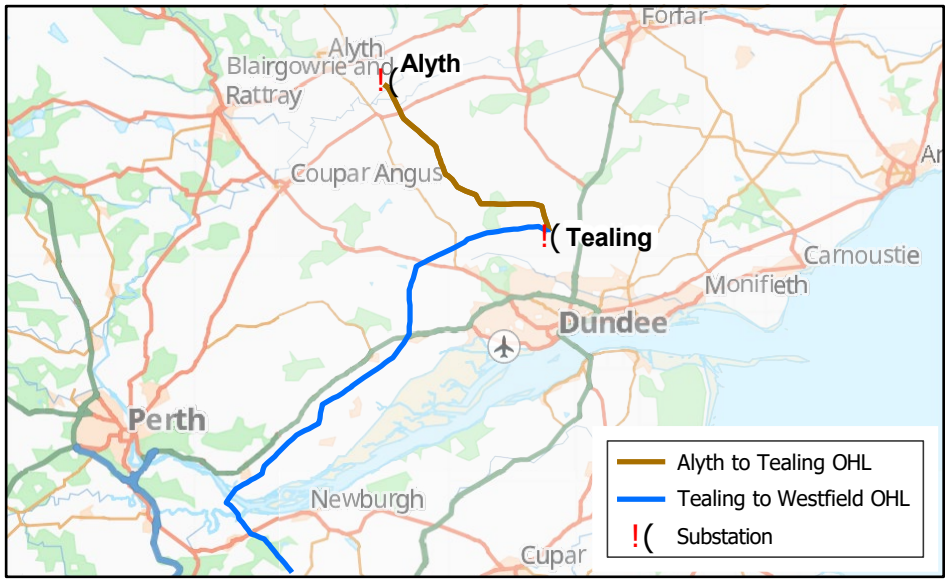
Engineering: Site 5B is anticipated to have the least disruption to the OHL network with fewer constraints between the point of connection and the site and due to the topography present at the location. Site 5B has significantly less civil works while compared to Site 8B.

Cost: It is anticipated that Site 5B requires significantly less earthworks to construct a level site than 8B. The high water table at 8B is likely to require more complex drainage management. Site 5B is in closer proximity to the required OHLs and so the capital cost to construct the diversion and connections will be less. Additional cost due to flood risk mitigation, existing wayleaves, and noise enclosures are envisaged.

Conclusion: Site 5B is the preferred option, however further assessment on the setting impacts to the Scheduled Monuments identified in close proximity will be required in order to ensure proportionate mitigation can be applied together with consideration of the flood risk and visual impacts.



Upgrade to 400kV for Alyth – Tealing and Tealing – Westfield OHL



Upgrade to 400kV for Alyth – Tealing and Tealing – Westfield OHL

The development involves the:

- Upgrade to 400kV by reconductoring of the existing 16km Alyth – Tealing 275kV OHL.
- Upgrade to 400kV by reconductoring of the existing 38km Tealing – Westfield 275kV OHL.

Development will include conductor and insulator replacement, the potential increase in height and relocation of certain towers, associated access tracks, site compounds, laydown areas and other ancillary works within proximity of the existing overhead lines.

When the overhead lines are upgraded from 275kV to 400kV they will be connected into the proposed new Tealing 400kV substation.


Conductor replacement


Insulator replacement


Access - roads and tracks


Tower replacement

Upgrade to 400kV for Alyth – Tealing and Tealing – Westfield OHL

Tower refurbishment

We have to undertake extensive assessments of the existing lines and examine steel work, condition of fixtures and also the condition of the foundations. Teams of highly skilled linesmen will carry out the required refurbishments and upgrades to the steelwork and foundations ahead of replacing the conductors.

Access

To access the towers, we will use a variety of methods including the construction of access tracks, use of existing tracks, laying trackway panels on favourable terrain or by foot.

New access tracks to towers will only be required where the foundations need to be refurbished.

We will agree any access requirements with the relevant landowners before commencing works.

Tree cutting

There may be various areas along the line where tree felling will be required to minimize the potential of any damage to the lines and to facilitate the upgrade works.

Replacing the conductors

To ensure a consistent supply of power throughout the refurbishment works, we will turn off (de-energise) one side of the tower line and keep the other side live. The linesmen will then prepare the line to be removed before using winches to remove the existing conductor. The same winches are used to pull the new conductor into place. The linesmen will work on sections of the line varying between 3km and 6km at any time. Working areas will be situated at each end to position winches and other essential equipment.

Through assessment, we may identify towers that need to be replaced. The replacement towers will be the similar character and construction as the existing structures.

Working with the community

The existing line passes through populated areas, crosses public highways, railway lines and over-sails the River Tay.

To ensure that our work has as little impact as possible on the lives of those living and working in the area, we will utilise protection systems such as scaffolding and netting to keep people safe and allow main travel routes to stay open.

During some operations, we will position staff in locations to help with information, provide reasonable instruction and ensure the safety of the public.

Project timeline

2022
- Projects' need and scopes confirmed.
- Site selection for substations started.
- OHL corridor and route options appraisal started.

2023
- Consultation 1 (May 2023) - OHL routeing, substation site selection and reconductoring.
- Finalisation of proposed OHL corridor, route and substation sites.
- Environmental and engineering surveys.
- (April – Dec) substation detailed design and connections' routeing.
- OHL alignment selection.
- Consultation 2 (Autumn/ Winter 2023) - OHL alignment and substations.
- EIA Screening/Scoping.

2024
- Environmental and engineering surveys continue.
- EIA/EA Report preparation.
- Pre-application Consultation 1 - OHL and substations.
- Pre-application Consultation 2 - OHL and substations.
- Planning applications submitted – substations.
- Section 37 application submitted - OHL.

2025
- Receive consents.
- Condition discharge.

2026
- Construction start – Tealing and Fiddes 400kV Substations.
- Construction start – Kintore – Fiddes – Tealing 400kV OHL.
- Construction Start – Alyth – Tealing and Tealing Westfield 400kV OHL Upgrades.

2027
- Construction works ongoing.

2028
- Construction complete - Tealing and Fiddes substations.
- Construction complete - Alyth – Tealing and Tealing Westfield 400kV OHL Upgrades.

2029
- Energisation – Tealing 400kV substation.
- Energisation – Alyth – Tealing and Tealing Westfield 400kV OHL Upgrades.

2030
- Construction complete and energisation - Kintore – Fiddes – Tealing 400kV OHL.
- Energisation – Fiddes 400kV substation.

Other projects in East Coast region

Projects in development

Eastern HVDC link (Eastern Green Link 2)

To support the ongoing growth of renewable generation in the area, we are required to install a 2GW subsea high voltage direct current (HVDC) cable link from Peterhead to Drax in Yorkshire. This will help to reduce congestion on the onshore transmission network by allowing the flow of energy through the subsea cable. This project is being jointly developed with National Grid Electricity Transmission and it is currentlyprogressing through the procurement and development stages.

Peterhead to South Humber HVDC link (Eastern Green Link 3)

A 2GW, 525kV subsea HVDC link between Peterhead and South Humber in England is required to enable the transmission from generators in the North East of Scotland to demand centres in the south of England. The link will require 2 HVDC converter substations on land, one at each end of the cable. HVDC Converter Stations (a specialised type of substation) convert electricity from alternating current (AC) to direct current (DC), and vice versa, for transmission purposes.

Spittal to Peterhead HVDC subsea cable link

A new HVDC subsea link between Spittal and Peterhead is also necessary to support the growth of renewable energy. The HVDC link will allow surplus renewable energy to be exported south to Peterhead without the need of a second onshore 400kV overhead Line. It will do this by connecting to landfall sites in Spittal and Peterhead.

Peterhead Net Zero 2030 developments

A second 400kV substation is required in the Peterhead area to support offshore and onshore electricity generation connections as well as onshore and offshore transmission infrastructure in the area. The substation will be similar to the first 400kV substation which is due to be commissioned in 2023.

Due to the high number of subsea links, and the potential need to support future offshore customer connections, system studies have informed the need for a Direct Current Switching Station (DCSS) at Peterhead. This project aims to deliver a 525kV DCSS, which is needed to co-ordinate the connection of offshore links and wind farms and will connect into the New Peterhead 400kV substation.

Peterhead 275kV substation refurbishment

Due to their condition, there is a requirement to replace the Super Grid Transformers (SGT), SGT1 and SGT2 at Peterhead 275/132kV substation. Transformers step up or step down the voltage of electricity between different circuits within our substations. Two new buildings will be created to house the new SGTs within a new compound to the southwest of the existing substation.

Fetteresso 400kV upgrade

The existing Fetteresso substation was fully constructed in 2016 to operate at a voltage of 275kV, with the intention of upgrading to 400kV in the future. The aim of this new project is to now upgrade the substation to operate at 400kV.

Other projects in East Coast region

Projects in construction

East Coast 275kV OHL upgrade

The East Coast OHL 275kV upgrade is the first part of the phased onshore reinforcement on the East Coast. The projected growth in generation capacity within the SSEN Transmission area gives rise to increased north to south power transfer requirements and therefore the OHLs are required to transfer more power. As a result, the conductors will operate at an elevated temperature. The elevated temperature can cause the conductors to sag. As a responsible operator we have modelled the future sag and under this project will undertake works to ensure the conductors remain within a safe clearance height. This project is currently programmed to be complete for October 2023.

East Coast 400kV OHL upgrade

This project is the second part of the phased onshore reinforcement on the East Coast. The works comprise of re-insulation and re-conductoring of overhead lines (OHLs) between Kintore, Fetteresso, Alyth and Kincardine (in Scottish Power Transmission's area) to 400kV. These works are programmed to complete in 2026.

Alyth 275/400kV substation

A new 275/400kV reactive compensation (equipment to stabilise network voltage) substation is being built at the existing OHL T-Junction tower at Haughend near Alyth. This new substation will operate at 275kV but will be built for 400kV capability. This project is currently programmed to be complete for October 2023.

Kintore 400kV substation

A number of significant projects connecting to the transmission network has triggered the need for a 400kV substation at Leylodge, Kintore. This involves a phased development with 'Phase 1' completed to tie in with the network north of Kintore in October 2023 and 'Phase 2' completed for the network south of Kintore energising to 400kV operation in 2026.

Tealing substation

In October 2019 works commenced at the existing Tealing substation as part of the overall East Coast 275kV upgrade, these initial works consisted of extending the existing footprint of the substation to accommodate a new energy connection by Seagreen Wind Energy Limited (SWEL), these works completed at the end of 2022. In June 2022 the next phase of the East Coast onshore 275kV upgrade scheme works began which will see two new Phase Shifting Transformers (PSTs) installed at the substation. The PSTs will help to manage the load being transferred on the circuits that run between Tealing and Kintore. The PSTs play an important part in allowing the wider East Coast scheme to deliver the overall required power transfer capacity. To minimise the impact to local residents and the surrounding community, we are also replacing Super Grid Transformer (SGT) 3 at the substation under the same construction period. The SGT which was installed in 1968 is reaching the end of its operational capabilities and therefore needs to be replaced. These works are programmed to complete in early 2024.

What happens now and how do I have my say?

We value the feedback provided by members of the public during all engagements and consultations. Without this valuable feedback, the project development team would be unable to progress projects and reach a balanced proposal.

We are keen to receive your views and comments in regards to the following questions:

- Have we adequately explained the need for these projects?
- Do you feel sufficient information has been provided to enable you to understand what is being proposed and why?
- Are you satisfied that our approach taken to select our preferred overhead line route and/or substation locations has been adequately explained?
- Do you agree with our preferred overhead line corridor, route and/or substation locations, if not, why?
- Are there any factors, or environmental features, that you think require further consideration during the preferred overhead line route and/or substation location selection process?
- Do you have any other comments or concerns in relation to the transmission infrastructure requirements or about the preferred overhead line route/substation locations?

Recite me

To support everyone online, we provide accessibility and language options on our website through 'Recite Me'. The accessibility and language support options provided by 'Recite Me' include text-to-speech functionality, fully customisable styling features, reading aids, and a translation tool with over 100 languages, including 35 text-to-speech.

Please select "Accessibility" on our website to try out our inclusive toolbar."

Please let us know if you require information in an adapted format such as paper copy, large print or braille and we will work with you to accommodate your preferences.

We are happy to accommodate all reasonable requests for adapted communications.

Comments

Following our events, a consultation period will open until **9 June 2023**.

You can submit feedback by completing our online feedback form available on our project webpage or using the feedback form at the back of this booklet. Alternatively, you may also submit feedback in writing, email or by phone to our Community Liaison Manager.

The feedback will be analysed by the project team and a report on the consultation will be produced and published on our website detailing our response to your feedback.

Feedback can be submitted online via the project website or via the project Community Liaison Manager:

Martha Smart
Community Liaison Manager

TKUP@sse.com

+44 (0) 7721 407 513

SSEN Transmission,
200 Dunkeld Road,
Perth PH1 3GH

Additional information

Information will also be made available via the project webpage and social media channels:

Project webpage:
ssen-transmission.co.uk/projects/2030-projects/East-Coast

Follow us on Facebook:
@ssencommunity

Follow us on Twitter:
@ssetransmission

Your feedback

Thank you for taking the time to read this consultation booklet. In order to record your views and improve the effectiveness of our consultation, please complete this short feedback form.

We welcome your feedback on the following East Coast 400kV Phase 2 Projects:

- **New Kintore – Fiddes – Tealing 400kV overhead line connection**
- **New Tealing 400kV substation**
- **New Fiddes 400kV substation**
- **Existing Alyth to Tealing overhead line 400kV upgrade**
- **Existing Tealing to Westfield overhead line 400kV upgrade**

Q1 Which consultation event did you attend, and did you find the event was helpful and informative?

- ☐ Kirkton of Skene
- ☐ Ardoe
- ☐ Laurencekirk
- ☐ Brechin
- ☐ Kirriemuir
- ☐ Tealing
- ☐ Online
- ☐ None

Q2 Is there a specific section of the East Coast 400kV phase 2 scheme that you are interested in? (Select all that apply)

Please note – it is important that you select which projects you are most interested in and refer back to these in any comments made in following questions so that we can accurately process your feedback

- ☐ Section A – Tealing to Forfar overhead line
- ☐ Section B – Forfar to Brechin overhead line
- ☐ Section C – Brechin to Laurencekirk overhead line
- ☐ Section D – Laurencekirk to Fiddes overhead line
- ☐ Section E – Fiddes to River Doe overhead line
- ☐ Section F – River Doe to Kintore overhead line
- ☐ Tealing 400kV substation
- ☐ Fiddes 400kV substation

Q3 Have we adequately explained the need for this project? If not or unsure, please let us know if there is any additional information which you would like us to provide.

- ☐ Yes
- ☐ No
- ☐ Unsure

Comments:

Q4 Do you feel sufficient information has been provided to enable you to understand what is being proposed and why? If not, please let us know if there is any additional information which you would like us to provide.

- ☐ Yes
- ☐ No

Comments:

Q5 **Are you satisfied that our approach taken to select our preferred overhead line corridor has been adequately explained? If not, please let us know if there is any additional information which you would like us to provide.**

☐ Yes ☐ No

Comments:

Q6 **Are you satisfied that our approach taken to select our preferred route has been adequately explained? If not, please let us know if there is any additional information which you would like us to provide.**

☐ Yes ☐ No

Comments:

Q7 **Are you satisfied that our approach taken to select our preferred substation locations has been adequately explained? If not, please let us know if there is any additional information which you would like us to provide.**

☐ Yes ☐ No

Comments:

Q8 **Do you agree with our preferred overhead line corridor, route and substation sites, if yes, please go to Q12, if no please go to Q9.**

☐ Yes ☐ No

Comments:

Q9 **If you selected no for Q8 in regards to the preferred overhead line corridor, is there an alternative corridor that you have discounted that you agree with, if yes please advise which one and why this is your preferred.**

☐ Yes ☐ No

Comments:

Q10 **If you selected no for Q8 in regards to the preferred overhead line route, which one of the alternative routes that we have discounted do you agree with.**

Section A ☐ A1.1

Section B ☐ B1.1 ☐ B1.2 ☐ B1.3

Section C ☐ C1.1 ☐ C1.2 ☐ C2 ☐ C3

Section D ☐ D1.1 ☐ D1.2 ☐ D2 ☐ D2.1 ☐ D3

Section E ☐ E1.1 ☐ E1.2

Section F ☐ F1.1 ☐ F1.2 ☐ F2 ☐ F2.1

Q11 **If you selected no for Q8 regarding the substations, is there an alternative substation site that we have discounted that you agree with, if yes please advise which one and why this is your preferred.**

☐ Yes ☐ No

Comments:

Q12 **Are there any factors, or environmental features, that you think require further consideration during the preferred overhead line corridor, route and/or preferred substation location selection process?** (Please indicate which area your comment relates to if you have selected multiple answers for Q2)

☐ Yes ☐ No

Comments:

Q13 **Do you have any other comments or concerns in relation to the East Coast Phase 2 projects and the transmission infrastructure requirements or about the preferred overhead line route/ substation locations?** (Please indicate which area your comment relates to if you have selected multiple answers for Q2)

☐ Yes ☐ No

Comments:

Q14 **Do you have ideas for biodiversity improvement projects in your local area that SSEN Transmission could get involved with? If yes, please provide further information in the comments section below.**

☐ Yes ☐ No

Comments:

Q15 **Do you have any other comments you would like the project team to be made aware of?**

☐ Yes ☐ No

Comments:

Q16 **Overall, how do you feel about the East Coast 400kV Phase 2 projects?**

☐ Support ☐ Object ☐ Neither support nor object

Comments:

Full name

Address

Telephone

Email

If you would like to be kept informed of progress on this project via email, please tick this box. ☐

If you would like your comments to remain anonymous please tick this box. ☐

Thank you for taking the time to complete this feedback form.

Please submit your completed form by one of the methods below:

Post: Grampian House, 200 Dunkeld Road, Perth PH1 3GH

Email: TKUP@sse.com

Online: ssen-transmission.co.uk/projects/2030-projects/East-Coast

Download: Comments forms and all the information from today's event will also be available to download from the project website.

The feedback form and all information provided in this booklet can also be downloaded from the project websites.

Any information given on the feedback form can be used and published anonymously as part of Scottish and Southern Electricity Networks consultation report. By completing this feedback form you consent to Scottish and Southern Electricity Networks using feedback for this purpose.

For information on how we collect and process your data, please see our privacy notice: **ssen.co.uk/PrivacyNotice**

Any information given on the feedback form can be used and published anonymously as part of Scottish and Southern Electricity Networks consultation report. By completing the feedback form you consent to Scottish and Southern Electricity Networks using feedback for this purpose. Comments made to SSEN Transmission are not representations to the Scottish Ministers and if SSEN Transmission submit an application there will be an opportunity to make representations on the application to Scottish Ministers.

Notes