

Consultation Document

Kintore to Tealing 400 kV Overhead Line

REF: LT455

New Overhead Line Routes:

Laurencekirk to the Proposed Hurlie Substation (at Fetteresso)

Proposed Hurlie Substation to Rickarton

River Dee to Coldstream, by Drumoak

February 2024



Rev								
	Prepared By		Checked By		Approved By		Date of Issue	
1.0	HM		GC		HC		19.01.24	
2.0	HM		GC		HC		09.02.24	
3.0	HM		GC		HC		19.02.24	
Final	HM		GC		HC		20.02.24	

CONTENTS

PREFACE	III
EXECUTIVE SUMMARY	V
1. INTRODUCTION	1
1.1 Purpose of Consultation Document	1
1.2 Previous Consultation May 2023	1
1.3 Project Changes Following May 2023 Consultation	2
1.4 March 2024 OHL Route Consultation	3
1.5 Report Structure	3
1.6 Next Steps	3
2. THE PROPOSALS	5
2.1 The Need for the Project	5
2.2 Technology Options Considered	5
2.3 Proposals Overview	6
3. ROUTE SELECTION PROCESS	10
3.1 Overall Approach and Guidance Followed	10
3.2 New Route Options Selection	10
3.3 New Route Options Identification	12
3.4 Route Options Appraisal	13
4. DESCRIPTION OF NEW ROUTES	18
4.1 Identification of New Route Options to Hurlie Substation	18
4.2 Identification of a New Route in Section F	19
5. APPRAISAL OF NEW ROUTES TO CONNECT WITH HURLIE SUBSTATION	20
5.1 Introduction	20
5.2 Section D – Laurencekirk to Hurlie Substation	20
5.3 Section E – Hurlie Substation to Rickarton	24
5.4 Selection of Preferred Routes	27
6. NEW ROUTE IN SECTION F	29
6.1 Introduction	29
6.2 Description of Route Option F1.3	29
6.3 Appraisal of Route Option F1.3	30
7. CONSULTATION ON THE PROPOSALS	34
7.1 Questions for Consideration by Consultees	34
7.2 Next Steps	34
7.3 Ongoing Engagement	34
GLOSSARY	36

List of Appendices:

Appendix A. Appraisal of New Route Options to Hurlie Substation (Section D)

Appendix B. Appraisal of New Route Options to Hurlie Substation (Section E)

Appendix C. Appraisal of New Route Option in Section F

PREFACE

This Consultation Document has been prepared by Land Use Consultants (LUC), on behalf of Scottish and Southern Electricity Networks Transmission (SSEN Transmission) to seek comments from all interested parties on the appraisal of four new overhead line (OHL) routes. These have been identified to provide options for connection of the proposed Kintore to Tealing 400 kV OHL, with a proposed 400 kV substation at Hurlie, in Fetteresso Forest near Stonehaven in Aberdeenshire. The new routes identified will form part of the new proposed OHL, approximately 106 km in length, to connect the existing Kintore Substation northwest of Aberdeen with a proposed new 400 kV substation at Hurlie, in Aberdeenshire and to a proposed new 400 kV substation at Emmock, near Tealing in Angus.

These new route options have been identified and appraised by SSEN Transmission due to a change in the proposed location of a new substation from the site proposed in May 2023 near Fiddes to a new site at Hurlie.

This Consultation Document also presents a new route option identified and proposed for Section F, Route Option F1.3. This route has been developed following consultation feedback and upon further collection and analysis of environmental data since the initial selection process and appraisals were undertaken. This route is now SSEN Transmission's preferred¹ route option in Section F as it is considered on balance to have the least environmental and technical constraint of the options considered.

The proposed OHL will enable future connections to the electricity transmission network and export routes to areas of demand. In addition, the following projects are also holding consultation events:

- New Emmock 400 kV Substation (previously named Tealing Substation): <https://www.ssen-transmission.co.uk/projects/project-map/emmock-400kv-substation/>
- New Hurlie 400 kV Substation: <https://www.ssen-transmission.co.uk/projects/project-map/hurlie-400kv-substation/>
- Existing Alyth to Tealing Overhead Line 400 kV Upgrade: <https://www.ssen-transmission.co.uk/projects/project-map/alyth---tealing-ohl-re-conductor/>
- Existing Tealing to Westfield (Glenrothes) Overhead Line 400 kV Upgrade: <https://www.ssen-transmission.co.uk/projects/project-map/tealing---westfield-ohl-re-conductor/>

In conjunction with the proposed Kintore to Tealing 400 kV Overhead Line, the above list of projects, collectively known as East Coast 400 kV Phase 2, have been determined as critical to enable the delivery of the UK and Scottish Government's renewable energy targets.

The proposed Kintore to Tealing 400 kV Overhead Line Consultation Document is available online at the project website: <https://www.ssen-transmission.co.uk/projects/project-map/kintore-fiddes-tealing-400kv-ohl-connection/>

Over the coming months SSEN Transmission will continue active engagement with Statutory Consultees and stakeholders to further understand constraints and identify potential opportunities. Public consultation events detailing the proposals described in this document will be held at the following times and locations:

14 March 2024 (2pm – 7pm) Laurencekirk, Dickson Hall
19 March 2024 (2pm – 7pm) Drumlithie, Drumlithie Village Hall
20 March 2024 (2pm – 7pm) Drumoak, Drumoak Bowling Club
21 March 2024 (2pm – 7pm) Auchenblae, Auchenblae Village Hall

¹ The 'preferred route' refers to the option which we believe offers an appropriate balance of technical and environmental impact considerations identified through initial assessment. This is then subject to consultation with stakeholders, where local and previously unknown considerations may confirm or alter the initial preference.

If you are unable to attend any of the planned in-person events, all the material that will be on display can also be downloaded from the project documents section of the dedicated project websites at the start of the consultation period.

Please use the below URLs to access the individual East Coast Phase 2 project pages:

- Kintore-Tealing 400kV OHL <https://bit.ly/3w8o9NB>
- Hurlie 400kV substation <https://bit.ly/3HFQOw1>
- Tealing (Emmock) 400kV substation <https://bit.ly/48W3BX7>
- Tealing-Westfield 400kV upgrade <https://bit.ly/48bATR1>
- Alyth-Tealing 400kV upgrade <https://bit.ly/42AUk4C>

Comments on this Consultation Document should be sent to:

Rhiannon Merritt

Community Liaison Manager

TKUP@sse.com

Scottish and Southern Electricity Networks Transmission

10 Henderson Road

Inverness

IV1 1SN

All comments are requested by **30 April 2024**.

EXECUTIVE SUMMARY

Scottish and Southern Electricity Networks Transmission (SSEN Transmission) operating under licence held by Scottish Hydro Electric Transmission plc, is proposing to establish a network of 400 kilovolt (kV) electricity transmission infrastructure across the northeast of Scotland. This is needed to provide greater capacity and flexibility for the transmission of electricity generated in the north of Scotland, in particular from the increasing number of offshore wind farms, and to help meet the Scottish and UK Government's energy security and Net Zero targets.

A key part of the infrastructure upgrade is the construction of a new 400 kV overhead transmission line (OHL) between the existing substation at Kintore (northwest of Aberdeen) and a proposed new substation to be built at Emmock near Tealing in Angus, just north of Dundee. The OHL would also connect to a proposed new substation at Hurlie, located in Fetteresso Forest, near Stonehaven in Aberdeenshire. The OHL project, known as the Kintore to Tealing 400 kV OHL project, would involve construction of approximately 106 kilometres (km) of new overhead line.

Due to the accelerated delivery programme required to achieve UK and Scottish Government 2030 targets, SSEN Transmission undertook a combined Corridor and Route consultation for the Kintore to Tealing 400 kV OHL project in May 2023. The consultation also presented the findings and outcome of the site selection exercises undertaken for new 400 kV substations proposed at Tealing and Fiddes.

Following the outcome of the May 2023 consultation, a decision was made by SSEN Transmission to revisit and extend the substation site selection exercise for Fiddes, widening the area of search with a view to seeking alternative substation site options to those previously presented during the May 2023 consultation. This resulted in a change of proposed substation location from Fiddes to Hurlie as detailed in the Fiddes Substation Report on Consultation (RoC)² (published in December 2023) following appraisal of new candidate sites and a detailed assessment of environmental, technical and cost criteria.

An OHL route options review was also undertaken following consultation feedback which resulted in changes to the preferred³ route options previously identified for Sections B and F (as detailed in the Kintore to Tealing OHL Report on Consultation⁴). Additionally, the change in location for the new proposed 400 kV substation from Fiddes to Hurlie necessitated a new OHL routeing exercise to be implemented in Section D and in part of Section E of the OHL corridor to allow the proposed Kintore to Tealing 400 kV OHL to enter and exit the new substation at Hurlie.

Following the outcome of this latest route options consultation, SSEN Transmission will proceed with defining alignment options for the OHL and access tracks within the Proposed Route, with further appraisal and consultation to be carried out in the coming months. On identification of a Proposed Alignment, an application for consent under Section 37 of the Electricity Act 1989 will be submitted to the Scottish Government's Energy Consents Unit for the proposed OHL infrastructure.

This consultation document sets out the key findings of a comparative appraisal of the new route options identified into and out of the proposed 400 kV Hurlie Substation, within which the new OHL could be developed, and it presents information on the proposed new Route Option F1.3. The approach to the identification and appraisal of routes has followed SSEN Transmission's Guidance 'Procedures for Routeing Overhead Lines and Underground Cables of 132 kV and above'⁵.

² SSEN Transmission (2023). Fiddes 400 kV Substation; Report on Consultation. Available [online]: <https://www.ssen-transmission.co.uk/globalassets/projects/rocs/fiddes/report-on-consultation---fiddes-400kv-substation.pdf>

³ The 'preferred route' refers to the option which we believe offers an appropriate balance of technical and environmental impact considerations identified through initial assessment. This is then subject to consultation with stakeholders, where local and previously unknown considerations may confirm or alter the initial preference.

⁴ SSEN Transmission (2023). Kintore to Tealing 400 kV Overhead Line; Report on Consultation. Available [online]: <https://www.ssen-transmission.co.uk/globalassets/projects/rocs/tkup-ohl/report-on-consultation---kintore-to-tealing-400kv-ohl.pdf>

⁵ SSEN Transmission (March 2018) Procedures for Routeing Overhead Lines of 132kV and above (updated in September 2020 to include underground cables of 132kV and above). PR-NET-ENV-501.

The appraisal process for the new Hurlie Substation routes followed two key stages. In the first stage, an assessment was carried out to define a study area within which new route options could be identified which would enable connectivity to the new substation proposed at Hurlie. New route options were identified by analysing a series of data sets on physical, technical and environmental constraints within the study area. This process identified four potential route options into and out of the alternative substation at Hurlie; two routes identified in Section D, and two routes identified in Section E.

The second stage of the appraisal involved more detailed consideration of the environmental, technical and cost constraints of developing an OHL within each of the new route options. A series of criteria were used to structure this process, and the desk-based analysis of constraints was supported by initial site visits to key parts of the study area by relevant project team specialists.

The appraisal identified constraints in all of the new route options which were assessed. In summary, the principal findings of the appraisal in terms of key differences between the options considered in each route section are set out below and are presented in more detail in the rest of this document.

- **Section D** (Route Options D4 and D5).
 - Both route options are constrained to a degree by environmental considerations, including natural heritage, cultural heritage, landscape and visual and land use aspects. Route Option D4 is considered to be slightly more constrained with respect to proximity to dwellings but is less constrained than Route Option D5 with respect to ecological, geological and landscape designations. Route Option D5 cuts across Strathfinella Local Nature Conservation Site (LNCS) and the Braes of Mearns Special Landscape Area (SLA). Route Option D4 does not cross any regionally designated sites. In terms of technical considerations, Route Option D5 is preferred due to clearance distance as the potential for an alignment to maintain a greater clearance distance from residential properties and wind turbines is less constrained. Route D4 is the preferred option from a cost perspective as it is the lowest cost option.
 - On balance, **Route Option D4** is the preferred route with respect to environmental, technical and cost criteria.
- **Section E** (Route Options E2 and E3).
 - Both route options are constrained to some extent by environmental considerations, including ornithology, people, landscape and visual and land use. Route Option E2 is considered to be slightly more constrained with respect to regional designations due to the presence of a small strip of woodland designated as ancient (of semi-natural origin) on the Ancient Woodland Inventory (AWI) which spans the centre of the route option. Route Option E3 is more constrained by commercial forestry with a greater potential to impact upon commercial forestry operations. In terms of technical considerations, Route Option E2 is the preferred option, having fewer minor road crossings and angle towers required. Route E2 is the preferred option from a cost perspective as it is the lowest cost option.
 - On balance, **Route Option E2** is the preferred route with respect to environmental, technical and cost criteria.
- **Section F** (Route Option F1.3).
 - Route Option F1.3 would cross the River Dee (a designated Special Area of Conservation (SAC)) in the same location as Route Option F1, which is less constrained than the river crossing associated with Route Options F2 and F2.1 previously considered. This new route would also avoid a direct crossing of Park House Garden and Designed Landscape (GDL) and Loch of Park Site of Special Scientific Interest (SSSI) which are associated with Route Options F2 and F2.1 to the west. Route Option F1.3 would also facilitate an OHL alignment to the west of, and at a greater distance from, the Loch of Skene Special Protection Area (SPA) / Ramsar Site / SSSI site than for the previously appraised eastern route options (F1 and F1.1) by providing a new section of route connecting from the southern end of Route Option F1 to the centre of Route Option F2. Route Option F1.3 is also considered to have fewer property constraints than the eastern options.

The findings of the new route options appraisal, which are presented in this Consultation Document, were appraised to derive a series of 'Red-Amber-Green' (RAG) scores for each of the criteria considered. Based on the

analysis undertaken and the RAG Ratings, Route Options D4 and E2 have been identified as forming the Preferred Route into and out of the proposed 400 kV Hurlie Substation. The Preferred Route represents the option which is considered on balance to have the least level of overall constraint.

When considering the wider OHL as presented during the May 2023 consultation, Route Options A1, B1.1, C1 and E1 (in part) have been identified as forming the Proposed Route to move forward to the next stage of the project (alignment). Route options for Section B and F have changed upon further review and the reasoning for new Route Option F1.3 is presented in this document following the RAG scoring approach for the new route. The identification of Route Option B1.1 in preference to B1 is explained in SSEN Transmission's Report on Consultation (RoC)⁴ following the route consultation in 2023.

The findings of the appraisal of all route options presented in this document will be reviewed taking account of feedback from key stakeholders and from the public consultation. Following the outcome of the consultation, SSEN Transmission will confirm the Proposed Route for the OHL project.

All comments on the proposals are requested by **30 April 2024**. A Report on Consultation (RoC) will be published after the consultation period has ended, which will document the consultation responses received, how these responses have been considered, and the decisions made in light of these responses.

1. INTRODUCTION

1.1 Purpose of Consultation Document

This Route Selection Consultation Document has been prepared by Land Use Consultants Ltd (LUC) on behalf of Scottish and Southern Electricity Networks Transmission (SSEN Transmission). SSEN Transmission, operating under licence held by Scottish Hydro Electric Transmission plc, owns, operates and develops the high voltage electricity transmission system in the north of Scotland and remote islands.

This Consultation Document invites comments from all interested parties on the appraisal of four new overhead line (OHL) routes which have been identified to provide options for connection of the proposed Kintore to Tealing 400 kV OHL with a proposed 400 kV substation at Hurlie, located in Fetteresso Forest, near Stonehaven in Aberdeenshire. These new route options have been identified and appraised by SSEN Transmission due to a change in the proposed location of a new substation from the site proposed in May 2023 near Fiddes to a new site at Hurlie (see Section 1.3).

This Consultation Document describes the new route options identified, the options appraisal undertaken, and the identification of the Preferred⁶ Route for the new routes required to connect with Hurlie Substation. This report also presents information on the identification and appraisal of a new route option in Section F of the OHL corridor. Comments are now sought from statutory authorities, key stakeholders, elected representatives and the public on the new route selection process and the Preferred Routes identified.

All feedback received in relation to the new routes will be reviewed and a Report on Consultation (RoC) will be produced that provides SSEN Transmission's response to the feedback received.

SSEN Transmission is also undertaking Pre-Application Consultation (PAC) for:

- the new proposed 400 kV substation at Hurlie, in Aberdeenshire. Information regarding the consultation can be found here: <https://www.ssen-transmission.co.uk/projects/project-map/fiddes-400kv-substation/> and,
- the new proposed 400 kV substation at Emmock in Angus. Information regarding the consultation can be found here: <https://www.ssen-transmission.co.uk/projects/project-map/emmock-400kv-substation/>

1.2 Previous Consultation May 2023

In May 2023, consultation was sought from all interested parties on the Preferred Route for the proposed new Kintore to Tealing 400 kV OHL, to connect to the existing Kintore Substation with a proposed new 400 kV substation near Fiddes, in Aberdeenshire and continuing south to connect to a proposed new 400 kV substation near Tealing, in Angus. A location plan of the OHL routes presented at the May 2023 consultation is shown in **Figure 1.1**.

A combined Corridor and Route consultation for the Kintore to Tealing 400 kV OHL project was undertaken, due to the accelerated delivery programme required to achieve UK and Scottish Government 2030 targets. The Corridor Consultation Document and the Route Selection Consultation Document from the May 2023 Consultation events can be found on the project website here: <https://www.ssen-transmission.co.uk/projects/project-map/kintore-fiddes-tealing-400kv-ohl-connection/>

During the May 2023 OHL Consultation, SSEN Transmission also consulted on proposals for two new 400 kV substations, one near Fiddes in Aberdeenshire and the other near Tealing in Angus. Consultation Documents for these projects can be found here:

- New Fiddes 400 kV Substation: <https://www.ssen-transmission.co.uk/projects/project-map/fiddes-400kv-substation/>

⁶ The 'preferred route' refers to the option which we believe offers an appropriate balance of technical and environmental impact considerations identified through initial assessment. This is then subject to consultation with stakeholders, where local and previously unknown considerations may confirm or alter the initial preference.

- New Tealing 400 kV Substation: <https://www.ssen-transmission.co.uk/projects/project-map/tealing-400kv-substation/>

Following the consultation in May 2023, three Reports on Consultation (RoCs) were produced, one for each project:

- Kintore to Tealing 400 kV Overhead Line Report on Consultation: <https://www.ssen-transmission.co.uk/globalassets/projects/rocs/tkup-ohl/report-on-consultation---kintore-to-tealing-400kv-ohl.pdf>
- Fiddes 400 kV Substation Report on Consultation: <https://www.ssen-transmission.co.uk/globalassets/projects/rocs/fiddes/report-on-consultation---fiddes-400kv-substation.pdf>
- Tealing 400 kV Substation Report on Consultation: <https://www.ssen-transmission.co.uk/globalassets/projects/rocs/tealing/report-on-consultation---tealing-400kv-substation.pdf>

The RoCs provide a summary of the consultation process and events, the key feedback received from consultees and stakeholders and SSEN Transmission's response to the information received. The main changes to the OHL project and the substations following this consultation are summarised in Section 1.3.

1.3 Project Changes Following May 2023 Consultation

Following the outcome of the May 2023 consultation, a decision was made by SSEN Transmission to revisit and extend the substation site selection exercise, widening the area of search with a view to seeking alternative substation site options to those previously presented for Fiddes during the May 2023 consultation. New candidate sites were identified and appraised. Following detailed assessment of environmental, technical and cost factors, a new location for the preferred substation site was selected at Hurlie, in Fetteresso Forest approximately 7 km west of Stonehaven, in Aberdeenshire.

The change in preferred substation site initially identified near Fiddes to the new preferred site at Hurlie necessitated a revised OHL routeing exercise to be implemented in Section D and in part of Section E of the preferred OHL corridor to allow the proposed Kintore to Tealing 400 kV OHL to connect with the new substation location at Hurlie. These new route options are shown on **Figure 1.2** and comprise route options which have been named as D4, D5, E2 and E3. Route Options D4 and D5 provide alternative routes to connect from the northern end of Section C (from the Preferred Route Option C1) to the Hurlie Substation site. Route Options E2 and E3 were identified as options to connect northwards from the substation site to connect with Route Option E1 near Rickarton which remains the preferred route option from this point to the north end of Section E. Further information on the identification and appraisal of these options is presented in **Chapter 4** of this report.

After the consultation period closed on 28th July 2023, the feedback received on the route options for the OHL was analysed as part of a detailed review of all the route options in sections A to F of the preferred OHL Corridor. This review was undertaken to check that all relevant consultation feedback and additional information about the constraints within each route option, including findings from further field surveys, was fully considered. The route review undertaken resulted in some changes to the route options previously preferred for Sections B and F.

- In Section B, the preferred route has changed from Route Option B1 to Route Option B1.1 which is an existing route option presented at the May 2023 consultation. It was considered that Route Option B1.1 had slightly less environmental and property constraint overall than Route Option B1 and greater potential for the OHL to avoid proximity to the River South Esk Special Area of Conservation (SAC) and other areas of flood risk associated with watercourses.
- In Section F, a new route option was identified, Route Option F1.3, which combines elements of the previously preferred Route Option F1 with part of Route Option F2. Route Options F1 and F2 are existing route options which were presented at the May 2023 consultation. Following a detailed review and an updated options appraisal, Route Option F1.3 is now the preferred option in Section F. It uses less constrained parts of Route Options F1 and F2 and provides greater separation from the designated Loch of Skene Special Protection Area (SPA) than Route Option F1 whilst avoiding key designated area constraints at the southern end of Route Option F2 and involving less residential properties. The description and appraisal of this new option is presented in more detail in **Chapter 6** of this document.

Following consultation on the proposed new substation site at Tealing, SSEN Transmission have confirmed that the proposed new substation site will remain in this location. To avoid confusion in relation to proximity of an existing 275 kV substation at Tealing, the proposed new 400 kV substation will be called Emmock Substation.

1.4 March 2024 OHL Route Consultation

SSEN Transmission has prepared this Consultation Document to provide stakeholders with information on the changes to the routing required for the proposed Kintore to Tealing 400 kV OHL Project following the decisions made from the May 2023 consultation outlined in Section 1.3.

This report describes the new route options which have been considered and the appraisal of these options to inform selection of new preferred route options in sections D, E (in part) and F (in part) of the OHL corridor. A public consultation will be held during March and April 2024 to provide all stakeholders and affected communities the opportunity to provide feedback on the amended proposals. Supplementary information for the consultation including dates for proposed public exhibitions to be held in various locations in the route corridor will be made available at: <https://www.ssen-transmission.co.uk/projects/project-map/kintore-fiddes-tealing-400kv-ohl-connection/>.

In parallel with the OHL consultation, SSEN Transmission will also be holding pre-application public consultations on the developing proposals for the substations at Hurlie and Emmock. Further information on these consultations can be found at the respective project webpages: <https://www.ssen-transmission.co.uk/projects/project-map/fiddes-400kv-substation/> and <https://www.ssen-transmission.co.uk/projects/project-map/tealing-400kv-substation/>.

1.5 Report Structure

This report is comprised of seven chapters as follows:

1. **Introduction** – setting out the purpose of the Consultation Document and the report structure.
2. **The Proposals** – describes the need for the proposals, the technology options considered, the proposed technology solution and outlines the typical construction methods.
3. **Route Selection Process** – sets out the process for identification and appraisal of the new route options considered in this report.
4. **Description of New Routes** – describes the route options that have been identified for connection to the proposed Hurlie 400 kV Substation and the new route option in Section F.
5. **Appraisal of New Routes to Connect with Hurlie Substation** – presents the analysis of the new route options connecting with Hurlie Substation against a series of environmental, technical and cost criteria, compares the analyses and identifies the preferred routes.
6. **New Route in Section F** – presents information on the new Route Option F1.3.
7. **Consultation on the Proposals** – invites comments on the route option appraisal process and identification of the preferred routes.

The main body of this document is supported by a series of figures and technical appendices which are included at the end of this document.

1.6 Next Steps

As part of the March to April 2024 consultation exercise, comments are sought from members of the public, statutory consultees and other key stakeholders on the new route options proposed in this report for connection to Hurlie Substation, and the new Route Option in Section F.

All comments are requested by **30 April 2024**.

Following the completion of this consultation exercise SSEN Transmission will develop a series of alignment options within the proposed routes, identify a preferred alignment and undertake consultation on the preferred alignment in Summer 2024.

A RoC will be produced for the feedback received on the route options presented in the March to April 2024 consultation and the alignment options presented at the subsequent Summer 2024 consultation. The RoC will document the consultation responses received and the decisions made considering these responses. The RoC will also confirm the Proposed Route and Proposed Alignment.

In parallel, respondents are also being asked for their feedback on the Proposed Substation sites at Hurlie and Emmock. Information regarding the substation sites can be found at the following project webpages:

- Hurlie 400 kV Substation: <https://www.ssen-transmission.co.uk/projects/project-map/fiddes-400kv-substation/>
- Emmock 400 kV Substation: <https://www.ssen-transmission.co.uk/projects/project-map/tealing-400kv-substation/>

2. THE PROPOSALS

2.1 The Need for the Project

Scottish and Southern Electricity Networks Transmission (SSEN Transmission) operating under licence held by Scottish Hydro Electric Transmission plc has a statutory duty under Schedule 9 of the Electricity Act to develop and maintain an efficient, co-ordinated and economical electrical transmission system in its licence area. Where there is a requirement to extend, upgrade or reinforce its transmission network, SSEN Transmission's aim is to provide an environmentally aware, technically feasible and economically viable solution which would cause the least disturbance to the environment and to people who use it.

In July 2022, National Grid, the Electricity System Operator (ESO), published the Pathway to 2030 Holistic Network Design (HND)⁷, 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, including the UK and Scottish Government's 2030 offshore wind targets of 50 GW and 11 GW.

For the north of 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. Identified elements of the network reinforcement to deliver this capacity require accelerated development and delivery to meet 2030 connection dates and the East Coast 400 kV Phase 2 requires to be progressed accordingly. The need for these reinforcements has been further underlined within the recent British Energy Security Strategy⁸. This sets out the UK Government's plans to accelerate homegrown power for greater energy independence.

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 400 kV connection between these sites to enable the significant power transfer capability needed to take power from onshore and large scale offshore renewable generation which is proposed to connect at onshore locations on the East Coast of Scotland before then being transported to areas of demand.

2.2 Technology Options Considered

2.2.1 Introduction

In the initial identification of the requirement for this project, onshore and offshore reinforcement options were assessed by the ESO in the HND study⁷. The HND includes proposals to construct offshore transmission infrastructure and the onshore works essential to facilitate the connection of the initial 10 GW of offshore wind generation and consequently the network needed to transport the electricity around the country. The ESO led on the offshore transmission network optioneering and design, exploring both radial⁹ and coordinated¹⁰ approaches for the connection of new offshore wind schemes, aiming to balance the needs of consumers, developers, communities and the environment. The East Coast 400 kV Phase 2 was deemed to be required in addition to the proposed offshore cables from the Peterhead area (in Aberdeenshire) to locations on the east coast of England. The HND identified the need to provide additional onshore capacity between Tealing and Kintore. There were limited alternative options identified that provided the required onshore capacity.

2.2.2 Reduced Build Alternative

Alternative SSEN Transmission option(s) considered included an alternative East Coast Onshore Phase 2 Reinforcement (TKU2)¹¹. This did not include the upgrading of the existing Kintore – Tealing 275 kV OHL route to

⁷ National Grid ESO (July 2022). Pathway to 2030: A holistic network design to support offshore wind deployment for net zero. Available [online]: <https://www.nationalgrideso.com/future-energy/the-pathway-2030-holistic-network-design>

⁸ UK Government (April 2022). British Energy Security Strategy. Available [online]: <https://www.gov.uk/government/publications/british-energy-security-strategy/british-energy-security-strategy>

⁹ Radial – offshore wind generation is connected directly to shore.

¹⁰ Co-ordinated – offshore wind generation zones are interconnected via offshore links.

¹¹ National Grid ESO (July 2022). Network Options Assessment 20221/22 Refresh. Available [online]: <https://www.nationalgrideso.com/future-energy/the-pathway-2030-holistic-network-design>

400 kV or the new substation at Hurlie. TKU2 was not progressed as it was not considered to provide the capacity required.

2.2.3 Onshore Underground Cable

Undergrounding cables over a significant length can have additional risk to the electricity transmission network in the event of cable failure and consequent outages. Environmental, technical, and operational constraints associated with undergrounding cables at 400 kV voltage include:

- **Technical Limitations:** Underground cables need specific ground conditions, and they can present challenges for maintenance and power restoration, especially if faults occur.
- **Environmental Impact:** Undergrounding can have lasting environmental effects, for example impacts on habitats and hydrology, and the area required for laying cables needs to be clear (and kept clear) of built development, other infrastructure or vegetation for easy access during construction and repairs.
- **Terrain:** It is more challenging to install and find a suitable route for underground cables on undulating terrain and steep slopes.
- **Infrastructure Needs:** For underground cables longer than 1-2 km, additional substation infrastructure would be needed, enlarging a project's footprint.
- **Operational Needs:** Restoring power in the event of a cable fault can take significantly longer than for an overhead line. Faults on overhead electricity lines can typically take a few hours to a few days to repair and are generally easy to locate. Underground cable faults often require extensive works, specialist resource, tools and equipment to locate the fault, followed by significant civils work to expose the damage, replace the damaged section and carry out the repairs which can take up to a month. This presents significant risks to security of supply and network reliability. It also impacts on SSEN Transmission's ability to meet its licence obligations of maintaining an efficient transmission network.
- **Cost:** Underground cables at 400 kV are estimated to be between five and ten times more expensive than overhead lines, and since these costs are reflected in consumer bills, it is a factor that needs to be considered.

More detailed information on the undergrounding of cables can be found here:

- <https://www.ssen-transmission.co.uk/projects/2030-projects/2030-faqs/>
- <https://www.ssen-transmission.co.uk/globalassets/projects/2030-projects/2030-project-documents/2030-challenges-doc.pdf>

2.3 Proposals Overview

To meet the required reinforcements of SSEN Transmission's onshore infrastructure, the construction of approximately 106 km of new 400 kV double circuit OHL between Kintore and Tealing is required.

The Proposed Development would comprise a series of steel lattice towers erected to support a number of electrical conductors (wires) which make up the circuits for the OHL. The typical height for the ASTI SSE400 tower suite, the likely tower design for the Proposed Development, is approximately 57 m, with a maximum extension height of up to 70 m.

The size of towers and span lengths¹² is generally dependent on three main factors: altitude; weather; and the topography of the route. The average span between towers is typically around 350 m, however, towers are typically closer together at high altitudes to withstand the effects of greater exposure to high winds, ice and other weather events. Higher towers may be required in certain locations to maintain the required ground clearance heights, such as at road, river and rail crossings.

¹²The span length is the distance between adjacent towers. This can vary depending on factors such as topography, altitude and climate.

The proposed steel lattice towers would support six conductor bundles (two or three wires per bundle) on six cross-arms (three on each side) and an earth wire between the peaks. Typical tower designs can be seen in **Plate 2.1**¹³ and a schematic of the proposed steel lattice towers is shown in **Plate 2.2**.



Plate 2.1 – Existing SSE400 steel lattice tower design

¹³ The existing SSE400 tower suite design is currently being modified to provide stronger tower structures. The final tower design and appearance may differ slightly from the existing SSE400 tower suite shown in Plate 2.1.

- removal of temporary works and site reinstatement.

All construction activities will be undertaken in accordance with a Construction Environmental Management Plan (CEMP) which will define specific methods for environmental survey, monitoring and management throughout construction. A CEMP will be produced by the Principal Contractor and agreed with statutory stakeholders prior to the commencement of construction.

2.3.2 Access

The routes over which construction access would be taken are still to be determined but will be taken from existing roads wherever possible to minimise the need to create new accesses. There may be a requirement for public road improvements such as road widening, bridge reinforcements or installations of new junctions (bellmouths) for construction traffic and compounds.

2.3.3 Forestry Removal

Some short sections of the proposed OHL would need to cross through woodlands including some areas of commercial coniferous and other forestry located in the Study Area particularly in Fetteresso Forest where Hurlie Substation would be located. It would not be possible to avoid some areas of commercial forestry in the alignment process and construction of the OHL. In these locations, trees would need to be felled to create a construction and maintenance wayleave for the OHL.

2.3.4 Programme

Subject to gaining the necessary consents, it is anticipated that construction of the proposed Kintore to Tealing 400 kV OHL project would commence in 2026. The project has a proposed energisation date of October 2030.

Project timeline



3. ROUTE SELECTION PROCESS

3.1 Overall Approach and Guidance Followed

The approach to route selection was informed by SSEN Transmission's Guidance 'Procedures for Routeing Overhead Lines and Underground Cables of 132 kV and above'¹⁴ (hereafter referred to as SSEN Transmission's Routeing Guidance). This Guidance broadens the basis for routeing decisions to reflect contemporary practice, and ensures environmental, technical and cost considerations are identified and appraised at each stage of the routeing process.

SSEN Transmission's Routeing Guidance sets out their approach to selecting a corridor, route or alignment for an OHL. This document helps SSEN Transmission to meet its obligations under Schedule 9 of the Electricity Act 1989, which requires transmission licence holders:

- to have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interests; and
- to do what they reasonably can to mitigate any effect that the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects.

The guidance sets out a process which aims to balance these environmental considerations with technical and economic considerations throughout the route options process.

The guidance provides a number of stages for overhead line routeing as follows:

- Stage 0: Routeing strategy development;
- Stage 1: Corridor Selection;
- Stage 2: Route Selection;
- Stage 3: Alignment Selection; and
- Stage 4: Environmental Impact Assessment (EIA) and consenting.

Each stage is iterative and typically increases in detail and resolution, bringing cost, technical and environmental considerations together in a way which seeks the best balance at each stage. The stages that are carried out can vary depending on the type, nature and size of a project and consultation can be carried out at each stage of the process.

Stage 2: Route Selection seeks to find a route within the corridor which avoids where possible, physical, environmental and amenity constraints, is likely to be acceptable to stakeholders, and is economically viable, taking into account factors such as altitude, slope, ground conditions and access.

This document provides the details of SSEN Transmission's appraisal of new route options as part of Stage 2 Route Selection identified to connect the proposed Kintore to Tealing 400 kV OHL with the proposed Hurlie 400 kV Substation (Route options D4, D5, E2 and E3) and for the new route option in Section F (Route Option F1.3). The new route options have been appraised through consideration of a Red, Amber, Green (RAG) Rating which assigns the findings of the appraisal of potential environmental and technical constraints on a high, intermediate or low level.

3.2 New Route Options Selection

3.2.1 Area of Search

The extent of the area of search for new route options, ("the Study Area"), has primarily been defined by the selection of the alternative 400 kV Substation at Hurlie. The Study Area allows for new routes to connect into and

¹⁴ SSEN Transmission (March 2018) Procedures for Routeing Overhead Lines of 132kV and above (updated in September 2020 to include underground cables of 132 kV and above). PR-NET-ENV-501.

out of the Hurlie Substation from the existing preferred routes in Section C (Route C1) and Section E (Route E1) within the Preferred Corridor 1b¹⁵.

It should be noted that a small area of the new Section D route options into the proposed Hurlie Substation extend slightly into Corridor 1a to avoid constraints relating to properties around Glenbervie and Drumlithie, and to avoid multiple crossings of major transportation routes, including the East Coast Main Line and the A90 dual carriageway.

Baseline studies have been focussed within the Study Area, although consideration of potential receptors outside of this area (e.g. environmental designations, visual receptors or cultural heritage sites) has been undertaken and is referenced where relevant in this report.

3.2.2 Baseline Conditions

A series of desk-based studies have been undertaken to identify a broad range of potential constraints and opportunities within the Study Area, to inform routeing. This has involved the following activities:

- identification of environmental designated sites and other constraints, with reference to the Aberdeenshire Local Development Plan (LDP)¹⁶ and Local Biodiversity Action Plan (LBAP)¹⁷, and utilising Geographic Information Systems (GIS) datasets available including those identified from NatureScot Site Link¹⁸ and NBN Atlas¹⁹;
- identification of archaeological and cultural heritage statutory designations, available from Historic Environment Scotland's (HES) Digital Download, and heritage assets recorded as being of 'Regional Significance' and Non-Inventory Designed Landscapes (NIDLs) within Aberdeenshire Council's online Historic Environment Records (HER);
- review of online SEPA interactive Flood Risk Mapping²⁰ and SEPA Future Flood Maps²¹;
- review of online NatureScot (2016) Carbon and Peatland Mapping²² to identify areas of carbon rich soils and peatland classification (Class 1 to 5)²³;
- review of the Aberdeenshire Local Development Plan (LDP) to identify further environmental constraints and opportunities, such as regional level designations or other locations important to the public²⁴;
- review of landscape character assessments (LCAs) of relevance to the Study Area²⁵;
- review of landscape designations of relevance to the Study Area (using local authority reporting);
- review of Ordnance Survey (OS) mapping (1:50,000 and 1:25,000 scales and online GIS data sources from OS OpenData) and aerial photography (where available) to identify other potential constraints such as settlements, properties, walking routes, cycling routes etc.;

¹⁵ Information on the identification and appraisal of corridor options was presented at the 2023 public consultation in the report 'Consultation Document – Corridor Selection, Project: Kintore – Fiddes – Tealing 400kV Overhead Line Connection, May 2023' see: <https://www.ssen-transmission.co.uk/projects/project-map/kintore-fiddes-tealing-400kv-ohl-connection/>

¹⁶ Aberdeenshire LDP (2023): <https://www.aberdeenshire.gov.uk/planning/plans-and-policies/ldp-2023/>

¹⁷ Aberdeenshire Council (part of the North East Scotland Biodiversity Partnership): <https://www.nesbiodiversity.org.uk/>

¹⁸ NatureScot (2023). SiteLink. Available [online]: <https://sitelink.nature.scot/home>

¹⁹ NBN Atlas. Available [online]: <https://nbnatlas.org/>

²⁰ Scottish Environment Protection Agency (Undated). Scottish Flood Hazard and Risk Information. Available [online]: <https://map.sepa.org.uk/floodmaps>

²¹ SEPA Future Flood Maps. Available [online]: <https://map.sepa.org.uk/floodmaps/FloodRisk/FutureFloodMaps>

²² NatureScot (2022). Carbon and Peatland 2016 map. Available [online]: <https://www.nature.scot/professional-advice/planning-and-development/planning-and-development-advice/soils/carbon-and-peatland-2016-map>

²³ Class 1 - Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas likely to be of high conservation value.

Class 2 - Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas of potentially high conservation value and restoration potential.

Class 3 - Dominant vegetation cover is not priority peatland habitat but is associated with wet and acidic type. Occasional peatland habitats can be found. Most soils are carbon-rich soils, with some areas of deep peat.

Class 4 - Area unlikely to be associated with peatland habitats or wet and acidic type. Area unlikely to include carbon-rich soils.

Class 5 - Soil information takes precedence over vegetation data. No peatland habitat recorded. May also include areas of bare soil. Soils are carbon-rich and deep peat.

²⁴ Aberdeenshire Council Local Development Plan 2023. Available [online]: <https://www.aberdeenshire.gov.uk/planning/plans-and-policies/ldp-2023/>

²⁵ NatureScot (2023). Scottish Landscape Character Types Map and Descriptions. Available [online]: <https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions>

- extrapolation of OS Vectormap GIS data to identify further environmental constraints including locations of watercourses and waterbodies, roads classifications and degree of slope;
- review of the Aberdeenshire Council online planning portal²⁶ to identify planning applications in each route option;
- review of other local information through online and published media such as those including information on recreation, tourism sites and walking routes;
- identification of existing OHL transmission infrastructure, roads, gas pipelines and railway lines;
- identification of existing and proposed wind farm developments and other third-party infrastructure; and
- review of existing terrain, soil and ground conditions.

Site walkover surveys were undertaken between September and December 2023 to review areas of potential constraint and verify route options and constraints across the Study Area. The following specialists undertook site visits:

- archaeologists;
- hydrologists;
- landscape architects;
- ecologists and ornithologists; and
- members of the SSEN project team comprising OHL and substation engineers, land agents, consents and environment team, communities team and project managers.

3.3 New Route Options Identification

New route options have been identified to allow for subsequent identification and development of OHL alignments during the next stage of the process (Stage 3 Alignment Selection). There are some variations in width across the new route options in areas of lesser constraint to provide more opportunities to find OHL alignments at later stages of the project.

A GIS-based digital routeing toolkit was initially used to help identify new route options. The process for identifying route options within the Study Area used a combination of the following:

- The constraints were layered onto a map so they may be viewed as a composite ‘heat map’ and weightings and buffers applied depending on the sensitivity of the constraint, or opportunity. In addition to constraints, some data sets provide opportunities to OHL routeing in line with the Holford Rules²⁷, such as running parallel to existing OHLs or roads.
- The initial identified route options were refined by the project team including the input from the environmental consultant team and from SSEN Transmission OHL engineers to take into account topography, land cover and the Holford Rules (as incorporated within the SSEN Transmission Routeing Guidance), in order to maximise the potential for alignment options within the identified routes, and to amend them as necessary.
- The new Hurlie 400 kV Substation site selection process was undertaken in parallel with development of the new OHL route options so that route options could be identified and connected with the approximate location of the proposed substation.

The route options identified for appraisal are described in **Chapter 4** of this Consultation Document.

²⁶ Aberdeenshire Council. Public access – planning and building register. Available [online]: <https://www.aberdeenshire.gov.uk/planning/public-access/#planning>

²⁷ SSEN Transmission Procedures for Routeing Overhead Lines and Underground Cables of 132kV and above PR-NET-ENV-501 Rev 2 Annex 1 Holford Rules: Guidelines for the Routeing of New High Voltage Overhead Transmission Lines with NGC 1992 and SHETL 2003 Notes

3.4 Route Options Appraisal

3.4.1 Environmental Criteria

The appraisal of route options has involved systematic consideration against a series of environmental topic areas defined within SSEN Transmission's Routeing Guidance.

Environmental considerations refer to the physical, natural and built environmental features as referred to in Schedule 9 of the *Electricity Act 1989* and to features of amenity as referred to in the Holford Rules.

A series of route option appraisals (comprising desk-based review and analysis informed with information from site work) were carried out by experienced professionally qualified individuals in the various specialist fields, to enable an informed combined opinion on the potential environmental effects of the route options drawing on key baseline constraints studies and survey information.

Appraisal of the level of environmental constraint associated with the route options involved systematic consideration against the following environmental topic areas and criteria derived from SSEN Transmission's Routeing Guidance:

- Natural Heritage – designations, protected species, habitats, ornithology, hydrology, geology and hydrogeology and consideration of Biodiversity Net Gain (BNG));
- Cultural Heritage – designations and cultural heritage assets;
- People – proximity to dwellings;
- Landscape and Visual – designations, landscape character and visual;
- Land Use – agriculture, forestry and recreation; and
- Planning – policy and proposals.

For each topic and criteria, the baseline constraints present within the route option were considered and an appraisal of the extent to which these constrain the OHL development was undertaken, with a 'RAG Rating' allocated based on the constraint appraised and following the criteria in SSEN Transmission's Routeing Guidance.

Natural Heritage

The level of natural heritage constraint in each route option was considered with respect to the potential to compromise the conservation status of designated sites, protected species, Annex 1 habitats and ornithological interests. The appraisal also considered the potential for constraints to compromise the integrity of important wetland areas, and with respect to the quality or quantity of surface water or groundwater of regional or local importance and which provide a public supply. The following topics and criteria were appraised:

- Designations:
 - International, European or National Designations. These included Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar Sites, National Parks, Sites of Special Scientific Interest (SSSI) and Ancient Woodland.
 - Regional Designations. These included Local Nature Reserves (LNR), Wildlife Sites and Regionally Important Geological and Geomorphological Sites (RIGS).
- Protected Species:
 - European Protected Species (EPS).
 - UK Biodiversity Action Plan (BAP) species (Red / Amber List).
 - Other Protected and Notable Species.
- Habitats:
 - Annex 1 Habitats.
 - Groundwater Dependent Terrestrial Ecosystems (GWDTE).
 - Biodiversity. Consideration of Biodiversity Net Gain (BNG) through quantitative measures and qualitative commentary.

- Ornithology:
 - Schedule 1 Birds.
 - Birds of Conservation Concern (BoCC).
- Hydrology / Geology / Hydrogeology:
 - Surface and Groundwater Drinking Water Protected Areas (DWPAs) (over 10m³ per day or supplies for over 50 people). This sub-topic related to the assessment for the potential impact upon public water supplies.
 - Aquifers providing regional / local resources. For example, abstractions for small public or private water supply or hydrological supply to GWDTE.
 - Surface waters or aquifers providing water for agricultural or industrial use (local importance).

In appraising the Natural Heritage constraints, consideration has been given to the ecological designations present and the implication for the assessment of BNG. The relative number, density and proportion of habitats considered irreplaceable in BNG terms – such as internationally and nationally designated sites, and Ancient Woodland – has been considered and taken into account when assigning the Natural Heritage RAG Ratings to each route option. The BNG considerations have also been informed by a quantitative analysis of the biodiversity units (BUs) in each route²⁸ following SSEN’s Biodiversity Toolkit approach²⁹.

Cultural Heritage

- Designations were assessed for the potential for the route option to compromise the designating feature or their setting of the following designations and sites.
 - World Heritage Sites (WHS), Scheduled Monuments (SM), Inventory Gardens and Designed Landscapes (GDL), and Inventory Battlefields.
 - Sites and Monument Record Entries.
- Cultural Heritage Assets were assessed for the potential for the route option to disturb and compromise the following designated assets:
 - Listed Buildings (A, B and C), Non-Inventory GDL and Conservation Areas.

People

- Proximity to dwellings. This included consideration of the level of constraint within route options represented by residential properties and other sensitive receptors such as schools or hospitals and taking account of the potential for an OHL alignment to be developed which could avoid these sensitive receptors.

Landscape and Visual

The assessment for this topic considered the potential for the route option to compromise: the special qualities of any specific landscape designations, the characteristic elements of the landscape (landscape character), and the view or visual amenity at a given location. Landscape and visual constraint was appraised with respect to the following criteria:

- Designations:
 - National or Regional designations including National Parks, National Scenic Areas (NSA), GDL and Wild Land Areas (WLA).
 - Local Designations including Regional Scenic Areas (RSA) and Special Landscape Areas (SLA).
- Landscape Character as defined in published character assessments (e.g. NatureScot national assessments).
- Visual. Constraints identified through changes in visual amenity for settlements and residential properties, key transportation and recreational routes utilised by tourists and visitors to an area, vantage points and tourist destinations from where views and landscape appreciation is important.

²⁸ Biodiversity Net Gain Optioneering Report Kintore-Fiddes-Tealing 400kV OHL Connection Project Quantitative BNG Assessment

²⁹ SSEN Biodiversity Net Gain Toolkit User Guide (TG-NET-ENG-526)

Land Use

This topic included appraisal of land use constraints for each route option with respect to: the agricultural use / viability of the land as an agricultural resource, the commercial viability of a forestry operation, and commercial viability and usage of identified recreational facilities. The principal criteria appraised were:

- Agriculture: analysis of the percentage of prime agricultural land located within the route option as defined in the Agricultural Land Classification (ALC).
- Forestry: appraisal of the presence of commercial forestry areas and the constraint this may have from future OHL development including from changes to forestry management/operation.
- Recreation: appraisal of constraint associated with the following criteria within each route:
 - Public Footpaths (with a specific focus on Core Paths), National Cycle Networks (NCN) and Scottish Great Trails.
 - Commercial Highland Sports, including fishing, stalking, shooting etc. For the purposes of this routeing appraisal, only commercial fishing was assessed due to the generally lowland nature of the Study Area.
 - Some consideration was also given to constraints from the presence of other key tourism facilities, where these were identified.

Planning

Analysis of route option constraints associated with planning were addressed in two key criteria:

- Policy: appraisal of the indicative compliance of the route options with relevant National / Regional or Local Planning Policy. This focused principally on relevant policy in the Scottish Government's National Planning Framework (NPF4) and in the Local Development Plan (LDP).
- Proposals: review of the potential for interaction of the route option with relevant projects already known to the planning system (planning applications and consents for developments larger than domestic scale).

3.4.2 Technical Criteria

The appraisal of route options also involved systematic consideration against a series of technical (engineering) topic areas and criteria.

Technical considerations refer to the capacity and voltage of the circuit, as a minimum, which will dictate the choice of the cable or conductor and tower suite, which may inform tower foundation requirements, span lengths, angle points, and constructability requirements.

A series of route option appraisals (comprising desk-based review informed by site visits) were carried out by experienced SSEN Transmission Engineers, to enable an informed opinion on the potential technical constraints of the route options. Appraisal of the options involved systematic consideration against the following technical criteria:

- Infrastructure Crossing:
 - Major crossings which included 132 kV OHLs, 275 kV OHLs, railway lines, watercourses more than 200 m wide, navigable canals, and gas or hydro pipelines.
 - Road crossings.
- Environmental Design:
 - Elevation. In relation to the percentage of the option which is above 200 m Above Ordnance Datum (AOD).
 - Atmospheric pollution. This sub-topic considered the length of the option within any high pollution areas.
 - Contaminated Land. Appraisal of the presence of the option within any known areas of contaminated land.
 - Flooding. In relation to the percentage of the length of the option with a width of greater than 80% which is located within a 1-in-200 year flood zone.

- Ground Conditions:
 - Terrain. Appraisal of the gradient of slopes present within the route option and the characteristics of the terrain, e.g. steep and mountainous or open and flat.
 - Peat. This appraisal considered the percentage of the length of the route option with over 50% of the width of the route which traversed through an area of peat.
- Construction and Maintenance:
 - Access: consideration of the network of existing tracks and the quantity of the route within a 1 km distance from the existing public road network.
 - Angle towers: consideration of locations where key deviations in the line of the OHL may be required.

The technical appraisal also considered ‘Proximity’ with reference to the distance of the following sub-topics to the route option: clearance distance, windfarms, communication masts, urban environments and metallic pipelines.

3.4.3 Cost Criteria

The appraisal of route options has also involved systematic consideration against a number of cost criteria.

Cost is a function of the quantum of assets required (cables, conductors, support structure, reactive compensation), the length of new infrastructure, the extent of construction as well as access works to address aspects such as altitude, slope and ground conditions and the nature and extent of operational maintenance required.

A high-level appraisal was carried out by SSEN Transmission to enable an informed opinion on the potential costs of development and operation of an OHL for each of the route options. Appraisal of the route options has involved systematic consideration against the following criteria:

- Capital – construction diversions, public road improvements, tree felling, land assembly and consent mitigations.
- Operational – inspections and maintenance costs.

3.4.4 Comparative Appraisal

The purpose of the comparative appraisal is to distinguish between options to allow a preference to be expressed for each group of comparable options based on the level of constraint appraised for each option across the environmental, technical and cost criteria. The comparison appraisal comprises two steps:

Step 1: Allocation of RAG Rating

Each topic within the environmental, technical and cost categories was considered in terms of the potential for the development to be constrained and a Red/Amber/Green (RAG) Rating applied as appropriate, drawing on the guidance and the approach to appraisal of constraint described in Sections 3.4.1 to 3.4.3.

A high-level convention based on a three point scale to assign RAG Ratings was applied as follows:

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

The RAG Rating applied to each topic takes account of opportunities and standard working practices including established environmental mitigation that, if implemented, could overcome the identified constraint. This helped to ensure that the most likely outcome was identified as opposed to the ‘worst case’.

Step 2: Comparison of Options

In the comparative appraisal, the RAG ratings identified for each topic and within each of the environmental, technical and cost categories were used to examine differentiators between the options being considered. The

appraisal compared the wider implications of each option on those topics (both individually and combined) to reach a reasoned conclusion, on balance across all topics, as to the preferred route option.

3.4.5 Identification of a Preferred Route

A comparative appraisal has been carried out of the new route options to arrive at a Preferred Route. The overall objective throughout the appraisal of route options is to take full consideration of all environmental factors to minimise any potential adverse effects on the environment whilst taking into account technical and cost considerations. The preferred route therefore represents the option which is considered on balance to have the least level of overall constraint.

The findings of the appraisals undertaken for the new route options and the selection of the preferred route options are set out in **Chapters 5 and 6** of this Consultation Document.

3.4.6 Identification of a Proposed Route

Consultation is undertaken by SSEN Transmission seeking feedback on the Preferred Route. This Consultation Document is issued to statutory and non-statutory consultees and is available to the public. It is supported via a series of public events and a consultation booklet. This Consultation Document and the booklet are publicly available at the link below:

<https://www.ssen-transmission.co.uk/projects/project-map/kintore-fiddes-tealing-400kv-ohl-connection/>

The consultation feedback and SSEN Transmission's response to the feedback will be collated, analysed and reported in a Report on Consultation (RoC) document which will be made publicly available. Its purpose is to record the stakeholder feedback received during the consultation process; explain how SSEN Transmission has responded, and how it has informed the selection of the Proposed Route and how it may be used to help inform project design. If the consultation responses do not result in any changes to the route, the reasons for this will be explained in the RoC.

4. DESCRIPTION OF NEW ROUTES

4.1 Identification of New Route Options to Hurlie Substation

The identification of new OHL route options required for the proposed 400 kV Hurlie Substation has been broken down into routes connecting with the new substation location from the south and the north as shown on **Figures 4.1** and **4.2**. There are two route options in each group:

- Routes D4 and D5 south of the substation: Section D – Laurencekirk to Hurlie Substation; and,
- Routes E2 and E3 north of the substation: Section E – Hurlie Substation to Rickarton.³⁰

Within each of the sections listed above, new route options have been identified based on determination of continuous sections of least constraint to allow for subsequent identification of OHL alignments during Stage 3 (alignment selection) of the project.

The new route options in Sections D and E have been developed to form a set of comparable routes which form a continuous connection from ‘end to end’. Each route option is further described in Section 4.1.1 and presented on **Figures 4.1** and **4.2** at the end of this document.

4.1.1 Section D – Laurencekirk to Hurlie Substation (**Figure 4.1**)

Two new Route Options D4 and D5 provide routes to connect from the northern end of the preferred Route Option C1 to Hurlie Substation site.

Route D4: This route option starts from the proposed Route Option C1 near Laurencekirk, north of Greenbottom Wood, and follows a northeastern direction towards Auchenzoch, where it passes between the settlement of Fordoun (to the east) and Red Hall House. The route continues northwards past Monboddo, crossing the Bervie Water west of Glenbervie and northwards over rising ground including Droop Hill. At Cotbank, the route turns northeast towards the site of the proposed Hurlie Substation.

Route D5: This route option starts from the proposed Route Option C1 near Laurencekirk, north of Greenbottom Wood, and follows a northeastern direction towards Cairnton. The route continues in a northerly direction to the west of the village of Auchenblae then turning east over the rising ground of Herscha Hill before connecting with the northern part of Route Option D4 in the vicinity of North Blairs. The route then crosses the Bervie Water west of Glenbervie and follows higher ground including Droop Hill. At Cotbank, the route turns northeast towards the site of the proposed Hurlie Substation.

4.1.2 Section E – Hurlie Substation to Rickarton (**Figure 4.2**)

Two new Route Options E2 and E3 provide routes to connect northwards from the proposed new Hurlie Substation to connect with Route Option E1 near Rickarton which remains the preferred route option from this point to the north end of Section E.

It should be noted that as a result of the changes to the proposed substation and the need to provide a connection via either Route Option E2 or E3, Route Option E1 has been amended to include only the northern section of the previously Preferred Route Option E1 from the point where Route Options E2 and E3 connect near Rickarton to the point where Route Option E1 connects to new Route Option F1.3 at Craiglug near the River Dee. The northern part of Route Option E1 is the previously preferred route with no proposed changes. As this route has previously been presented at the May 2023 consultation³¹, a comparative appraisal is not included within this Consultation Document.

³⁰ Route options E2 and E3 form a common point of connection just north of Rickarton in the centre of Section E of the OHL corridor. North of this point the OHL follows Route Option E1 which was identified in the 2023 routeing consultation as SSEN Transmission’s preferred option and is now the Proposed Option for the route between Rickarton and the northern end of Section E.

³¹ SSEN Transmission (May 2023). Consultation Document – Route Selection. Project: Kintore-Fiddes-Tealing 400 kV Overhead Line Connection. Available [online]: ssen-transmission.co.uk/globalassets/projects/east-coast-phase-2-may-2023-docs/ohl-consultation-doc/consultation-document---route-selection-may-2023.pdf

Route E2: The route starts at the proposed Hurlie Substation and initially follows a northern direction through Fetteresso Forest with the line of an existing high voltage OHL to the immediate west of the route. At Mergie, the route heads in a northeastern direction to Rumbleyond, just north of Rickarton, where it joins Route Option E1. The southern section of the route option avoids Mergie Local Nature Conservation Site (LNCS) located to the south and east of the route option, south of Rickarton.

Route E3: This route starts at Hurlie Substation, following an easterly direction across an extensive area of Fetteresso Forest towards Nether Swanley where the route then heads in a northern direction and joins with Route Option E1 at Rumbleyond, just north of Rickarton.

4.2 Identification of a New Route in Section F

Route F1.3 (Figure 4.3): This is a new route option for Section F, identified by SSEN Transmission following review of feedback from the May 2023 consultation, and taking account of updated route appraisal reviews and information obtained from field surveys. This new route option combines elements of the previously preferred Route Option F1 with a significant section of Route Option F2 by following a new 'joining' section of route which connects the two former options (Route Option F1.3). Route Options F1 and F2 were presented in the May 2023 consultation.

The proposed new Route Option F1.3 crosses the River Dee in the same location as Route Option F1 then leaves F1 following a new 3 km section of route in a north westerly direction between the village of Drumoak and Drum Castle towards Coldstream, where it joins the line of Route Option F2. The new Route Option F1.3 facilitates a route through the whole of Section F which uses less constrained parts of Route Options F1 and F2.

5. APPRAISAL OF NEW ROUTES TO CONNECT WITH HURLIE SUBSTATION

5.1 Introduction

This chapter provides a summary of the key considerations of each new route option in Sections D (D4 and D5) and E (E2 and E3) from an environmental, technical and cost perspective, and provides a summary which presents the findings of the comparative appraisal of each new route. This has informed selection of an overall Preferred Route. The following figures accompany the text in this chapter and illustrate environmental baseline constraints identified under each key topic considered.

- **Figures 5.1 to 5.7** illustrate constraints for the route options in Section D.
- **Figures 5.8 to 5.14** illustrate constraints for the route options in Section E.

The figures for each Section are presented as: Ecology constraints; Hydrology constraints; Cultural Heritage constraints; Landscape constraints; and Land Use Constraints.

Appendix A presents the baseline constraints and the findings of the appraisal of key environmental and technical considerations for Section D route options and **Appendix B** presents the baseline constraints and the findings of the appraisal of key environmental and technical considerations for Section E route options.

5.2 Section D – Laurencekirk to Hurlie Substation

5.2.1 Introduction

Tables 5.1 to 5.3 present a summary of the main environmental, technical and cost considerations following SSEN Transmission's Routeing Guidance and the findings of the comparative appraisal of new Route Options D4 and D5 in Section D.

5.2.2 Environment

From an environmental perspective, both route options are considered to be broadly comparable. Both route options have a degree of constraint associated with criteria considered for Natural Heritage, Cultural Heritage, People, Landscape and Visual, Land Use and Planning considerations.

Route Option D5 is constrained by Strathfinella Local Nature Conservation Site (LNCS), a designated site noted for geological interests, which crosses the width of the route option. Construction activities such as foundation excavation and ground investigation work may compromise the geological features of the designated site.

The route options are constrained by ornithological considerations as they both pass within connectivity distance associated with birds foraging from coastal sites at the Montrose Basin SPA and Fowlsheugh SPA. The northernmost sections for both route options and in the area connecting to the Hurlie Substation (in Fetteresso Forest) are known to support breeding Schedule 1 bird species.

Cultural heritage designations are present in both options and constrain them to some extent such that both options have been RAG Rated as Amber. Both route options are constrained by their proximity to Glenbervie Garden and Designed Landscape (GDL) and Droop Hill Cairns Scheduled Monument (SM). Route Option D4 is constrained by proximity to two Category B Listed Buildings (Redhall House (LB 9652) and Monboddo House (LB 9643)). Route Option D5 is constrained by its close proximity to the Auchenblae Conservation Area as the route runs through a section of the designated site with the potential to directly disturb the parkland and woodland that contributes to its character and could compromise its setting. Route Option D5 passes in close proximity to the west and north sides of the village of Auchenblae.

In relation to proximity to residential properties, Route Option D5 is slightly less constrained. This route allows flexibility during alignment design to locate OHL infrastructure at distances of greater than four times the nominal height of the OHL towers, although the route and any alignment within it would pass within 400 m of, and wrap around, the community of Auchenblae. Route Option D4 is considered to be more constrained as, in a small number

of locations, the OHL infrastructure needs to be aligned at a distance of approximately 200 m from residential properties, which is within the range of two to four times the nominal height of the OHL towers.

There is a local landscape designation which constrains Route Option D5. Approximately 3 km of the route option passes through the Braes of the Mearns Special Landscape Area (SLA). As such, Route Option D5 is considered to be less preferred due to the potential impact of an OHL upon the special qualities of the SLA. Although Route Option D5 only passes through the edge of the SLA, the special qualities note the importance of the relationship between the Braes and the farmed landscapes to the southeast. Route Option D4 does not cross any designated landscapes; the Braes of the Mearns SLA is located approximately 1 km northwest of part of the route option at its closest point. As such, Route Option D4 is RAG Rated as Green, while Route Option D5 is RAG Rated as Amber in relation to landscape designations.

Both route options have been RAG Rated as Amber for landscape character, as it is considered an OHL alignment may compromise local landscape character on either route. Route Option D5 would cross the steep slopes west of Auchenblae, while both route options would cross the more undulating landscape to the northeast of Auchenblae.

Both route options have been RAG Rated as Amber for visual amenity as it is considered an OHL alignment may compromise views or visual amenity experienced by a range of sensitive receptors. Route Option D5 has the potential to compromise views from nearby settlements including Auchenblae and Glenbervie and there is potential for the OHL to be prominent along the skyline in some views from Auchenblae. Route Option D4 offers the opportunity to avoid close proximity to Auchenblae.

Both route options are constrained by land use considerations as they pass through areas of prime agricultural land (Class 2 and Class 3.1) as well as some areas of commercial forestry particularly on the approach to the Hurlie Substation site in Fetteresso Forest. In terms of planning, both route options have some potential to be contrary to LDP allocations and designations and some LDP and NPF4 policies.

On balance, from an environmental perspective, **Route Option D4** is the preferred route. The summary RAG ratings for environmental considerations are provided in **Table 5.1: Environmental RAG Rating Table for Section D of the OHL Route**.

Table 5.1: Environmental RAG Rating Table for Section D of the OHL Route

Topic	Criteria	Sub-Criteria	Route D4	Route D5
Natural Heritage	Designations	International, European or National	Green	Green
		Regional	Green	Amber
	Protected Species	European Protected Species (EPS)	Green	Green
		UK Biodiversity Action Plan (UKBAP)	Green	Green
		Other Protected and Notable Species	Green	Green
	Habitats	Annex 1	Green	Green
		Groundwater Dependent Terrestrial Ecosystems (GWDTE)	Green	Green
		Biodiversity	Green	Green
	Ornithology	Designations	Amber	Amber
		Schedule 1 Birds	Amber	Amber
		Birds of Conservation Concern (BoCC)	Green	Green
	Geology, Hydrology, Hydrogeology	Surface and Groundwater Drinking Water Protected Area (SG DWPA)	Green	Green
		Aquifer providing regional / local resources	Green	Green
		Surface waters or aquifer for agricultural use or industrial use	Green	Green

Topic	Criteria	Sub-Criteria	Route D4	Route D5
Cultural Heritage	Designations	World Heritage Sites (WHS), Scheduled Monuments (SM), Inventory Garden and Designed Landscapes (GDL), Inventory Battlefields	Yellow	Yellow
		Sites and Monument Record (SMR) Entries	Green	Green
	Cultural Heritage Assets	Listed Buildings, Non-inventory Designed Landscape (NIDL), Conservation Areas	Yellow	Yellow
People	Proximity to dwellings	Residential Properties and other sensitive receptors	Yellow	Green
Landscape and Visual	Designations	National, regional, local	Green	Yellow
	Landscape Character	Landscape character in published character assessments	Yellow	Yellow
	Visual Amenity	Properties, transport and recreational routes, vantage points	Yellow	Yellow
Land Use	Agriculture	Agricultural Land Classification (ALC)	Yellow	Yellow
	Forestry	Commercial Forestry	Yellow	Yellow
	Recreation	Paths and Tourism	Green	Green
		Highland Sports (Fishing)	Green	Green
Planning	Policy	National, regional, local policy	Yellow	Yellow
	Proposals	Projects known to the planning system	Green	Green

5.2.3 Technical

From a technical perspective, Route Options D4 and D5 are both constrained by major crossings due to the number of gas pipelines to be crossed, although Route Option D4 crosses fewer. Route Option D4 is slightly more constrained by minor roads as the route has a higher number of minor and local roads requiring to be crossed. Route Option D5 has a higher number of angle towers required, largely due to the steeper terrain and requirement to avoid settlements, particularly at Auchenblae, where a large number of angle towers may be required in close proximity to residential properties. Route Option D5 is located within closer proximity to the settlement of Auchenblae and passes to the west and north of the settlement.

Although both route options have been assigned a RAG Rating of Green for terrain, the maximum slope experienced on Route Option D5 is significantly higher than Route Option D4, particularly in the area close to Drumelzie Wood.

Route Option D4 has been assigned a RAG Rating of Red for contaminated land due to its close proximity to the former Fordoun Airfield site. The former airfield was identified as a high-risk site for contamination and potential further site investigations may be required to mitigate risk. Route Option D5 has been assigned a RAG rating of Green due to avoiding this potential risk. Further investigation of potential historic contamination would be undertaken by SSEN Transmission if Route Option D4 is taken forward as the proposed route to ensure that any risks to human and environmental receptors were understood and mitigated.

Route Option D4 is more constrained by clearance distances to residential properties near Fordoun where a cluster of residential properties are located.

The constraints described for Route Option D4, which are not present in Route Option D5, can be technically overcome and a feasible alignment is possible through this section.

Both route options have been RAG Rated as Red and are constrained by the presence of wind turbines and small windfarms as they both pass through and close to proposed and operational facilities. There are more single wind turbines located within Route Option D4 than in D5.

Both route options are also constrained by metallic pipes as both would interact with the major gas pipeline network which would require mitigation, however Route Option D4 is preferred as the route crosses fewer pipelines.

On balance, both routes are considered to be technically feasible, however, Route Option D5 is marginally preferred from a technical perspective due to the potential for an alignment to be designed maintaining a greater clearance distance from residential properties and wind turbines. The summary RAG Ratings for technical considerations are shown in **Table 5.2: Technical RAG Rating Table for Section D of the OHL Route**.

Table 5.2: Technical RAG Rating Table for Section D of the OHL Route

Criteria	Sub-Criteria	Route D4	Route D5
Infrastructure Crossing	Major crossings	Red	Red
	Minor Roads	Yellow	Green
Environmental Design	Elevation	Green	Green
	Contaminated Land	Red	Green
	Flooding	Green	Green
Ground Conditions	Terrain	Green	Green
	Peatland	Green	Green
Construction / Maintenance	Access	Green	Green
	Angle Towers	Green	Red
Proximity	Clearance Distance	Yellow	Green
	Windfarms	Red	Red
	Communication Masts	Green	Green
	Urban Developments	Green	Green
	Metallic Pipes	Yellow	Yellow

5.2.4 Cost

Route Option D4 is the lowest cost option and is within 10% of the costs of Route Option D5. Both routes are of similar lengths and have similar woodland felling and compensation requirements. Route Option D5 has marginally more major pipeline crossings compared to Route Option D4 which are currently unavoidable, and which may lead to additional costs to mitigate impacts.

The terrain in Route Option D5 is more challenging than in Route Option D4 and construction may be more costly due to the steeper and more undulating terrain. Both route options are in close proximity to existing public highways with Route Option D4 having more road crossings compared to Route Option D5. Route Option D5 has less existing access tracks which increases the length of new access track construction compared to Route Option D4. There is potential for Route Option D4 having a marginal increased capital and operational cost due to the existing Fordoun Airfield and a contamination risk associated with this existing infrastructure. Route Option D5 has a greater number of angle towers compared to Route Option D4.

Route Option D4 is the lowest cost option and is preferred primarily in relation to environmental and technical constraints.

The summary RAG Ratings for cost are shown in **Table 5.3: Cost RAG Rating Table for Section D of the OHL Route**.

Table 5.3: Cost RAG Rating Table for Section D of the OHL Route

Economic (capital)	Route D4	Route D5
Capital		
Operational		

5.3 Section E – Hurlie Substation to Rickarton

5.3.1 Introduction

Tables 5.4 to 5.6 present a summary of the main environmental, technical and cost considerations based on the appraisal following SSEN Transmission’s Routeing Guidance and the findings of the comparative appraisal of Route Options E2 and E3 in Section E.

Appendix B presents the baseline constraints and the findings of the appraisal of key environmental and technical considerations for Section E route options.

5.3.2 Environment

From an environmental perspective, both route options are considered to be broadly comparable with similar levels of constraint for criteria considered in relation to Natural Heritage, People, Landscape and Visual, Land Use and Planning considerations.

Route Option E2 is slightly more constrained by national natural heritage designations due to the presence of a strip of woodland classed as ‘Ancient (of semi-natural origin)’ on the Scottish Ancient Woodland Inventory (AWI) which spans the centre of the route option. Both route options abut the boundary of the Mergie Local Nature Conservation Site (LNCS). In relation to ornithological considerations, both route options are constrained due to the potential for presence of Schedule 1 bird species at the southern sections of route options at the point where they connect with Hurlie Substation (in Fetteresso Forest).

In relation to proximity to residential properties, both route options are partly constrained due to residential properties and the potential for an OHL to be sited within 200 m of dwellings which is within the range of two to four times the nominal height of the OHL towers.

Both route options are constrained by landscape character considerations due to the presence of characteristic elements within the landscape which increase their sensitivity to development, in particular in the valley of the Cowie Water which is crossed by both options and the Hill of Pitspunkie in Route Option E2. In addition, both routes are constrained by visual considerations, particularly associated with visual amenity for scattered residential properties and users of the road network, including the A957 and minor roads.

From a land use perspective, Route Option E3 is significantly more constrained by commercial forestry. Although both route options would need to traverse sections of Fetteresso Forest, an existing high voltage OHL to the immediate west of Route Option E2 provides opportunity for an alignment to follow a wayleave and cleared corridor through the forest adjacent to the existing OHL infrastructure. The forested areas within Route Option E3 are largely untouched by infrastructure, and as such an OHL alignment would have a greater impact on the forestry operations in this area.

In terms of planning, both route options have some potential to be contrary to LDP and NPF4 policies, but no significant development planning proposals have been identified in either route.

On balance, from an environmental perspective, **Route Option E2** is the preferred route. The summary RAG Ratings for environmental considerations are shown in **Table 5.4: Environmental RAG Rating Table for Section E of the OHL Route**.

Table 5.4: Environmental RAG Rating Table for Section E of the OHL Route

Topic	Criteria	Sub-Criteria	Route E2	Route E3
Natural Heritage	Designations	International, European or National	Yellow	Green
		Regional	Green	Green
	Protected Species	European Protected Species (EPS)	Green	Green
		UK Biodiversity Action Plan (UKBAP)	Green	Green
		Other Protected and Notable Species	Green	Green
	Habitats	Annex 1	Green	Green
		Groundwater Dependent Terrestrial Ecosystem (GWDTE)	Green	Green
		Biodiversity	Green	Green
	Ornithology	Designations	Green	Green
		Schedule 1 Birds	Yellow	Yellow
		Birds of Conservation Concern (BoCC)	Green	Green
	Geology, Hydrology, Hydrogeology	Surface and Groundwater Drinking Water Protected Area (SG DWPA)	Green	Green
		Aquifer providing regional / local resources	Green	Green
Surface waters or aquifer for agricultural use or industrial use		Green	Green	
Cultural Heritage	Designations	World Heritage Sites (WHS), Scheduled Monuments (SM), Inventory Garden and Designed Landscape (GDL), Inventory Battlefields	Green	Green
		Sites and Monument (SMR) Entries	Green	Green
	Cultural Heritage Assets	Listed Buildings, Non-Inventory Designed Landscape (NIDL), Conservation Areas	Green	Green
People	Proximity to dwellings	Residential Properties and other sensitive receptors	Yellow	Yellow
Landscape and Visual	Designations	National, regional, local	Green	Green
	Landscape Character	Landscape character in published character assessments	Yellow	Yellow
	Visual Amenity	Properties, transport and recreational routes, vantage points	Yellow	Yellow
Land Use	Agriculture	Agricultural Land Classification (ALC)	Green	Green
	Forestry	Commercial Forestry	Yellow	Red
	Recreation	Paths and Tourism	Green	Green
		Highland Sports (Fishing)	Green	Green
Planning	Policy	National, regional, local policy	Yellow	Yellow
	Proposals	Projects known to the planning system	Green	Green

5.3.3 Technical

From a technical perspective, both route options are constrained by major crossings and metallic pipes due to the requirement to cross the A957 public road and one gas pipeline. Route Option E3 is more constrained by minor roads due to the crossing of one minor road whereas Route Option E2 crosses no B class or minor roads.

Although elevation provides a constraint to some extent for both route options, Route Option E2 is considered to be slightly more constrained due to the higher elevations which the route would cross through, although it should be noted that the elevation is within the capabilities of the selected tower suite ASTI SSE400 and is therefore not a key determining criteria for the options.

Route Option E3 requires a greater number of angle towers including one sharp angle tower, required largely to avoid residential properties.

Route Option E2 is constrained by wind farms due to the proximity of the consented Craigneill Hill Wind Farm to the north of the route option, although it should be noted that the wind farm lies outwith the route option boundary.

On balance, both routes are considered to be technically feasible and have a similar level of constraint but **Route Option E2** is preferred from a technical perspective as it has the opportunity to utilise the operational corridor of existing OHL infrastructure (XS1/XS2), aiming to minimise the amount of new infrastructure in new locations. The summary RAG Ratings for technical considerations are shown in **Table 5.5: Technical RAG Rating Table for Section E of the OHL Route**.

Table 5.5: Technical RAG Rating Table for Section E of the OHL Route

Criteria	Sub-Criteria	Route E2	Route E3
Infrastructure Crossing	Major crossings	Red	Red
	Minor Roads	Green	Yellow
Environmental Design	Elevation	Red	Red
	Contaminated Land	Green	Green
	Flooding	Green	Green
Ground Conditions	Terrain	Green	Green
	Peatland	Green	Green
Construction / Maintenance	Access	Green	Green
	Angle Towers	Green	Yellow
Proximity	Clearance Distance	Green	Green
	Windfarms	Yellow	Green
	Communication Masts	Green	Green
	Urban Developments	Green	Green
	Metallic Pipes	Yellow	Yellow

5.3.4 Cost

Route Option E2 is the lowest cost option compared to Route Option E3 which is within 5% of the costs of Route Option E2. Both route options are of similar length and the proximity to existing public highways is similar for both route options. The terrain in both routes is challenging due to steep and undulating terrain and similar for each route option. Both route options have similar infrastructure crossing requirements. There are no features on any specific route that would drive a higher operational cost.

Route Option E2 is preferred for environmental and technical reasons as well as being the lowest cost option.

The summary RAG Ratings for Cost considerations are shown in **Table 5.6: Cost RAG Rating Table for Section E of the OHL Route**.

Table 5.6: Cost RAG Rating Table for Section E of the OHL Route

Economic (capital)	Route E2	Route E3
Capital		
Operational		

5.4 Selection of Preferred Routes

5.4.1 Introduction

The selection of the Preferred Route is achieved by consideration of the Preferred Option identified for each Section and how these may combine to form a preferred route overall. The selection of the Preferred Route takes account of the appraisals presented in Sections 5.2 and 5.3 and a summary of the overall Preferred Route is presented below.

The Preferred Route into and out of the proposed Hurlie 400 kV Substation connects from the previous Preferred Route C1 to the south and connects into the northern part of the Preferred Route Option E1 (to the north) as shown on **Figure 5.15**.

5.4.2 Section D - Laurencekirk to Hurlie Substation

Two new route options were considered and appraised in this section: Route Option D4 and Route Option D5.

There are relatively few key differences between the two route options in terms of environmental, technical and cost criteria but on balance, **Route Option D4** is the preferred option.

With respect to environmental criteria, both routes are considered to be comparable. Route Option D4 is slightly more constrained by proximity to residential dwellings, however, Route Option D5 is constrained to a greater extent by natural heritage designations, landscape designations and cultural heritage designations. It is considered that Route Option D5 may compromise the conservation status of the Strathfinella LNCS, the special qualities of the Braes of the Mearns SLA and the setting of the Auchenblae Conservation Area through which part of the route option passes.

With respect to technical criteria, Route Option D5 is considered to have a marginally lower risk of technical constraints particularly the ability to maintain further distance from residential properties, maintaining minimum separation distances to wind turbines and avoiding potential contaminated land risk at the former RAF Fordoun site.

With respect to cost considerations, Route Option D4 is likely to be the lower cost option but broadly comparable to Route Option D5. However, the environmental and technical considerations noted above are the key drivers of route preference.

5.4.3 Section E – Hurlie Substation to Rickarton

Two new route options were considered and appraised in this section: Route Option E2 and Route Option E3. There are relatively few key differences between the two route options in terms of environmental, technical and cost criteria but on balance, **Route Option E2** is the preferred option.

With respect to environmental criteria, both routes are considered to be largely comparable. Route Option E2 is more constrained due to the requirement to cross a natural heritage designation as a small strip of Ancient Woodland is located within the centre of the route. Route Option E3 is more constrained for land use due to the extent and areas of commercial forestry present within the route option at Fetteresso Forest. Route Option E3 is considered to be slightly less preferred on balance to Route Option E2 because the commercial viability of the forestry operations could be compromised.

With respect to technical criteria, Route Option E2 is considered to have a lower risk of technical constraint along the route. Route Option E2 is slightly more constrained by the elevation of the land, but Route Option E3 is more constrained by the number of minor roads to be crossed and the number of angle towers that will be required.

With respect to cost considerations, Route Option E2 is likely to be the lower cost option but broadly comparable to Route Option E3. However, the environmental and technical considerations noted above are the key drivers of route preference.

6. NEW ROUTE IN SECTION F

6.1 Introduction

This chapter provides a summary of the new Route Option F1.3 and the key considerations from an appraisal of constraints for the environmental, technical and cost criteria used in SSEN Transmission's Routeing Guidance. The following figures accompany the text in this chapter and illustrate environmental baseline constraints identified under each key topic considered.

- **Figures 6.1 to 6.7** illustrate constraints for the route options in Section F1.3.

Appendix C presents the baseline constraints and the findings of the appraisal of environmental and technical considerations for the new F1.3 route option.

6.2 Description of Route Option F1.3

Following the public and stakeholder consultation in May 2023, a review of all route options in Sections A to F was undertaken by SSEN Transmission. The review was undertaken to check that all relevant consultation feedback and additional information about the constraints within each route option, including findings from further field surveys, was fully considered.

At the May 2023 consultation, Route Option F1 was presented as the preferred option for Section F primarily since it avoided Park House GDL and Loch of Park SSSI and was located further from a designated cultural heritage site at Barmekin of Echt Hillfort. There was also a slight preference on landscape grounds for an eastern route option which was considered to be less constrained by areas of woodland.

Consultation feedback on Route Option F1 included concerns raised regarding the number and density of properties in the route option which passes the western edge of a number of large settlements at Peterculter, Westhill and Kirkton of Skene and where there is potential for cumulation of constraints with other existing OHLs. A key area with several environmental and land use constraints was identified in the vicinity of Drumoak Church relating to residential properties, designated cultural heritage sites and the proximity of existing OHL infrastructure. The proximity of the northern end of Route Option F1 to the Loch of Skene (which is designated as an SPA / Ramsar / SSSI site for its bird interests of international significance) was also raised as a concern in responses from some consultees due to the potential for effects on the protected wildfowl species which over winter at the loch.

Following analysis of the consultation feedback, a re-appraisal of key constraints and issues identified was undertaken. This took account of further information from field surveys (covering landscape, hydrology and ecology) and further consultation with statutory consultees in relation to cultural heritage constraints associated with the principal route options in Section F. The information was mapped digitally using the identification and selection methods outlined in **Section 3.3** and a section of new route was identified and developed which was considered to have potentially less overall environmental and technical constraint than Route Option F1. This new route option (named Route Option F1.3) combines elements of the southern section of the previously preferred Route Option F1 (where it crosses the River Dee) with a significant section of Route Option F2 by following a new 'joining' section of route which connects the two former options.

The new Route Option F1.3 is shown on **Figure 4.3**. It enables a crossing of the River Dee (SAC and LNCS) which is close to the crossing point for Route Option F1, but which helps to avoid constraints associated with cultural heritage designations at and near Drumoak Church. The river crossing area for Route Option F1.3 also avoids directly crossing Park House GDL and the Loch of Park SSSI which are associated with the western route options (Route Options F2 and F2.1 as presented during the May 2023 consultation and as shown on **Figure 1.1**).

A route following Route Option F1.3 is considered to have fewer environmental and land use constraints than the previously preferred option. Key differences include those in the locations listed below.

- The crossing of the River Dee to the west of Drumoak Church would help to avoid listed buildings and scheduled monuments and properties in what is a very constrained location. A crossing to the west of the church would also span a narrower section of the flood risk area associated with the River Dee.

- Maintaining a river crossing downstream of Drumoak allows the position of the OHL route to be maintained from previous consultation and to pass through the eastern edge of the Dee Valley Special Landscape Area (SLA).
- As noted above, the river crossing location for Route Option F1.3 would avoid passing through designated areas at the Loch of Park SSSI and Park House GDL which significantly constrain the southern part of the western route options (F2 and F2.1). This area is also constrained by a quarry which has planning consent for extension.
- North of Drumoak, Route Option F1.3 would pass to the southwest of Drum Castle GDL which would help to avoid constraints associated with the setting of the castle and the area of woodland to the west of the GDL.
- In the central part of Section F, following Route Option F1.3 would help to avoid areas important for protected birds (including raptor species) and would avoid land close to the western edge of populous communities at Westhill and Peterculter which includes areas used by the community for amenity and recreation. Route Option F1.3 would also avoid passing through part of the Aberdeen Green Belt.
- The updated route option would also facilitate an OHL alignment at a greater distance from the Loch of Skene which is a designated SPA / Ramsar / SSSI site than for the eastern route option (Route Option F1) as collision risk with designated bird species (particularly wintering geese) is a key constraint.

In general terms, Route Option F1.3 is also considered to have fewer locations with property constraints than Route Option F1 in providing a connection through the whole of section F. Route Option F1.3 passes in proximity to the settlements of Drumoak and Echt but it avoids the constrained areas associated with Route Option F1 at Cairnton, Woodside, Mid Anguston and at Kirkton of Skene where the route is also constrained by proximity to listed buildings, an existing OHL and the Loch of Skene.

Figures 6.1 to 6.7 illustrate the environmental baseline constraints identified under each topic considered for Route Option F1.3. The figures are presented as: Ecology constraints; Hydrology constraints; Cultural Heritage constraints; Landscape constraints; and Land Use Constraints.

From a technical perspective, Route Option F1.3 avoids the wide flood extents associated with the Leuchar Burn which constrain the routes to the east of the Loch of Skene (Route Options F1 and F1.1). Route Option F1.3 would also avoid the larger settlements of Peterculter and Westhill which are located in relatively close proximity to the eastern route options. Route Option F1.3 also minimises the interface with existing gas transmission pipelines.

Route Option F1.3 also relieves some of the technical constraints when crossing the River Dee in comparison to the other proposed routes. In practice this is likely to mean a reduced number of, and size of, angle towers to navigate these constraints.

6.3 Appraisal of Route Option F1.3

6.3.1 Introduction

This section presents a summary of the main environmental, technical and cost considerations which have been appraised following SSEN Transmission's Routing Guidance and the findings of the appraisal of new Route Option F1.3.

6.3.2 Environment

Route Option F1.3 is constrained by natural heritage designations in relation to the crossing of the River Dee (a statutory European designated SAC site) and the presence of some areas of LEPO woodland within the route option. The River Dee Local Nature Conservation Site (LNCS) and the River Dee Corridor LNCS (regionally designated sites) are coincident with the River Dee SAC and represent a constraint in the southern section of the route option. However, these sites would need to be crossed by any OHL route option in Section F.

From a cultural heritage perspective, Route Option F1.3 is constrained by a number of designations that lie within the route option or in close proximity to the route option boundary which may compromise the setting of key assets including Drum Castle GDL and scheduled monuments at Normandykes Roman Camp, and Bogton Cairn, Field System and Trackway in the area to the north of the River Dee crossing.

Route Option F1.3 passes in proximity to the village of Drumoak and there are a number of individual and small groups of residential properties which form a constraint where they would reduce the available route width for the future development of an OHL alignment.

In relation to Landscape and Visual constraints, Route Option F1.3 is constrained by the Dee Valley Special Landscape Area (SLA), although this is crossed by all route options in Section F. Route Option F1.3 is located within the Broad Wooded and Farmed Valley Landscape Character Type (LCT) and so is constrained by the potential to compromise a number of characteristic elements which contribute to landscape character, including areas of native woodland. In common with the other options in Section F, the route is also constrained by visual amenity considerations particularly where it is proximate to residential properties, including around the northern edge of the settlement of Drumoak and where the route option crosses a number of core paths and the National Cycle Network (NCN) 195.

Consideration of Land Use issues has identified that Route Option F1.3 is constrained by the presence of commercial forestry whereby the route option, may cross close to, or within the edge of, a number of woodland areas with commercial forestry. Some woodland felling may be required to create an OHL corridor in some areas, particularly through Coldstream Plantation although this area has been recently cleared of woodland.

In terms of Planning, Route Option F1.3 has some potential to be contrary to LDP designations and LDP and NPF4 policies. No significant constraints from planning proposals have been identified in the route option area. The summary RAG Ratings for environmental considerations are set out in **Table 6.1: Environmental RAG Rating Table for Route Option F1.3 of the OHL Route.**

Table 6.1 Environmental RAG Rating Table for Route Option F1.3

Topic	Criteria	Sub-Criteria	Route F1.3
Natural Heritage	Designations	International, European or National	Yellow
		Regional	Yellow
	Protected Species	European Protected Species (EPS)	Green
		UK Biodiversity Action Plan (UKBAP)	Green
		Other Protected and Notable Species	Green
	Habitats	Annex 1	Green
		Groundwater Dependent Terrestrial Ecosystem (GWDTE)	Green
		Biodiversity	Green
	Ornithology	Designations	Yellow
		Schedule 1 Birds	Yellow
		Birds of Conservation Concern (BoCC)	Green
	Geology, Hydrology, Hydrogeology	Surface and Groundwater Drinking Water Protected Area (SG DWPA)	Green
		Aquifer providing regional / local resources	Green
Surface waters or aquifer for agricultural use or industrial use		Green	
Cultural Heritage	Designations	World Heritage Site (WHS), Scheduled Monument (SM), Inventory Garden and Designed Landscape (GDL), Inventory Battlefield	Yellow
		Sites and Monument (SMR) Entries	Green
	Cultural Heritage Assets	Listed Buildings, Non-Inventory Designed Landscape (NIDL), Conservation Areas	Yellow

Topic	Criteria	Sub-Criteria	Route F1.3
People	Proximity to dwellings	Residential Properties and other sensitive receptors	
Landscape and Visual	Designations	National, regional, local	
	Landscape Character	Landscape character in published character assessments	
	Visual Amenity	Properties, transport and recreational routes, vantage points	
Land Use	Agriculture	Agricultural Land Classification (ALC)	
	Forestry	Commercial Forestry	
	Recreation	Paths and Tourism	
		Highland Sports (Fishing)	
Planning	Policy	National, regional, local policy	
	Proposals	Projects known to the planning system	

6.3.3 Technical

Route Option F1.3 is technically constrained in similar ways to Route Options F1 and F2, particularly surrounding the River Dee crossing and proximity to the edge of the community at Drumoak. This section of the route is required to cross the River Dee, B9077, A93 and runs in parallel to and crosses multiple gas pipelines. These constraints may result in a large number of angle towers being required to navigate through them when determining an alignment and angle positions. It should be noted that all of the proposed route options in this section experience similar constraints when crossing the River Dee.

Route F1.3 is constrained by clearance distances to residential properties near Drumoak.

The route is also slightly constrained by a communications mast within the central area of Route Option F1.3.

In comparison to F1 and F1.2, Route Option F1.3 has a reduced interface with major gas pipelines, therefore reducing potential induced voltage risk and the need for design mitigation.

The summary RAG Ratings for technical considerations are shown in **Table 6.2 Technical RAG Rating Table for Route Option F1.3 of the OHL Route**.

Table 6.2 Technical RAG Rating Table for Route Option F1.3 of the OHL Route

Topic	Criteria	Sub-Criteria	Route F1.3
Technical	Infrastructure Crossing	Major crossings	
		Minor Roads	
	Environmental Design	Elevation	
		Contaminated Land	
		Flooding	
	Ground Conditions	Terrain	
		Peatland	
	Construction / Maintenance	Access	
		Angle Towers	
	Proximity	Clearance Distance	
		Windfarms	
		Communication Masts	

Topic	Criteria	Sub-Criteria	Route F1.3
		Urban Developments	
		Metallic Pipes	

6.3.4 Cost

There is no constraint or feature of Route Option F1.3 that is likely to drive a higher capital or maintenance cost. The length and extent of required woodland felling is broadly comparable to the other route options in Section F. The primary drivers for changing the preferred route are driven by environmental and technical constraints. Cost is not considered a key constraint or driver in selecting Route Option F1.3.

Cost appraisal is comparative between options and as there is only a single route option under consideration there is no corresponding RAG Rating for Route Option F1.3.

7. CONSULTATION ON THE PROPOSALS

SSEN Transmission places great importance on, and is committed to, consultation and engagement with all parties, or stakeholders, likely to have an interest in proposals for new projects such as this. Stakeholder consultation and engagement is an essential part of an effective development process.

7.1 Questions for Consideration by Consultees

When providing your comments and feedback, SSEN Transmission would be grateful for your consideration of the questions below:

- Which consultation event did you attend?
- Did you find the event was helpful and informative?
- Is there a specific route of the Kintore to Tealing 400 kV OHL that you are interested in?
- 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.
- 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.
- Are you satisfied that our approach taken to select our new routes options have been adequately explained? If not, please let us know if there is any additional information which you would like us to provide.
- Do you agree with our preferred OHL route?
- Are there any factors, or environmental features, that you think require further consideration during the preferred OHL route selection process?
- Do you have any ideas for biodiversity enhancement projects in your local area that SSEN Transmission could get involved with? If yes, please provide further information in the comments section below.
- Do you have any other comments you would like the project team to be made aware of?
- Overall, how do you feel about the Kintore - Tealing 400 kV Scheme?

7.2 Next Steps

Consultation events will be held as detailed in the preface of this document. The responses received from these consultation events, and those sought from statutory consultees and other key stakeholders, will be considered before the Proposed Route is confirmed in Sections D, E and F.

All comments are requested by **30 April 2024**. A Report on Consultation (RoC) will be published after the consultation period has ended, which will document the consultation responses received, and the decisions made by SSEN Transmission in light of these responses.

7.3 Ongoing Engagement

The period of consultation is part of an ongoing engagement process that spans the full development cycle for the project, where feedback is sought at different stages and engagement with stakeholders is continuous as SSEN Transmission refines the proposals.

Following this consultation and the publication of the associated RoC, consultation will be sought on the preferred alignment within the Proposed Route in Summer 2024.

7.3.1 Summary of Preferred and Proposed Routes

This Consultation Document has identified the following as SSEN Transmission's Preferred Routes in Sections D, E (in part) and F of the Kintore to Tealing OHL corridor:

- Following the identification and appraisal of route options summarised in this Consultation Document, **Route Option D4** is the Preferred Route to connect from the north end of Route Option C1 near Laurencekirk to the site of the proposed new substation at Hurlie in Fetteresso Forest.

- Further to the identification and appraisal of route options summarised in this report, **Route Option E2** is the Preferred Route to connect from Hurlie Substation to Route Option E1 near Rickarton.
- **Route Option F1.3** is a new Route Option for Section F which has been identified following consultation feedback and route constraints and options appraisal reviews. This new route will combine with elements of the previously preferred Route Option F1 with parts of Route Option F2 to provide a continuous route through Section F of the OHL corridor. Route Option F1.3 is the preferred option in Section F which is considered on balance to have less overall environmental and technical constraint than the options previously appraised in this section.

In the other sections of the OHL corridor, the Proposed Routes to be taken forward to alignment, as set out in our November 2023 Report on Consultation (published in December 2023³²) are as follows:

- **Route Option A1.** This is the previously preferred route option for Section A with no proposed changes. This is because the information and responses provided and our subsequent review has not identified that any of the other route options would be less constrained from an environmental, community or technical perspective.
- **Route Option B1.1.** This is a new preferred route for Section B which has been confirmed following consultation feedback and route appraisal reviews. Route Option B1.1 is an existing route option which was presented at the May 2023 consultation. In response to community feedback this route option has been widened at Padanaram, taking the OHL further away from this village. It was considered that Route Option B1.1 had slightly less environmental and property constraint overall than Route Option B1 and has greater potential to avoid proximity to the River South Esk SAC and other areas of flood risk associated with watercourses. On balance across environmental, technical and cost considerations B1.1 represents the preferred option in Section B.
- **Route Option C1.** This is the previously preferred route option for Section C with no proposed changes. This is because the information and responses provided and our subsequent review has not identified that any of the other route options would be less constrained from an environmental, community or technical perspective.
- **Route Option E1.** This is a revised route option for Section E which includes only the northern section of the previously preferred Route Option E1. The proposed route option now runs from the point where the new Route Options E2 and E3 connect to Route Option E1 near Rickarton to the location where Route Option E1 connects to the new Route Option F1.3 at Craiglug just south of the River Dee. The northern part of Route Option E1 is the previously preferred route with no proposed changes. This is because the information and responses provided and our subsequent review has not identified that any of the other route options would be less constrained from an environmental, community or technical perspective.

³² SSEN Transmission (2023). Kintore to Tealing 400 kV Overhead Line. Report on Consultation. Available [online]: [report-on-consultation---kintore-to-tealing-400kv-ohl.pdf](https://www.ssen-transmission.co.uk/report-on-consultation---kintore-to-tealing-400kv-ohl.pdf) (ssen-transmission.co.uk)

GLOSSARY

Term	Definition
400 kV	400 kilovolt (400,000 volt) operating voltage electrical circuit.
Alignment	A centre line of an overhead line OHL, along with location of key angle structures.
Amenity	The natural environment, cultural heritage, landscape and visual quality. Also includes the impact of SSEN Transmission's works on communities, such as the effects of noise and disturbance from construction activities.
Ancient Woodland	In Scotland, Ancient Woodland are areas of woodland that have existed since 1750 and are relatively undisturbed by human development. They are considered irreplaceable and have complex biodiversity that have accumulated over hundreds of years.
Ancient Woodland Inventory (AWI)	AWI is a provisional guide to the location of Ancient Woodland. It contains three main categories of woodland, all of which are likely to be of value for their biodiversity and cultural value. These include Ancient Woodland, Long-established woodlands of plantation origin (LEPO), and other woodlands.
Angle Tower	Support structure (tower or pole) which allows a change in direction of the overhead line.
Biodiversity Net Gain (BNG)	Biodiversity Net Gain (BNG) is an approach to development that aims to leave the natural environment in a measurably better state than it was pre-development. It focuses on the change in the biodiversity value of a site, comparing the pre and post construction biodiversity values to ensure a positive impact overall.
Birds of Conservation Concern (BoCC)	Birds of Conservation Concern (BoCC) provides the status of all regularly occurring birds in the UK, Channel Islands and Isle of Man. The current version is BoCC 5. Birds of highest conservation concern will appear on the Red List.
Centre Line	The linear connection between the central point of each support structure along the length of the overhead line.
Circuit	Overhead line or underground cable consisting of multiple conductors, to carry electric current.
Class 1 and Class 2 Peatland	Class 1 – Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas likely to be of high conservation value. Class 2 – Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas of potentially high conservation value and restoration potential.
Communities	Those stakeholders (organisations and individuals including residents) with a particular remit or interest in the local area affected by the works.
Conductor	A metallic wire strung from structure to structure, to carry electric current.
Consultation	The dynamic process of dialogue between individuals or groups, based on a genuine exchange of views and, normally, with the objective of influencing decisions, policies or programmes of action.
Contaminated Land	Land contaminated by harmful substances including Unexploded Ordnance (UXO).
Corridor	A linear area which allows a continuous connection between the defined connection points. The corridor may vary in width along its length; in unconstrained areas it may be many kilometres wide.
Corridor (preferred)	A corridor for the overhead line taken forward to stakeholder consultation following a comparative appraisal of corridor options.
Corridor (proposed)	A corridor taken forward following stakeholder consultation to the route selection stage of the overhead line routeing process.

Term	Definition
Double circuit	A double circuit transmission line comprises of two independent circuits each made up of three sets of conductors (cables).
Drinking Water Protected Areas (DWPA)	The water in ditches, streams, lochs and possibly groundwater in these areas is protected and likely to be taken to Water Treatment works, where it is treated and provided to the public as drinking water.
Effect	The direct or indirect physical consequence(s) of the proposed corridor option on receptors, under each of the various topic headings.
Electricity System Operator (ESO)	National Grid is the Electricity System Operator (ESO) for Great Britain. The ESO balances electricity supply and demand to ensure the electricity supply.
Engagement	The establishment of effective relationships with individuals or groups.
Environmental Impact Assessment (EIA)	A formal process set down in The Electricity Works (EIA) (Scotland) Regulations 2000 (as amended in 2008) used to systematically identify, predict and assess the likely significant environmental impacts of a proposed project or development.
Gardens and Designed Landscapes (GDLs)	Garden and Designed Landscape, as listed on the Inventory of Gardens and Designed Landscapes held by Historic Environment Scotland. These are considered by a panel of experts to be of national importance.
General Environmental Management Plans (GEMPs)	A series of standardised construction environmental management plans produced by SSEN Transmission.
Ground Water Dependent Terrestrial Ecosystem (GWDTE)	Wetlands which critically depend on groundwater flows. They are safeguarded by the Water Framework Directive (WFD) and are sensitive to hydrological and ecological changes.
Habitat	Term most accurately meaning the place in which a species lives, but also used to describe plant communities or agglomerations of plant communities.
Heat Map	A graphical or map based output from a digital analysis of physical, technical and/or environmental constraints. Uses different colours to illustrate the relative degree of constraints.
Holford Rules	Principles used to inform the routing of overhead lines and siting of substations. Supplementary Notes for the Siting of Substations capture relevant aspect of the Holford Rules in SSEN's guidance document <i>Procedures for Routing Overhead Lines and Underground Cables of 132 kV and above</i> .
Habitats Regulations Appraisal (HRA)	Appraisal to determine whether the Proposed Development will give rise to Likely Significant Effects (LSEs) on European designated sites in line with the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland).
Kilovolt (kV)	One thousand volts.
Landscape Character Type (LCT)	A distinct, recognisable and consistent pattern of elements in a landscape that differentiate the area from another.
Long-established woodlands of plantation origin (LEPO)	NatureScot category of the Scottish Ancient Woodland Inventory. Many of these plantation sites have developed semi-natural characteristics, especially the oldest ones, which may be as rich as Ancient Woodland.
Listed Building	Building included on the list of buildings of special architectural or historic interest and afforded statutory protection under the 'Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997' and other planning legislation. Classified categories A-C(s).
Local Nature Conservation Site (LNCS)	A non-statutory designation given by local authorities to areas of locally important nature and landscapes.
Local Nature Reserve (LNR)	Areas of natural heritage that are locally important.

Term	Definition
Mitigation	Term used to indicate avoidance, remediation or alleviation of adverse impacts.
National Forestry Inventory (NFI)	A woodland data map covering all forest and woodland areas over 0.5 hectare with a minimum of 20% canopy cover, or the potential to achieve it, and a minimum width of 20 metres.
National Nature Reserve (NNR)	Areas of natural heritage that are nationally important.
National Scenic Area (NSA)	A national level designation applied to those landscapes considered to be of exceptional scenic value.
Necessary Wayleave	A wayleave granted by The Scottish Ministers under Schedule 4 of the Electricity Act 1989 on behalf of a landowner if it is deemed expedient that such a wayleave should be granted, but only sought in circumstances where that landowner will not grant a Wayleave voluntarily.
Overhead line (OHL)	An electric line installed above ground, usually supported by lattice steel towers or poles.
Planning Application	An application for planning permission under the Town and Country Planning (Scotland) Act 1997, as amended by the Planning etc. (Scotland) Act 2006. It should be noted that consent under section 37 of the Electricity Act 1989 usually carries with it a direction from the Scottish Ministers under Section 57 of the Town and Country Planning (Scotland) Act 1997 that planning permission be deemed granted.
Plantation Woodland	Woodland of any age that obviously originated from planting.
Preferred Option	The option which SSEN Transmission believes offers the appropriate balance of technical and environmental impact considerations identified through initial assessment. This is then subject to consultation with stakeholders, where local and previously unknown considerations may confirm or alter the initial preference. Once confirmed, this becomes the Proposed Option to take forward to the next stage of project development.
Properties in Care (PiC)	A collection of monuments, which define significant aspects of Scotland's history, brought into care for their long term preservation and public benefit through the Ancient Monuments and Archaeological Areas Act 1979. They are managed by Historic Environment Scotland on behalf of Scottish Ministers.
Proposed Development	The Proposed Development is taken to be the description of: the location of the development; the physical characteristics of the OHL, based on the proposed alignment and limits of deviation (LOD), including an indicative support structure (tower or pole) schedule, also specifying access arrangements and any associated construction activities and land-use requirements. The Proposed Development also comprises a description of the main characteristics of the operational development and an estimate of residues and emissions associated with both the construction and operational phases (as set out in Schedule 4 of the EIA Regulations)
RAG Rating	A Red, Amber, Green rating provided to allow for a comparison between different options being appraised.
Ramsar Site	Wetlands of international importance that have been designated for containing representative, rare or unique wetland types or for their importance in conserving biological diversity.
Riparian Woodland	Natural home for plants and animals occurring in a thin strip of land bordering a stream or river.
Route	A linear area of approximately 1 km width (although this may be narrower/wider in specific locations in response to identified pinch points / constraints), which provides a continuous connection between defined connection points.

Term	Definition
Route (preferred)	A route for the overhead line taken forward to stakeholder consultation following a comparative appraisal of route options.
Route (proposed)	A route taken forward following stakeholder consultation to the alignment selection stage of the overhead line routing process.
Routing	The work undertaken which leads to the selection of a proposed alignment, capable of being taken forward into the consenting process under Section 37 of the Electricity Act 1989.
Schedule 1 Species	Birds listed on the Schedule 1 of the Wildlife & Countryside Act 1981, of which it is an offence to intentionally or recklessly disturb at, on or near an 'active' nest.
Scheduled Monument	A monument which has been scheduled by the Scottish Ministers as being of national importance under the terms of the 'Ancient Monuments and Archaeological Areas Act 1979'.
Semi-natural Woodland	Woodland that does not obviously originate from planting. The distribution of species will generally reflect the variations in the site and the soil. Planted trees must account for less than 30% of the canopy composition
Site of Special Scientific Interest (SSSI)	A designated area of national importance for natural heritage. The aim of the SSSI network is to maintain an adequate representation of all natural and semi-natural habitats and native species across Britain.
Span	The section of overhead line between two structures.
Special Area of Conservation (SAC)	An area designated under the EC Habitats Directive to ensure that rare, endangered or vulnerable habitats or species of community interest are either maintained at or restored to a favourable conservation status.
Special Landscape Area (SLA)	Landscapes designated by local planning authorities which are considered to be of regional/local importance for their scenic qualities.
Special Protection Area (SPA)	An area designated under the Wild Birds Directive (Directive 74/409/EEC) to protect important bird habitats. Implemented under the Wildlife and Countryside Act 1981.
Species Protection Plan (SPP)	Developed to document general procedures, legislation and requirements for ensuring protection to a variety of species.
Stakeholders	Organisations and individuals who can affect or are affected by SSEN Transmission works.
Study Area	The area within which the corridor, route and alignment study takes place.
Substation	A node on the network to allow safe control of the electricity network. This could include convergence of multiple circuits, transformation of voltage or other functions to maintain and operate the electricity network.
Substation Site Area	Site area identified as necessary to deliver all the substation infrastructure requirements e.g. platform, access tracks, temporary construction area, drainage including SUDS, landscaping.
Terminal Structure	A structure (tower or pole) required where the line terminates either at a substation or at the beginning and end of an underground cable section.
The National Grid	The electricity transmission network in the Great Britain.
UK Biodiversity Action Plan (UK BAP)	The UK BAP was published in 1994 after the Convention on Biological Diversity. It summarised the most threatened species and habitats in the UK and gave detailed plans for their recovery.
Unexploded Ordnance (UXO)	Military ammunition or explosive device that has failed to function as intended.
Volts	The international unit of electric potential and electromotive force.

Term	Definition
Wayleave	A voluntary agreement entered into between a landowner upon whose land an overhead line is to be constructed and SSEN Transmission.

APPENDIX A. APPRAISAL OF NEW ROUTE OPTIONS TO HURLIE SUBSTATION (SECTION D)

This appendix presents the baseline constraints and the findings of the appraisal of key environmental, technical and cost considerations for each route option in Section D which connects to the 400 kV Hurlie Substation. Two route options are appraised – Options D4 and D5.

The appendix provides the findings of the environmental and technical comparative appraisal for each route option within Section D and details the RAG Ratings applied to each route identified under each environmental and technical topic as per SSEN Transmission's Routeing Guidance. The cost comparative appraisal is covered in the main report.

The environmental topics consider the following: natural heritage, cultural heritage, people, landscape and visual, land use and planning.

The technical topics address: infrastructure crossings, environmental design, ground conditions, construction / maintenance and proximity.

The cost topics address: capital and operational.

This appendix follows the structure:

- Environmental Appraisal
- Technical Appraisal

Environmental Appraisal
Table A1. Environmental Appraisal for Route Option D4

Topic	Constraints	Evaluation	RAG Score
Natural Heritage			
Designations	<p>International, European or National Designations</p> <p>There are no international or European designations within the route option.</p> <p>The closest statutory national designated site for natural heritage is Eslie Moss Site of Special Scientific Interest (SSSI) (NGR NO 613 702), located approximately 2.2 km west of the southern edge of the route option, northeast of Edzell (see Figure 5.1). Eslie Moss SSSI is designated for its base-rich basin mire habitat with areas of fen and fen-meadow, extensive willow carr and small birchwood.</p> <p>There are a number of non-statutory national designations within the route option comprising woodland classified as Long Established Plantation of Origin (LEPO)¹ on the Ancient Woodland Inventory (AWI)². The key areas are located at (see Figure 5.1):</p> <ul style="list-style-type: none"> • Woodland south of Crookieden (NGR NO 707 746) lies wholly within the route option and extends almost half the width of the route. This comprises upland birchwood and wet woodland on the Native Woodland Survey of Scotland (NWSS)³. • Woodland at Red Hall House (NGR NO 742 771) extends across approximately one third of the width of the route option. This woodland is listed as an unidentifiable type on the NWSS. • Two areas of woodland at Monboddo (NO 746 781) lie wholly within the route option and extend across approximately half the width of the route option. Parts of this woodland are recorded as wet woodland and lowland mixed deciduous woodland on the NWSS. 	<p>This route option has been assigned a Green RAG rating because it is unlikely to compromise the conservation status of any statutory or non-statutory international, European or national designated site and/or the conservation status of the designated features of these sites.</p> <p>There is limited potential for the route to compromise the conservation status of non-statutory nationally designated LEPO woodland. The blocks of LEPO noted can generally be avoided through overhead line (OHL) alignment. Any requirement to provide OHL wayleaves through LEPO woodland could be mitigated to some extent by selecting an OHL alignment wherever possible through the narrowest sections/outlying areas of the woodland.</p> <p>It may be possible to enhance the condition of woodland in the longer term through new planting, particularly in areas where the baseline value has been affected by commercial forestry.</p>	

¹ LEPO woodlands comprise categories 1b and 2b on the AWI. These woodlands are described by NatureScot (2021) as: “interpreted as plantation from maps of 1750 (1b) or 1860 (2b) and continuously wooded since. Many of these sites have developed semi-natural characteristics, especially the oldest ones, which may be as rich as Ancient Woodland.”

² NatureScot (2021). A guide to understanding the Scottish Ancient Woodland Inventory (AWI). Available at: <https://www.nature.scot/doc/guide-understanding-scottish-ancient-woodland-inventory-awi> [Accessed November 2023].

³ Scottish Forestry. National Woodland Survey of Scotland; https://experience.arcgis.com/experience/aa6b4ff901294dea84dcff3205d48fab?data_id=dataSource_11-17c32120a8f-layer-9%3A47205. [Accessed December 2023].

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> Woodland at Mill of Glenbervie (NGR NO 758 803) extends across approximately one quarter the width of the route option. This area is noted as a lowland mixed deciduous woodland on the NWSS. Four small areas of woodland near Cotbank (NGR NO 755 824, NO 760 824, NO 764 826 and NO 77152 83048) lie wholly within the route option with a fifth nearby woodland (NGR NO 768 825) extending across approximately one quarter the width of the route option. Only the westernmost of these woodlands is included on the NWSS; it is noted as upland birchwood. The easternmost of these (NGR NO 771 830) appears to be no longer wooded on aerial imagery. <p>Regional Designations</p> <p>There are no regionally designated sites within the route option.</p> <p>The closest Local Nature Conservation Site (LNCS) is the Elfhill LNCS located approximately 0.5 km east of the northern section of the route option at Carmont (see Figure 5.1).</p>	<p>This route option has been assigned a Green RAG rating because the route option is unlikely to compromise the conservation status of any regionally designated sites and/or the conservation status of the designated features of the site.</p>	
Protected Species	<p>European Protected Species (EPS)</p> <ul style="list-style-type: none"> Watercourses along the route, primarily the Bervie Water, are likely to be used by otter (<i>Lutra lutra</i>). Smaller watercourses and field drains are also likely to be used by this species. The closest record of otter within the last 15 years was approximately 9.9 km northwest of the route option near Bridge of Dye in 2012. Survey in 2023 recorded an otter spraint under a bridge over a field drain north of Pitarrow within the route option. Bats may be present roosting in the woodlands and trees along the route and are likely to use linear features such as treelines, hedgerows and watercourses throughout the route option for foraging and commuting. The closest record of a bat within the last 15 years was a Nathusius pipistrelle (<i>Pipistrellus nathusii</i>) approximately 1.2 km south of the route option, south of Fordoun in 2010. There is some limited potential for great crested newt (<i>Triturus cristatus</i>) to be present in non-flowing waterbodies such as ponds. Habitat suitability in 	<p>This route option has been assigned a Green RAG rating because it is unlikely to compromise the conservation status of known presence or suitable habitat for EPS.</p> <p>The route option may be constrained by the presence of EPS, but it is assumed that these areas/habitats would be avoidable and where this is not possible, suitable best practice mitigation can be applied with appropriate NatureScot licences in place.</p> <p>Pre-construction surveys will be required to determine likely presence or absence of EPS with a particular focus on key supporting habitats. Species-specific mitigation that would be required is dependent on field survey results and alignment design. It is anticipated that mitigation would be feasible, particularly where features and habitats of greater ecological potential are avoided. Mitigation will follow those methods set out in SSEN Transmission's standard Species Protection Plans (SPPs), with additional mitigation agreed and implemented where field survey data indicates a requirement.</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>northeast Scotland is considered suboptimal⁴ and the distribution of this species is limited⁵. There are no publicly available records of great crested newt within 10 km of the route option within the last 15 years.</p>	<p>It may be possible to enhance habitats for protected species (see Biodiversity below), in line with priorities identified by the North East Scotland Biodiversity Partnership⁶.</p>	
	<p>UK Biodiversity Action Plan (BAP)⁷ Species</p> <ul style="list-style-type: none"> • Pine marten (<i>Martes martes</i>) and red squirrel (<i>Sciurus vulgaris</i>) may be present in the woodlands along the route option. The nearest publicly available record of pine marten is from over 10 years ago from 2012 near East Cairnbeg, approximately 1.5 km northwest of the route option at Auchenblae. Saving Scotland's Red Squirrels online map⁸ indicates there have been sightings of red squirrel in suitable woodland habitat throughout the route option. • Water vole (<i>Arvicola amphibius</i>) records are scattered within this area. There are no publicly available records identified on the NBN Atlas^{Error! Bookmark not defined.} within 10 km, although there are records further north towards Stonehaven (north of the Bervie Water)⁹ indicating potential for presence in suitable habitat along the route option. • The route crosses the Bervie Water and Luther Water watercourses, which may have the potential for species of fish listed on the UK BAP (eg brown trout (<i>Salmo trutta</i>)). • Brown hare (<i>Lepus europaeus</i>) is likely to be present in farmland. The closest record within the last 15 years was identified approximately 1.2 km south of the route option in 2021. • Upland habitats within the route option near Glamis may be suitable for mountain hare (<i>Lepus timidus</i>). The closest record within the last 15 years was identified northwest of Glenbervie in 2021 within a 10 km grid square overlapping the route option. 	<p>This route option has been assigned a Green RAG rating because it is unlikely to compromise the conservation status or suitable habitat of UK BAP, protected or notable species.</p> <p>The route option may be constrained by the presence of UK BAP, protected and notable species in specific locations such as woodland habitats, but these areas/habitats can likely be avoided as they would not extensively constrain the route option. Pre-commencement surveys would be required to determine likely presence or absence of protected species with a particular focus on key supporting habitats. Species-specific mitigation that may be required is dependent on field survey results and alignment design.</p> <p>It is anticipated that mitigation would be feasible, particularly where features and habitats of greater ecological potential are avoided. Mitigation will follow those methods set out in SSEN Transmission's standard SPPs, with additional mitigation implemented where required by survey data.</p> <p>It may be possible to enhance habitats for UK BAP, protected and notable species (see Biodiversity below), in line with priorities identified by the North East Scotland Biodiversity Partnership.</p>	

⁴ O'Brien, D., Hall, J., Miro, A., and Wilkinson, J. (2017). Testing the validity of a commonly-used habitat suitability index at the edge of a species' range: great crested newt *Triturus cristatus* in Scotland. *Amphibia-Reptilia* 38 (2017): 265-273.

⁵ Wilkinson, J.W., Arnell, A., Driver, D. & Driver, B. (2014). Elaborating the distribution of the great crested newt in Scotland (2010-2011). Scottish Natural Heritage Commissioned Report No. 793.

⁶ North East Scotland Biodiversity Partnership: <https://www.nesbiodiversity.org.uk/>

⁷ UK BAP: <https://data.jncc.gov.uk/data/bdd8ad64-c247-4b69-ab33-19c2e0d63736/UKBAP-UKListPriorityHabitatsSpecies-V1.4-2010.xls>

⁸ Saving Scotland's Red Squirrels Online Map (2023 Data): <https://scottishsquirrels.org.uk/squirrel-sightings/>

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> • Hedgehog (<i>Erinaceus europaeus</i>) is likely to be present on woodland edges and in gardens. The closest record within 10 km of the route within the last 15 years was identified approximately 1.5 km west of the option at Auchenblae. • Reptiles such as slow worm (<i>Anguis fragilis</i>) may be present in gardens, grasslands, woodland edges and hedges. The closest record of an adder (<i>Vipera berus</i>) within 10 km of the route option within the last 15 years was identified approximately 4.4 km northwest of the route option at Clattering Bridge in 2020, while the closest common lizard was identified approximately 3.1 km north of the route option in Fetteresso Forest in 2021. • Amphibians such as common toad (<i>Bufo bufo</i>) may be present in gardens and wetland habitats. The closest record of a common toad within the last 15 years was identified approximately 1.6 km northwest near Auchenblae in 2020. <p>Other Protected and Notable Species</p> <p>There is potential for badger in areas of woodland and farmland within the route option. Records from NBN Atlas, and field data from surveys in 2023, indicate that badger (<i>Meles meles</i>) is present within 10 km of the route option.</p> <p>The route is covered by the North East Scotland Biodiversity Partnership. Water shrew (<i>Neomys fodiens</i>) is the only mammal on the list of 'locally important species', and there are no publicly available records identified on NBN Atlas within 10 km; the nearest available record is on the Cowie Water, west of Stonehaven⁹.</p>		
Habitats	<p>Annex 1 Habitats</p> <p>Desk study and field survey data indicate that the habitats along the route option are dominated by farmland comprising a mix of arable with pasture and pockets of woodland, principally of commercial forestry. There may be limited pockets of Annex 1 Habitats, particularly where there are remaining extents of semi-natural woodland.</p>	<p>This route option has been assigned a Green RAG rating because it is unlikely to compromise the conservation status of Annex 1 Habitats.</p> <p>It is unlikely that there are large areas of Annex 1 Habitats present along the route due to the intensively managed, lowland agricultural nature of the area. Desk study and field evidence indicate that semi-natural habitats are confined to relatively limited areas due to the dominant patterns of land use. If pockets of Annex 1 Habitat are present within the route option, it is</p>	

⁹ Littlewood, N., Chapman, P., Francis, I., Roberts, G., Robinson, A. and Sideris, K. (2017) Mammal Atlas of North East Scotland and the Cairngorms. NESBReC, Aberdeen. 183pp.

Topic	Constraints	Evaluation	RAG Score
		assumed that these would be avoided (or spanned) through detailed design of the OHL alignment as they would not extensively constrain the option.	
	<p>Groundwater Dependent Terrestrial Ecosystems (GWDTE)</p> <p>Desk study and field survey data indicate that the habitats along the route option are dominated by farmland comprising a mix of arable with pasture and pockets of woodland, principally of commercial forestry. There may be limited pockets of GWDTE habitats, for example small areas of marshy grasslands.</p>	<p>This route option has been assigned a Green RAG rating because it is unlikely to compromise the integrity of GWDTE habitats.</p> <p>It is unlikely that there are large extents of GWDTE within the route option due to the intensively managed, lowland agricultural nature of the habitats that dominate the route. Desk study and field evidence indicate that semi-natural habitats (and therefore potential for GWDTE) are confined to relatively limited areas due to the dominant patterns of land use. Where any pockets of GWDTE are confirmed to be present within the route option following further survey, it is assumed that these would be avoided (or spanned) through detailed design of the OHL alignment as they would not extensively constrain the route option.</p>	
	<p>Biodiversity</p> <p>The density of Biodiversity Units derived from habitats within the route option is calculated to be 7.49 BU/ha. Irreplaceable habitats are calculated to be present at a density of 0.01 BU/ha. Watercourses are present at a density of 0.22 BU/ha.</p>	<p>This route option has been assigned a Green RAG rating because this option is less than 110% of the least biodiversity units impacted option (see D5).</p> <p>Specific habitat and enhancement recommendations are dependent on field survey results and design of the OHL alignment. The option is covered by the North East Scotland Biodiversity Partnership and there may be opportunities to contribute to priorities identified in their Habitat Statements. This may include feasible actions such as:</p> <ul style="list-style-type: none"> • Consider woodland enhancement projects (eg, LEPO woodlands) to increase biodiversity value (eg through removal of INNS and/or restoration of habitats impacted by commercial forestry). • Enhance riparian habitats where the route crosses watercourses, such as the Bervie Water. 	
Ornithology	<p>Designated Sites</p> <p>The southern part of the route option is approximately 13 km from the main part of the Montrose Basin Special Protection Area (SPA) / Ramsar Site (and SSSI; Dun's Dish SSSI is 9.4 km to the south of D4) with c. 8 km of section D4 within core foraging range of the SPA. (see also 'Designations' section above). The SPA designation's qualifying interests include wintering populations of greylag goose (<i>Anser anser</i>), pink-footed goose (<i>Anser brachyrhynchus</i>), dunlin (<i>Calidris alpina</i>),</p>	<p>The route option has been assigned an Amber RAG rating as it may compromise an internationally or nationally designated area and/or the conservation status of the qualifying features of the site due to the route passing within connectivity distance (core foraging ranges) of both Montrose Basin and Fowlsheugh SPA designated features.</p> <p>The Montrose Basin SPA represents a potential constraint for the route option with likely significant effects (LSE) predicted for key qualifying</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>knot (<i>Calidris canutus</i>), oystercatcher (<i>Haematopus ostralegus</i>), redshank (<i>Tringa tetanus</i>), eider (<i>Somateria mollissima</i>), shelduck (<i>Tadorna tadorna</i>), wigeon (<i>Mareca penelope</i>) and its waterfowl assemblage.</p> <p>Pink-footed goose and greylag goose roost within the SPA but feed beyond the SPA boundaries up to a distance of 20 km. The other qualifying interests do not habitually use habitats beyond the SPA boundary. The national conservation status of pink-footed goose and greylag goose populations is considered to be favourable but both species are sensitive to operational effects of OHLs due to potential collision.</p> <p>The northern part of the route option is, at its closest point, approximately 9 km from the Fowlsheugh SPA (and SSSI) which is designated for breeding fulmar (<i>Fulmarus glacialis</i>), guillemot (<i>Uria aalge</i>), herring gull (<i>Larus argentatus</i>), kittiwake (<i>Rissa tridactyla</i>), razorbill (<i>Alca torda</i>) and its breeding seabird assemblage. At this distance, there is potential connectivity between the route option and herring gull if suitable foraging habitat occurs within the route option.</p>	<p>species, in particular wintering geese, due to potential for collision of birds with the OHL conductors, for birds making flights between the designated area and core foraging areas to the north and within the route option. Pink-footed geese are the principal species of wintering geese at the site, with greylag goose numbers having declined substantially at the SPA following a northward redistribution of their Scottish wintering population in recent years¹⁰.</p> <p>The distance between the Montrose Basin SPA and the route option, and information on the historic distribution of feeding pink-footed geese¹⁰ suggests that the constraint, in relation to collision risk, is not likely to be substantial. Further appraisal (Habitats Regulations Appraisal (HRA)) would be required to determine the potential for adverse impacts on integrity of the designated site (ie. in relation to foraging flights of the designated features to and from the SPA roost) which would be permanent (for the lifetime of the OHL). Opportunity exists to align an OHL away from frequently used feeding fields, however, these can change annually if the cropping regime alters their suitability. Given the distance from the SPA (ie over 13 km from Montrose Basin), large concentrations of geese in flight are less likely within the route option than in areas closer to the roost. Concentrations may still occur however, in association with feeding areas. Line-marking with bird diverters would be required as design mitigation in locations where conductors are likely to pose collision risk to susceptible birds. Nevertheless, in close proximity to roosts, bird divertors may be less effective when large flocks encounter poor visibility at dawn and dusk or due to weather conditions.</p> <p>Breeding herring gulls from the Fowlsheugh SPA may travel substantial distances to feed (refer to breeding large gull data in Thaxter <i>et al.</i> 2012¹¹) but habitats within the route option are unlikely to provide important food resources so substantial movements of birds through the route option are not anticipated during the breeding season (mid-April to mid-August). Foraging flocks of gulls generally occur within agricultural lands during</p>	

¹⁰ Mitchell, C. 2012. Mapping the distribution of feeding Pink-footed and Iceland Greylag Geese in Scotland. Wildfowl & Wetlands Trust / Scottish Natural Heritage Report, Slimbridge. 108pp.

¹¹ Thaxter CB, Ross-Smith VH, Bouten W, et al. Avian vulnerability to wind farm collision through the year: Insights from lesser black-backed gulls (*Larus fuscus*) tracked from multiple breeding colonies. J Appl Ecol. 2019;56:2410–2422. <https://doi.org/10.1111/1365-2664.13488>

Topic	Constraints	Evaluation	RAG Score
		<p>periods of field preparation (ploughing/following crop harvesting) which are concentrated in the Autumn and early Spring, periods when gulls from Europe join UK birds as part of a wider population unit (ie would not be considered as SPA birds). These fields provide a foraging resource that is generally limited to a time frame when the land management practices (ploughing/harvesting) are on-going. Most of the route option is further than 10.5 km from the SPA, which is the mean foraging distance for breeding herring gulls - only the northern most 3.5 km is within this distance. The entire route option is within the mean maximum foraging distance of the species, however, although regular foraging flights by SPA herring gulls are not anticipated given the timing of breeding and foraging possibilities associated with land management, and collision risk is considered to be low for breeding herring gull associated with the SPA given field use and timings of ploughing etc. Further appraisal (HRA) would be required to determine the potential for adverse impacts on the integrity of the Fowlsheugh SPA (ie in relation to the foraging flights and activity of the designated feature herring gull), which would be permanent (for the lifetime of the OHL).</p> <p>Line-marking with bird diverters will be applied as design mitigation when conductors are likely to pose collision risk to susceptible birds, notably the SPA species as outlined above. Nevertheless, bird divertors may be less effective when birds encounter poor visibility at dawn and dusk or due to weather conditions.</p>	
	<p>Schedule 1 Birds</p> <p>The route option may support populations of Schedule 1 birds. Woodland habitat may support Schedule 1 raptors including species such as osprey (<i>Pandeion haliaetus</i>), red kite (<i>Milvus milvus</i>) and goshawk (<i>Accipiter gentilis</i>). Watercourses, including rivers, streams and ditches and adjacent wetland may support Schedule 1 kingfisher (<i>Alcedo atthis</i>) and little ringed plover (<i>Charadrius dubius</i>).</p> <p>Breeding populations of Schedule 1 species may be sensitive to disturbance during construction, and during operation. Some Schedule 1 raptor species, if present (eg red kite), may be sensitive to collision impacts.</p>	<p>The route option has been RAG rated as Amber as the option has the potential to compromise the conservation status of Schedule 1 bird species or their habitats.</p> <p>The area around and within the route option is generally dominated by lowland agricultural habitat, largely comprising enclosed pasture and arable fields with hedgerows and small blocks of largely plantation woodland. This habitat is not anticipated to support large populations of Schedule 1 birds. Areas of plantation forestry within the route option may support Schedule 1 breeding birds, including raptors. As such, there is potential for disturbance/displacement and loss of breeding habitat for Schedule 1 species associated with the new OHL development.</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>Birds of Conservation Concern (BoCC)</p> <p>The route option may support populations of birds on the red and amber lists of Birds of Conservation Concern (BoCC), some of which are also on Schedule 1. Farmland areas, including arable, pasture, wet grassland and hedgerows, may support red-listed waders including lapwing (<i>Vanellus vanellus</i>), curlew (<i>Numenius Arquata</i>), oystercatcher and ringed plover (<i>Charadrius hiaticula</i>), farmland specialists like grey partridge (<i>Perdix perdix</i>), and red-listed passerines including skylark (<i>Alauda arvensis</i>), starling (<i>Sturnus vulgaris</i>), house sparrow (<i>Passer domesticus</i>), corn bunting (<i>Emberiza calandra</i>) and yellowhammer (<i>Emberiza citrinella</i>).</p> <p>Woodland patches may support red-listed species like spotted flycatcher (<i>Muscicapa striata</i>) and tree sparrow (<i>Passer montanus</i>). Wetland areas, including rivers and ditches, may support red-listed ducks and grebes. Herring gulls may also be present on farmland and wetland habitats.</p>	<p>Implementation of good practice set out in SSEN Transmission's standard SPPs would ensure that breeding attempts are safeguarded during construction. Operational constraints may arise from collision risk, but the habitats present are unlikely to support high numbers of individuals susceptible to collisions.</p> <p>The route option has been RAG rated as Green as the option is unlikely to compromise the conservation status of populations of a red or amber listed species or affect their essential breeding, passage or wintering habitat. Populations of BoCC red-listed species mainly comprise farmland and woodland passerines and low densities of breeding waders. The breeding sites of both groups will be safeguarded during construction through implementation of good practice as set out in SSEN Transmission's standard SPPs and passerines are also relatively tolerant of disturbance. The anticipated low densities of breeding waders means that any short-term potential disturbance in the construction phase will not compromise the conservation status of these populations in the region.</p>	<p>Yellow</p>
Hydrology / Geology / Hydrogeology	<p>Surface and Groundwater Drinking Water Protected Areas (DWPA)</p> <p>The entire route option is within a groundwater DWPA. There are no Drinking Water Protected Areas (Surface) within or near the route option.</p> <p>Scottish Environment Protection Agency (SEPA) CAR licence abstraction data indicates that there is one abstraction within the route option at Jacksbank Farm (NGR NO 766 832).</p> <p>Private water supply (PWS) data from Aberdeenshire Council indicates that there are two Regulated (Type A)¹² PWS sources within the route option, one which supplies five properties at Cushnie Farmhouse and Cottages (NGR NO 752 783) and the other supplies five properties including Castleton Farm and Cottages and</p>	<p>The route option has been RAG rated as Green as it is unlikely to result in water flow pathways to surface and groundwaters and is unlikely to compromise the quality and/or quantity of surface water or groundwaters which provide public supply.</p> <p>There is space within the route option to avoid PWS; and these will be avoided where possible during the design of the alignment.</p> <p>During alignment design, a minimum buffer of 50 m from infrastructure will be applied to watercourses and water features where possible, and with the implementation of construction mitigation (eg SSEN Transmission's General Environmental Management Plans (GEMPs) and following SEPA best</p>	<p>Green</p>

¹² Regulated supplies are supplies for over 50 people and/or supplies for commercial or public supplies. These were previously known as Type A supplies. All noted Type A/ Regulated supplies provided by councils were included in this criterion, as the council does not differentiate between commercial or supplies for >50 people in their data.

Topic	Constraints	Evaluation	RAG Score
	<p>Culzean House (NGR NO 758 789). Both sources are groundwater springs (see Figure 5.2).</p> <p>There are no surface water DWPA's within the route option.</p>	<p>practice guidance), it is considered that this option is unlikely to result in water flow pathways to surface and groundwaters.</p>	
	<p>Aquifers Providing Regional / Local Resources</p> <p>The aquifers within this route option are classified as moderate productivity (Class 2B) and low productivity aquifers, within which virtually all flow is through fractures and discontinuities in the bedrock. There are no highly productive aquifers within the route option.</p> <p>There are 11 known properties that are supplied by small PWS (Type B¹³) within this route option, with others just outside the route boundary and are well shown on Ordnance Survey mapping at NGR NO 786 850. Most of the Type B PWS supplies within the route option are close to or further northeast of Droop Hill, for example at Burn of Guinea (NGR NO 747 813) and Cotbank (NGR NO 763 828). Groundwater dependent habitats are not anticipated to be extensive within the route option (see Habitats, GWDTE listed above).</p>	<p>The route option has been RAG rated as Green as it is unlikely that it would result in water flow pathways to surface and groundwaters, which could affect aquifers providing regional and local resources.</p> <p>There is space within the route option to avoid PWS and GWDTE; and these will be avoided where possible during the design of the OHL alignment.</p> <p>SSEN Transmission has stringent construction mitigation measures to protect PWS and undertakes pre works, during and post works monitoring of all PWS which are close to the OHL. As such, it is considered that the quantity and quality of water supplies within the route option would not be adversely affected.</p>	
	<p>Surface Waters or Aquifer Providing Water for Agricultural or Industrial Use</p> <p>The route option is crossed by up to seven mapped watercourses that are shown on 1:50K Ordnance Survey (OS) mapping. These are:</p> <ul style="list-style-type: none"> • Black Burn (Waterbody ID 5711) which was classified by SEPA as overall 'Moderate' in 202014; • Ducat Water (Waterbody ID 5709) which was classified by SEPA as overall 'Good ecological potential' in 2020; • Luther Water (Waterbody ID 5706) which was classified by SEPA as 'Good ecological potential' in 2020; • Bervie Water (Waterbody ID 23262) which was classified by SEPA as having 'Moderate ecological potential' in 2020; 	<p>The route option has been RAG rated as Green because it is unlikely to result in water flow pathway(s) to surface and groundwaters.</p> <p>Within this route option there are seven watercourses which cross the entire width of the option. The Luther Water has a wide flood extent (ranging from 200 m to 600 m) where it is crossed by the route option. The flood risk area associated with the Luther Water could be spanned, assuming the alignment at the crossing location was located close to the centre of the route option.</p> <p>Stringing the OHL over watercourses would not affect the beds and banks of the watercourses and new watercourse crossings (eg for access tracks) would be avoided wherever possible during the alignment design. Following SEPA guidance¹⁶, all surface watercourses and waterbodies would typically be buffered by a minimum of 50 m from OHL infrastructure and construction working areas, where possible. As the route option is generally 1-2 km wide, most of the small waterbodies within the route could likely be avoided.</p>	

¹³ Type B PWS classification relates to smaller, domestic supplies

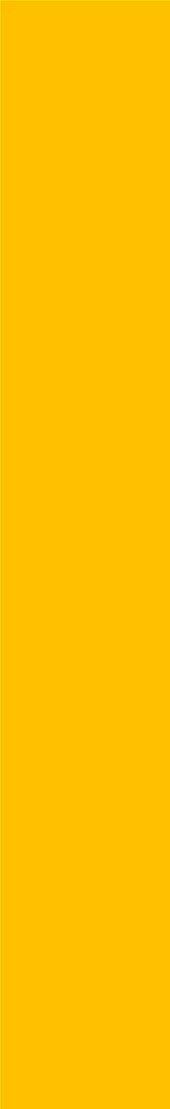
¹⁴ SEPA. Water Classification Hub. Available at: <https://www.sepa.org.uk/data-visualisation/water-classification-hub/>

¹⁶ SEPA General Scoping Guidance for Large Infrastructure Projects, appended to SEPA's pre-application consultation response to the OHL route options consultation, dated 22 June 2023

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> Carron Water (Waterbody ID 23257) which was classified by SEPA as having a 'Moderate ecological potential' in 2020; Two tributaries of the Carron Water, which were too small to be classified by SEPA. <p>The only watercourse with a large flood risk area in this route, based on SEPA Future Flood maps¹⁵, is the Luther Water south of Auchenblae (see details in Engineering Appraisal section). There are several small surface waterbodies and watercourses within the route option.</p>	<p>Mitigation measures would be incorporated into the design and construction to reduce impacts on the surface water environment, which would include best practice pollution control measures and implementation of relevant SSEN Transmission General Environmental Management Plans (GEMPs) to prevent sediment laden run-off entering the water environment, via a range of measures including sediment traps, filter trenches, silt fences, swales and settlement ponds. These are standard mitigation for preventing the potential adverse impacts of construction activities on surface water quality.</p> <p>With careful siting of infrastructure components, including appropriate buffers from water features, avoiding flood risk areas and the implementation of good practice mitigation, the remaining constraint in relation to surface waters would be reduced and the option is unlikely to result in water flow pathway(s) to surface and groundwaters or to compromise their quality and quantity.</p>	
Cultural Heritage			
Designations	<p>World Heritage Sites (WHS), Scheduled Monuments (SM), Inventory Gardens and Designed Landscapes (GDL), Inventory Battlefields</p> <p>There are no World Heritage Sites or Properties in Care within the route option, and no part of the route option crosses any Inventory Garden and Designed Landscape or Inventory Historic Battlefield. Within the route option there is one Scheduled Monument: Droop Hill, Cairns (SM 4778), of heritage value at the national level and of high sensitivity.</p> <p>There are many designated heritage assets in the wider landscape around the route option, but most are unlikely to be constraints. Two designations (Fordoun Homestead Moat (SM 2231) and Glenbervie House GDL (GDL 194)) are within 1 km of the route option and are shown on Figure 5.3.</p> <ul style="list-style-type: none"> Fordoun, Homestead Moat (SM 2231) stands 250 m from the southern boundary of the route option. The remains of the moat are currently edged by broadleaved woodland which screens views from, and to, the Scheduled Monument providing a sheltered and localised setting, and the Scheduled Monument does not represent a significant constraint. 	<p>The route option has been RAG rated as Amber as, although it would avoid direct interaction with or disturbance to any designated features, it may compromise the settings of the following designated features that lie within or in close proximity to the route option.</p> <ul style="list-style-type: none"> Glenbervie GDL (GDL 194): The exclusively rural setting of the GDL and views out from, or to and across the GDL are key aspects of its setting, contributing to its character and cultural significance. Located 470 m east of the eastern boundary of the GDL and rising over the high ground at Droop Hill, the route option could intrude into a key view (from public roads on the east side of the GDL) looking westwards across the GDL and would detract from appreciation of its current rural setting. Designing the OHL alignment (eg to the west of Droop Hill) to avoid proximity to the GDL could reduce the potential effect on its setting to a level such that it would not be a significant constraint. Droop Hill Cairns (SM 4778): The route option crosses farmland that forms part of the setting of the settlement remains and could detract 	

¹⁵ SEPA Future Flood Risk map. Available at: <https://map.sepa.org.uk/floodmaps/FloodRisk/FutureFloodMaps>

Topic	Constraints	Evaluation	RAG Score
	<p>The two designations that may constrain the route option are:</p> <ul style="list-style-type: none"> Glenbervie House GDL (GDL 194) (NGR NO 771 804): located 470 m east of the eastern edge of the route option and stands on the confluence of the Pilketty Burn and the Bervie Water. The main views from the GDL are aligned to the east overlooking parkland and out to surrounding farmland. Views out in other directions from the GDL are largely screened by mature broadleaved woodland policies. There are open views looking west across the GDL from public roads that run east of the GDL, the GDL being seen backdropped by Droop Hill in these views. Droop Hill Cairns (SM 4778) (NGR NO 755 815): located north of the Bervie Water in the approximate centre of the route option towards the north end. The monument comprises prehistoric settlement and a large spread of field clearance cairns, which may include burial cairns, extending over a large area on the summit of Droop Hill. Views from the monument are mainly directed to the south across the Glenbervie Water valley, and this forms a key aspect of its setting. Two wind turbines stand to the northwest and southeast, either side of the monument. 	<p>from appreciation of the setting where the route option crosses the valley intruding into a key view from the site across the Glenbervie Water valley. Designing the OHL alignment (to the west) to avoid proximity to the Scheduled Monument could reduce the effect on its setting to a level such that it would not be a significant constraint.</p> <p>Overall, there is scope through adoption of effective mitigation at the OHL alignment design stage to reduce the impact on designated heritage assets for this route option.</p> <p>It is uncertain taking account of other constraints whether all mitigation could be delivered therefore there is intermediate potential for the development to be constrained, hence the Amber RAG rating.</p>	
	<p>Sites and Monument Record (SMR) Entries</p> <p>There are nine archaeological sites within the route option recorded in the SMR as being of 'Regional Significance' and of medium sensitivity. The locations and extents of these are shown on Figure 5.3.</p> <p>These regionally significant assets comprise the remains of a field system and stone clearance heaps at Jacksbank (NO78SE0019), spread across the summit of Jacksbank Hill, towards the north end of the route option, two enclosures (NO77NW0029 and NO77NW0024), an unenclosed settlement (NO77NW0026) several ring ditches and souterrains (NO77NE0031), an additional ring ditch (NO77NW0032) and a possible Roman Marching Camp (NO77NW0007), all visible as cropmark sites in the central part of the route option, between Monboddo and Fourdoun, and two cropmark sites of pit alignment (NO67SE0012) and an enclosure (NO77SW0020) to the south of the Ducat Water, at the southern end of the route option.</p>	<p>The route option has been RAG rated as Green for SMR sites as there are relatively few (nine) 'Regionally Significant' sites within the route option, and it is considered that the archaeological sites identified do not represent a significant constraint for the route option and may be taken as an indication of moderate / low potential for the presence of previously unidentified archaeological / cultural heritage features.</p> <p>These heritage assets are thinly distributed along the route option and are either small in size or extent or are located at the periphery of the route option. It is considered that the constraints could be minimised through effective mitigation at the design stage (ie avoidance through siting of towers/routeing access within demarcated areas). Where direct impacts on these SMR sites cannot be avoided during the alignment design stage, constraints could be mitigated through a programme of works (ie trial trench evaluation and excavation, or watching brief) in advance of construction works to a scope agreed by the local authority.</p>	

Topic	Constraints	Evaluation	RAG Score
Cultural Heritage Assets	<p>Cultural heritage assets within the route option and within 1 km of the route option are shown on Figure 5.3.</p> <p>Within the route option there are:</p> <ul style="list-style-type: none"> Three Listed Buildings (two B Listed, of heritage value at the regional level and of medium sensitivity, and one C Listed, of heritage value at the local level and of low sensitivity). <p>There are no Category A Listed Buildings within the route option.</p> <p>There are no Non Inventory Designed Landscapes (NIDLs) within the route option. There are no Conservation Areas within the route option or within 1 km of the route option boundary.</p> <p>Listed buildings (A, B and C)</p> <p>The Listed Buildings are located within the central part of the route option between Fordoun and Monboddo.</p> <p>Two Category B Listed, Redhall House (LB 9652) (NO 743 768) and Monboddo House (LB 9643) (NO 744 782), both country houses of heritage value at the regional level and of medium sensitivity located towards the central part of the route option may be a constraint with regards to potential changes to their settings.</p> <ul style="list-style-type: none"> Redhall House (LB 9652): This country house stands northwest of Fordoun and just south of the B966. The main elevation of the House is orientated towards the east-northeast, overlooking formal gardens and out across surrounding farmland. The views from this elevation form a key aspect of its setting. Monboddo House (LB 9643): This country house stands north of the B966 and east of Auchenblae village. The main elevation of the House is orientated towards the southeast, overlooking formal gardens and out across surrounding farmland. The view from this elevation for a key aspect of its setting. Long views from the House, particularly from ground level, are generally constrained by surrounding woodland. More distant views may be gained from the upper floors. <p>There are other Listed Buildings in the wider landscape around the route option, most are unlikely to be constraints. 18 Listed Buildings (11 B Listed and seven C</p>	<p>The route option has been RAG rated as Amber as it would not directly disturb a cultural heritage asset but it may compromise the setting of the following Listed Buildings that lie within the route option.</p> <ul style="list-style-type: none"> Redhall House (LB 9652, B Listed) and Monboddo House (LB 9643, B Listed): Views out from these Listed Buildings, across formal gardens, and to the surrounding farmland are a key aspect of their settings, contributing to their cultural significance. The route option crosses farmland that forms part of the wider landscape setting of the Houses, and there is potential for the route option to be constrained in relation to key views from the Listed Buildings. Designing the OHL alignment to avoid proximity to the Listed Buildings and siting towers so that they are not in direct line of sight in key views from the Houses would be considered to reduce the extent of the constraint from the building's settings to a non-significant level. <p>Overall, there is scope through adoption of effective mitigation at the alignment design stage to route the OHL to avoid proximity to the cultural heritage assets, affected by this route option, to reduce the potential impacts.</p> <p>It is uncertain taking account of other constraints whether all mitigation could be delivered therefore there is an intermediate potential for the development to be constrained, hence the Amber RAG rating.</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>Listed) lie within 1 km of the route option boundary and are shown on Figure 5.3. The Listed Buildings are thinly scattered within the 1 km buffer, except for a small area around Glenbervie (NO 767 805). They comprise largely of small residential properties (ie farmsteads), small parish kirks, agricultural buildings (ie dovecots and mills) and bridges; all of which have generally localised settings and are not significant constraints.</p>		
Proximity to Dwellings			
Residential Properties and other sensitive receptors	<p>The route option extends for a length of approximately 20 km and passes around or close to a number of settlements including (from south to north) Fordoun, Monboddo and Glenbervie. Individual residential properties and small settlements within the route boundary form a constraint to OHL development where they reduce the available route width to develop an alignment resulting in 'pinch points' between residential properties and/or other constraints.</p> <p>There are two locations through the route where concentrations and distribution of dwellings constrains the route in this way:</p> <ul style="list-style-type: none"> to the northwest of Fordoun between Red Hall and Pittengardner. to the east of Auchenblae around Monboddo. 	<p>The route option has been RAG rated as Amber to reflect that in a number of more constrained areas, development of an OHL alignment may require location of the infrastructure to be within approximately 200 m of dwellings (which is within the range of two to four times the nominal height of the OHL towers).</p> <p>At the routeing stage it is not possible to be fully definitive with respect to the distances that the OHL can be maintained from individual residential properties. In the constrained locations identified around some settlements in the route, detailed alignment work may require the OHL to be located less than 200 m from dwellings. This could have implications for amenity issues associated with general proximity to electricity infrastructure. Mitigation through optimal alignment to maximise set back from dwellings taking account of other constraints would be deployed.</p> <p>The area to the northwest of Fordoun at Red Hall and Pittengardner is considered the most constrained in this route as there are residential properties across much of the width of the route. There is a narrow gap between properties that an OHL could be aligned through to maintain distances of more than two times the OHL tower height. This potential alignment has been assumed in the appraisal of constraint presented here.</p>	
Landscape & Visual			
Designations	<p>The route option does not cross any designated landscapes however the Braes of the Mearns Special Landscape Area (SLA) is located approximately 1 km to the northwest of the route option at its closest point (see Figure 5.4). Aberdeenshire Council's Local Development Plan (2022), Appendix 13: Aberdeenshire Special</p>	<p>The route option has been RAG rated as Green as it is unlikely to compromise the special qualities of the Braes of the Mearns SLA. The route option does not cross the SLA. At its closest point, approximately 500 m of the route option is located approximately 1 km from the SLA.</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>Landscape Areas¹⁷ lists the following ‘aspects and features’ (equivalent to special qualities) that are recognised through the SLA designation:</p> <ul style="list-style-type: none"> • Strong contrast between the distinctive flat Howe and the dramatic ridge of the Mounth to the north. • Clear expression of the Highland Boundary Fault, where Highland and Lowland Scotland meet. • Intact historic farmed landscape of the Howe of the Mearns, with a strong structure of beech woodland and avenues along the foot of the slopes. • Highly visible ridge viewed from across the landscape to the southeast, including from the A90, which defines the Howe of the Mearns. • Cairn o’ Mount’s scenic viewpoint is a popular stopping place on the former old military road with views across the Howe and remains of Bronze Age burial cairns, which give the spot its name. There are also views inland to the Cairngorms and northwards. • Strath Finella, an intimate wooded glen leading into the hills. • Wooded estate landscapes including Fasque, Fettercairn and Drumtochty whose distinctive policies and tree belts give a richness and cultural diversity, which reinforces the contrast of landscape character with the simplicity of land cover of the adjacent uplands. They also have historical connections with national figures such as Gladstone. • Well known literary associations of the Howe of the Mearns including the work of Lewis Grassic Gibbon. 	<p>There is potential for an OHL in this route to compromise the wider setting of the SLA where the 500 m length of the OHL is located at a distance of approximately 1 km from the SLA. This limits the level to which proximity to the SLA is a constraint. The special qualities of the SLA, including scenic views across the Howe of the Mearns, are unlikely to be compromised at distances of 1km and over. The level of constraint arising from proximity to the designated area is therefore low.</p>	
Landscape Character	<p>The southern part of the route option extends across the Howe of the Mearns within Strathmore and Mearns, (Broad Valley Lowland Landscape Character Type (LCT)) and the northern part of the route extends across the Mounth landscape area (Coastal Farmed Ridges and Hills LCT) (see Figure 5.5). These areas are defined by NatureScot’s Landscapes of Scotland (2012)¹⁸ and Nature Scot’s 2019 national dataset of LCTs¹⁹.</p>	<p>The route option has been RAG rated as Amber as an OHL in this route may compromise characteristic elements that contribute to landscape character. Areas of constraint are considered where an OHL passes through or over key features that contribute to landscape character or where the OHL would be highly prominent within the landscape.</p>	

¹⁷ Aberdeenshire Council (2022) Aberdeenshire Local Development Plan - October 2022 – Appendix 13 Aberdeenshire Special Landscape Areas. Available at: <https://online.aberdeenshire.gov.uk/ldpmedia/LDP2021/Appendix13AberdeenshireSpecialLandscapeAreas.pdf>

¹⁸ NatureScot. (2024). Landscape variety in Scotland. Available at: <https://www.nature.scot/landscapes-and-habitats/about-scotlands-landscapes/landscape-variety-scotland>

¹⁹ NatureScot. (2023). Scottish Landscape Character Types Map and Descriptions. Available at: <https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions>

Topic	Constraints	Evaluation	RAG Score
	<p>The Howe of the Mearns and Strathmore and Mearns are characterised by gentle rolling agricultural lowlands. The landscape is generally open with large fields and ranges from medium to large scale. Pockets and lines of trees are scattered across the landscape and although sparse, are characteristic features and help to define field boundaries and the landform.</p> <p>The landscape of the Mounth forms part of the Highland Boundary Fault, at the foothills of the Grampian Mountains which is a prominent landscape feature that forms the backdrop to the lowland areas to the south particularly the lower lying land across Strathmore and Mearns to the south-east. This landscape also plays an important role as a transitional landscape between the low-lying Strathmore and Mearns and uplands to the north-west. Although elevated and upland in nature, the area of the Mounth and Highland Boundary Fault included within the route is lower lying and less dramatic than parts of the Highland Boundary Fault to the south-west, including north of Fettercairn and within the Angus Glens. This however does not diminish the role the Highland Boundary Fault plays at Fetteresso in forming the backdrop to Strathmore and Mearns.</p> <p>The landscapes of both Strathmore and Mearns and the Mounth are generally rural in character. There are some existing vertical man-made elements in the landscape including scattered individual and small groups of wind turbines including south of Monboddo, at Droop Hill and at Jacksbank. The existing 275kV Fetteresso to Alyth overhead line (currently being upgraded to 400kV) is located within this section.</p> <p>The route crosses low lying farmland near Fordoun and the A90. It includes more elevated land between Auchenblae and the Fetteresso Forest. Within this stretch, the route extends across Knock Hill, Droop Hill and elevated land at Jacksbank which form high points within the landscape. These hills contribute to the characteristic rolling landform of the landscape.</p> <p>The route rises on to the southern slopes of Fetteresso Forest which forms part of the characteristic elevated backdrop to the lowland areas to the south.</p>	<p>Local hills and areas of elevated landform form constraint in this route option. Locating an OHL on elevated land at Knock Hill, Droop Hill and Jacksbank would result in the OHL being prominent in the landscape, with wider potential for effects on landscape character, including its rural undulating nature. Avoiding hills and locating the OHL on lower lying land would reduce the OHL's prominence in the landscape, with potential for back-clothing against higher land.</p> <p>Opportunities to align the OHL on lower lying land between Knock Hill and Herscha, and lower lying land to the east and west of Droop Hill and west and north of the local hill at Jacksbank would be explored during detailed alignment work. The OHL could therefore be located on lower elevations where infrastructure would be less prominent in the wider landscape and therefore less compromising to the rural undulating character. There is also potential to back-cloth the OHL against the rising slopes on the upland edge of Fetteresso Forest to reduce the OHL prominence in the landscape.</p> <p>An OHL in this route would sit within the context of the upgraded Fetteresso to Alyth overhead line to the west of the route. As such, the OHL would be located within a landscape that is already influenced by vertical man-made features. Potential for cumulative effects on landscape character as a result of an additional OHL in the landscape forms a constraint. This constraint could be mitigated through detailed alignment by parallelling the new OHL with the existing OHL where possible, in order to contain cumulative effects rather than extending effects across a larger area of landscape. Further mitigation could be achieved by back-clothing the OHL against areas of higher land in order to reduce the new OHL's overall prominence in the landscape when viewed in the context of the existing OHL.</p>	
Visual	<p>The route option extends for a length of approximately 20 km and passes around or close to key areas where sensitive visual receptors are located. These visual receptors have potential to form constraints and include:</p>	<p>The route option has been RAG rated as Amber as an OHL alignment in this route may compromise views or visual amenity experienced by a range of sensitive visual receptors. Due to the distribution and density of visual receptors in the route option, the level of constraints is considered such that</p>	

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> • Those living and traveling around settlements located within the vicinity of the route option, including (from south to north) Fordoun, Auchenblae and Glenbervie where open views to the wider surrounding landscape are available. • Scattered residential properties within the route and those located within close proximity of the route; • Users of Core Paths within the central part of the route north of Fordoun, who are likely to have some open views of the surrounding landscape in open stretches of path; • Those travelling along the local road network, including the A90, B9120, B966 and other B class and minor roads who experience sequential views of the surrounding landscape. • People travelling along the East Coast Main Line Railway to the east of the route. <p>Indicative Viewpoints to Represent Sensitive Visual Receptors</p> <ul style="list-style-type: none"> • B9120 near Cowieshill (NGR NO 674 724) – represents views experienced by visual receptors within the southern end of the route near Cowieshill; • Fordoun (NGR NO 748 760) - represents views experienced by visual receptors in and around Fordoun; • Minor road near East Town Farm (NGR NO 771 844) - represents residential receptors to the north of the route and potential cumulative effects with the existing high voltage OHL. 	<p>there is potential for the OHL to compromise views or visual amenity in some locations.</p> <p>There is potential for an OHL in this route to compromise views from nearby settlements including Fordoun, Auchenblae and Glenbervie. The route offers some opportunity to avoid close proximity to Auchenblae and Glenbervie and reduce the degree to which views from these settlements are compromised.</p> <p>Where the route passes to the north-west of Fordoun there is limited opportunity to avoid close proximity to residential properties that form a pinch point to the northwest of Fordoun at Red Hall and Pittengardner. There is a gap between properties that an OHL could be aligned through to maintain distances of at least two times the OHL tower height. This potential alignment has been assumed in the appraisal of constraint presented here.</p> <p>The route crosses higher land and a series of local hills including Knock Hill, Droop Hill and Jacksbank. The route also partially extends across the upland edge on the approach to Fetteresso Forest. As such there is potential for the OHL to be prominent along the skyline in some views experienced by surrounding residential receptors, road users, those travelling on the East Coast Main Line Railway and those living and travelling around Auchenblae and Glenbervie. The prominence of the OHL on elevated landform, as perceived by these visual receptors is considered to form a constraint due to the potential widespread visibility of the OHL and as such widespread potential for the OHL to compromise views.</p> <p>Opportunities to align the OHL on lower lying land between Knock Hill and Herscha, and lower lying land to the east and west of Droop Hill and west and north of the local hill at Jacksbank will be explored during the detailed alignment work. Locating an OHL through these lower lying areas means that infrastructure would be less prominent in views experienced by visual receptors within the route option and its immediate context. There is also potential to back-cloth the OHL against the rising slopes on the upland edge of Fetteresso Forest to reduce the OHL's visual prominence on the Highland Boundary Fault when viewed from the south.</p> <p>Potential cumulative visual effects as a result of a new OHL in addition to the upgraded Fetteresso to Alyth OHL to the west of the route option is also</p>	

Topic	Constraints	Evaluation	RAG Score
		<p>considered to be a constraint. A further OHL in this area has the potential to bring OHL infrastructure closer to visual receptors in and around the route, including residents at dwellings, recreational receptors and road users, and potentially surround them, especially residents at dwellings. Opportunities to parallel the OHL with the existing high voltage OHL to the west of the route to contain potential cumulative visual effects, rather than extend them across the landscape, will be explored during the detailed alignment work, in order to reduce the level to which visual amenity is compromised by potential cumulative visual effects.</p>	
Land Use			
Agriculture	<p>Approximately 1,050 ha (or 53%) of the land in route option D4 is prime agricultural land (class 2 – land capable of producing a wide range of crops, or class 3.1 – Land capable of producing consistently high yields of a narrow range of crops and/or moderate yields of a wider range) (see Figure 5.6).</p> <p>The southern section of the route is predominantly covered by class 2 land interspersed with areas of class 3.1 and 3.2 land and the northern section is predominantly of lower land classification (non prime land) interspersed with some small areas of class 3.1.</p>	<p>The route option has been RAG rated as Amber as it passes directly through extensive areas of prime agricultural land (ALC 1, 2 and 3.1). Considering the relatively limited footprint of OHL tower foundations, the permanent loss of agricultural land for OHL development is not expected to compromise the agricultural use or viability of the land as an agricultural resource.</p> <p>In some sections of the route, where prime agricultural land is present, it would not be possible to avoid where it constrains the full width of the option. Land take would be associated with the area contained within the footprint of the OHL tower foundations (and any permanent access tracks) and would therefore be permanent for the operational life of the asset. At the OHL alignment stage, siting of tower positions and access tracks would seek to reduce impacts on agricultural operations.</p>	
Forestry	<p>There are areas of commercial forestry to the north of the route at Fetteresso (at Mid Hill and Elf Hill) which has been identified as forming part of the National Forest Estate (managed by Forestry and Land Scotland) and is located within the entire width of route leading into the proposed 400 kV Hurlie Substation site.</p> <p>An area of mixed forestry located at the southern end of the route option at Greenbottom Wood covers a limited strip the width of route option and appears to be managed commercially.</p> <p>There are also a number of plantations and small woodland blocks characterised by commercial conifer species which are located throughout the route option, but which do not span the whole width of the route. These include blocks at</p>	<p>The route option has been RAG rated as Amber as it passes through an area of commercial forestry and is likely to result in some loss of woodland to tree-felling/wayleave clearance activities which may compromise commercial returns of the forestry operations.</p> <p>In a small number of locations, the route option is constrained by the presence of woodlands with some commercial forestry activity present. At these points the development of an OHL alignment and associated wayleave within the route has potential to cross close to, or within the edges, of the woodland blocks and therefore to have some potential to compromise commercial returns from these enterprises as some felling may be required</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>Crossroads (north of Fordoun), north of Wattleston House (south of Knockbank Farm) at Jacksbank Wood (south and southeast of Jacksbank).</p>	<p>to create a wayleave. Additionally, where coniferous species are present, further felling may be required to ensure a wind firm edge.</p> <p>The areas of managed woodland at Fetteresso and Greenbottom Wood may be potentially affected by creation of OHL wayleaves. At Fetteresso, the woodland covers the entire width of the route option which would not be possible to completely avoid with an OHL alignment. Aerial imagery shows the area of woodland at Greenbottom Wood which spans a narrow strip across the width of the route to be very sparse and is not considered to represent a major constraint.</p> <p>The alignment design would seek to avoid commercial woodland. Where the alignment cannot avoid woodland, towers would be positioned, where possible, in the narrowest sections or towards the edge of the woodland blocks to reduce the extent of felling required. It is not considered that the integrity of the principal woodland areas and commercial operations would be significantly affected.</p> <p>The other smaller areas of commercial forestry can be avoided with alignment as they do not cross the whole route and are located in areas where an alignment could reasonably be taken to avoid them.</p>	
<p>Recreation: Core Paths NCN Routes Scottish Great Trails Notable areas used for tourism and recreation</p>	<p>Paths and Trails</p> <p>A core path is present within the route option. Core paths are designated under the <i>Land Reform (Scotland) Act 2003</i>²⁰ as the main paths for public access throughout the area. A core path connecting Fordoun and Monboddo (Fordoun: Monboddo Link) spans the width of the route in its central section and therefore forms a potential constraint. See Figure 5.7.</p> <p>National Cycle Network (NCN) route 1 runs along the coast beyond the east of the route over 7 km from the route.</p> <p>There are no Scottish Great Trails within or near the route.</p> <p>Recreation and Tourism Facilities</p> <p>The following recreational and tourism facilities located in the route option boundary have been identified:</p>	<p>Paths and Trails</p> <p>The route option has been RAG rated as Green as the option generally avoids interaction with public footpaths or national cycle routes and does not interact with notable areas known for recreation and tourism.</p> <p>The route would need to span the core path between Fordoun and Monboddo which crosses the width of the option area. Whilst there is potential for some users to experience a change in the views where the OHL crosses the path, it is likely these changes would be local to the crossing point(s) and this interaction would not be considered to compromise the use of the footpath. There are no other core paths or trails along the route option albeit some quieter minor roads might be used for informal recreation by some people.</p>	

²⁰ Land Reform (Scotland) Act 2003. Available at: <https://www.legislation.gov.uk/asp/2003/2/contents>

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> • Cowden Farmhouse, a holiday let, located 2.3 km northwest of Glenbervie. • Fetteresso Forest is used for recreational activities including walking and mountain biking. The northern extent of the route option is located within this forest. <p>There are a number of small scale recreation and tourism facilities beyond the boundary of the route option but within close proximity (up to 500 m). These include:</p> <ul style="list-style-type: none"> • The Redhall Arms Hotel, which is located in Fordoun, approximately 400 m east of the route option. • Post Office House, a holiday let which is located in Fordoun, approximately 400 m east of the route option. <p>There are also a number of recreation and tourism receptors located approximately 500 m to 1 km from the route option including two holiday lets and a golf course in the settlement of Auchenblae 1 km to the west, and local tourism facilities such as a bed and breakfast facility at Thornton Castle located approximately 600 m beyond the south of the route option boundary and holiday lets in the nearby settlement of Mains of Thornton.</p>	<p>The construction of the OHL and associated access tracks may result in some short-term, temporary disruption to use of the core path where crossed by the OHL (and would be mitigated with temporary diversions).</p> <p>Construction of an OHL within the route would not interact with the recreational amenity of users of this route because the OHL route is located over 7 km from the NCN.</p> <p>Recreation and Tourism Facilities</p> <p>Felling for wayleaves at Fetteresso Forest is unlikely to be significantly constrained by recreational uses of the forest area and it is likely that any affected paths could be redirected. There are several trails to the west of the route which would provide alternative options for recreational use.</p> <p>The recreation and tourism facilities identified within the route option and adjacent to it are of generally local significance with an absence of major tourist attractions or recreational facilities nearby. Whilst there is some potential for the sites to constrain the route, it is not considered that the amenity of users using the facilities would be compromised by an OHL in the vicinity.</p> <p>Other larger recreation and tourism facilities are located up to 1 km from the outer edge of the route option boundary and are not considered to comprise a significant constraint to the route.</p>	
Recreation – fishing	<p>The following locations of game fishing let on a commercial basis have been identified within the route option:</p> <ul style="list-style-type: none"> • On the Bervie Water, to the west of Glenbervie, there is a fishing beat used for salmon, sea trout and brown trout fishing, managed/let by Laurencekirk & District Angling Association²¹. The fishing area extends west from Glenbervie to east of North Blairs for approximately 1.2 km through the eastern half of the route option width on both banks of the river. • The Stonehaven & District Angling Association²² also have fishing rights on the north bank of the Bervie Water between Milton of Dellavaird Farm and 	<p>The route option has been RAG rated as Green. The route option may interact with areas used for commercial highland sports (fishing) however, this is not considered to be a significant constraint as the effects would be localised and are not considered to have the potential to compromise their commercial viability.</p> <p>Energy Networks Association (ENA) guidance²³ advises angling no closer than 30 m from an OHL that crosses or runs parallel to the watercourse. A section of up to approximately 80 m of the fishing beat on each bank could</p>	

²¹ Laurencekirk & District Angling Association. Available at: <https://www.laurencekirk-angling-club.com/fishings.html>

²² Stonehaven & District Angling Association. Available at: <https://www.stonehavenangling.com/>

²³ Energy Network Association Information Sheet - Angling Guidance. Available at: <https://www.energynetworks.org/assets/images/Resource%20library/Angling%20Guidance%20Information%20Sheet%20Final.pdf?1698659970>

Topic	Constraints	Evaluation	RAG Score
	<p>the Burn of Guinea which extends across the western half of the route option width.</p> <ul style="list-style-type: none"> Further sections of fishing outwith the route option are managed by the Laurencekirk & District Angling Association and the Stonehaven & District Angling Association on the Bervie Water. 	<p>be sterilised from use by anglers taking account of this buffer distance and the width of the OHL conductor arrays.</p> <p>The full width of the route option is assumed to be constrained by commercial fishing beats on the Bervie Water. Therefore, an alignment in the route option would not be able to avoid the constraint and may interact with the fishing beat. However, since the fishing lets on this watercourse extend for a substantial length of the river it is not considered that the route option would compromise the commercial viability of the fishing enterprises.</p>	
Planning			
Policy	<p>Relevant National Planning Policy and Development Plans have been considered to support evaluation of likely compliance of the route option with national, regional and local planning policy.</p> <p>Planning Policy</p> <p>The National Planning Framework 4 (NPF4)²⁴ policies relevant to this route option are:</p> <ul style="list-style-type: none"> Policy 3(b) Natural Environment Policy 4(b-d & f) Natural Places Policy 5(b-c) Soils Policy 6(b) Forestry, woodland and trees Policy 7(h and i) Historic assets and places Policy 11(e)(ii) Landscape and visual impacts Policy 22(a) Flood risk and water management <p>Aberdeenshire Local Development Plan 2023²⁵ (Aberdeenshire LDP) policies relevant to this route option are:</p> <ul style="list-style-type: none"> Policy E1 Natural Heritage Policy E2 Landscape 	<p>Key planning policies have been considered in the context of the appraisal findings for other criteria in this table and commentary is provided on those of note in the evaluation in relation to NPF4 and LDP policies. Planning Policy</p> <p>The route option has been RAG rated as Amber as it may be contrary to the following LDP, and similar NPF4 polices:</p> <ul style="list-style-type: none"> NPF4 Policy 4b/4c & Aberdeenshire LDP Policy E1 - due to the potential impact on natural heritage and ornithology and notably the Montrose Basin and Fowlsheugh SPAs, see Natural Heritage above. To comply with this policy public economic or social benefits would need to clearly outweigh any negative effects on the protected resource, and there would need to be no reasonable alternative site. NPF4 Policy 11(e) & Aberdeenshire LDP Policy E2 - due to the potential impact on the landscape, see Landscape and Visual above. Any adverse effects would need to be clearly outweighed by social, environmental or economic benefits of at least local importance. NPF4 Policies 5(b), 6(b) & Aberdeenshire LDP Policies E3, PR1 and C3 - there is a presumption against the removal of trees, woodlands and hedgerows; and prime agricultural land should not be developed unless considered essential. See Natural Heritage above. In order to comply 	

²⁴ Scottish Government. (2023). National Planning Framework 4 (NPF4). Available at: <https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2023/02/national-planning-framework-4/documents/national-planning-framework-4-revised-draft/national-planning-framework-4-revised-draft/govscot%3Adocument/national-planning-framework-4.pdf>

²⁵ Aberdeenshire Local Development Plan 2023. Available at: <https://online.aberdeenshire.gov.uk/ldpmedia/LDP2021/AberdeenshireLocalDevelopmentPlan2023IntroductionAndPolicies.pdf>

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> Policy E3 Forestry and Woodland Policies HE1 and HE2 Protecting Listed Buildings, Scheduled Monuments and Archaeological Sites, Historic, Cultural and Conservation Areas Policy PR1 Protecting Important Resources Policy C3 Carbon Sinks and Stores Policy C4 Flooding <p>Planning Allocations and Designations</p> <p>The Aberdeenshire LDP sets out the following site within the route option corridor:</p> <ul style="list-style-type: none"> Fordoun (Brownmuir) – Employment site BUS2. <p>The Aberdeenshire LDP sets out the following sites located outwith the route option corridor:</p> <ul style="list-style-type: none"> Fordoun - Protected areas in the village – Sites P1, P2 and P3 and Employment site BUS1 and Opportunity site OP1 (200 m from the route boundary). 	<p>with these policies significant public benefits would need to outweigh any loss and compensatory planting would need to be provided.</p> <ul style="list-style-type: none"> NPF4 Policy 7 & Aberdeenshire LDP Policies HE1 and HE2 - due to the potential impact on a number of heritage assets including the Glenbervie GDL. See Cultural Heritage above. Development that would have an adverse impact on heritage assets is resisted, if unavoidable, development needs to be minimised and justified in order to comply with the policies. <p>Planning Allocations and Designations</p> <p>The route option may affect the following LDP designations:</p> <ul style="list-style-type: none"> Aberdeenshire LDP Brownmuir site (Fordoun Aerodrome) north of the village of Fordoun, the route option directly affects Employment Site BUS2 which is a 35 ha existing employment site which is safeguarded. Aberdeenshire LDP village of Fordoun – the edge of route option is located 200 m away from the village boundary and may affect Opportunity Site OP1 which is for 15 houses and Site BUS1 which is an existing employment site which is safeguarded. Development capacity may be reduced and also introduce additional residential properties to the area. <p>A number of these possible policy conflicts may be removed following further OHL alignment / design development, environmental assessment and mitigation development.</p>	
Proposals	<p>The following planning proposals have been identified within the route option²⁶:</p> <ul style="list-style-type: none"> Prior notification for the erection of two polytunnels north of Westerton of Pittarrow Farm which is located wholly within the route option (APP/2020/1589). An approved planning application for a house at Auchenzeoch Farm which is located inside the route option boundary northwest of Fordoun (APP/2022/2659). 	<p>The route option has been RAG rated as Green as there are no projects known to the planning system which may interact with the option.</p> <ul style="list-style-type: none"> The route option overlaps with the boundary for the prior notification for the erection of two polytunnels, however, it is considered that the planning applications present only a minor constraint and could be avoided by an OHL alignment developed within the route option. The route option overlaps with the boundaries for the approved planning application for the houses at Auchenzeoch, Howe View, 	

²⁶ Relevant planning applications have been included up to 31 January 2024.

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> • A planning application approved for the erection of a house and garage/workshop at land west of Howe View (located southwest of Redhall House) which is located in the centre of the route option (APP/2022/1785). • An approved planning application for the erection of a ground mounted solar array and associated infrastructure, located at Fordoun Sawmill north of Fordoun, located within the centre of the route option (APP/2021/0050). • An approved planning application for the erection of a dwellinghouse at Monboddo Castle, located within the route option boundary (APP/2018/1764). • A consented planning application for the erection of a house northeast of Backfield Farm (northwest of Drumlithie), located within the centre of the route option (APP/2022/2277). • An approved planning application for the erection of three dwellinghouses is located largely outwith the route boundary to the north of the route option, to the southwest of Upper Quithel. A small section of the planning application boundary lies within the route boundary (APP/2019/0948). • The Proposal of Application Notice (PAN) applications for the proposed 400 kV substations at Hurlie, near Fetteresso, and Emmock, near Tealing, are due to be submitted in early 2024. PAC events are scheduled to be undertaken in Spring 2024. The project webpages can be found in Section 1.6. Next Steps of the Consultation Document. <p>There are no other known planning applications, consents, PAC/PAN or scoping applications at the time of this appraisal.</p> <p>SSEN Transmission is working towards a submission for an application for consent to construct a proposed 132kV OHL to connect the nearby existing Fetteresso Substation with the consented wind farm at Glendye. More information can be found at the project webpage: https://www.ssen-transmission.co.uk/projects/project-map/glendye-windfarm-connection/</p>	<p>Monboddo Castle, Upper Quithel and Backfield Farm however, it is considered that the planning applications present a minor constraint and could be avoided by an OHL alignment developed within the route option.</p> <ul style="list-style-type: none"> • The route option overlaps with the boundary for a consented ground mounted solar array at Fordoun Sawmill. There are pinch points either side of this planning application due to the presence of residential properties and Fordoun Airfield. However, it is considered that the planning application present a minor constraint and could be avoided by an OHL alignment developed within the route option. 	

Table A2. Environmental Appraisal for Route Option D5

Topic	Constraints	Evaluation	RAG Score
Natural Heritage			
Designations	<p>International, European or National Designations</p> <p>There are no international or European designations within the route option.</p> <p>The closest statutory national designated site for natural heritage is Eslie Moss SSSI, located approximately 5 km southwest of the southern edge of the route, northeast of Edzell (see Figure 5.1).</p> <p>There are a number of non-statutory national designations within the route option comprising woodland classified as LEPO¹ on the AWI². The key areas are located at (see Figure 5.1):</p> <ul style="list-style-type: none"> • Woodland south of Crookieden (NGR NO 707 746) lies wholly within the route option and extends across almost half the width of the route option. This woodland comprises Upland birchwood and Wet woodland on the NWSS. • Woodland, Drumelzie Wood (NGR NO 716 787) extends across less than one quarter of the width of the route option. • Woodland at Mill of Glenbervie (NGR NO 758 803) extends across approximately one quarter the width of the route option. This area is noted as a Lowland mixed deciduous woodland on the NWSS. • Four small areas of LEPO woodland near Cotbank (NGR NO 755 824, NO 760 824, NO 764 826 and NO 771 830) lie wholly within the route option with a fifth nearby woodland (NGR NO 768 825) extending across approximately one quarter the width of the route option. Only the westernmost of these woodlands is included on the NWSS; it is noted as upland birchwood. Note that the eastern most of these (NGR NO 771 830) appears to be no longer wooded on aerial imagery. 	<p>This route option has been assigned a Green RAG rating because it is unlikely to compromise the conservation status of any statutory or non-statutory international, European or national designated site and/or the conservation status of the designated features of these sites.</p> <p>There is the potential for the route to compromise the conservation status of non-statutory national designations. The LEPO woodlands that may be impacted by an alignment are relatively limited and largely comprise narrow strips that would be avoidable through careful alignment, considering tower siting and design, and applying mitigation to retain LEPO woodland through sensitive construction techniques.</p> <p>The LEPO woodland near Laurencekirk creates a pinch point in the route option. The requirement to provide OHL wayleaves may require felling of LEPO woodland which would then need to be mitigated to some extent by selecting an OHL alignment wherever possible through the narrowest sections/outlying areas of the woodlands, considering tower siting and design, and applying mitigation to retain LEPO woodland through sensitive construction techniques.</p> <p>It may be possible to enhance the condition of woodland in the longer term through new planting particularly in areas where the baseline value has been affected by commercial forestry.</p>	
	<p>Regional Designations</p> <p>There is one LNCS within the route option (see Figure 5.1):</p> <ul style="list-style-type: none"> • Strathfinella LNCS (NGR NO 720 791), which extends across almost the entire width of the route option at Drumelzie Wood. It includes areas of deeply weathered granite and an extensive network of fluvio-glacial 	<p>This route option has been assigned an Amber RAG rating because it may compromise a regional designation (LNCS) and/or the conservation status of the designating features of the LNCS.</p> <p>Strathfinella LNCS would be difficult to avoid as there is only a narrow area of the route option that is outwith and to the east of the LNCS; an OHL</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>meltwater channels. The site is located on the Highland Boundary Fault Complex. The Slack of Birnie is of botanical interest and the loch at Glensaugh supports good aquatic vegetation.</p>	<p>alignment at this location would be constrained by the properties at Auchenblae and Galloquhine.</p> <p>The majority of LNCS within the route option is arable farmland based on aerial imagery and field evidence. The LNCS is largely noted for geological interest, however, the location of any geological features of interest within the site is unknown at present but are unlikely to be within agricultural fields and are more likely to be near the Luther Water. The fields within the LNCS and route option are considered unlikely to be notable for biological natural heritage features. Geological features of the LNCS may be compromised through construction activities such as foundation excavation and ground investigation work. Notable features are most likely to be present along the Luther Water, and it would be possible to minimise impacts on the LNCS in this area by spanning this watercourse however it would not be possible to span the entirety of the LNCS.</p>	
Protected Species	<p>European Protected Species</p> <p>European protected species assemblages are likely to be similar to route option D4.</p> <ul style="list-style-type: none"> Watercourses along the route, primarily the Bervie Water and Luther Water, are likely to be used by otter. Smaller watercourses and field drains are also likely to be used by this species. The closest record of otter within the last 15 years was approximately 9 km northwest of the route option near Bridge of Dye in 2012. Bats may be present roosting in the woodlands and trees along the route and are likely to use linear features such as treelines, hedgerows and watercourses throughout the route option for foraging and commuting. The closest record of a bat within the last 15 years was a Soprano pipistrelle (<i>Pipistellus pygmaeus</i>) approximately 1.2 km southeast of the route option, in Keabog in 2015. There is some limited potential for great crested newt to be present in non-flowing waterbodies such as ponds. Habitat suitability in northeast Scotland is considered suboptimal⁴ and the distribution of this species is limited⁵. There are no publicly available records of great crested newt within 10 km of the route option within the last 15 years. 	<p>This route option has been assigned a Green RAG rating because the route is unlikely to compromise the conservation status of known presence or suitable habitat for EPS.</p> <p>The route may be constrained by the presence of EPS but it is assumed that these areas/habitats would be avoidable and where this is not possible, suitable best practice mitigation can be applied with appropriate NatureScot licences in place.</p> <p>Pre-commencement surveys will be required to determine presence or likely absence of protected species with a particular focus on key supporting habitats. Species-specific mitigation that would be required is dependent on field survey results and alignment design. It is anticipated that mitigation would be feasible, particularly where features and habitats of greater ecological potential are avoided. Mitigation will follow those methods set out in SSEN Transmission's standard SPPs, with additional mitigation agreed and implemented where field survey data indicates a requirement.</p> <p>It may be possible to enhance habitats for protected species (see Biodiversity section below) in line with priorities identified by the North East Scotland Biodiversity Partnership.</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>UK Biodiversity Action Plan (BAP)⁷ Species</p> <p>UKBAP protected species assemblages are likely to be similar to route option D4.</p> <ul style="list-style-type: none"> • Pine marten and red squirrel may be present in the woodlands along the route option. The nearest publicly available record of pine marten is approximately 0.2 km west of the route option, west of Auchenblae. Saving Scotland's Red Squirrels online map indicates there have been sightings of red squirrel in suitable woodland habitat throughout the route option. • Water vole records are scattered within this area. There are no publicly available records identified on the NBN Atlas within 10 km within the last 15 years, although there are records further north towards Stonehaven (north of the Bervie Water)⁹ indicating potential for presence in suitable habitat along the route. • The route crosses the Bervie Water and Luther Water watercourses, which may have the potential for species of fish listed on the UK BAP (eg, brown trout). • Brown hare is likely to be present in farmland. The closest record of brown hare within 10 km and the last 15 years is approximately 2.3 km east of the route option, near Fordoun in 2021. • Mountain hare may be present within upland habitats. The closest record within 10 km of the route option within the last 15 years was identified northwest of Glenbervie in 2021 within a 10 km grid square overlapping the route option. • Hedgehog is likely to be present on woodland edges and in gardens. The closest record within 10 km and within the last 15 years is approximately 0.4 km east of the route option at Auchenblae. • Reptiles such as slow worm may be present in gardens, grasslands, woodland edges and hedges. The closest record of an adder within 10 km of the route option within the last 15 years was identified approximately 4.5 km northwest of the route option at Clattering Bridge in 2020, while the closest common lizard was identified approximately 3 km northwest of the route in Fetteresso forest in 2021. 	<p>This route option has been assigned a Green RAG rating because it is unlikely to compromise the conservation status or suitable habitat of UK BAP, protected or notable species.</p> <p>The route option may be constrained by the presence of UK BAP, protected and notable species in specific locations, but it is assumed that it would be reasonable to avoid these areas/habitats by careful OHL alignment within the route option as they would not extensively constrain the route. Pre-commencement surveys would be required to determine presence or likely absence of protected species with a particular focus on key supporting habitats. Species-specific mitigation that may be required is dependent on field survey results and alignment design.</p> <p>It is anticipated that mitigation would be feasible, particularly where features and habitats of greater ecological potential are avoided. Mitigation will follow those methods set out in SSEN Transmission's standard SPPs, with additional mitigation implemented where required by survey data.</p> <p>It may be possible to enhance habitats for UK BAP, protected and notable species (see Biodiversity section below), in line with priorities identified by the North East Scotland Biodiversity Partnership.</p>	<p>Green</p>

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> Amphibians such as common frog (<i>Rana temporaria</i>) and common toad may be present in gardens and wetland habitats. The closest record of a common frog within 10 km of the route option within the last 15 years was identified within the route option near Auchenblae in 2020. <p>Other Protected and Notable Species</p> <p>There is potential for badger in areas of woodland and this species will also utilise farmland. Records from NBN Atlas, and field data from surveys in 2023, indicate that badger is present within 10 km of the route option.</p> <p>The route is covered by the North East Scotland Biodiversity Partnership. Water shrew is the only mammal on the list of 'locally important species', and there are no publicly available records identified on NBN Atlas within 10 km; the nearest record is on the Cowie Water west of Stonehaven⁹.</p>		
Habitats	<p>Annex 1 Habitats</p> <p>The habitats along the route option are dominated by farmland comprising a mix of arable with pasture and pockets of woodland, principally of commercial forestry. There may be limited pockets of Annex 1 habitats, particularly where there are remaining extents of semi-natural woodland.</p> <p>Groundwater Dependent Terrestrial Ecosystems (GWDTE)</p> <p>The habitats along the route option are dominated by farmland comprising a mix of arable with pasture and pockets of woodland, principally of commercial forestry. There may be limited pockets of GWDTE habitats, for example small areas of marshy grasslands.</p>	<p>This route option has been assigned a Green RAG rating because it is unlikely to compromise the conservation status of Annex 1 Habitats.</p> <p>It is unlikely that there are large areas of Annex 1 habitats present along the route due to the intensively managed, lowland agricultural nature of the area. Desk study evidence indicates that semi-natural habitats are confined to relatively limited areas due to the dominant patterns of land use. If pockets of Annex 1 habitat are present within the route, it is assumed that these would be avoided (or spanned) through detailed design of the OHL alignment as they would not extensively constrain the route.</p> <p>This route option has been assigned a Green RAG rating because it is unlikely to compromise the integrity of GWDTE habitats.</p> <p>It is unlikely that there are large extents of GWDTE within the route option due to the lowland agricultural nature of the habitats that dominate the route. Desk study and field evidence indicate that semi-natural habitats (and therefore potential for GWDTE) are confined to relatively limited areas due to the dominant patterns of land use. Where any pockets of GWDTE are confirmed to be present within the route following further survey, it is assumed that these would be avoided (or spanned) through detailed design of the OHL alignment as they would not extensively constrain the route.</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>Biodiversity</p> <p>The density of Biodiversity Units derived from habitats within the route option is calculated to be 7.47 BU/ha. Irreplaceable habitats are calculated to be present at a density of 0.01 BU/ha. Watercourses are present at a density of 0.19 BU/ha.</p>	<p>This route option has been assigned a Green RAG rating because this option is the least biodiversity units impacted option.</p> <p>Specific habitat and enhancement recommendations are dependent on field survey results and design of the alignment. The option is covered by the North East Scotland Biodiversity Partnership and there may be opportunities to contribute to priorities identified in their Habitat Statements. This may include feasible actions such as:</p> <ul style="list-style-type: none"> • Consider woodland enhancement projects (eg, LEPO woodlands) to increase biodiversity value through removal of INNS and/or restoration of habitats impacted by commercial forestry. • Enhance riparian habitats where the route crosses watercourses, such as the Bervie Water. 	
Ornithology	<p>Designated Sites</p> <p>The southern part of the route option is approximately 13 km from the main part of the Montrose Basin SPA / Ramsar Site (and SSSI; Dun's Dish SSSI lies 9.4 km to the south of D5). A section of some 8 km in length lies within the core foraging range of the SPA's designated goose species but most of the route option is more than 20 km from the SPA (see also 'Designations' section above). The SPA designation's qualifying interests include wintering populations of greylag goose, pink-footed goose, dunlin, knot, oystercatcher, redshank, eider, shelduck, wigeon and its waterfowl assemblage. Pink-footed goose and greylag goose roost within the SPA but feed beyond the SPA boundaries up to a distance of 20 km. The other qualifying interests do not habitually use habitats beyond the SPA boundary. The national conservation status of pink-footed goose and greylag goose populations is considered to be favourable but both species are sensitive to operational effects of OHLs due to potential collision.</p> <p>The northern part of the route option is, at its closest point, approximately 9 km from the Fowlsheugh SPA (and SSSI) which is designated for breeding fulmar, guillemot, herring gull, kittiwake, razorbill and its breeding seabird assemblage. At this distance, there is potential connectivity between the route option and herring gull if suitable foraging habitat occurs within the route option.</p>	<p>The route option has been RAG rated as Amber since it may compromise an internationally or nationally designated area and/or the conservation status of the qualifying features of the site, due to the route passing within connectivity distance (core foraging ranges) of the designated features of both Montrose Basin SPA and Fowlsheugh SPA.</p> <p>The Montrose Basin SPA represents a potential constraint for the route option with likely significant effects (LSE) predicted for key qualifying species, in particular wintering geese, due to potential for collision of birds with the OHL conductors, for birds making flights between the designated area and core foraging areas to the north and within the route option. Pink-footed geese are the principal species of wintering geese at the site, with greylag goose numbers having declined substantially at the SPA following a northward redistribution of their Scottish wintering population in recent years¹⁰.</p> <p>The distance between the Montrose Basin SPA and the route option, and information on the historic distribution of feeding pink-footed geese¹¹ suggests that the constraint, in relation to collision risk, is not likely to be substantial. Further appraisal (HRA) would be required to determine the potential for adverse impacts on integrity of the designated site (ie in relation to foraging flights of the designated features to and from the SPA roost) which would be permanent (for the lifetime of the OHL). Opportunity</p>	

Topic	Constraints	Evaluation	RAG Score
		<p>exists to align an OHL away from frequently used feeding fields, however, these can change annually if the cropping regime alters their suitability. Given the distance from the SPA (ie over 13 km from Montrose Basin), large concentrations of geese in flight are less likely within the route option than in areas closer to the roost. Concentrations may still occur however, in association with feeding areas. Line-marking with bird diverters would be required as design mitigation in locations where conductors are likely to pose collision risk to susceptible birds. Nevertheless, in close proximity to roosts, bird divertors may be less effective when large flocks encounter poor visibility at dawn and dusk or due to weather conditions.</p> <p>Breeding herring gulls from the Fowlsheugh SPA may travel substantial distances to feed (refer breeding large gull data in <i>Thaxter et al. 2012</i>¹¹) but habitats within the route option are unlikely to provide important food resources so substantial movements of birds through the route option are not anticipated during the breeding season (mid-April to mid-August). Foraging flocks of gulls generally occur within agricultural lands during periods of field preparation (ploughing/following crop harvesting) which are concentrated in the Autumn and early Spring, periods when gulls from Europe join UK birds as part of a wider population unit. These fields provide a foraging resource that is generally limited to a time frame when the land management practices (ploughing/harvesting) are on-going. Most of the route option is further than 10.5 km from the SPA, which is the mean foraging distance for breeding herring gulls - only the northern most 3.5 km is within this distance. The entire route option is within the mean maximum foraging distance of the species, however, although regular foraging flights by SPA herring gulls are not anticipated, and collision risk is considered to be low for breeding herring gull associated with the SPA given field use and timings of ploughing etc. Further appraisal (HRA) would be required to determine the potential for adverse impacts on the integrity of the Fowlsheugh SPA (ie in relation to the foraging flights and activity of the designated feature herring gull), which would be permanent (for the lifetime of the OHL).</p> <p>Line-marking with bird diverters will be applied as design mitigation when conductors are likely to pose collision risk to susceptible birds, notably the</p>	

Topic	Constraints	Evaluation	RAG Score
		SPA species as outlined above. Nevertheless, bird divertors may be less effective when birds encounter poor visibility at dawn and dusk or due to weather conditions.	
	<p>Schedule 1 Birds</p> <p>The route option may support populations of Schedule 1 birds. Woodland habitat may support Schedule 1 raptors including species such as osprey, red kite and goshawk. Watercourses, including rivers, streams and ditches and adjacent wetland may support Schedule 1 kingfisher and little ringed plover.</p> <p>Breeding populations of Schedule 1 species may be sensitive to disturbance during construction, and during operation. Some Schedule 1 raptor species, if present (eg red kite), may be sensitive to collision impacts.</p>	<p>The route option has been RAG rated as Amber since the option has the potential to compromise the conservation status of Schedule 1 bird species or their habitats.</p> <p>The area around and within the route option is generally dominated by lowland agricultural habitat, largely comprising enclosed pasture and arable fields with hedgerows and small blocks of largely plantation woodland. This habitat is not anticipated to support large populations of Schedule 1 birds. Areas of plantation forestry within the route option may support Schedule 1 breeding birds, including raptors. As such, there is potential for disturbance/displacement and loss of breeding habitat for Schedule 1 species associated with the new OHL development.</p> <p>Implementation of good practice as set out in SSEN Transmission's standard SPPs would ensure that breeding attempts are safeguarded during construction. Operational constraints may from collision risk, but the habitats present are unlikely to support high numbers of individuals susceptible to collisions.</p>	
	<p>Birds of Conservation Concern (BoCC)</p> <p>The route option may support populations of birds on the red and amber lists of Birds of Conservation Concern (BoCC), some of which are also on Schedule 1. Farmland areas, including arable, pasture, wet grassland and hedgerows, may support red-listed waders including lapwing, curlew, oystercatcher and ringed plover, farmland specialists like grey partridge, and red-listed passerines including skylark, starling, house sparrow, corn bunting and yellowhammer.</p> <p>Woodland patches may support red-listed species like spotted flycatcher and tree sparrow. Wetland areas, including rivers and ditches, may support red-listed ducks and grebes. Herring gulls may also be present on farmland and wetland habitats.</p>	<p>The route option has been RAG rated as Green as the option is unlikely to compromise the conservation status of populations of a red or amber listed species or essential breeding, passage or wintering habitat.</p> <p>Populations of BoCC red-listed species mainly comprise farmland and woodland passerines and low densities of breeding waders. The breeding sites of both groups will be safeguarded during construction through implementation of good practice as set out in SSEN Transmission's standard SPPs and passerines are also relatively tolerant of disturbance. The anticipated low densities of breeding waders means that any short-term potential disturbance will not compromise the conservation status of these populations in the wider region.</p>	
	<p>Surface and Groundwater Drinking Water Protected Areas (DWPA)</p>	<p>The route option has been RAG rated as Green as it is unlikely to result in water flow pathways to surface and groundwaters and is unlikely to</p>	

Topic	Constraints	Evaluation	RAG Score
Hydrology / Geology / Hydrogeology	<p>The entire route option is within a groundwater DWPA. There are no Drinking Water Protected Areas (Surface) within or near the route.</p> <p>SEPA CAR licence abstraction data indicates that there are two abstractions within the route option at Jacksbank Farm (NGR NO 766 832) and Crookieden Farm (NGR NO 710 754).</p> <p>PWS data from Aberdeenshire Council indicates that there is one Regulated (Type A)¹³ PWS source within the route option, which supplies five properties including Castleton Farm and Cottages and Culzean House (NGR NO 758 789). The source is a groundwater spring (see Figure 5.2).</p>	<p>compromise the quality and/or quantity of surface water or groundwaters which provide public supply.</p> <p>There are no surface water DWPA's within the route option. There is space within the route option to avoid PWS; and these would be avoided where possible during the design of the alignment.</p> <p>During alignment design, a minimum buffer of 50 m from infrastructure will be applied to watercourses and water features where possible, and with the implementation of construction mitigation (e.g. SSEN Transmission's GEMPs and following SEPA best practice guidance), it is considered that this option is unlikely to result in water flow pathways to surface and groundwaters.</p>	
	<p>Aquifers Providing Regional / Local Resources</p> <p>The aquifers within this route option are classified as moderate productivity (Class 2B) and low productivity aquifers, within which virtually all flow is through fractures and discontinuities in the bedrock. There are no highly productive aquifers within the route option. There are 17 known properties that are supplied by small PWS (Type B¹⁴) within this route option and are well shown on Ordnance Survey mapping at NGR NO 786 850. Most of these are close to Herscha Hill and Droop Hill such as Newlands (NGR NO 728 800) and North Blairs (NGR NO 746, 809).</p> <p>Groundwater dependent habitats are not anticipated to be extensive within the route option (see GWDTE listed above).</p>	<p>The route option has been RAG rated as Green as it is considered unlikely to result in water flow pathways to surface and groundwaters, which could affect aquifers providing regional and local resources.</p> <p>There is space within the route option to avoid PWS and GWDTE; and these will be avoided where possible during the design of the alignment.</p> <p>SSEN Transmission have stringent construction mitigation measures to protect PWS and also undertake pre works, during and post works monitoring of all PWS which are close to the OHL. As such, it is considered that the quantity and quality of water supplies within the route option would not be adversely affected.</p>	
	<p>Surface Waters or Aquifer Providing Water for Agricultural or Industrial Use</p> <p>The route option crosses up to eight mapped watercourses that are shown on 1:50K OS mapping. These are:</p> <ul style="list-style-type: none"> • Black Burn (Waterbody ID 5711) which was classified by SEPA as overall 'Moderate' in 202015; • Ducat Water (Waterbody ID 5709) which was classified by SEPA as overall 'Good ecological potential' in 2020; • Luther Water (Waterbody ID 5706) which was classified by SEPA as 'Good ecological potential' in 2020; 	<p>The route option has been RAG rated as Green as it is unlikely to result in water flow pathway(s) to surface and groundwaters.</p> <p>Within this route option there are eight watercourses which cross the entire width of the option, and all associated flood risk areas are narrow and could be spanned or avoided. Stringing the OHL over watercourses would not affect the beds and banks of the watercourses and new watercourse crossings (eg. for access tracks) would be avoided where possible during alignment design.</p> <p>Following SEPA guidance¹⁷, all surface watercourses and waterbodies would typically be buffered by a minimum of 50 m from OHL infrastructure and construction working areas, where possible. As the route option is generally</p>	

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> • Tributary of Luther Water, which was too small to be classified by SEPA; • Bervie Water (Waterbody ID 23262) which was classified by SEPA as having 'Moderate ecological potential' in 2020; • Carron Water (Waterbody ID 23257) which was classified by SEPA as having a 'Moderate ecological potential' in 2020; • Two tributaries of the Carron Water, which were too small to be classified by SEPA. <p>The route option largely avoids the flood risk areas (based on SEPA Future Flood maps¹⁶) that are associated with the Luther Water. Flood extents associated with the other watercourses to be crossed are minor and can be spanned or avoided.</p>	<p>0.6 km – 3 km wide, most of the small waterbodies within the route could likely be avoided. Within this option, all flood risk areas could be spanned or avoided.</p> <p>Mitigation measures would be incorporated into the design and its construction to reduce impacts on the surface water environment, which include best practice pollution control measures and implementation of relevant SSEN Transmission environmental management plans to prevent sediment laden run-off entering the water environment, via a range of measures including sediment traps, filter trenches, silt fences, swales and settlement ponds. These are standard mitigation for preventing the potential adverse impacts of construction activities on surface water quality.</p> <p>Therefore, with careful siting of infrastructure components, including appropriate buffers from water features, avoiding flood risk areas and the implementation of good practice mitigation, the remaining constraint in relation to surface waters would be reduced and the option is unlikely to result in water flow pathway(s) to surface and groundwaters or to compromise their quality or quantity.</p>	
Cultural Heritage			
Designations	<p>World Heritage Sites (WHS), Scheduled Monuments (SM), Inventory Gardens and Designed Landscapes (GDL), Inventory Battlefields</p> <p>There are no World Heritage Sites or Properties in Care within the route option, and no part of the route option crosses any Inventory Garden and Designed Landscape or Inventory Historic Battlefield. Within the route option there is one Scheduled Monument: Droop Hill, Cairns (SM 4778), of heritage value at the national level and of high sensitivity.</p> <p>There are many designated heritage assets in the wider landscape around the route option, most are unlikely to be constraints. Two designations (Fordoun Homestead Moat (SM 2231) and Glenbervie House GDL (GDL 194)) are within 1 km of the route option boundary and are shown on Figure 5.3.</p> <ul style="list-style-type: none"> • Fordoun, Homestead Moat (SM 2231) stands 250 m from the southern boundary of the route option. The remains of the moat are currently surrounded by woodland which screens views from, and to, the Scheduled 	<p>The route option has been RAG rated as Amber as, although it would avoid direct interaction with or disturbance to any designated feature, it may compromise the settings of the following designated features that lie within or in close proximity to the route option.</p> <ul style="list-style-type: none"> • Glenbervie GDL (GDL 94): The exclusively rural setting of the GDL and views out from, or to and across, the GDL, are key aspects of its setting, contributing to its character and cultural significance. Located 470 m east of the western boundary of the GDL and rising over the high ground at Droop Hill, this route option would intrude into a key view (from public roads on the east side of the GDL) looking westwards across the GDL and would detract from appreciation of its current rural setting. Designing the OHL alignment (to the west of Droop Hill) to avoid proximity to the GDL could minimise the effect on its setting to a level such that it would not be a significant constraint. 	

Topic	Constraints	Evaluation	RAG Score
	<p>Monument, and provides a sheltered and localised setting for the monument and the Scheduled Monument do not represent a significant constraint.</p> <p>The two designation that may constrain the route option are:</p> <ul style="list-style-type: none"> Glenbervie House GDL (GDL 194) (NGR NO 771, 804): located 470 m east of the eastern edge of the route option and stands on the confluence of the Pilketty Burn and the Bervie Water. The main views from the GDL are aligned to the east overlooking parkland and out to surrounding farmland. Views out in other directions from the GDL are largely screened by woodland policies. There are open views looking west across the GDL from public roads that run east of the GDL, the GDL is seen backdropped by Droop Hill in these views. Droop Hill Cairns (SM 4778) (NGR NO 755, 815): located north of the Bervie Water in the approximate centre of the route option towards the northern end. The monument comprises prehistoric settlement and a large spread of field clearance cairns, which may include burial cairns, extending over a large area on the summit of Droop Hill. Views from the monument are mainly directed to the south across the Glenbervie Water valley, and this forms a key aspect of its setting. Two wind turbines stand to the northwest and southeast, either side of the monument. 	<ul style="list-style-type: none"> Droop Hill Cairns (SM 4778): The route option crosses farmland that forms part of the setting of the settlement remains and could detract from appreciation of the setting where the route option crosses the valley intruding into a key view from the site across the Glenbervie Water valley. Designing an OHL alignment (to the west) to avoid proximity to the Scheduled Monument could minimise the effect on its setting to a level such that it would not be a significant constraint. <p>Overall, there is scope through adoption of effective mitigation at the alignment design stage to minimise the impact on designated heritage assets likely to be affected by this route option.</p> <p>It is uncertain taking account of other constraints whether all mitigation could be delivered therefore there is intermediate potential for the development to be constrained, hence the Amber RAG rating.</p>	
	<p>Sites and Monument Record (SMR) Entries</p> <p>There are seven archaeological sites within the route option recorded in the SMR as being of 'Regional Significance' and of medium sensitivity. The location and extents of these are shown on Figure 5.3.</p> <p>These regionally significant assets comprise the remains of a field system and stone clearance heaps at Jacksbank (NO78SE0019), spread across the summit of Jacksbank Hill towards the north end of the route option, four cropmark sites of a ring ditch (NO77NE0031), unenclosed settlement (NO77NW0026) and circular enclosures/ring ditches (NO77NW0024) and a double palisaded enclosure/ring ditch (NO77NW0019) all in the central part of the route option, between Monboddo and West Cairnbeg, and an additional two cropmark sites of a pit alignment (NO67SE0012) and an enclosure (NO77SW0020) to the south of the Ducat Water, at the southern end of the route option.</p>	<p>The route option has been RAG rated as Green for SMR sites as there are relatively few (seven) 'Regionally Significant' sites within the route option, and it is considered that archaeological sites identified do not represent a significant constraint for the route option and may be taken as an indication of moderate / low potential for the presence of previously unidentified archaeological / cultural heritage features.</p> <p>These heritage assets are thinly distributed along the route option and are either small in size or extent or located at the periphery of the route option. It is considered that the constraints could be minimised through effective mitigation at the design stage (ie avoidance through siting of towers/access within demarcated areas). Where direct impacts on these SMR sites cannot be avoided during the alignment design stage, constraints could be mitigated through a programme of works (ie. trial trench evaluation and excavation, or</p>	

Topic	Constraints	Evaluation	RAG Score
		watching brief) in advance of construction works to a scope agreed by the local authority.	
Cultural Heritage Assets	<p>Listed buildings (A, B and C)</p> <p>There are no Category A or B Listed Buildings within the route option.</p> <p>There is only one Listed Building, Category C Listed Mid Blairs farm (steading, house mill and bothy) of heritage value at the local level and of low sensitivity, within the route option. The Listed Building, which has three parts in close proximity, lies just south of the Bervie Water (NGR NO 744, 805) and has a localised setting and does not represent a significant constraint to the route option.</p> <p>There are other Listed Buildings in the wider landscape around the route option, most are unlikely to be significant constraints. 94 Listed Buildings (One A Listed (St Palladius' Episcopal, Church), 29 B Listed and 64 C Listed) lie within 1 km of the route option and are shown on Figure 5.3. Most of the Listed Buildings are clustered in Auchenblae village Conservation Area and have generally localised settings, they are not considered to be significant constraints.</p> <p>Non-Inventory GDL</p> <p>There are no Non-Inventory Designed Landscapes within the route option.</p> <p>Conservation Areas</p> <p>One Conservation Area, Auchenblae (CA 658) lies partly within the route option. There are no other Conservation Areas within 1 km of the route option.</p> <p>The cultural heritage assets that are within the route option or within 1 km of it are shown on Figure 5.3.</p> <ul style="list-style-type: none"> Auchenblae Conservation Area (CA 658), of heritage value at the regional level and of medium sensitivity, sits on either side of the Luther Water (NGR NO 727 788) in the central part of the route option. The route option clips the northern and western edges of the Conservation Area. This part of the Conservation Area comprises parkland and areas of woodland that add to the rural landscape setting of the Conservation Area and contributes to its character. 	<p>The route option has been RAG rated as Amber as it could directly disturb Auchenblae Conservation Area and is considered likely to compromise the integrity of this designated site.</p> <p>The northern and western edges of Auchenblae Conservation Area designation are clipped by the route option and intersection with the Conservation Area would directly disturb the parkland and woodland that contributes to its character and could compromise its setting.</p> <p>It may be feasible to align an OHL in order to avoid directly crossing the boundaries of the designated Conservation Area and this would remove the direct interaction with the Conservation Area designation. However, OHL alignment within the route but outwith the boundary of the designated site would still be constrained in relation to the potential for changes in setting of the Conservation Area given proximity of the route to the western and northern part of the village and its elevation above the settlement.</p> <p>Overall, there is some scope through adoption of effective mitigation at the alignment design stage to reduce the impact on the cultural heritage assets. Any OHL alignment however would be located within close proximity to the Auchenblae Conservation Area with the potential to change its setting.</p> <p>It is uncertain taking account of other constraints whether all mitigation could be delivered therefore there is intermediate potential for the development to be constrained, hence the Amber RAG rating.</p>	
Proximity to Dwellings			

Topic	Constraints	Evaluation	RAG Score
Residential Properties and other sensitive receptors	<p>The route option extends for a length of approximately 20 km and passes around or close to a number of settlements including (from south to north) Auchenblae and Glenbervie. Individual residential properties and small settlements within the route boundary form a constraint to OHL development where they reduce the available route width to develop an alignment resulting in ‘pinch points’ between residential properties and/or other constraints.</p> <p>There are a number of locations through the route where concentrations and distribution of dwellings constrains the route in this way including in particular to the south of Auchenblae between Cairnton and Pitrennie Mill.</p>	<p>The route option has been RAG rated as Green as there is flexibility to develop an OHL alignment that can locate infrastructure at distances of greater than four times the nominal height of the OHL towers.</p> <p>At the routeing stage it is not possible to be fully definitive with respect to the distances that the OHL could be maintained from individual residential properties. This route offers potential to avoid adverse amenity issues for dwellings associated with operational noise and from general proximity to electricity infrastructure, including properties around Cairnton and Pitrennie Mill. Mitigation through optimal alignment to maximise set-back from residential properties taking account of other constraints would be deployed.</p> <p>The route and any alignment within it would pass within 400 m of the large settlement of Auchenblae.</p>	
Landscape & Visual			
Designations	<p>Approximately 3 km of the route to the west of Auchenblae crosses the Braes of the Mearns SLA (see Figure 5.4). Aberdeenshire Council’s Local Development Plan (2022)¹⁷, Appendix 13: Aberdeenshire Special Landscape Areas lists the following ‘aspects and features’ (equivalent to special qualities) that are recognised through the SLA designation:</p> <ul style="list-style-type: none"> • Strong contrast between the distinctive flat Howe and the dramatic ridge of the Mounth to the north. • Clear expression of the Highland Boundary Fault, where Highland and Lowland Scotland meet. • Intact historic farmed landscape of the Howe of the Mearns, with a strong structure of beech woodland and avenues along the foot of the slopes. • Highly visible ridge viewed from across the landscape to the southeast, including from the A90, which defines the Howe of the Mearns. • Cairn o’ Mount’s scenic viewpoint is a popular stopping place on the former old military road with views across the Howe and remains of Bronze Age burial cairns, which give the spot its name. There are also views inland to the Cairngorms and northwards. 	<p>The route option has been RAG rated as Amber as the route option may compromise the special qualities of the Braes of the Mearns SLA.</p> <p>The SLA forms a constraint as approximately 3 km of the route option passes through the SLA to the west of Auchenblae. As such, there is potential for the OHL to compromise some of the special qualities of the SLA including its role as a “<i>highly visible ridge</i>” when viewed from the south, as an OHL has the potential to be seen across this ridge in views from the south. The SLA’s “<i>wooded estate landscapes</i>” may also be compromised if removal of woodland is required to accommodate the OHL where it crosses belts of characteristic woodland at the Luther Water at the Glen of Drumtochty.</p> <p>Mitigation through detailed alignment work would seek to locate the OHL at the furthest distance possible from the SLA boundary and seek to avoid areas of higher elevation where an OHL would be most prominent in views from the SLA. Such mitigation would aim to reduce potential effects on the key features of the SLA.</p> <p>Constraints presented by the SLA could be mitigated during detailed alignment work if the OHL is located on the lower slopes between Black Hill</p>	

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> • Strath Finella, an intimate wooded glen leading into the hills. • Wooded estate landscapes including Fasque, Fettercairn and Drumtochty whose distinctive policies and tree belts give a richness and cultural diversity, which reinforces the contrast of landscape character with the simplicity of land cover of the adjacent uplands. They also have historical connections with national figures such as Gladstone. • Well known literary associations of the Howe of the Mearns including the work of Lewis Grassie Gibbon. 	<p>and Auchenblae and is aligned through existing gaps in woodland along the Luther Water, to minimise tree loss as far as possible.</p>	
Landscape Character	<p>The southern part of the route option extends across the Howe of the Mearns within Strathmore and Mearns (Broad Valley Lowlands LCT), and the northern part of the route extends across the Mounth landscape area (Coastal Farmed Ridges and Hills LCT) (see Figure 5.5). These areas are defined by NatureScot's Landscapes of Scotland (2012)¹⁸ and Nature Scot's 2019 national dataset of LCTs¹⁹. The Howe of the Mearns and Strathmore and Mearns characterised by gentle rolling agricultural lowlands. The landscape is generally open with large fields and ranges from medium to large scale. Pockets and lines of trees are scattered across the landscape and although sparse, are characteristic features and help to define field boundaries and the landform.</p> <p>The landscape of the Mounth forms part of the Highland Boundary Fault, at the foothills of the Grampian Mountains which is a prominent landscape feature that forms the backdrop to the lowland areas to the south particularly the lower lying land across Strathmore and Mearns to the south-east. This landscape also plays an important role as a transitional landscape between the low-lying Strathmore and Mearns and uplands to the north-west. Although elevated and upland in nature, the area of the Mounth and Highland Boundary Fault included within the route is lower lying and less dramatic than parts of the Highland Boundary Fault to the south-west, including north of Fettercairn and within the Angus Glens. This however does not diminish the role the Highland Boundary Fault plays at Fetteresso in forming the backdrop to Strathmore and Mearns.</p> <p>The landscapes of both Strathmore and Mearns and the Mounth are generally rural in character. There are some existing vertical man-made elements in the landscape including scattered individual and small groups of wind turbines including south of Monboddo, at Droop Hill and at Jacksbank. The existing 275 kV</p>	<p>The route option has been RAG rated as Amber as an OHL in this route may compromise characteristic elements that contribute to landscape character. Areas of constraint are considered where an OHL passes through or over key features that contribute to landscape character or where the OHL would be highly prominent within the landscape.</p> <p>Characteristic woodland along the Luther Water at the Glen of Drumtochty forms a constraint as it narrows the width in which an OHL can be aligned. These areas of woodland contribute to landscape character and removal of these woodlands to accommodate an OHL would compromise these characteristic elements of the landscape at the local level. Mitigation through detailed alignment work would seek to minimise woodland and individual tree loss as far as possible to reduce potential effects on these features that contribute to local landscape character. This could include aligning the OHL through existing gaps in the woodland to minimise tree loss.</p> <p>Local hills and areas of elevated landform form a constraint in this route option. Locating an OHL on elevated land at Herscha Hill, Knock Hill, Droop Hill and Jacksbank would result in the OHL being prominent in the landscape, with wider potential for effects on landscape character, including its rural undulating nature. Avoiding hills and locating the OHL on lower lying land will reduce the OHL's prominence in the landscape, with potential for back-clothing against higher land. Opportunities to align the OHL on lower lying land to the north-west of Herscha Hill or between Knock Hill and Herscha Hill, lower lying land to the east and west of Droop Hill, and lower land west and north of the local hill at Jacksbank would be explored during detailed alignment work.</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>Fetteresso to Alyth overhead line (currently being upgraded to 400 kV) is located within this section.</p> <p>The route crosses the Luther Water at the Glen of Drumtochty where belts of broadleaved woodland line the burn. These areas of woodland contribute to landscape character.</p> <p>The route crosses more elevated land between Auchenblae and the Fetteresso Forest. Within this stretch, the route extends across Herscha Hill, Knock Hill, Droop Hill and elevated land at Jacksbank which form high points within the landscape. These hills contribute to the characteristic rolling landform of the landscape.</p> <p>The route also extends up the southern slopes of Fetteresso Forest which forms part of the characteristic elevated backdrop to the lowland areas to the south.</p>	<p>The OHL could be located on lower elevations where infrastructure would be less prominent in the wider landscape and less compromising to the rural undulating character. There is also potential to back-cloth the OHL against the rising slopes on the upland edge of Fetteresso Forest to reduce the OHL prominence in the landscape.</p> <p>An OHL in this route would sit within the context of the upgraded Fetteresso to Alyth overhead line to the west of the route. As such, the OHL would be located within a landscape that is already influenced by vertical man-made features. Potential for cumulative effects on landscape character as a result of an additional OHL in the landscape forms a constraint. This constraint could be mitigated through detailed alignment by parallelling the new OHL with the existing OHL where possible, in order to contain cumulative effects rather than extending effects across a larger area of landscape. Further mitigation could be achieved by back-clothing the OHL against areas of higher land in order to reduce the new OHs's overall prominence in the landscape when viewed in the context of the existing OHL.</p>	
Visual	<p>The route option extends for a length of approximately 20km and passes around or close to key areas where sensitive visual receptors are located. These visual receptors have potential to form constraints and include:</p> <ul style="list-style-type: none"> • Those living and traveling around settlements located within the vicinity of the route option, including (from south to north) Auchenblae and Glenbervie where open views to the wider surrounding landscape are available; • Scattered residential properties within the route and those located within close proximity of the route; • Users of Core Paths to the southeast of the central part of around Auchenblae, who are likely to have some open views of the surrounding landscape in open stretches of path; • Those travelling along the local road network, including the A90, B9120, B966 and other B class and minor roads who experience sequential views of the surrounding landscape. • People travelling along the East Coast Main Line Railway to the east of the route option. 	<p>The route option has been RAG rated as Amber as an OHL in this route option may compromise views experienced by a range of sensitive visual receptors. Due to the distribution and density of visual receptors in the route option, the level of constraints is considered such that there is potential for the OHL to compromise views or visual amenity in some locations.</p> <p>There is potential for an OHL in this route to compromise views from nearby settlements including Auchenblae and Glenbervie. The route offers some opportunity to avoid close proximity to these settlements and reduce the degree to which views from these settlements are compromised.</p> <p>The route crosses higher land and a series of local hills including Herscha Hill, Knock Hill, Droop Hill and Jacksbank. The route also partially extends across the upland edge on the approach to Fetteresso Forest. As such there is potential for the OHL to be prominent along the skyline in some views experienced by surrounding residential receptors, road users, those travelling on the East Coast Main Line Railway and those living and travelling around Auchenblae and Glenbervie. The prominence of the OHL on elevated landform, as perceived by these visual receptors is considered to</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>Indicative Viewpoints to Represent Sensitive Visual Receptors:</p> <ul style="list-style-type: none"> • B9120 near Cowieshill (NGR NO 67420 72415) – represents views experienced by visual receptors within the southern end of the route near Cowieshill; • Glen Road, Auchenblae (NGR NO 72466 79289) - represents views experienced by residential receptors in and around Auchenblae, within the Braes of the Mearns SLA. • Minor road near East Town Farm (NGR NO 77131 84429) - represents residential receptors to the north of the route and potential cumulative effects with the existing high voltage OHL. 	<p>form a constraint due to the potential widespread visibility of the OHL and as such widespread potential for the OHL to compromise views.</p> <p>Opportunities could be explored to align the OHL on lower lying land to the north-west of Herscha Hill or between Knock Hill and Herscha Hill, lower lying land to the east and west of Droop Hill, and lower land west and north of the local hill at Jacksbank. Locating an OHL through these lower lying areas would make infrastructure less prominent in views experienced by visual receptors within the route option and its immediate context. There is also potential to back-cloth the OHL against the rising slopes on the upland edge of Fetteresso Forest to reduce the OHL’s visual prominence on the Highland Boundary Fault when viewed from the south.</p> <p>Potential cumulative visual effects as a result of a new OHL in addition to the upgraded Fetteresso to Alyth OHL to the west of the route option is also considered to be a constraint. A further OHL in this area has the potential to bring OHL infrastructure closer to visual receptors in and around the route, including residents at dwellings, recreational receptors and road users, and potentially surround them, especially residents at dwellings. Opportunities to parallel the OHL with the existing high voltage OHL to the west of the route to contain potential cumulative visual effects, rather than extend them across the landscape, will be explored during the detailed alignment work, in order to reduce the level to which visual amenity is compromised by potential cumulative visual effects.</p>	
Land Use			
Agriculture	<p>Approximately 1,140ha (or 46%) of the land in route option D5 is prime agricultural land (class 2 – land capable of producing a wide range of crops, or class 3.1 – land capable of producing consistently high yields of a narrow range of crops and/or moderate yields of a wider range) (see Figure 5.6).</p> <p>The southern section of the route is predominantly covered by class 2 land interspersed with areas of class 3.1 land and the northern section is predominantly of lower land classification (non prime land) interspersed with some small areas of class 3.1.</p>	<p>The route option has been RAG rated as Amber as it passes directly through extensive areas of prime agricultural land (ALC1, 2 and 3.1). Considering the relatively limited footprint of OHL tower foundations the permanent loss of agricultural land for an OHL, the development is not expected to compromise the agricultural use or viability of the land as an agricultural resource.</p> <p>In most sections of the route where prime agricultural land is present, it would not be possible to avoid where it constrains the full width of the option. Land take would be associated with the area contained within the footprint of the OHL tower foundations and therefore would be permanent</p>	

Topic	Constraints	Evaluation	RAG Score
		<p>for the operational life of the asset. At the OHL alignment stage, siting of tower positions and access tracks would seek to reduce impacts on agricultural operations.</p>	
Forestry	<p>There are areas of commercial forestry at the south of the route option at Drumelzie Wood (west of Auchenblae) and to the north of the route at Fetteresso (at Mid Hill and Elf Hill) which have been identified as forming part of the National Forest Estate (managed by Forestry and Land Scotland). Drumelzie Wood is only partly located within the west of the route option. Fetteresso Forest covers the width of the route option at the northern end.</p> <p>An area of mixed forestry located at the southern end of the route option at Greenbottom Wood covers a limited strip the width of the route option and appears to be managed commercially.</p> <p>There are also a number of plantations and small woodland blocks characterised by commercial conifer species which are located throughout the route option, but which do not span the whole width of the route. These include blocks at Mid Blairs (northeast of Auchenblae) and Jacksbank Wood (south and southeast of Jacksbank).</p>	<p>The route option has been RAG rated as Amber as it passes through an area of commercial forestry and is likely to result in some loss of woodland to tree-felling/wayleave clearance activities which may compromise commercial returns of the forestry operations.</p> <p>In a number of locations, the route option is constrained by the presence of woodlands with some commercial forestry activity present. At these points the development of an OHL alignment and associated wayleave within the route option has potential to cross close to, or within the edges, of the woodland blocks and therefore to have some potential to compromise commercial returns from these enterprises. Additionally, where coniferous species are present, further felling may be required to ensure a wind firm edge.</p> <p>The areas of managed woodland at Fetteresso and Greenbottom Wood may be potentially affected by creation of OHL wayleaves. At Fetteresso the woodland covers the entire width of the route option which could not be avoided by an OHL alignment. Aerial imagery shows the area of woodland at Greenbottom Wood which spans a narrow strip across the width of the route to be very sparse and is not considered to represent a major constraint.</p> <p>The OHL alignment design would seek to avoid commercial woodland. Where the alignment cannot avoid woodland, towers would be positioned, where possible, in the narrowest sections or towards the edge of the woodland blocks to reduce the extent of felling required. It is not considered that the integrity of the principal woodland areas and commercial operations would be significantly affected.</p> <p>The other smaller areas of commercial forestry can be avoided with alignment as they do not cross the whole route and are located in areas where an alignment could reasonably be taken to avoid them.</p>	
Recreation: Core Paths	<p>Paths and Trails</p> <p>A core path is present within the route option. Core paths are designated under the <i>Land Reform (Scotland) Act 2003</i>²⁰ as the main paths for public access</p>	<p>The route option has been RAG rated as Green as the route option avoids interaction with key footpaths or national cycle routes and does not significantly interact with notable areas known for recreation and tourism.</p>	

Topic	Constraints	Evaluation	RAG Score
<p>NCN Routes</p> <p>Scottish Great Trails</p> <p>Notable areas used for tourism and recreation</p>	<p>throughout the area. A core path west of Auchenblae (Auchenblae Cemetery Road Link) runs along the eastern edge of the route and crosses into the route for approximately 250 m. See Figure 5.7.</p> <p>NCN route 1 runs along the coast beyond the east of the route over 7 km from the route.</p> <p>There are no Scottish Great Trails within or near the route.</p> <p>Recreation and Tourism Facilities</p> <p>The following recreational and tourism facilities located in the route option boundary have been identified:</p> <ul style="list-style-type: none"> • Cowden Farmhouse, a holiday let which is located in the northern section, northwest of Glenbervie. • A holiday let called ‘The Cottage’ located to the north of Auchenblae, near Newlands. • Auchenblae Golf Course, located partially within the route to the northeast of Auchenblae in the centre of the route option. • Fetteresso Forest is used for recreational activities including walking and mountain biking. The northern extent of the route option is located within this forest. • Drumelzie Wood is used for recreational activities including walking. The wood extends partially into the route to the west of Auchenblae for approximately 200 m, although the majority of the wood extends to the west of the route option. <p>There are a number of small-scale recreation and tourism facilities beyond the boundary of the route option but within close proximity (up to 500 m). These include.</p> <ul style="list-style-type: none"> • Coullie Stays, a holiday let which is located approximately 250 m northwest of the route, south of the Drumelzie Wood near East Cairnbeg, with views to the east and south of the route option. • Pitrennie Mill Caravan and Motorhome Club site is located approximately 200 m east of the route option, to the east of Cairnton. 	<p>Paths and Trails</p> <p>The route option may need to span a core path which crosses part of the width of the option area. Whilst there is potential for some users to experience amenity effects (including visually) in the vicinity of this crossing, it is not considered that the recreational use of the path would be significantly compromised. There are no other core paths or trails along the route option albeit likely some quieter minor roads will be used for informal recreation by some people.</p> <p>The construction of the OHL and associated access tracks may result in some temporary disruption to use of the core path if it needed to be crossed by the OHL (and would be mitigated with temporary diversions) however this would be short-term in nature.</p> <p>NCN route 1 is a long-distance route with views of the east coast. Construction of an OHL within the route would not interact with the recreational amenity of users of this route because the OHL route is located beyond 7 km of the NCN route.</p> <p>Recreation and Tourism Facilities</p> <p>The recreation facilities (Auchenblae Golf Course, Fetteresso Forest and Drumelzie Wood) identified within the route option are of local significance with an absence of major tourist attractions or formal recreational facilities. Most of the area associated with these facilities are located outwith the route boundary and only a small proportion protrudes into the route boundary. Whilst there is potential for the sites identified to constrain development of an alignment within the route to some extent, it is not considered that that the amenity of users of the facilities would be compromised by development of an OHL, and it is considered likely that during alignment, Auchenblae Golf Course and Drumelzie Wood could be avoided. During construction, felling for wayleaves at Fetteresso is unlikely to be significantly constrained by recreational uses of the forest area and it is likely that any affected paths could be redirected. Trails located to the west of the route could provide alternative options for recreational use and would potentially be screened from the OHL by retained forestry.</p>	<p style="background-color: #4CAF50; color: white; text-align: center; padding: 10px;">RAG Score</p>

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> A number of holiday lets in Auchenblae which are located approximately 300 m to the east of the route. <p>There are also a number of recreation and tourism receptors which are outside of the route option boundary and within approximately 500 m to 1 km. There are three holiday properties approximately 800 m north-west of the route option, south of Tipperty. There is also a local tourism attraction (bed and breakfast at Thornton Castle) located approximately 600 m to the south of the route option.</p>	<p>The holiday let at Cowden is located within the route boundary along the northwestern boundary and is afforded some screening to the north of the property from wooded areas and has open views to the surrounding landscape and area to the south of the of the property. The holiday let called The Cottage faces south into the route and has open views to the surrounding landscape. The holiday let at East Cairnbeg has open views within the surrounding landscape including across the route option. There is potential for an OHL in this route option to compromise the visual amenity afforded to the properties identified above, and for those identified outwith the route option to the east as they are not afforded screening across the majority of the route area. Whilst these facilities have some potential to constrain the route, it is not considered that their recreational use would be compromised. Mitigation would involve locating the OHL alignment as far as possible from the properties to minimise effects.</p> <p>The other recreation and tourism facilities located in settlements outwith the route are not considered to be a constraint to the route option due to the distance from the route boundary. This includes: Pitrennie Mill Caravan and Motorhome Club, holiday lets in Auchenblae and Tipperty and Thornton Castle.</p>	
Recreation – Fishing	<p>The following locations of game fishing let on a commercial basis have been identified within the route option:</p> <ul style="list-style-type: none"> On the Bervie Water, to the west of Glenbervie, there is a fishing beat used for salmon, sea trout and brown trout fishing, managed/let by Laurencekirk & District Angling Association²¹. The fishing area extends west from Glenbervie to east of North Blairs for approximately 1.2 km through the eastern half of the route option width on both banks of the river. The Stonehaven & District Angling Association²² also have fishing rights on the north bank of the Bervie Water between Milton of Dellavaird Farm and the Burn of Guinea which extends across the western half of the route option width. Further sections of fishing outwith the route option are managed by the Laurencekirk & District Angling Association and the Stonehaven & District Angling Association on the Bervie Water. 	<p>The route option has been RAG rated as Green. The route option may interact with areas used for commercial highland sports (fishing) however, this is not considered to be a significant constraint as the effects would be localised and are not considered to have the potential to compromise their commercial viability.</p> <p>ENA guidance²³ advises angling no closer than 30 m from an OHL that crosses or runs parallel to the watercourse. A section of up to approximately 80 m of the fishing beat on each bank could be sterilised from use by anglers taking account of this buffer distance and the width of the OHL conductor arrays.</p> <p>The full width of the route option is assumed to be constrained by commercial fishing beats on the Bervie Water. Therefore, an alignment in the route option would not be able to avoid the constraint and may interact with the fishing beat. However, since the fishing lets on this watercourse extend</p>	

Topic	Constraints	Evaluation	RAG Score
		for a substantial length of the river it is not considered that the route option would compromise the commercial viability of the fishing enterprises.	
Planning			
Policy	<p>Relevant National Planning Policy and Development Plans have been considered to support evaluation of likely compliance of the route option with national, regional and local planning policy.</p> <p>Planning Policy</p> <p>The NPF4²⁴ policies relevant to this route option are below:</p> <ul style="list-style-type: none"> • Policy 3(b) Natural Environment • Policy 4(b-d & f) Natural Places • Policy 5(b-c) Soils • Policy 6(b) Forestry, woodland and trees • Policy 7(h) Conservation areas • Policy 7(h and i) Historic assets and places • Policy 11(e)(ii) Landscape and visual impacts • Policy 22(a) Flood risk and water management <p>Aberdeenshire LDP 2023²⁵ policies relevant to this route option are:</p> <ul style="list-style-type: none"> • Policy E1 Natural Heritage • Policy E2 Landscape • Policy E3 Forestry and Woodland • Policies HE1 and HE2 Protecting Listed Buildings, Scheduled Monuments and Archaeological Sites, Historic, Cultural and Conservation Areas • Policy PR1 Protecting Important Resources • Policy C3 Carbon Sinks and Stores • Policy C4 Flooding <p>Planning Allocations and Designations</p> <p>The Aberdeenshire LDP sets out the following sites within the route option corridor:</p>	<p>Key planning policies have been considered in the context of the appraisal findings for other criteria in this table and commentary is provided on those of note in the evaluation in relation to NPF4 and LDP policies.</p> <p>Planning Policy</p> <p>The route option has been RAG rated as Amber as it may be contrary to the following LDP, and similar NPF4 policies:</p> <ul style="list-style-type: none"> • NPF4 Policy 4b/4c & Aberdeenshire LDP Policy E1 – due to the potential impact on natural heritage and ornithology and notably the Montrose Basin and Fowlsheugh SPAs, see Natural Heritage above. To comply with this policy public economic or social benefits would need to clearly outweigh any negative effects on the protected resource, and there would need to be no reasonable alternative site. • NPF4 Policy 11(e) & Aberdeenshire LDP Policy E2 - due to potential impact on the landscape notably the Braes of the Mearns SLA, see Landscape and Visual above. Any adverse effects would need to be clearly outweighed by social, environmental or economic benefits of at least local importance. • NPF4 Policies 5(b), 6(b) & Aberdeenshire LDP Policies E3, PR1 and C3 - there is a presumption against the removal of trees, woodlands and hedgerows; and prime agricultural land should not be developed unless considered essential. See Natural Heritage above. In order to comply with these policies significant public benefits would need to outweigh any loss and compensatory planting would need to be provided. • NPF4 Policy 7 & Aberdeenshire LDP Policies HE1 and HE2 - due to the potential impact on a number of heritage assets including the Glenbevie GDL and Auchenblae Conservation Area. See Cultural Heritage above. Development that would have an adverse impact on heritage assets is resisted, if unavoidable, development needs to be minimised and justified to comply with the policies. 	

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> Auchenblae (Conservation Area) - Protected areas in the village – Sites P1, P2 and P6 are within the route option, and route option is located 200 m from LDP sites P3, P4 and P5; and Opportunity site OP1. 	<p>Planning Allocations and Designations</p> <p>The route option may affect the following LDP designations:</p> <ul style="list-style-type: none"> Aberdeenshire LDP village of Auchenblae which is a Conservation Area – the village boundary lies within the route option and may affect a number of protected amenity and woodland areas directly (Sites P1, P2 and P6) and others indirectly, and Opportunity Site OP1 which is for 25 houses and lies within 200 m. Development capacity may be reduced with the potential to introduce additional residential receptors to the area. <p>A number of these possible policy conflicts may be removed following further OHL alignment / design development and environmental assessment and mitigation development.</p>	
Proposals	<p>The following planning proposals have been identified within the route option²⁶:</p> <ul style="list-style-type: none"> A consented planning application for the erection of three houses at Crookieden Farm which is located within the middle of the route (APP/2021/2293). Prior notification for two polytunnels adjacent north of Westerton of Pittarrow Farm which is located within the southern edge of the route (APP/2020/1589). An approved planning application for a house to the northwest of Westerton of Pittarrow which is located within the centre of the route option (APP/2019/2738). An approved planning application for the alteration/extension of a farm bothy to form a house at Cairnton Farm, located in the middle of the route (APP/2021/1867). An approved planning application for extension to a dog kennel at Laurney Lodge Luxury Dog Hotel, Fordoun, which is located within the western edge of the route (APP/2022/2017). A planning application approved for the erection of a house northeast of Backfield Farm (northwest of Drumlithie), which is located within the centre of the route option (APP/2022/2277). 	<p>The route option has been RAG rated as Green as there are no projects known to the planning system which may interact with the option.</p> <ul style="list-style-type: none"> The route option overlaps with the boundary for the prior notification for the erection of two polytunnels, however, it is considered that the planning applications present a minor constraint and could be avoided by an alignment developed within the route option. The route option overlaps with the boundaries for approved planning applications for erection of houses at Crookieden Farm, Westerton of Pittarrow, Cairnton Farm, Upper Quithel, dog kennels at Laurney Lodge and house at Backfield Farm. However, it is considered that these planning applications present a minor constraint and could be avoided by an alignment developed within the route option. 	

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> An approved planning application for the erection of three houses located largely outwith the route boundary to the north of the route option, to the southwest of Upper Quithel. A small section of the planning application boundary lies within the route boundary (APP/2019/0948). The PAN applications for the proposed 400 kV substations at Hurlie, near Fetteresso, and Emmock, near Tealing, are due to be submitted in early 2024. PAC events are scheduled to be undertaken in Spring 2024. The project webpages can be found in Section 1.6. Next Steps of the Consultation Document. <p>There are no other known planning applications, consents, PAC/PAN or scoping applications at the time of this appraisal.</p> <ul style="list-style-type: none"> SSEN Transmission is working towards a submission for an application for consent to construct a proposed 132kV OHL to connect the nearby existing Fetteresso Substation with the consented wind farm at Glendye. More information can be found at the project webpage: https://www.ssen-transmission.co.uk/projects/project-map/glendye-windfarm-connection/ 		

Technical Appraisal

Infrastructure crossings. Infrastructure creates a constraint on an OHL often requiring additional clearance, enhanced reliability and protection provision to the infrastructure during construction and maintenance. Each crossing of infrastructure therefore has the potential to constrain the route option.

- Major crossings include other OHLs of 132 kV and above, railways, rivers and lochs over 200 m wide, navigable waterways, motorways and other major roads, major pipelines and other significant infrastructure. These crossings require specific OHL solutions and can constrain the OHL design.
- The minor roads sub-criteria includes all road crossings excluding those considered under the major crossings criteria. Private tracks and driveways may also be included where there is a requirement to maintain access or where relatively high traffic volumes are anticipated. Whilst the impact on OHL design is considered to be less for these crossings than for the minor road crossings, measures are still required to enable these crossings and collectively they can constrain a route option.

Environmental design. The terrain, land features and atmosphere all have the potential to constrain the design of an OHL; the ease and safety of routeing an OHL, construction of an OHL and maintenance of an OHL can be impacted. Furthermore, the environment which an OHL crosses can impose long term risks from pollution and flooding. Route options with multiple or significant environmental features have a higher risk of constraint when routeing an OHL. Environmental constraints associated with the OHL are discussed in the **Environmental Appraisal** of this appendix and in **Section 5** of the main consultation document.

- High elevations increase wind and ice loading on the overhead lines which requires shorter spans between angle towers or stronger structures. This can constrain route options and increase the cost. Additionally, access for construction and maintenance is often more difficult at higher altitudes and the risk of severe weather events is greater.
- Contaminated land poses a significant health risk to construction and maintenance operatives, and is potentially expensive to mitigate, dispose of or remediate. As such, the presence of contaminated land in a route option would be a significant constraint. For assessment purposes, the presence of unexploded ordnance (UXO), is also considered in this section as it has similar implications.
- Areas vulnerable to flooding pose a potential risk during construction as they may prevent maintenance tasks from being undertaken, and can pose a physical risk to structures during flood events. As such, route options with large areas of land that are vulnerable to flooding would be assigned a higher risk of constraint.

Ground conditions. Ground topography and condition can impact the choice of route options, access to the OHL, as well as construction and maintenance of the OHL. Route options with larger areas of challenging ground conditions are more likely to be significantly constrained.

- Steep or mountainous slopes present a significant difficulty for routeing, access, construction and the maintenance of an OHL. Route options with a large proportion of the route option which traverse ground with steep or mountainous slopes are more likely to be constrained and it would therefore be more difficult and costly to build and maintain an OHL.
- Peat, particularly deep peat, represents a significant constraint for access, construction and the maintenance of an OHL, particularly as it is an important habitat and the construction of a new OHL could cause long-term damage. Route options which cross larger areas of peatland are more likely to be constrained and it would therefore be more difficult and costly to build and maintain an OHL.

Construction / Maintenance. OHLs should be routed in consideration to the requirements of construction and maintenance, as the preferred route option can have a significant impact on the safety and cost of the Proposed Development throughout its lifetime.

- The construction of temporary accesses are a significant project cost. Route options that are remote and are located at a distance from existing tracks and the public road network have the potential to incur large costs due to the requirement to construct road access. Furthermore, access for inspection and maintenance is a requirement throughout the life of the asset. Route options that are remote from the existing access routes represent a significant constraint and have a higher potential to be constrained.
- OHLs with a higher number of angle supports tend to be more challenging to construct due to the number of angle pull throughs, and often require more extensive access. As such, a route option with a larger number of angle supports is at a greater risk of being constrained.

Proximity. Existing features can constrain a route option as they often are required to be avoided to reduce or avoid any impacts. These features include properties, windfarms, telecommunications masts, urban area and metallic pipes.

- Dispersed buildings and properties are a common feature across the Scottish landscape. Placing OHLs in close proximity to these features is avoided where possible. Route options where many pinch points occur due to the potential close proximity to buildings and residential properties are considered to be more constrained. The proposed routes are approximately 1 km or more in width and the route centreline has been identified to allow sufficient space for refinement of the OHL design at the alignment stage to increase the distance of an OHL to buildings within close proximity.
- Windfarms pose a risk to OHLs as they can disrupt the airflow and as such, the OHLs need to be routed around any wind turbines and windfarms at a distance of three times the rotor diameter wherever possible.
- OHLs can block existing line of sights for telecommunication masts and therefore the line of sights from communication masts can constrain route options and structure locations.
- As with dispersed buildings and properties, urban areas represent a significant constraint whereby the route option will need to be routed around.
- Metallic pipes have to be avoided by individual angle supports as they are often expensive to reroute, and, ideally, the final alignment should avoid running in parallel to a metallic pipe, to avoid any potential electrical impacts on the pipelines. As such, metallic pipes represent a constraint to route options.

Table A3 – Technical Baseline and RAG Rating Table for Route Options D4 and D5

Criteria	Sub-criteria	Route D4	RAG Rating	Route D5	RAG Rating
Infrastructure Crossings	Major Crossings	Three gas pipeline crossings (NGGT).		Five gas pipeline crossings (NGGT).	
	Minor Roads	One B-road crossing, 14 minor/local road crossings.		One B-road crossing, ten minor/local road crossings.	
Environmental Design	Elevation	Length through 50-100 m: 10,490 m. Length through 100-150 m: 3,512 m. Length through 150-200 m: 4,605 m. Length through 200-300 m: 901 m.		Length through 50-100 m: 5,329 m. Length through 100-150 m: 5,612 m. Length through 150-200 m: 6,061 m. Length through 200-2300 m: 421 m.	

Criteria	Sub-criteria	Route D4	RAG Rating	Route D5	RAG Rating
		Minimum Elevation: 59 m. Maximum Elevation: 221 m.		Minimum Elevation: 59 m. Max Elevation: 192 m.	
	Contaminated Land	Route passes through former Fordoun RAF site which was identified as potential contaminated ground.		Low risk in terms of contaminated land.	
	Flooding	Distance through high river flood risk: 1,620 m. Distance through high surface water flood risk: 460 m. Percentage of route within flood risk: 11%. River crossings: 13.		Distance through high river flood risk: 1,290 m. Distance through high surface water flood risk: 240 m. Percentage of route within flood risk: 8%. River crossings: nine.	
Ground Conditions	Terrain	Length through 0-5° slope: 9,858 m. Length through 5-10° slope: 4,141 m. Length through 10-20° slope: 2,957 m. Length through 20-40° slope: 240 m. Max. slope: 26°.		Length through 0-5° slope: 7,358 m. Length through 5-10° slope: 6,287 m. Length through 10-20° slope: 2,278 m. Length through 20-40° slope: 270 m. Max. slope: 38°.	
	Peat	Distance through Class 1 Peatland: 0 m. Distance through Class 2 Peatland: 0 m. Distance through Class 3 Peatland: 0 m. Distance through Class 5 Peatland: 0 m. Distance through 0-0.5 m peat depth: 0 m. Distance through 0.5-1 m peat depth: 0 m. Distance through 1-1.5 m peat depth: 0 m. Distance through 1.5 m or more peat depth: 0 m.		Distance through Class 1 Peatland: 0 m. Distance through Class 2 Peatland: 0 m. Distance through Class 3 Peatland: 0 m. Distance through Class 5 Peatland: 0 m. Distance through 0-0.5 m peat depth: 0 m. Distance through 0.5-1 m peat depth: 0 m. Distance through 1-1.5 m peat depth: 0 m. Distance through 1.5 m or more peat depth: 0 m.	
Construction / Maintenance	Access	Distance through 50-100 m from access roads: 2,215 m. Distance through 100-300 m from access roads: 10,061 m. Distance through 300-1,000 m from access roads: 4,862 m.		Distance through 50-100m from access roads: 2,104 m. Distance through 100-300m from access roads: 9,854 m. Distance through 300-1,000m from access roads: 2,795 m.	
	Angle Towers	Angle towers (number) - 01 to 03 degrees: zero. Angle towers (number) - 03 to 10 degrees: one.		Angle towers (number) - 01 to 03 degrees: zero. Angle towers (number) - 03 to 10 degrees: three.	

Criteria	Sub-criteria	Route D4	RAG Rating	Route D5	RAG Rating
		Angle towers (number) - 10 to 30 degrees: four. Angle towers (number) - 30 to 60 degrees: five. Angle towers (number) - 60 to 80 degrees: zero. Total number of angles: ten.		Angle towers (number) - 10 to 30 degrees: four. Angle towers (number) - 30 to 60 degrees: ten. Angle towers (number) - 60 to 80 degrees: zero Total number of angles: 17.	
Proximity	Clearance Distance	Residential Buildings within 5 m: zero. Commercial Buildings within 5 m: zero. Other Buildings within 5 m: zero. Residential Buildings within 170 m: 19. Commercial Buildings within 170 m: two. Other Buildings within 170 m: 62. Residential Buildings within 500 m: 107. Commercial Buildings within 500 m: five. Other Buildings within 500 m: 333.		Residential Buildings within 5 m: zero. Commercial Buildings within 5 m: zero. Other Buildings within 5 m: zero. Residential Buildings within 170 m: six. Commercial Buildings within 170 m: one. Other Buildings within 170 m: 17. Residential Buildings within 500 m: 187. Commercial Buildings within 500 m: 19. Other Buildings within 500 m: 342	
	Wind Farms	There are two privately owned wind turbines at Pitrennie Mill which would infringe on the distance of three times the rotor diameter and would need to be purchased. The route option also passes by a small windfarm located on Droop Hill although it is expected that the distance of three times the rotor diameter could be maintained A small windfarm is located at Upper Kinmouth.		The route option passes by an approved windfarm location near Herscha Hill and Droop Hill but it is expected that at the alignment stage, a distance of three times the rotor diameter would be maintained. A small windfarm is located at Upper Kinmouth.	
	Communication Masts	No masts located within route		No masts located within route	
	Urban Developments	Passes in close proximity to Auchenblae, including remote commercial and residential buildings to the West of Auchenblae.		Passes in close proximity to Auchenblae	
	Metallic Pipes	Three crossings.		Five crossings.	

Technical Appraisal of Routes D4 and D5

Major Crossings are present within both route options and have been assigned a RAG Rating of Red (High). As Route Option D4 crosses three major gas pipelines compared to five in Route Option D5, Route Option D4 is seen as preferred in this respect. In terms of Minor Crossings, both route options cross one B-road as well as multiple minor and local roads. Route Option D5 has a small number of minor roads to be crossed and is seen as preferred in this respect, however, the crossing methodologies for roads such as these are commonplace.

Both route options are assigned a RAG Rating of Green (Low) for Elevation as the majority of the route option lengths (less than 10% of both route options) are located within 200-300 m Above Ordnance Datum (AOD). Route Option D4 is assigned a Red RAG rating for contaminated land due to it passing through the former Fordoun RAF site which was identified as a potential risk site for contaminated land.

In relation to Terrain, the maximum slope in Route Option D5 is significantly higher than Route Option D4; 39° compared to 26°. However, it is considered likely that this would be mitigated at the alignment stage. Both route options have been assigned a RAG Rating of Green (Low) as the majority of the route lengths are between 0-20°. Route Option D4 is the preferred option due to the route traversing gentler slopes although it should be noted that both route options are considered to be technically feasible. As there are no areas of Class 1 or 2 peatland located within either route option, the RAG Ratings have been assigned as Green (Low).

As there are a large number of local road networks within both route options for construction and maintenance, both route options have been assigned a RAG Rating of Green (Low). Neither route option is at a distance greater than 1 km from a local public road. Both route options are considered comparable in terms of access and it should not be considered a constraint.

Route Option D5 has a 70% increase in the number of angle supports than Route Option D4, the majority of which are between 30-60° angles, however the numbers of angle towers should be taken as indicative only at this stage of the Proposed Development. Route Option D5 passes close to Drumelzie Wood which is located on steep terrain to the west of the route option, and also passes close to the settlement of Auchenblae which is located to the east of the route option. As such, a large number of angle towers may be located in close proximity to residential properties which is contrary to the Holford Rules for routeing OHLs.

Route Option D4 is more constrained and has been assigned a RAG Rating of Amber (Intermediate) as the route option contains a pinch point of residential properties near Fordoun.

Both route options pass through a number of sparsely populated wind turbines and smaller windfarms, and as such have been assigned a RAG Rating of Red (High). Both route options pass by an existing windfarm at Jacksbank / Upper Kinmouth where the proximity to houses could cause a constraint whereby the distance of three times the rotor diameter of a wind turbine may not be maintained. However, it is considered likely that the buffer distance of three times the rotor diameter will be maintained throughout Route Option D5. Within Route Option D4, there is a pinch point at Pitrennie Mill where the route passes two independent wind turbines where the distance of three times the rotor diameter may not be maintained due to proximity constraints related to residential properties. No communication masts were identified within either route option, and as such, both route options have been assigned a RAG Rating of Green (Low).

Urban Developments do not constrain either route option, and both route options have been assigned a RAG Rating of Green (Low) as neither route option passes directly through any significant urban areas. Both route options pass close to many residential dwellings throughout the route, with Route Option D5 passing in closer proximity to Auchenblae in the west and Route Option D4 passing at a further distance from this settlement in the east.

Metallic Pipes are present across both route options and have been assigned a RAG Rating of Amber (Intermediate). Both route options run parallel to gas pipelines in some areas, and will require mitigation due to the interaction with the major gas pipeline network. As Route Option D4 crosses fewer pipelines than Route Option D5 (three compared to five respectively), Route Option D4 is considered to be the preferred route in this respect. The full extent of required mitigation and impact can only be understood once an alignment has been identified and conversations have been held with the pipeline operators.

In conclusion, Route Option D5 should be considered as the most preferred option for entering Fetteresso because it has fewer pinch points such as that maintaining the clearance distance to properties experienced on Route Option D4. Both options are technically feasible and should be taken into consideration and feed into the overall assessment as per PR-NET-ENV-501 which includes other aspects such as environmental and cost to determine the preferred Option when considering all criteria.

APPENDIX B. APPRAISAL OF NEW ROUTE OPTIONS TO HURLIE SUBSTATION (SECTION E)

This appendix presents the baseline constraints and the findings of the appraisal of key environmental, technical and cost constraints for each route option in Section E which connects to the 400 kV Hurlie Substation. Two route options are appraised – Options E2 and E3.

The appendix provides the findings of the environmental and technical comparative appraisal for each route option within Section E and details the RAG Ratings applied to each route identified under each environmental and technical topic as per SSEN Transmission's Routeing Guidance. The cost comparative appraisal is covered in the main report.

The environmental topics consider the following: natural heritage, cultural heritage, people, landscape and visual, land use and planning.

The technical topics address: infrastructure crossings, environmental design, ground conditions, construction / maintenance and proximity.

The cost topics address: capital and operational.

This appendix follows the structure:

- Environmental Appraisal
- Technical Appraisal

Environmental Appraisal
Table B1. Environmental Appraisal for Route Option E2

Topic	Constraints	Evaluation	RAG Score
Natural Heritage			
Designations	<p>International, European or National Designations</p> <p>There are no international or European designations within the route option.</p> <p>The closest statutory designated site for natural heritage is Red Moss of Netherley Special Area of Conservation (SAC) and SSSI (NGR NO 856 937), located approximately 4.7 km northeast of the route, west of Newtonhill (see Figure 5.8).</p> <p>There are a number of non-statutory national designations within the route option. There is a single area of woodland classified as Ancient Woodland¹ on the AWI. This is located in the centre of the route option at Mergie (NGR NO 793 888), extending across the majority of the width of the route option and is noted to be upland birchwood on the NWSS.</p> <p>In addition, there are blocks of woodland classified as LEPO on the AWI located at (see Figure 5.8):</p> <ul style="list-style-type: none"> Woodland at Mergie to the west (NGR NO 790 899) and east NGR (NO 795 886) of the block of Ancient Woodland identified. The eastern portion is noted as upland birchwood on the NWSS. 	<p>This route option has been assigned an Amber RAG rating because it has potential to compromise the conservation status of an area of Ancient Woodland, a non-statutory national designation.</p> <p>The route option is unlikely to compromise the conservation status of any statutory international, European or national designated area and/or the conservation status of the designated features of these sites.</p> <p>The strip of Ancient Woodland spans the centre of the route option and is considered to be an irreplaceable habitat; it should be avoided through alignment. This may be possible by siting towers through a block of LEPO to the west.</p> <p>The LEPO woodlands that may be impacted by the OHL alignment are limited and largely comprise commercial forestry. The LEPO woodland around Hill of Swanley may not be avoidable due to an adjacent LNCS (see below). Any requirement to provide OHL wayleaves through LEPO woodland could feasibly be mitigated to some extent by selecting an OHL alignment wherever possible through the narrowest sections/outlying areas of the woodland.</p> <p>It may be possible to enhance the condition of woodland in the longer term through new planting particularly in areas where the baseline value has been affected by commercial forestry.</p>	
	<p>Regional Designations</p> <p>There are no LNCS within the route option (see Figure 5.8).</p> <p>The closest LNCS is Mergie LNCS (NGR NO 803 885) which is adjacent to the route option and consists of the following habitats: neutral and acid grassland, broadleaved and coniferous woodland, wet heath, scrub, bracken, bog, pond, rivers and rush pasture, and locally important species of plant.</p>	<p>This route option has been assigned a Green RAG rating because the route option is unlikely to compromise the conservation status of the LNCS and/or the conservation status of the designated features of the site.</p> <p>The route option is constrained by the presence of the LNCS adjacent to the eastern boundary, and by the presence of irreplaceable Ancient Woodland spanning the majority of the route option to the west of the LNCS (see above).</p>	

¹ Ancient Woodlands comprise categories 1a and 2a on the AWI. These woodlands are described by NatureScot (2021) as: "interpreted as semi-natural woodland from maps of 1750 (1b) or 1860 (2b) and continuously wooded to the present day."

Topic	Constraints	Evaluation	RAG Score
		<p>The LNCS would be avoidable through alignment as it is located outside the route option.</p>	
Protected Species	<p>European Protected Species</p> <ul style="list-style-type: none"> Watercourses along the route, primarily the Cowie Water, are likely to be used by otter. Smaller watercourses and field drains are also likely to be used by this species. The closest records of otter within the last 15 years was approximately 4.4 km northwest of the route option in Red Moss of Netherly in 2021. Bats may be present roosting in the woodlands and trees along the route and are likely to use linear features such as treelines, hedgerows and watercourses throughout the route option for foraging and commuting. The closest record of a bat within the last 15 years was a Soprano pipistrelle approximately 2.4 km south of the route option, in Keabog in 2015. There is some limited potential for great crested newt to be present in non-flowing waterbodies such as ponds. Habitat suitability in northeast Scotland is considered suboptimal^{Error! Bookmark not defined.} and the distribution of this species is limited^{Error! Bookmark not defined.}. There are no publicly available records of great crested newt within 10 km of the route option within the last 15 years. 	<p>This route option has been assigned a Green RAG rating because it is unlikely to compromise the conservation status of known presence or suitable of EPS. The route may be constrained by the presence of EPS but it is assumed that these areas/habitats would be avoidable and where this is not possible, suitable best practice mitigation can be applied with appropriate NatureScot licences in place.</p> <p>Pre-construction surveys will be required to determine presence or likely absence of EPS with a particular focus on key supporting habitats. Species-specific mitigation that would be required is dependent on field survey results and alignment design. It is anticipated that mitigation would be feasible, particularly where features and habitats of greater ecological potential are avoided. Mitigation will follow those methods set out in SSEN Transmission's standard Species Protection Plans (SPPs), with additional mitigation agreed and implemented where field survey data indicates a requirement.</p> <p>It may be possible to enhance habitats for protected species (see Biodiversity below), in line with priorities identified by the North East Scotland Biodiversity Partnership.</p>	
	<p>UK Biodiversity Action Plan (BAP)^{Error! Bookmark not defined.} Species</p> <ul style="list-style-type: none"> Pine marten and red squirrel are likely to be present in the woodlands along the route option. The nearest publicly available record of pine marten is within the route option north of Slug Road in 2019. Saving Scotland's Red Squirrels online map indicates there have been sightings of red squirrel in suitable woodland habitat throughout the route option. Water vole records are scattered within this area. The nearest recent record is northwest of Stonehaven near Ury, and an old record north of Hurlie Bog (in the north-west of the route, near Mergie). Water vole may therefore be present within suitable habitat along the route option. The route crosses the Bervie Water and Luther Water watercourses, which may have the potential for fish listed on the UK BAP (eg. brown trout). 	<p>This route option has been assigned a Green RAG rating because it has limited potential to compromise the conservation status or suitable habitat of UK BAP, protected or notable species.</p> <p>The route option may be constrained by the presence of UK BAP, protected and notable species in specific areas such as woodland habitats. It may not be possible to avoid these areas/habitats entirely through alignment. Pre-commencement surveys would be required to determine presence or likely absence of protected species with a particular focus on key supporting habitats. Species-specific mitigation that may be required is dependent on field survey results and alignment design.</p> <p>It is anticipated that mitigation would be feasible, particularly where features and habitats of greater ecological potential are avoided. Mitigation will follow</p>	

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> • Water shrew may be present within habitats close to watercourses within the route. One record of water shrew was identified within 10 km of the route option within the last 15 years, it was approximately 8.7 km northwest of the route option at Crathes in 2011. • Brown hare is likely to be present in farmland. The closest record of brown hare within 10 km and the last 15 years is approximately 3.5 km northwest of the route option in Strathgyle Wood in 2021. • Mountain hare may be present within upland habitats. The closest record within 10 km of the route option within the last 15 years was identified northwest of Glenbervie in 2021 within a 10 km grid square overlapping the route option. • Hedgehog is likely to be present on woodland edges and in gardens. The closest record within 10 km and within the last 15 years is approximately 4.7 km northwest of the route option northwest of Durriss forest. • Reptiles such as slow worm may be present in gardens, grasslands, woodland edges and hedges. The closest record of a common lizard was identified approximately 1.7 km northwest of the route option in Fetteresso forest in 2021. • Amphibians such as common toad may be present in gardens and wetland habitats. The closest record of a slow worm within 10 km of the route option within the last 15 years was identified approximately 8.6 km northwest of the route option at Crathes in 2011. The closest record of a common toad within 10 km of the route option within the last 15 years was identified approximately 4.6 km northeast of the route option at Red Moss of Netherly in 2019. The closest record of a common frog within 10 km of the route option within the last 15 years was identified approximately 4.5 km northeast of the route option at Red Moss of Netherly in 2017. <p>Other Protected and Notable Species</p> <p>There is potential for badger in areas of woodland and this species will also utilise farmland. Records from NBN Atlas, and field data from surveys in 2023, indicate that badger is present within 10 km of the route option.</p> <p>The route is covered by the North East Scotland Biodiversity Partnership. Water shrew is the only mammal on the list of 'locally important species'. There are no</p>	<p>those methods set out in SSEN Transmission's standard SPPs, with additional mitigation implemented where required by survey data.</p> <p>It may be possible to enhance habitats for UK BAP, protected and notable species (see Biodiversity below), in line with priorities identified by the North East Scotland Biodiversity Partnership.</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>publicly available records of water shrew identified on NBN Atlas within 10 km. The nearest record is on the Cowie Water west of Stonehaven^{Error! Bookmark not defined.}.</p>		
Habitats	<p>Annex 1 Habitats</p> <p>Desk study and field survey data indicate that the majority of the habitats along the route option comprise commercial forestry, with some heathland and grassland habitats also present, and extents of farmland in the north of the route. There is some potential for Annex 1 habitats to be present within the route option, particularly where there are remaining extents of semi-natural woodland, or areas of heath that may support H4030 European dry heaths² or H4010 Northern Atlantic wet heaths with <i>Erica tetralix</i>³.</p>	<p>This route option has been assigned a Green RAG rating because it is unlikely to compromise the conservation status of Annex 1 Habitats.</p> <p>It is unlikely that there are large extents of Annex 1 habitats present along the route due to the presence of extensive commercial forestry and based on initial field evidence. Desk study and field evidence indicate that semi-natural habitats are confined to relatively limited areas due to the dominant patterns of land use. If pockets of Annex 1 habitat are present within the route, it is assumed that these would be avoided (or spanned) through detailed design of the OHL alignment such that they would not extensively constrain the route.</p>	
	<p>Groundwater Dependent Terrestrial Ecosystems</p> <p>Desk study and field survey data indicate that the habitats along the route option comprise commercial forestry, with some heathland and grassland habitats also present, and extents of farmland in the north of the route. There may be limited pockets of GWDTE habitats, for example marshy grasslands, wet woodland or wet heath.</p>	<p>This route option has been assigned a Green RAG rating because it is unlikely to compromise the integrity of GWDTE habitats.</p> <p>It is unlikely that there are large extents of GWDTE within the route option due to the presence of extensive commercial forestry and based on initial field evidence. Desk study and field evidence indicate that semi-natural habitats (and therefore potential for GWDTE) are confined to relatively limited areas due to the dominant patterns of land use. Where any pockets of GWDTE are confirmed to be present within the route following further survey, it is assumed that these would be avoided (or spanned) through detailed design of the OHL alignment as they would not extensively constrain the route.</p>	
	<p>Biodiversity</p> <p>The density of Biodiversity Units derived from habitats within the route option is calculated to be 17.16 BU/ha. Irreplaceable habitats are calculated to be present at a density of 0.2 BU/ha. Watercourses are present at a density of 0.32 BU/ha.</p>	<p>This route option has been assigned a Green RAG rating because it is the least biodiversity units impacted option.</p> <p>Although the BU density (units/ha) is high, the route is short and encompasses large extents of commercial forestry. The desk-based method of calculating Biodiversity Units uses publicly available data that does not distinguish between woodland types. As such, a conservative approach is taken, and woodland habitat types are assumed to be of a high value type; the true value of the woodland habitats present is therefore likely to be lower as</p>	

² <https://sac.jncc.gov.uk/habitat/H4030/>

³ <https://sac.jncc.gov.uk/habitat/H4010/>

Topic	Constraints	Evaluation	RAG Score
		<p>much of the woodland comprises commercial forestry. The presence of a LNCS within the route will also contribute to the BU density.</p> <p>Specific habitat and enhancement recommendations are dependent on field survey results and design of the alignment. The option is covered by the North East Scotland Biodiversity Partnership and there may be opportunities to contribute to priorities identified in their Habitat Statements. This may include actions such as:</p> <ul style="list-style-type: none"> • Consider woodland enhancement projects (eg, LEPO woodlands along the route) to increase biodiversity value through removal of INNS and/or restoration of habitats impacted by commercial forestry. • Enhance riparian habitats where the route crosses watercourses, such as the Cowie Water. 	
Ornithology	<p>Designated Sites</p> <p>The route option is approximately 7.8 km distant from the Fowlsheugh SPA (and SSSI) at its closest, a SPA which is designated for breeding fulmar, guillemot, herring gull, kittiwake, razorbill and its breeding seabird assemblage. At this distance, there is potential connectivity between the route option and herring gull, although suitable foraging habitat within the route option itself is likely to be limited (flights beyond the route option to more favourable foraging areas may occur, however).</p> <p>The route option lies just over 16 km to the south of Loch of Skene SPA, with c. 4 km of the route lying within the core foraging range of the SPA designated species greylag goose (15-20 km). The national conservation status of the greylag goose population is favourable but is sensitive to operational effects of OHLs due to potential collision risk.</p>	<p>The route option has been RAG rated as Green since it is unlikely to compromise any internationally or nationally designated area and/or the qualifying features of the site, for example by passing near to it and having assumed connectivity.</p> <p>Breeding herring gulls from the Fowlsheugh SPA may travel substantial distances to feed but habitats within the route option are unlikely to provide important food resources so substantial movements of birds through the route option are not anticipated. Regular foraging flights by SPA herring gulls are not anticipated given that the habitat within the route is unlikely to provide optimal foraging during the herring gull breeding season (mid-April to mid-August) and collision risk is considered to be low.</p> <p>The Loch of Skene SPA represents a potential constraint for the route option with the possibility of likely significant effects (LSE) predicted for a key qualifying species, greylag goose, due to potential for collision of birds with the OHL conductors, for birds making flights between the designated area and core foraging areas.</p> <p>The distance between the Loch of Skene SPA (> 16 km from the OHL in E2), the habitat types present along the route together with information on the historic distribution of feeding pink-footed geese with <i>Mitchell (2012)</i> noting that the majority of foraging areas associated with the SPA lie to the north of</p>	

Topic	Constraints	Evaluation	RAG Score
		the roost, suggests that the constraint, in relation to collision risk, is not likely to be substantial.	
	<p>Schedule 1 Birds</p> <p>The route option may support populations of Schedule 1 birds. Woodland habitat may support Schedule 1 raptors including species such as osprey, red kite and goshawk. Watercourses, including rivers, streams and ditches and adjacent wetland may support Schedule 1 kingfisher and little ringed plover.</p> <p>Breeding populations of Schedule 1 species may be sensitive to disturbance during construction, including some raptor and owl species, and some specialist species including little ringed plover and kingfisher. Some Schedule 1 raptor species, if present (eg red kite), may be sensitive to collision impacts.</p>	<p>The route option has been RAG rated as Amber since the option has the potential to compromise the conservation status of Schedule 1 bird species or their habitats.</p> <p>The area around and within the route option is generally dominated by lowland agricultural habitat, largely comprising enclosed pasture and arable fields with hedgerows and small blocks of largely plantation woodland. This habitat is not anticipated to support large populations of Schedule 1 birds. Areas of plantation forestry within the route option may support Schedule 1 breeding birds, including raptors. As such, there is potential for disturbance/displacement and loss of breeding habitat for Schedule 1 species associated with the new OHL development.</p> <p>Implementation of good practice as set out in SSEN Transmission's standard SPPs would ensure that breeding attempts are safeguarded during construction. Operational constraints may arise from collision risk, but the habitats present are unlikely to support high numbers of individuals susceptible to collisions</p>	
	<p>Birds of Conservation Concern (BoCC)</p> <p>The route option may support populations of birds on the red and amber lists of BoCC, some of which are also on Schedule 1. Farmland and moorland areas, including arable, pasture, heath, wet grassland and hedgerows, may support red-listed waders including lapwing, curlew, oystercatcher and ringed plover, farmland specialists like grey partridge, birds of mixed upland habitat like black grouse, and red-listed passerines including skylark, starling, house sparrow, corn bunting and yellowhammer.</p> <p>Woodland patches may support red-listed species like spotted flycatcher and tree sparrow. Wetland areas, including rivers and ditches, may support red-listed ducks and grebes. Herring gulls may also be present on farmland and wetland habitats.</p>	<p>The route option has been RAG rated as Green as the option is unlikely to compromise the conservation status of populations of a red or amber listed species or essential breeding, passage or wintering habitat.</p> <p>Populations of BoCC red-listed species mainly comprise farmland and woodland passerines, low densities of breeding waders and potentially back grouse. The breeding or display sites of these groups will be safeguarded during construction implementation of good practice as set out in SSEN Transmissions standard SPPs, and passerines are also relatively tolerant of disturbance. The anticipated low densities of breeding waders means that any short-term potential disturbance will not compromise the conservation status of these populations in the region.</p>	
	<p>Surface and Groundwater Drinking Water Protected Areas (DWPA)</p>	<p>The route option has been RAG rated as Green as it is unlikely to result in water flow pathways to surface and groundwaters and is unlikely to</p>	

Topic	Constraints	Evaluation	RAG Score
Hydrology / Geology / Hydrogeology	<p>The entire route option is within a groundwater DWPA. There are no Drinking Water Protected Areas (Surface) within or near the route.</p> <p>SEPA CAR licence abstraction data indicates that there are no abstractions in the route option.</p> <p>PWS data from Aberdeenshire Council indicates that there is one Regulated (Type A)¹³ PWS within the route option at Fetteresso Substation (NGR NO 789 859). The source of the PWS is surface rainwater (see Figure 5.8).</p>	<p>compromise the quality and/or quantity of surface water or groundwaters which provide public supply. There are no surface water DWPAs within the route option.</p> <p>There is space within the route option to avoid PWS; and these would be avoided where possible during the design of the alignment.</p> <p>During alignment design, a minimum buffer of 50 m from infrastructure will be applied to watercourses and water features where possible, and with the implementation of construction mitigation (eg SSEN Transmission's GEMPs and following SEPA best practice guidance), it is considered that this option is unlikely to result in water flow pathways to surface and groundwaters.</p>	
	<p>Aquifers Providing Regional / Local Resources</p> <p>The aquifers within this route option are classified as low productivity (Class 2C) aquifers, within which virtually all flow is through fractures and discontinuities in the bedrock. There are no highly productive aquifers within the route option.</p> <p>There are two known properties supplied by small, Type B¹⁴ PWS within the route option. These are located at Rumbleyond (NGR NO 819 903) and at Cowhill (NGR NO 814 905).</p> <p>Groundwater dependent habitats are not anticipated to be extensive within the route option (see GWDTE listed above)</p>	<p>The route option has been RAG rated as Green as it is unlikely to result in water flow pathways to surface and groundwaters, which could affect aquifers providing regional and local resources.</p> <p>There is space within the route option to avoid PWS and GWDTE; and these will be avoided where possible during the design of the alignment.</p> <p>SSEN Transmission has stringent construction mitigation measures to protect PWS and undertakes pre works, during and post works monitoring of all PWS which are close to the OHL. As such, it is considered that the quantity and quality of water supplies within the route option would not be adversely affected.</p>	
	<p>Surface Waters or Aquifer Providing Water for Agricultural or Industrial Use</p> <p>The route option crosses three mapped watercourses that are shown on 1:50K OS mapping. These are:</p> <ul style="list-style-type: none"> • Cowie Water (Waterbody ID 23254) was classified by SEPA as overall 'High' in 202015; • Black Burn is a tributary to Cowie Water which is too small to be classified by SEPA under the Water Framework Directive; • Cowton Burn (known as Rumbleyond Burn further upstream) (Waterbody ID 23255) was classified by SEPA as overall 'Good' ecological potential in 2020. 	<p>This route option has been RAG rated as Green because it is unlikely to result in water flow pathway(s) to surface and groundwaters.</p> <p>Within this route option there are three watercourses which cross the full width of the option, none of which has wide predicted flood extents and all flood risk areas could be spanned or avoided.</p> <p>Stringing the OHL over watercourses would not affect the beds and banks of the watercourses and new watercourse crossings (eg for access tracks) would be avoided as much as possible during the alignment design. Following SEPA guidance¹⁷, all surface watercourses and waterbodies would typically be buffered by a minimum of 50 m from OHL infrastructure and construction working areas, where possible. As the route option is generally 0.8 km – 2.5</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>There are no watercourses with wide predicted floodplains within the route option, with all SEPA Future Flood¹⁶ extents less than 130 m wide (see details in Engineering Appraisal section).</p>	<p>km wide, most of the small waterbodies within the route could likely be avoided.</p> <p>Mitigation measures would be incorporated into the design and construction to reduce impacts on the surface water environment, including best practice pollution control measures and implementation of relevant SSEN Transmission GEMPs to prevent sediment laden run-off entering the water environment, via a range of measures including sediment traps, filter trenches, silt fences, swales and settlement ponds. These are standard mitigation for preventing the potential adverse impacts of construction activities on surface water quality.</p> <p>Therefore, with careful siting of infrastructure components, including appropriate buffers from water features, avoiding flood risk areas and the implementation of good practice mitigation, the remaining constraint in relation to surface waters would be reduced and the option is unlikely to result in water flow pathway(s) to surface and groundwaters or compromise their quality and quantity.</p>	
Cultural Heritage			
Designations	<p>World Heritage Sites (WHS), Scheduled Monuments (SM), Inventory Gardens and Designed Landscapes (GDL), Inventory Battlefields</p> <p>There are no World Heritage Sites, Scheduled Monuments or Properties in Care within the route option, and no part of the route option crosses any Inventory Garden and Designed Landscape or Inventory Historic Battlefield.</p> <p>There are numerous designated heritage assets in the wider landscape around the route option, most are unlikely to be constraints. Four designations are within 1 km of the route option and are shown on Figure 5.10.</p> <p>The designated heritage assets within the route option and in the wider landscape consist primarily of prehistoric settlement remains (hut circles, field systems, clearance cairns) and Second World War military features, all of which have generally localised settings and not considered to be significant constraints.</p>	<p>The route option has been RAG rated as Green as it is unlikely to compromise any designated heritage assets or their settings.</p> <p>Most of the designations within the route option or in the immediate landscape, surrounding the route option, have generally localised settings and are not considered to be significant constraints.</p>	
	<p>Sites and Monument Record Entries</p>	<p>The route option has been RAG rated as Green for SMR sites as there are few 'Regionally Significant' sites within the route option, and it is considered that</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>There is one archaeological site within the route option recorded in the SMR as being of 'Regional Significance' and of medium sensitivity. The location and extent of this is shown on Figure 5.10.</p> <p>This regionally significant asset (Clochanshiels, House and Field System (NO78NE0002)) comprises settlement remains (of likely prehistoric date) that currently stand in open areas within commercial forestry.</p>	<p>the archaeological sites identified do not represent a significant constraint for the route option.</p> <p>This heritage asset lies at the periphery of the route option and can be readily avoided at the alignment design stage.</p>	
Cultural Heritage Assets	<p>The cultural heritage assets within in the route option area and within 1 km of the route option are shown on Figure 5.10.</p> <p>Within the route option there are:</p> <ul style="list-style-type: none"> Two Listed Buildings (one B Listed, of heritage value at the regional level and of medium sensitivity, and one C Listed, of regional heritage value and of medium sensitivity). <p>There are no Category A Listed Buildings within the route option.</p> <p>There are no Conservation Areas within the route option or within 1 km of the route option boundary.</p> <p>There are no Non-Inventory Designed Landscapes (NIDLs) within the route option.</p> <p>Listed buildings (A, B and C)</p> <p>These Listed Buildings (Mergie Farmhouse (LB 9312, B Listed) and Mergie House Garden House (LB 9313, C Listed)) stand to the north of Cowie Water (NGR NO 796, 886). Both have localised settings and do not represent significant constraints.</p> <p>There are many other Listed Buildings in the wider landscape around the route option, most are unlikely to be constraints. Only two Category C Listed Buildings Cowton Bridge (LB 9380) and Auquhollie Bridge (LB 9381) lies within 1 km of the route option. These have localised river settings and are not key constraints.</p>	<p>The route option has been RAG rated as Green as it would be unlikely to disturb or compromise the setting of any cultural heritage assets.</p> <p>The Listed Buildings within the route option or in the immediate landscape, surrounding the route option, have generally localised settings and are not considered to be significant constraints to the development of an OHL alignment.</p>	

Proximity to Dwellings

Topic	Constraints	Evaluation	RAG Score
Residential Properties and other sensitive receptors	<p>The route option extends for a length of approximately 6 km and includes a number of individual scattered dwellings and groups of dwellings. Some of these residential properties form a constraint to OHL development where they reduce the available route width to develop an alignment resulting in 'pinch points' between residential properties and/or other constraints.</p> <p>The principal location where properties represent a greater constraint is in the area to the south of the A957 between Mergie and Mill Haugh where a number of properties are located across the route option.</p>	<p>The route option has been RAG rated as Amber to reflect that in one constrained area, development of an OHL alignment may require location of the infrastructure to be within approximately 200 m of dwellings (which is within the range of two to four times the nominal height of the OHL towers).</p> <p>At the routeing stage it is not possible to be fully definitive with respect to the distances that the OHL can be maintained from individual residential properties. In the constrained location identified around some properties in the route, detailed alignment work may require the OHL to be located less than 200m from dwellings. This could have implications for amenity issues associated with general proximity to electricity infrastructure. Mitigation through optimal alignment to maximise set-back from dwellings taking account of other constraints would be deployed.</p> <p>The area to the south of the A957 between Mergie and Mill Haugh is considered to be most constrained where a small number of dwellings are located across the route.</p>	
Landscape & Visual			
Designations	The route option does not cross any designated landscapes and there are no designated landscapes within 1 km of the route.	The route option has been RAG rated as Green as there are no designated landscapes within 1 km of the route and as such it is unlikely to compromise the special qualities of any designated landscapes.	
Landscape Character	<p>The route extends across the Mounth landscape area as defined by NatureScot's Landscapes of Scotland (2012)^{Error! Bookmark not defined.}, within the Summits and Plateaux LCT (NatureScot, 2019^{Error! Bookmark not defined.}) (see Figure 5.12). The landscape of the Mounth forms part of the Highland Boundary Fault, at the foothills of the Grampian Mountains which is a prominent landscape feature that forms the backdrop to the lowland areas to the south.</p> <p>The landscape is generally elevated with a strong upland rural character. There are some existing vertical man-made elements in the landscape including the existing 275 kV Fetteresso to Alyth overhead line (currently being upgraded to 400 kV).</p> <p>Despite being located in a generally large-scale upland landscape, the route crosses the valley of the Cowie Water which is smaller scale and more complex and intimate landscape. Here the landform is characterised by deep incised</p>	<p>The route option has been RAG rated as Amber as an OHL in this route may compromise characteristic elements that contribute to landscape character. Areas of constraint are considered where an OHL passes through or over key features that contribute to landscape character or where the OHL would be highly prominent within the landscape.</p> <p>The valley of the Cowie Water forms a constraint as the OHL may conflict with the small scale, intimate and complex nature of this incised valley. In addition, areas of native woodland along this valley further constrain the route as the woodland reduces the available space in which to align an OHL. This valley, including the woodland, are features that contribute to landscape character. Removal of woodland to accommodate an OHL would compromise these characteristic elements of the landscape at the local level. Mitigation through detailed alignment work would seek to minimise woodland and individual</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>valley slopes with belts and pockets of forestry and woodland, including some native woodland, all of which are features that contribute to local landscape character.</p>	<p>tree loss as far as possible to reduce potential effects on these features that contribute to local landscape character. This could include aligning the OHL through existing gaps in the woodland or edges of pockets of woodland to minimise tree loss, and therefore the level to which landscape character is compromised.</p> <p>Hill of Pitspunkie in the northern part of the route forms a constraint as locating an OHL on this hill would result in the OHL being prominent in the wider landscape, with wider potential effects on landscape character, including its rural nature. The route offers opportunity avoid the Hill of Pitspunkie. Avoiding this hill and locating the OHL on lower lying land to the northwest would reduce the OHL's prominence in the landscape, with potential for back-clothing against higher land. This will be explored during the detailed alignment work. The OHL would therefore be located on lower elevations where infrastructure would be less prominent in the wider landscape and therefore less compromising to the rural character.</p>	
Visual	<p>The route option extends for a length of approximately 6 km and passes around or close to key areas where sensitive visual receptors are located. These visual receptors have potential to form constraints and include:</p> <ul style="list-style-type: none"> Scattered residential properties within the route and those located within close proximity of the route. Those travelling along the local road network, including the A957 and surrounding minor roads who experience sequential views of the surrounding landscape. <p>Indicative Viewpoints to Represent Sensitive Visual Receptors:</p> <ul style="list-style-type: none"> Minor road near Mergie (NGR NO 793 885) – represents views experienced by residential receptors within the Cowie Water Valley near Mergie. A957, near Millsburn (NGR NO 809 889) – represents elevated views experienced by residential receptors along the A957 and those travelling along the A957. 	<p>The route option has been RAG rated as Amber as an OHL in this route may compromise views experienced by a range of sensitive visual receptors. Due to the distribution and density of visual receptors in the route option, the level of constraints is considered such that there is potential for the OHL to compromise views or visual amenity in some locations.</p> <p>There is potential for views of an OHL in this route to compromise views from scattered residential properties within the Cowie Water Valley, particularly around Mergie, and along the A957. In addition, the potential prominence of the OHL in surrounding views because of the elevated landform in the route is considered to be a constraint due to the potential widespread visibility of the OHL and as such widespread potential for the OHL to compromise views.</p> <p>Potential cumulative visual effects as a result of a new high voltage OHL in addition to the upgraded Fetteresso to Alyth 2 SY2/SY1 and the 275 kV Kintore to Tealing XT1/XT2 OHLs that run immediately to the west and further to the east of the route option respectively are also considered to be a constraint. A further OHL between the two existing high voltage OHLs has the potential to bring OHL infrastructure closer to visual receptors in and around the route, including residents at dwellings, recreational receptors and road users, and potentially surround them, especially residents at dwellings.</p>	

Topic	Constraints	Evaluation	RAG Score
		<p>Opportunities to parallel the OHL with the existing high voltage OHL to the west of the route to contain potential cumulative visual effects, rather than extend them across the settled Cowie Water Valley, will be explored during the detailed alignment work, in order to reduce the level to which visual amenity is compromised by potential cumulative visual effects.</p>	
Land Use			
Agriculture	<p>None of the land in route option E2 is classed as prime agricultural land (see Figure 5.13).</p> <p>The route primarily comprises land classified as class 5.1 – Land capable of use as improved grassland to the south of the route and class 3.2 – Land capable of average production through high yields of barley, oats and grass to the north of the route. The route is interspersed with some areas of land classified as 4.2 – Land capable of producing a narrow range of crops.</p>	<p>This route has been assigned a RAG rating of Green as the option would affect lower quality agricultural land of class 3.2 and below.</p>	
Forestry	<p>The majority of the southern part of the route option is located in prime commercial forestry at Fetteresso Forest which has been identified as forming part of the National Forest Estate (managed by Forestry and Land Scotland).</p> <p>There are also a number of smaller woodland plantations west of Rickarton characterised by mature commercial conifer species which do not span the whole width of the route but are concentrated within the area with narrow gaps between them.</p>	<p>The route has been assigned a RAG rating of Amber as the option is partly constrained by the presence of woodland within a commercial forest. The development of an OHL alignment and associated wayleave within the forestry would cross woodland blocks and has the potential to compromise commercial returns of the forestry operation.</p> <p>The areas of managed woodland at Fetteresso and west of Rickarton would be affected by creation of OHL wayleaves. Additionally, where coniferous species are present, further felling may be required to ensure a wind firm edge. At these locations the woodland covers the entire width of the route option which would not be possible to avoid with an OHL alignment and could result in compromising of the commercial forestry returns. However, the forestry operation at Fetteresso is of a very large scale and there may be some potential to plan forestry operations to reduce the impact of changes associated with accommodating an OHL.</p> <p>As it is not considered possible to avoid Fetteresso Forest, there is the opportunity for the alignment design to route the OHL through a wayleave for an existing high voltage OHL which would reduce the need for further fragmentation of commercial forest. Where the alignment cannot avoid woodland, the towers would be positioned, where possible, in the narrowest</p>	

Topic	Constraints	Evaluation	RAG Score
		sections or towards the edge of the woodland blocks to reduce the extent of felling required.	
Recreation: Core Paths NCN Routes Scottish Great Trails Notable areas used for tourism and recreation	<p>Paths and Trails</p> <p>The route option avoids interaction with core paths. These are designated under the <i>Land Reform (Scotland) Act 2003</i>^{Error! Bookmark not defined.} as the main paths for public access throughout the area. There are no core paths within or within the vicinity of the route (see Figure 5.14).</p> <p>NCN route 1 runs along the Aberdeenshire coast beyond the east of the route over 7 km from the route.</p> <p>There are no Scottish Great Trails within or near the route.</p> <p>Recreation and Tourism Facilities</p> <p>One recreational and tourism facility has been identified within the route:</p> <ul style="list-style-type: none"> Approximately half of the route option is located within Fetteresso Forest which is used for recreational activities including walking and mountain biking. <p>There are two small-scale recreation and tourism facilities beyond the boundary of the route option but within close proximity (up to 500 m). These include:</p> <ul style="list-style-type: none"> Smiddy Cottage, a holiday let, located approximately 70 m east of the route option boundary. A holiday let, at Snob Croft near Mergie, located approximately 100 m east of the route option boundary. 	<p>The route has been appraised as a RAG rating of Green as it avoids interaction with key footpaths or national cycle routes and does not interact with notable areas known for recreation and tourism.</p> <p>Paths and Trails</p> <p>NCN route 1 is a long-distance route with views of the east coast. Construction of an OHL within the route would not interact with the recreational amenity of users of this route because the route is located beyond 5.5k m of the NCN route. The OHL is not considered to compromise the recreational use of this facility.</p> <p>Recreation and Tourism Facilities</p> <p>Felling for wayleaves at Fetteresso Forest is unlikely to be significantly constrained by recreational uses of the forest area and it is likely that any affected walking or mountain biking trails could be redirected. Trails within the forest to the west of the route option could provide alternative options for recreational use and would be potentially screened from the OHL by retained forestry.</p> <p>Smiddy Cottage has open views to the surrounding landscape. An OHL alignment within the route option has some potential to change the visual amenity of this property however the recreational use would not be considered to be compromised. Mitigation would involve locating the OHL alignment as far as possible from the property.</p> <p>The holiday let at Snob Croft is afforded screening in the form of woodland which would reduce the view to OHL infrastructure and is not considered a constraint to the route option.</p> <p>The tourism and recreation facilities identified within and adjacent to the route option are of local significance with an absence of major tourist attractions or recreational facilities nearby. Whilst there is potential for the sites identified to constrain development of an alignment within the route, it is not considered that their recreational use would be compromised.</p>	

Topic	Constraints	Evaluation	RAG Score
Recreation - Fishing	<p>The following locations of game fishing let on a commercial basis have been identified within the route option:</p> <ul style="list-style-type: none"> Fishing for salmon, sea trout and brown trout is let by the Stonehaven & District Angling Association on several sections of the Cowie Water^{Error! Bookmark not defined.}. This includes fishing on both banks of the Upper Cowie section from Mid Hill at the river's source, downstream through Hobseat and Swanley to the march with the private Rickarton House beat. This section of the river crosses the route option. 	<p>The route option has been RAG rated as Green. The route option may interact with areas used for commercial highland sports (fishing) however, this is not considered to be a significant constraint as the effects would be localised and not considered to have the potential to compromise their commercial viability.</p> <p>ENA guidance^{Error! Bookmark not defined.} advises angling no closer than 30 m from an OHL that crosses or runs parallel to the watercourse. A section of up to approximately 80 m of the fishing beat on each bank could be sterilised from use by anglers taking account of this buffer distance and the width of the OHL conductor arrays.</p> <p>The full width of the route option is assumed to be constrained by commercial fishing beats on the Cowie Water. Therefore, an alignment in the route option would not be able to avoid the constraint and may interact with the fishing beat. However, since the fishing lets on this watercourse extend for a substantial length of the river it is not considered that the route option would compromise the commercial viability of the fishing enterprises.</p>	
Planning			
Policy	<p>Relevant National Planning Policy and Development Plans have been considered to support evaluation of likely compliance of the route option with national, regional and local planning policy.</p> <p>Planning Policy</p> <p>The NPF4^{Error! Bookmark not defined.} policies relevant to this route option are:</p> <ul style="list-style-type: none"> Policy 3(b) Natural Environment Policy 4(b-d & f) Natural Places Policy 5(b-c) Soils Policy 6(b) Forestry, woodland and trees Policy 7(h and i) Historic assets and places Policy 11(e)(ii) Landscape and visual impacts Policy 22(a) Flood risk and water management 	<p>Key planning policies have been considered in the context of the appraisal findings for other criteria in this table and commentary is provided on those of note in the evaluation in relation to NPF4 and LDP policies.</p> <p>Planning Policy</p> <p>The route option has been RAG rated as Amber as it may be contrary to the following LDP, and similar NPF4 polices:</p> <ul style="list-style-type: none"> NPF4 Policy 4(b-f) & Aberdeenshire LDP Policy E1 - due to the potential impact on natural heritage and ornithology notably the Fowlsheugh SPA, see Natural Heritage above. To comply with this policy public economic or social benefits would need to clearly outweigh any negative effects on the protected resource, and there would need to be no reasonable alternative site. NPF4 Policy 11(e) & Aberdeenshire LDP Policy E2 - due to the potential impact on the landscape see Landscape and Visual above. Any adverse 	

Topic	Constraints	Evaluation	RAG Score
	<p>Aberdeenshire LDP 2023^{Error! Bookmark not defined.} policies relevant to this route are:</p> <ul style="list-style-type: none"> • Policy E1 Natural Heritage • Policy E2 Landscape • Policy E3 Forestry and Woodland • Policies HE1 and HE2 Protecting Listed Buildings, Scheduled Monuments and Archaeological Sites, Historic, Cultural and Conservation Areas • Policy PR1 Protecting Important Resources • Policy C3 Carbon Sinks and Stores • Policy C4 Flooding <p>Planning Allocations and Designations</p> <ul style="list-style-type: none"> • None 	<p>effects would need to be clearly outweighed by social, environmental or economic benefits of at least local importance.</p> <ul style="list-style-type: none"> • NPF4 Policy 6(b) & Aberdeenshire LDP Policies E3, PR1 and C3 - there is a presumption against the removal of trees, woodlands and hedgerows. See Natural Heritage above. In order to comply with these policies significant public benefits would need to outweigh any loss and compensatory planting would need to be provided. <p>Planning Allocations and Designations</p> <ul style="list-style-type: none"> • None <p>A number of these possible policy conflicts may be removed following further OHL alignment development and environmental assessment and mitigation.</p>	
Proposals	<p>The following planning proposals have been identified within the route option:</p> <ul style="list-style-type: none"> • There is an approved planning application for the erection of three houses (short-term holiday lets) at Mergie (west of Rickarton) which is located within the centre of the route option (APP/2017/2668). • There is a consent for Craigneil Wind Farm consisting of 11 wind turbines and ancillary infrastructure to the north of Rickarton. The proposed turbines are located outwith the route option to the northwest, although the site boundary extends a short distance into the northwest of the route option area for approximately 300 m (APP/2018/0993). • The Proposal of Application Notice (PAN) applications for the proposed 400 kV substations at Hurlie, near Fetteresso, and Emmock, near Tealing, have been submitted in early 2024. PAC events are scheduled to be undertaken in March 2024. The project webpages can be found in Section 1.6. Next Steps of the Consultation Document. <p>There are no other known planning applications, consents, PAC/PAN or scoping applications at the time of this appraisal.</p> <p>SSEN Transmission is working towards a submission for an application for section 37 consent to construct a proposed 132 kV OHL to connect the existing Fetteresso Substation with the consented wind farm at Glendye. More</p>	<p>The route has been RAG rated as Green as there are no projects known to the planning system which may interact with the option.</p> <ul style="list-style-type: none"> • The route option overlaps with the boundary for the approved planning application for the holiday properties at Mergie. However, it is considered that the planning application presents a minor constraint and could be avoided by careful alignment development within the route option. • The proposed Craigneil Wind Farm is located within approximately 300 m of the northwestern side of the route option. The site boundary extends partially into the route option although no wind turbines are proposed to be developed within the route option. The nearest proposed wind turbine would be located approximately 400 m from the route boundary. It is considered that this planning application presents a minor constraint and could be avoided by careful alignment development within the route option. 	

Topic	Constraints	Evaluation	RAG Score
	information can be found at the project webpage: https://www.ssen-transmission.co.uk/projects/project-map/glendye-windfarm-connection/		

Table B2. Environmental Appraisal for Route Option E3

Topic	Constraints	Evaluation	RAG Score
Natural Heritage			
Designations	<p>International, European or National Designations</p> <p>There are no international or European designations within the route option.</p> <p>The closest statutory national designated site for natural heritage is Loch of Lumgair SSSI (NGR NO 850 828), located approximately 4.4 km southeast of the route, south of Stonehaven (see Figure 5.8).</p> <p>There are two non-statutory national designations within the route option comprising woodland classified as LEPO on the AWI. The key areas are located at (see Figure 5.8):</p> <ul style="list-style-type: none"> • Woodland at Nether Swanley (NGR NO 818 879) which extends across the full width of the route option; and • Woodland south of Glenton Hill (NGR NO 819 883) which is wholly included within the route option. <p>Regional Designations</p> <p>There are no LNCS within the route option.</p> <p>The closest is Mergie LNCS (NGR NO 802 885) which is adjacent to the route option at Whitehill (Figure 5.8). Mergie LNCS is noted as having neutral and acid grassland, broadleaved and coniferous woodland, wet heath, scrub, bracken, bog, pond, rivers and rush pasture alongside the Cowie Water, and locally important species of plant.</p>	<p>This route option has been assigned a Green RAG rating because it is not likely to compromise the conservation status of any statutory international, European or national designated area and/or the conservation status of the designated features of these sites, and the LEPO woodlands that may be impacted by an alignment are limited and largely comprise commercial forestry.</p> <p>The LEPO woodland around Nether Swanley would not be avoidable as it spans the route option. Any requirement to provide OHL wayleaves through LEPO woodland could be mitigated to some extent by selecting an OHL alignment wherever possible through the narrowest sections/outlying areas of the woodland, considering tower siting and design, and applying mitigation to retain LEPO woodland through sensitive construction techniques.</p> <p>It may be possible to enhance the condition of woodland in the longer term through new planting particularly in areas where the baseline value has been affected by commercial forestry.</p> <p>This route option has been assigned a Green RAG rating because the route option is not likely to compromise the conservation status of Mergie LNCS and/or the conservation status of the designated features of the site.</p>	
Protected Species	<p>European Protected Species</p> <ul style="list-style-type: none"> • Watercourses along the route, primarily the Cowie Water, are likely to be used by otter. Smaller watercourses and field drains are also likely to be used by this species. The closest record of an otter within the last 15 years was identified approximately 4.7 km northeast of the route option in Red Moss of Netherly in 2021. • Bats may be present roosting in the woodlands and trees along the route and are likely to use linear features such as treelines, hedgerows 	<p>This route option has been assigned a Green RAG rating because it is unlikely to compromise the conservation status of known presence or suitable habitat of EPS.</p> <p>The route option may be constrained by the presence of EPS, but it is assumed that these areas/habitats would be avoidable and where this is not possible, suitable best practice mitigation can be applied with appropriate NatureScot licences in place.</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>and watercourses throughout the route option for foraging and commuting. The closest record of a bat within the last 15 years was a Soprano pipistrelle approximately 2.5 km south of the route option, in Keabog in 2015.</p> <ul style="list-style-type: none"> There is some limited potential for great crested newt to be present in non-flowing waterbodies such as ponds. Habitat suitability in northeast Scotland is considered suboptimal and the distribution of this species is limited. There are no publicly available records of great crested newt within 10 km of the route option within the last 15 years. 	<p>Pre-construction surveys will be required to determine presence or likely absence of EPS with a particular focus on key supporting habitats. Species-specific mitigation that would be required is dependent on field survey results and alignment design. It is anticipated that mitigation would be feasible, particularly where features and habitats of greater ecological potential are avoided. Mitigation will follow those methods set out in SSEN Transmission's standard SPPs, with additional mitigation agreed and implemented where field survey data indicates a requirement.</p> <p>It may be possible to enhance habitats for protected species (see Biodiversity below), in line with priorities identified by the North East Scotland Biodiversity Partnership.</p>	
	<p>UK Biodiversity Action Plan (BAP) Species</p> <ul style="list-style-type: none"> Pine marten and red squirrel are likely to be present in the woodlands along the route. The closest record of pine marten within the last 15 years was identified within the route option in Fetteresso Forest in 2012. Saving Scotland's Red Squirrels online map indicates there have been sightings of red squirrel in suitable woodland habitat throughout the route option. Water vole records are scattered within this area. The nearest recent record is north-west of Stonehaven near Ury, and an old record north of Hurlie Bog (in the northwest of the route, near Mergie). Water vole may therefore be present within suitable habitat along the route option. The route crosses the Cowie Water, which may have potential for fish listed on the UK BAP (eg, brown trout). Water shrew may be present within habitats close to watercourses within the route. One record of water shrew was identified within 10 km of the route option within the last 15 years, it was approximately 9.1 km northwest of the route option at Crathes in 2011. Brown hare is likely to be present in farmland. The closest record of brown hare within 10km and the last 15 years is approximately 3.5 km northwest of the route option in Strathgyle Wood in 2021. 	<p>This route option has been assigned a Green RAG rating because it has limited potential to compromise the conservation status or suitable habitat of UK BAP, protected or notable species.</p> <p>The route option may be constrained by the presence of UK BAP, protected and notable species in specific areas such as woodland habitats. It may be possible to avoid the majority of these areas/habitats through alignment as the southern and eastern portion of the route crosses out of woodland habitats and into farmland. Pre-commencement surveys would be required to determine presence or likely absence of protected species with a particular focus on key supporting habitats. Species-specific mitigation that may be required is dependent on field survey results and alignment design.</p> <p>It is anticipated that mitigation would be feasible, particularly where features and habitats of greater ecological potential are avoided. Mitigation will follow those methods set out in SSEN Transmission's standard SPPs, with additional mitigation implemented where required by survey data.</p> <p>It may be possible to enhance habitats for UK BAP, protected and notable species (see Biodiversity below), in line with priorities identified by the North East Scotland Biodiversity Partnership.</p>	

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> • Hedgehog is likely to be present on woodland edges and in gardens. The closest record within 10 km and within the last 15 years is approximately 1.7 km west of the route option north of Slug Road in 2021. • Reptiles such as slow worm may be present in gardens, grasslands, woodland edges and hedges. The closest record of a common lizard within the last 15 years was identified approximately 1.6 km north of the route option in Strathgyle Wood in 2017. • Amphibians such as common toad may be present in gardens and wetland habitats. The closest record of a common toad within the last 15 years was identified approximately 4.7 km northeast of the route option in Red Moss of Netherly in 2019. <p>Other Protected and Notable Species</p> <p>There is potential for badger in areas of woodland and this species will also utilise farmland. Records from NBN Atlas, and field data from surveys in 2023, indicate that badger is present within 10 km of the route option.</p> <p>The route is covered by the North East Scotland Biodiversity Partnership. Water shrew is the only mammal on the list of 'locally important species'. There are no publicly available records of water shrew identified on NBN Atlas within 10 km. The nearest record is on the Cowie Water west of Stonehaven <small>Error! Bookmark not defined.</small>.</p>		
Habitats	<p>Annex 1 Habitats</p> <p>Habitats in the south and west of the route option consist of commercial forestry, with some heathland and grassland habitats also present, while extents of farmland are present in the north and east of the route. There is some potential for Annex 1 habitats to be present within the route option, particularly where there are extents of heath that may support H4030 European dry heaths² or H4010 Northern Atlantic wet heaths with <i>Erica tetralix</i>³.</p>	<p>This route option has been assigned a Green RAG rating because it is unlikely to compromise the conservation status of Annex 1 Habitats.</p> <p>It is unlikely that there are large extents of Annex 1 habitats present along the route due to the presence of extensive commercial forestry and based on initial field evidence. Where pockets of Annex 1 habitat are present within the route, it is assumed that these would be avoided (or spanned) through detailed design of the OHL alignment such that they would not extensively constrain the route.</p>	
	<p>Groundwater Dependent Terrestrial Ecosystems</p> <p>Habitats in the south and west of the route option consist of commercial forestry, with some heathland and grassland habitats also present, while</p>	<p>This route option has been assigned a Green RAG rating because it is unlikely to compromise the integrity of GWDTE habitats.</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>extents of farmland are present in the north and east of the route. There may be limited pockets of GWDTE habitats, for example marshy grassland, wet woodland or wet heath.</p>	<p>It is unlikely that there are large extents of GWDTE within the route option due to the mix of commercial forestry and based on initial field evidence. Where any pockets of GWDTE are confirmed to be present within the route following further survey, it is assumed that these would be avoided (or spanned) through detailed design of the OHL alignment as they would not extensively constrain the route.</p>	
	<p>Biodiversity</p> <p>The density of Biodiversity Units derived from habitats within the route option is calculated to be 18.34 BU/ha. Irreplaceable habitats are calculated to be absent, with a density of 0.00 BU/ha. Watercourses are calculated to be absent, with a density of 0.00 BU/ha.</p>	<p>This route option has been assigned a Green RAG rating because this option is less than 110% of the least biodiversity units impacted option (see E3).</p> <p>Although the BU density (units/ha) is high, the route is short and encompasses large extents of forestry that comprise a commercial forestry. The desk-based method of calculating Biodiversity Units uses publicly available data that does not distinguish between woodland types. As such, a conservative approach is taken and woodland habitat types are assumed to be of a high value type; the true value of the woodland habitats present is therefore likely to be lower as much of the woodland comprises commercial forestry.</p> <p>Specific habitat and enhancement recommendations are dependent on field survey results and design of the alignment. The option is covered by the North East Scotland Biodiversity Partnership and there may be opportunities to contribute to priorities identified in their Habitat Statements. This may include feasible actions such as:</p> <ul style="list-style-type: none"> • Consider woodland enhancement projects (eg, LEPO woodlands along the route) to increase biodiversity value through removal of INNS and/or restoration of habitats impacted by commercial forestry. • Enhance riparian habitats where the route crosses watercourses, such as the Cowie Water. 	
Ornithology	<p>Designated Sites</p> <p>The route option is approximately 6.5 km from the Fowlsheugh SPA (and SSSI) which is designated for breeding fulmar, guillemot, herring gull, kittiwake, razorbill and its breeding seabird assemblage. At this distance, there is potential connectivity between the route option and herring gull, although suitable foraging habitat within the route option itself is likely to be limited (flights beyond the route option to more favourable foraging areas may occur, however).</p>	<p>The route option has been RAG rated as Green since it is unlikely to compromise any internationally or nationally designated area and/or the qualifying features of the site, for example by passing near to it and having assumed connectivity.</p> <p>Breeding herring gulls from the Fowlsheugh SPA may travel substantial distances to feed but habitats within the route option are unlikely to provide important food resources so substantial movements of birds through the route option are not anticipated. Regular foraging flights by SPA herring gulls are not anticipated given that the habitat within the route is unlikely to provide optimal foraging</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>The route option lies just over 16 km to the south of Loch of Skene SPA, with c. 4 km of the route lying within the core foraging range of the SPA designated species greylag goose (15-20 km). The national conservation status of the greylag goose population is favourable but is sensitive to operational effects of OHLs due to potential collision risk.</p>	<p>during the herring gull breeding season (mid-April to mid-August) and collision risk is considered to be low.</p> <p>The Loch of Skene SPA represents a potential constraint for the route with the possibility of likely significant effects (LSE) predicted for a key qualifying species, greylag goose, due to potential for collision of birds with OHL conductors, for birds making flights between the designated area and core foraging areas.</p> <p>However, the distance between the Loch of Skene SPA (> 16 km from the OHL in E3), the habitat types present along the route together with information on the historic distribution of feeding pink-footed geese with <i>Mitchell (2012)</i> Error! Bookmark not defined. noting that the majority of foraging areas associated with the SPA lie to the north of the roost, suggests that the constraint, in relation to collision risk, is not likely to be substantial.</p>	
	<p>Schedule 1 Birds</p> <p>The route option may support populations of Schedule 1 birds. Woodland habitat may support Schedule 1 raptors including species such as osprey, red kite and goshawk. Watercourses, including rivers, streams and ditches and adjacent wetland may support Schedule 1 kingfisher and little ringed plover.</p> <p>Breeding populations of Schedule 1 species may be sensitive to disturbance during construction, and during operation. Some Schedule 1 raptor species, if present (eg red kite), may be sensitive to collision impacts.</p>	<p>The route option has been RAG rated as Amber since the option has the potential to compromise the conservation status of Schedule 1 bird species or their habitats.</p> <p>The area around and within the route option is generally dominated by lowland agricultural habitat, largely comprising enclosed pasture and arable fields with hedgerows and small blocks of largely plantation woodland. This habitat is not anticipated to support large populations of Schedule 1 birds. Areas of plantation forestry within the route option may support Schedule 1 breeding birds, including raptors. As such, there is potential for disturbance/displacement and loss of breeding habitat for Schedule 1 species associated with the new OHL development.</p> <p>Implementation of good practice as set out in SSEN Transmission's standard SPPs would ensure breeding attempts are safeguarded during construction. Operational constraints may arise as a result of collision risk, but the habitats present are unlikely to support high numbers of individuals susceptible to collision.</p>	
	<p>Birds of Conservation Concern (BoCC)</p> <p>The route option may support populations of birds on the red and amber lists of BoCC, some of which are also on Schedule 1. Farmland areas, including arable, pasture, wet grassland and hedgerows, may support red-listed waders including lapwing, curlew, oystercatcher and ringed plover,</p>	<p>The route has been RAG rated as Green since the option is unlikely to compromise the conservation status of populations of a red or amber listed species or essential breeding, passage or wintering habitat.</p> <p>Populations of BoCC red-listed species mainly comprise farmland and woodland passerines and low densities of breeding waders. The breeding sites of both</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>farmland specialists like grey partridge, and red-listed passerines including skylark, starling, house sparrow, corn bunting and yellowhammer.</p> <p>Woodland patches and forestry plantation may support red-listed species such as spotted flycatcher and tree sparrow. Herring gulls may also be present on farmland and wetland habitats, although these are likely to be limited in extent across the route option.</p>	<p>groups will be safeguarded during construction through implementation of good practice as set out in SSEN Transmission's standard SPPs and passerines are also relatively tolerant of disturbance. The anticipated low densities of breeding waders means that any short-term potential disturbance will not compromise the conservation status of these populations in the region.</p>	
Hydrology / Geology / Hydrogeology	<p>Surface and Groundwater Drinking Water Protected Areas (DWPA)</p> <p>The entire route option is within a groundwater DWPA. There are no Drinking Water Protected Areas (Surface) within or near the route.</p> <p>SEPA CAR licence abstraction data indicates that there are no abstractions in the route option.</p> <p>PWS data from Aberdeenshire Council indicates that there is one Regulated (Type A)¹³ PWS within the route option at Fetteresso Substation (NGR NO 789 859). The source of the PWS is surface rainwater (see Figure 5.9).</p> <p>There are no surface water DWPAs within the route option.</p>	<p>The route option has been RAG rated as Green as it is unlikely to result in water flow pathways to surface and groundwaters and is unlikely to compromise the quality and/or quantity of surface water or groundwaters which provide public supply.</p> <p>There is space within the route option to avoid PWS; and these will be avoided where possible during the design of the alignment.</p> <p>During alignment design iterations, a minimum buffer of 50 m from infrastructure will be applied to watercourses and water features where possible, and with the implementation of construction mitigation (eg SSEN Transmission's GEMPs and following SEPA best practice guidance), it is considered that this option is unlikely to result in water flow pathways to surface and groundwaters.</p>	
	<p>Aquifers Providing Regional / Local Resources</p> <p>The aquifers within this route option are classified as low productivity (Class 2C) aquifers, within which virtually all flow is through fractures and discontinuities in the bedrock. There are no highly productive aquifers within the route option.</p> <p>There are seven known properties supplied by small Type B¹⁴ PWS within the route option from Grains of Fetteresso (NGR NO 819 863) in the south, to Rumbleyond (NGR NO 819 903) and Cowhill (NGR NO 8143, 905) in the north of the route.</p> <p>Groundwater dependent habitats are not anticipated to be extensive within the route option (see GWDTE listed above).</p>	<p>The route option has been RAG rated as Green as it is unlikely that it would result in water flow pathways to surface and groundwaters, which could affect aquifers providing regional and local resources.</p> <p>There is space within the route option to avoid PWS and GWDTE; and these will be avoided where possible during the design of the alignment.</p> <p>SSEN Transmission have stringent construction mitigation measures to protect PWS and also undertake pre works, during and post works monitoring of all PWS which are close to the OHL. As such, it is considered that the quantity and quality of water supplies within the route option would not be adversely affected.</p>	
	<p>Surface Waters or Aquifer Providing Water for Agricultural or Industrial Use</p> <p>The route crosses three minor watercourses, the Burn of Baulks and Burn of Graham are within the south side of the route; both of these watercourses</p>	<p>The route option has been RAG rated as Green because it is unlikely to result in water flow pathway(s) to surface and groundwaters.</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>and another small tributary of the Burn of Graham are too small to be classified by SEPA under the Water Framework Directive.</p> <p>There are two watercourses large enough to be classified by SEPA:</p> <ul style="list-style-type: none"> • Cowie Water (Waterbody ID 23254) which was classified by SEPA as overall 'High' in 2020¹⁵; • Cowton Burn (Rumbleyond Burn further upstream) (Waterbody ID 23255) which was classified by SEPA as overall 'Good' ecological potential in 2020. <p>SEPA Future Flood maps¹⁶ show no areas of fluvial flood risk within this option.</p>	<p>Within this route option there are two watercourses which cross the entire width of the option, and none with any flood risk areas based on SEPA future flood mapping.</p> <p>Stringing the OHL over watercourses would not affect the beds and banks of the watercourses and new watercourse crossings (eg for access tracks) would be avoided as much as possible during the alignment design. Following SEPA guidance¹⁷, all surface watercourses and waterbodies would typically be buffered by a minimum of 50 m from OHL infrastructure and construction working areas, where possible. As the route option is generally 1 km wide, the small waterbodies within the route could likely be avoided.</p> <p>Mitigation measures would be incorporated into the design and construction to reduce impacts on the surface water environment, which would include best practice pollution control measures and implementation of relevant SSEN Transmission GEMPs to prevent sediment laden run-off entering the water environment, via a range of measures including sediment traps, filter trenches, silt fences, swales and settlement ponds. These are standard mitigation for preventing the potential adverse impacts of construction activities on surface water quality.</p> <p>With careful siting of infrastructure components, including appropriate buffers from water features, avoiding flood risk areas and the implementation of good practice mitigation, the remaining constraint in relation to surface waters would be reduced and the option is unlikely to result in water flow pathway(s) to surface and groundwaters or compromise their quality and quantity.</p>	
Cultural Heritage			
Designations	<p>World Heritage Sites (WHS), Scheduled Monuments (SM), Inventory Gardens and Designed Landscapes (GDL), Inventory Battlefields</p> <p>There are no World Heritage Sites or Properties in Care within the route option, and no part of the route option crosses any Inventory Garden and Designed Landscape, or Inventory Historic Battlefield.</p> <p>Within the route option there are:</p>	<p>The route option has been RAG rated as Green as it is unlikely to compromise any designated assets or their settings.</p> <p>Most of the designations within the route option or in the immediate vicinity of the route option, have generally localised settings and are not considered to be significant constraints for routeing of an OHL.</p>	

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> Two Scheduled Monuments, Clochanshies, Cairns, House and Field System (SM 4857) and Glenton Hill, House, Enclosure & Field System (SM 4873). <p>Clochanshies, Cairns, House and Field System (SM 4857) and Glenton Hill, House, Enclosure & Field System (SM 4873) lies to the south of Cowie Water (NGR NO 804, 877) and Glenton Hill, House, Enclosure & Field System (SM 4873) lies to the north (NGR NO 825, 885). Both comprise prehistoric settlement remains (hut circles and associated field systems) and have generally localised settings.</p> <p>There are numerous designated heritage assets in the wider landscape around the route option, most are unlikely to be constraints. Three (all Scheduled Monuments) are within 1 km of the route option and are shown on Figure 5.10.</p> <p>The designated heritage assets within the wider landscape are largely located on either side of the Slug Road (A957) and around the Cowie Water, to the east and northwest of the route option. They consist primarily of prehistoric settlement remains (hut circles, field systems and clearance cairns) and Second World War military features which have generally localised settings.</p>		
	<p>Sites and Monument Record (SMR) Entries</p> <p>There are two archaeological records within the route option recorded in the SMR as of being of 'Regional Significance' and of medium sensitivity. The locations and extents of these are shown on Figure 5.10.</p> <p>These regionally significant assets comprise Clochanshies, House and Field System (NO78NE0002) and Clochanshies, Hut Circle and House Platform (NO88NW0014); these are settlement remains (of likely prehistoric date) that currently stand in open areas within commercial forestry.</p>	<p>The route option has been RAG rated as Green for SMR sites as there are few (two) 'Regional Significant' sites within the route option, and it is considered that the archaeological sites identified do not represent a significant constraint for the route option.</p> <p>These heritage assets are small in size, located close to the northern boundary of the route option and could be readily avoided during the alignment design stage.</p>	
Cultural Heritage Assets	<p>Listed buildings (A, B and C)</p> <p>There are no Listed Buildings within the route option.</p> <p>There are other Listed Buildings within the wider landscape around the route option, most are unlikely to be significant constraints. Four Listed</p>	<p>The route option has been RAG rated as Green as it would not be considered to disturb or compromise the settings of any cultural heritage assets.</p> <p>The Listed Buildings in the immediate landscape surrounding the route option have generally localised settings and are not considered to be significant constraints for routeing of an OHL.</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>Buildings (one B Listed and three C Listed) lie within 1 km of the route option boundary and shown on Figure 5.10.</p> <p>Two of these (Mergie Farmhouse (LB 9312), B Listed) and Mergie House Garden House (LB 9313, C Listed) stand to the north of Cowie Water (around NGR NO 796, 886) and both have localised settings that do not represent significant constraints. The other two Category C Listed Buildings (Cowton Bridge (LB 9380) and Auquhollie Bridge (LB 9381)) have localised river settings and are not constraints.</p> <p>Non-Inventory GDL</p> <p>There are no Non-Inventory Designed Landscapes within the route option.</p> <p>Conservation Areas</p> <p>There are no Conservation Areas within the route option or within 1km of the route option boundary.</p>		
Proximity to Dwellings			
Residential Properties and other sensitive receptors	<p>The route option extends for a length of approximately 6 km and includes a number of individual scattered properties and groups of dwellings. Some of these residential properties form a constraint to OHL development in the northern part of the route, including along the A957 between Rickarton and Bogheadly, where they reduce the available route width to develop an alignment resulting in 'pinch points' between residential properties and/or other constraints.</p> <p>The remainder of the route is generally unconstrained by dwellings.</p>	<p>The route option has been RAG rated as Amber to reflect that in constrained areas, development of an OHL alignment may require location of the infrastructure to be within approximately 200m of dwellings (which is within the range of two to four times the nominal height of the OHL towers).</p> <p>At the routeing stage it is not possible to be fully definitive with respect to the distances that the OHL can be maintained from individual residential properties. In the constrained locations identified around some groups of properties in the route, detailed alignment work may require the OHL to be located less than 200m from dwellings. This could have implications for amenity issues associated with general proximity to electricity infrastructure. Mitigation through optimal alignment to maximise set-back from dwellings taking account of other constraints would be deployed.</p> <p>The area along the A957 between Rickarton and Bogheadly is considered to be the most constrained in this route as dwellings span most of the width of the route. There is a gap between these dwellings that an OHL could be aligned through to maintain distances of more than two times the OHL tower height. This potential alignment has been assumed in this appraisal of constraint.</p>	

Topic	Constraints	Evaluation	RAG Score
Landscape & Visual			
Designations	The route option does not cross any designated landscapes and there are no designated landscapes within 1 km of the route (see Figure 5.11).	The route option has been RAG rated as Green as there are no designated landscapes within 1 km of the route and as such it is unlikely to compromise the special qualities of any designated landscapes.	
Landscape Character	<p>The route extends across the Mounth landscape area as defined by NatureScot's Landscapes of Scotland (2012)^{Error! Bookmark not defined.}. The route option is at the boundary between the Summits and Plateaux LCT and the Coastal Farmed Ridges and Hills LCT (NatureScot, 2019^{Error! Bookmark not defined.}) (see Figure 5.12). The landscape of the Mounth forms part of the Highland Boundary Fault, at the foothills of the Grampian Mountains which is a prominent landscape feature that forms the backdrop to the lowland areas to the south.</p> <p>The landscape is generally elevated with a strong upland rural character. There are some existing vertical man-made elements in the landscape including the existing 275 kV Fetteresso to Alyth 2 SY2/SY1 overhead line (currently being upgraded to 400 kV) and the 275 kV Kintore to Tealing XT1/XT2 overhead line located to the west and east of the route respectively.</p> <p>The route sits on the edge of the upland Fetteresso Forest area, which forms part of the Highland Boundary Fault. The Highland Boundary Fault is a prominent and characteristic landscape feature that forms the backdrop in views from the south.</p>	<p>The route option has been RAG rated as Amber as an OHL in this route may compromise characteristic elements that contribute to landscape character. Areas of constraint are considered where an OHL passes through or over key features that contribute to landscape character or where the OHL would be highly prominent within the landscape.</p> <p>The valley of the Cowie Water forms a constraint as the OHL may conflict with the small scale, intimate and complex nature of this incised valley. This conflict with landscape scale would be exacerbated if an OHL is located across local hills that surround the Cowie Water Valley as the OHL has the potential to be perceived as prominent elevated and overbearing features in contrast with the small scale valley landscape. In addition, locating an OHL on local hills such as Glenton Hill and Hill of Pitspunkie would result in the OHL being prominent in the wider landscape, with wider potential effects on landscape character, including its rural nature. The route offers opportunity to avoid these local hills.</p> <p>Avoiding hills and locating the OHL on lower lying land would reduce the OHL's prominence in the landscape, with potential for back-clothing against higher land. Opportunities to route the OHL through areas of lower lying land to the west of Glenton Hill, and the lower eastern slopes of Hill of Pitspunkie will be explored during the detailed alignment work. The OHL would therefore be located wherever possible on lower elevations where infrastructure would be less prominent in the wider landscape and less compromising to the rural character.</p>	
Visual	<p>The route option extends for a length of approximately 6 km and passes around or close to areas where some sensitive visual receptors are located. These visual receptors have potential to form constraints and include:</p> <ul style="list-style-type: none"> Scattered residential properties within the route and those located immediately outwith the route to the south, east and west; 	<p>The route option has been RAG rated as Amber as an OHL in this route may compromise views experienced by a range of sensitive visual receptors. Due to the distribution and density of visual receptors in the route option, the level of constraints is considered such that there is potential for the OHL to compromise views or visual amenity in some locations.</p> <p>There is potential for views of an OHL in this route to compromise views from scattered residential properties within the southern part of the route and</p>	

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> Those travelling along the local road network, including surrounding minor roads, who experience sequential views of the surrounding landscape. <p>Indicative Viewpoints to Represent Sensitive Visual Receptors</p> <ul style="list-style-type: none"> Minor road near Upper Wyndings (NGR NO 815 853) – represents residential receptors and road users to the south of the route. A957, near Rickarton (NGR NO 817 891) – represents elevated views experienced by residential receptors along the A957 and those travelling along the A957. 	<p>dwelling along the A957. In addition, the potential prominence of the OHL in surrounding views, including from the local road network and dwellings outside of the route, because of the elevated landform in the route is considered to be a constraint due to the potential widespread visibility of the OHL and as such widespread potential for the OHL to compromise views.</p> <p>Opportunities to locate the OHL along lower lying land to avoid local hills within the route such as Glenton Hill and Hill of Pitspunkie offers potential to reduce the prominence of the OHL in surrounding views and as such the degree to which visual amenity is compromised.</p> <p>Potential cumulative visual effects as a result of a new high voltage OHL in addition to the upgraded Fetteresso to Alyth 2 SY2/SY1 and the 275kV Kintore to Tealing XT1/XT2 OHLs that run immediately to the west and east of the route respectively are also considered to be a constraint. A further OHL between the two existing high voltage OHLs has the potential to bring OHL infrastructure closer to visual receptors in and around the route, including residents at dwellings, recreational receptors and road users, and potentially surround them, especially residents at dwellings. Mitigation through optimal alignment to maximise set-back from dwellings taking account of other constraints would be deployed in order to reduce the potential for overbearing views of new infrastructure.</p>	
Land Use			
Agriculture	<p>None of the land in route option E3 is prime agricultural land (see Figure 5.13).</p> <p>The route primarily comprises of land classified as class 3.2 – Land capable of average production through high yields of barley, oats and grass to the south of the route, interspersed with land classified as class 4.2 – Land capable of producing a narrow range of crops and some areas of class 5.1 – Land capable of use as improved grassland.</p>	<p>This route has been assigned a RAG rating of Green as the option would affect lower quality agricultural land of class 3.2 and below.</p>	
Forestry	<p>The southern half of the route option is located in prime commercial forestry at Fetteresso Forest which has been identified as forming part of the National Forest Estate (managed by Forestry and Land Scotland). This is an</p>	<p>The route has been assigned a RAG rating of Red as the option is constrained by the presence of woodlands within a commercial forest. The development of an OHL alignment and associated wayleave within the forest would cross currently</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>extensive area of upland forestry which is actively managed as a commercial enterprise on a large scale.</p> <p>The northern half of the route option contains smaller parcels of mature commercial conifer woodland and shelterbelts which span the majority of the width of the route.</p>	<p>undisturbed woodland blocks and has the potential to result in a sufficient loss of woodland to compromise commercial returns of the forestry operation.</p> <p>The areas of managed woodland at Fetteresso would be affected by creation of OHL wayleaves. Additionally, where coniferous species are present, further felling may be required to ensure a wind firm edge. At this location there is a continuous large stretch of woodland covering much of the width of the route area which is unlikely to be avoidable as the area within the route option to the south of Fetteresso Forest is constrained by residential properties and landscape considerations. It is considered that an OHL alignment would not be able to avoid commercial forestry. The forestry operation at Fetteresso is of a very large scale and there may be some potential to plan forestry operations to reduce the impact of changes associated with accommodating an OHL in this location.</p> <p>It is considered that the smaller areas of commercial forestry in the north of the route could be largely avoided by an OHL alignment. Where the alignment design cannot avoid woodland, towers would be positioned, where possible, in the narrowest sections or towards the edge of the woodland blocks to reduce the extent of felling required.</p>	
Recreation: Core Paths NCN Routes Scottish Great Trails Notable areas used for tourism and recreation	<p>Paths and Trails</p> <p>The route option avoids interaction with core paths. They are designated under the <i>Land Reform (Scotland) Act 2003</i> as the main paths for public access throughout the area. There are no core paths within or within the vicinity of the route (see Figure 5.14).</p> <p>NCN route 1 runs along the Aberdeenshire coast beyond the east of the route over 7 km from the route.</p> <p>There are no Scottish Great Trails within or near the route.</p> <p>Recreation and Tourism Facilities</p> <p>The following recreational and tourism facilities located in the route option boundary have been identified:</p> <ul style="list-style-type: none"> Approximately two-thirds of the route is located within Fetteresso Forest which is used for informal recreational activities including walking and mountain biking. 	<p>The route has been assigned a RAG rating of Green as the option avoids interaction with public footpaths or national cycle routes and does not interact with notable areas known for recreation and tourism.</p> <p>Paths and Trails</p> <p>NCN route 1 is a long-distance route with views of the east coast. Construction of an OHL within the route would not interact with the recreational amenity of users of this route because the OHL route is located over 4.7 km from the NCN.</p> <p>Recreation and Tourism Facilities</p> <p>Felling for wayleaves at Fetteresso Forest is unlikely to be significantly constrained by recreational uses of the forest area and it is likely that any affected walking or mountain biking trails could be redirected. Trails within the forest to the west of the route option could provide alternative options for recreational use and would be potentially screened from the OHL by retained forestry. The recreation and tourism facilities identified within the route option are of local significance with an absence of major tourist attractions or recreational facilities nearby. Whilst there is potential for the sites identified to constrain development</p>	

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> The Dreys, a holiday let, is located within the route option in the southern section. Swanley Livery is located partially within the route option on the edge of the western section of the route. This is a livery yard providing a number of services, including a schooling facility and events. <p>There is one small-scale recreational and tourism facility beyond the boundary of the route option but within close proximity (up to 500 m).</p> <ul style="list-style-type: none"> Smiddy Cottage, a holiday let, is located approximately 250 m north of the route option boundary, near Clachanshiels. 	<p>of an alignment within the route to some extent, it is not considered that that the amenity of users using the facility would be compromised.</p> <p>The Dreys holiday let is afforded screening to the north in the form of Fetteresso Forest. Swanley Livery is afforded some screening through the presence of wooded areas. It is not considered that the amenity of users using the recreational facilities would be compromised.</p> <p>Smiddy Cottage is afforded some screening through the presence of Fetteresso Forest and is not considered to be a constraint to the route option.</p>	
Recreation – Fishing	<p>The following locations of game fishing let on a commercial basis have been identified within the route option:</p> <ul style="list-style-type: none"> Fishing for salmon, sea trout and brown trout is let by the Stonehaven & District Angling Association on several sections of the Cowie Water^{Error! Bookmark not defined.}. This includes fishing on both banks of the Upper Cowie section from Mid Hill at the river’s source, downstream through Hobseat and Swanley to the march with the private Rickarton House beat. This section of the river crosses the route option. 	<p>The route option has been RAG rated as Green. The route option may interact with areas used for commercial highland sports (fishing) however, this is not considered to be a significant constraint as the effects would be localised and are not considered to have the potential to compromise their commercial viability.</p> <p>ENA guidance^{Error! Bookmark not defined.} advises angling no closer than 30 m from an OHL that crosses or runs parallel to the watercourse. A section of up to approximately 80 m of the fishing beat on each bank could be sterilised from use by anglers taking account of this buffer distance and the width of the OHL conductor arrays.</p> <p>The full width of the route option is assumed to be constrained by commercial fishing beats on the Cowie Water. Therefore, an alignment in the route option would not be able to avoid the constraint and may interact with the fishing beat. However, since the fishing lets on this watercourse extend for a substantial length of the river it is not considered that the route option would compromise the commercial viability of the fishing enterprises.</p>	
Planning			
Policy	<p>Relevant National Planning Policy and Development Plans have been considered to support evaluation of likely compliance of the route option with national, regional and local planning policy.</p> <p>Planning Policy</p> <p>The NPF4^{Error! Bookmark not defined.} policies relevant to this route option are below:</p>	<p>Key planning policies have been considered in the context of the appraisal findings for other criteria in this table and commentary is provided on those of note in the evaluation in relation to NPF4 and LDP policies.</p> <p>Planning Policy</p> <p>The route option has been RAG rated as Amber as it may be contrary to the following LDP, and similar NPF4 polices:</p>	

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> • Policy 3(b) Natural Environment • Policy 4(b-d & f) Natural Places • Policy 5(b-c) Soils • Policy 6(b) Forestry, woodland and trees • Policy 7(h and i) Historic assets and places • Policy 11(e)(ii) Landscape and visual impacts • Policy 22(a) Flood risk and water management <p>Aberdeenshire LDP 2023^{Error! Bookmark not defined.} policies relevant to this route option are:</p> <ul style="list-style-type: none"> • Policy E1 Natural Heritage • Policy E2 Landscape • Policy E3 Forestry and Woodland • Policies HE1 and HE2 Protecting Listed Buildings, Scheduled Monuments and Archaeological Sites, Historic, Cultural and Conservation Areas • Policy PR1 Protecting Important Resources • Policy C3 Carbon Sinks and Stores • Policy C4 Flooding <p>Planning Allocations and Designations</p> <ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • NPF4 Policy 4b/4c & Aberdeenshire LDP Policy E1 - due to the potential impact on natural heritage and ornithology notably the Fowlsheugh SPA, see Natural Heritage above. To comply with this policy public economic or social benefits would need to clearly outweigh any negative effects on the protected resource, and there would need to be no reasonable alternative site. • NPF4 Policy 11(e) & Aberdeenshire LDP Policy E2 - due to the potential impact on the landscape, see Landscape and Visual above. Any adverse effects would need to be clearly outweighed by social, environmental or economic benefits of at least local importance. • NPF4 Policy 6(b) & Aberdeenshire LDP Policies E3, PR1 and C3 - there is a presumption against the removal of trees, woodlands and hedgerows; See Natural Heritage above. In order to comply with these policies significant public benefits would need to outweigh any loss and compensatory planting would need to be provided. <p>Planning Allocations and Designations</p> <ul style="list-style-type: none"> • None <p>A number of these possible policy conflicts may be removed following further OHL alignment / design development and environmental assessment and mitigation development.</p>	
Proposals	<p>The following planning proposals have been identified within the route option:</p> <ul style="list-style-type: none"> • There is a planning application approved for the conversion of an agricultural building into a house, near Cottonbrae (north of Fetteresso) (APP/2019/1015). • The approved consent application for Craigneil Wind Farm is located outwith the route option to the west (APP/2018/0993). • The PAN applications for the proposed 400 kV substations at Hurlie, near Fetteresso, and Emmock, near Tealing, are due to be submitted early 2024. PAC events are scheduled to be undertaken in Spring 2024. 	<p>The route has been RAG rated as Green as there are no projects known to the planning system which may interact with the option.</p> <ul style="list-style-type: none"> • The route option overlaps the boundaries for the approved planning application for the conversion of an agricultural building to a home at Cottonbrae. However, it is considered that this planning application presents a minor constraint and could be avoided within the route option. • The consented Craigneil Wind Farm is not considered to represent a land use constraint to development of an OHL in this route option. 	

Topic	Constraints	Evaluation	RAG Score
	<p>The project webpages can be found in Section 1.6. Next Steps of the Consultation Document.</p> <p>There are no other known planning applications, consents, PAC/PAN or scoping applications at the time of this appraisal.</p> <p>SSEN Transmission is working towards submission for an application for section 37 consent to construct a proposed 132 kV OHL to connect the existing Fetteresso Substation with the consented wind farm at Glendye.</p> <p>More information can be found at the project webpage: https://www.ssen-transmission.co.uk/projects/project-map/glendye-windfarm-connection/</p>		

Technical Appraisal

Infrastructure crossings. Infrastructure creates a constraint on an OHL often requiring additional clearance, enhanced reliability and protection provision to the infrastructure during construction and maintenance. Each crossing of infrastructure therefore has the potential to constrain the route option.

- Major crossings include other OHLs of 132 kV and above, railways, rivers and lochs over 200 m wide, navigable waterways, motorways and other major roads, major pipelines and other significant infrastructure. These crossings require specific OHL solutions and can constrain the OHL design.
- The minor roads sub-criteria includes all road crossings excluding those considered under the major crossings criteria. Private tracks and driveways may also be included where there is a requirement to maintain access or where relatively high traffic volumes are anticipated. Whilst the impact on OHL design is considered to be less for these crossings than for the minor road crossings, measures are still required to enable these crossings and collectively they can constrain a route option.

Environmental design. The terrain, land features and atmosphere all have the potential to constrain the design of an OHL; the ease and safety of routeing an OHL, construction of an OHL and maintenance of an OHL can be impacted. Furthermore, the environment which an OHL crosses can impose long term risks from pollution and flooding. Route options with multiple or significant environmental features have a higher risk of constraint when routeing an OHL. Environmental constraints associated with the OHL are discussed in the **Environmental Appraisal** of this appendix and in **Section 5** of the main consultation document.

- High elevations increase wind and ice loading on the overhead lines which requires shorter spans between angle towers or stronger structures. This can constrain route options and increase the cost. Additionally, access for construction and maintenance is often more difficult at higher altitudes and the risk of severe weather events is greater.
- Contaminated land poses a significant health risk to construction and maintenance operatives, and is potentially expensive to mitigate, dispose of or remediate. As such, the presence of contaminated land in a route option would be a significant constraint. For assessment purposes, the presence of unexploded ordnance (UXO), is also considered in this section as it has similar implications.
- Areas vulnerable to flooding pose a potential risk during construction as they may prevent maintenance tasks from being undertaken, and can pose a physical risk to structures during flood events. As such, route options with large areas of land that are vulnerable to flooding would be assigned a higher risk of constraint.

Ground conditions. Ground topography and condition can impact the choice of route options, access to the OHL, as well as construction and maintenance of the OHL. Route options with larger areas of challenging ground conditions are more likely to be significantly constrained.

- Steep or mountainous slopes present a significant difficulty for routeing, access, construction and the maintenance of an OHL. Route options with a large proportion of the route option which traverse ground with steep or mountainous slopes are more likely to be constrained and it would therefore be more difficult and costly to build and maintain an OHL.
- Peat, particularly deep peat, represents a significant constraint for access, construction and the maintenance of an OHL, particularly as it is an important habitat and the construction of a new OHL could cause long-term damage. Route options which cross larger areas of peatland are more likely to be constrained and it would therefore be more difficult and costly to build and maintain an OHL.

Construction / Maintenance. OHLs should be routed in consideration to the requirements of construction and maintenance, as the preferred route option can have a significant impact on the safety and cost of the Proposed Development throughout its lifetime.

- The construction of temporary accesses are a significant project cost. Route options that are remote and are located at a distance from existing tracks and the public road network have the potential to incur large costs due to the requirement to construct road access. Furthermore, access for inspection and maintenance is a requirement throughout the life of the asset. Route options that are remote from the existing access routes represent a significant constraint and have a higher potential to be constrained.
- OHLs with a higher number of angle supports tend to be more challenging to construct due to the number of angle pull throughs, and often require more extensive access. As such, a route option with a larger number of angle supports is at a greater risk of being constrained.

Proximity. Existing features can constrain a route option as they often are required to be avoided to reduce or avoid any impacts. These features include properties, windfarms, telecommunications masts, urban area and metallic pipes.

- Dispersed buildings and properties are a common feature across the Scottish landscape. Placing OHLs in close proximity to these features is avoided where possible. Route options where many pinch points occur due to the potential close proximity to buildings and residential properties are considered to be more constrained. The proposed routes are approximately 1 km or more in width and the route centreline has been identified to allow sufficient space for refinement of the OHL design at the alignment stage to increase the distance of an OHL to buildings within close proximity.
- Windfarms pose a risk to OHLs as they can disrupt the airflow and as such, the OHLs need to be routed around any wind turbines and windfarms at a distance of three times the rotor diameter wherever possible.
- OHLs can block existing line of sights for telecommunication masts and therefore the line of sights from communication masts can constrain route options and structure locations.
- As with dispersed buildings and properties, urban areas represent a significant constraint whereby the route option will need to be routed around.
- Metallic pipes have to be avoided by individual angle supports as they are often expensive to reroute, and, ideally, the final alignment should avoid running in parallel to a metallic pipe, to avoid any potential electrical impacts on the pipelines. As such, metallic pipes represent a constraint to route options.

Table B3 – Technical Baseline and RAG Rating Table for Route Options E2 and E3

Criteria	Sub-criteria	Route E2 Baseline	RAG Rating	Route E3 Baseline	RAG Rating
Infrastructure Crossings	Major Crossings	One A-road crossing (A957 Slug Road), and one gas pipeline crossing (NGGT).	Red	One A-road crossing (A957 Slug Road) and one gas pipeline crossing (NGGT).	Red
	Minor Roads	No B or minor road crossings.	Green	One minor road crossings.	Yellow
Environmental Design	Elevation	Length through 100-150 m: 692 m. Length through 150-200 m: 3,267 m. Length through 200-300 m: 2,220 m. Min Elevation: 128 m.	Red	Length through 50-100 m: 210 m. Length through 100-150 m: 1,732 m. Length through 150-200 m: 2,631 m. Length through 200-300 m: 2,100 m.	Red

Criteria	Sub-criteria	Route E2 Baseline	RAG Rating	Route E3 Baseline	RAG Rating
		Max Elevation: 261 m.		Min Elevation: 89 m. Max Elevation: 230 m.	
	Contaminated Land	Low risk in terms of contaminated land.		Low risk in terms of contaminated land.	
	Flooding	Distance through high river flood risk: 180 m. Distance through high surface water flood risk: 150 m. Percentage of route within flood risk: 5%. River crossings: seven.		Distance through high river flood risk: 180 m. Distance through high surface water flood risk: 390 m. Percentage of route within flood risk: 9%. River crossings: two.	
Ground Conditions	Terrain	Length through 0-5° slope: 1,056 m. Length through 5-10° slope: 2,828 m. Length through 10-20° slope: 2,085 m. Length through 20-40° slope: 210 m. Max. slope: 31°.		Length through 0-5° slope: 1,503 m. Length through 5-10° slope: 2,327 m. Length through 10-20° slope: 2,618 m. Length through 20-40° slope: 225 m. Max. slope: 26°.	
	Peat	Distance through Class 1 Peatland: 0 m. Distance through Class 2 Peatland: 0 m. Distance through Class 3 Peatland: 270 m. Distance through Class 5 Peatland: 480 m. Distance through 0-0.5 m peat depth: 0 m. Distance through 0.5-1 m peat depth: 0 m. Distance through 1-1.5 m peat depth: 0 m. Distance through 1.5 m or more peat depth: 0 m.		Distance through Class 1 Peatland: 0 m. Distance through Class 2 Peatland: 0 m. Distance through Class 3 Peatland: 270 m. Distance through Class 5 Peatland: 663 m. Distance through 0-0.5 m peat depth: 0 m. Distance through 0.5-1 m peat depth: 0 m. Distance through 1-1.5 m peat depth: 0 m. Distance through 1.5 m or more peat depth: 0 m.	
Construction / Maintenance	Access	Distance through 50-100 m from access roads: 1,020 m. Distance through 100-300 m from access roads: 1,620 m. Distance through 300-1,000 m from access roads: 1,800 m.		Distance through 50-100 m from access roads: 1,202 m. Distance through 100-300 m from access roads: 2,997 m. Distance through 300-1,000 m from access roads: 1,050 m.	
	Angle Towers	Angle towers (number) - 01 to 03 degrees: zero. Angle towers (number) - 03 to 10 degrees: three.		Angle towers (number) - 01 to 03 degrees: zero. Angle towers (number) - 03 to 10 degrees: two.	

Criteria	Sub-criteria	Route E2 Baseline	RAG Rating	Route E3 Baseline	RAG Rating
		Angle towers (number) - 10 to 30 degrees: one. Angle towers (number) - 30 to 60 degrees: one. Angle towers (number) - 60 to 80 degrees: zero. Total number of angles: five.		Angle towers (number) - 10 to 30 degrees: one. Angle towers (number) - 30 to 60 degrees: two. Angle towers (number) - 60 to 80 degrees: one. Total number of angles: six.	
Proximity	Clearance Distance	Residential Buildings within 5 m: zero. Commercial Buildings within 5 m: zero. Other Buildings within 5 m: zero. Residential Buildings within 170 m: two. Commercial Buildings within 170 m: zero. Other Buildings within 170 m: three. Residential Buildings within 500 m: 11. Commercial Buildings within 500 m: two. Other Buildings within 500 m: 38.		Residential Buildings within 5 m: zero. Commercial Buildings within 5 m: zero. Other Buildings within 5 m: zero. Residential Buildings within 170 m: two. Commercial Buildings within 170 m: zero. Other Buildings within 170 m: two. Residential Buildings within 500 m: 21. Commercial Buildings within 500 m: three. Other Buildings within 500 m: 50.	
	Wind Farms	The route option runs along the boundary of a windfarm near the consented Craigneil Hill although it is expected that the distance of three times the rotor diameter will be maintained		No windfarms/turbines in close proximity to route.	
	Communication Masts	No masts located within route.		No masts located within route.	
	Urban Developments	Passes in close proximity to remote residential and non-residential buildings.		Passes in close proximity to remote residential and non-residential buildings.	
	Metallic Pipes	One crossing.		One crossing.	

Technical Appraisal of Routes E2 and E3

Both route options have been assigned a RAG Rating of Red (High) for Major Crossings as both routes cross the A957 and one gas pipeline. Both route options are afforded space for the crossings to be achieved. In relation to Minor Roads, Route Option E2 has been assigned a RAG Rating of Green (Low) as the route option has no B-road or minor road crossings. Route Option E3 has been assigned a RAG Rating of Amber (Intermediate) as the route option contains a higher number of minor and local road crossings than Route Option E2. Whilst this is a constraint to Route Option E3, the methodology for crossing these types of roads is well established and should not be considered a defining factor in the selection of a Preferred Route.

In terms of Elevation, Section E routes have higher elevations compared to the Section D routes. Both route options have been assigned a RAG Rating of Red (High) as both routes traverse land where greater than 25% of the route length is above 200 m Above Ordnance Datum (AOD) which could result in challenging working conditions during the tower installation phase. It is considered likely that at the alignment stage, the elevations may be able to be reduced. Whilst being assigned a RAG Rating of Red (High) in line SSEN Transmission's Routeing Guidance, the maximum elevation on Route Option E2 is 261 m which is considered to be within the capabilities of the selected SSE400 tower suite. Contaminated Land has been assigned a RAG Rating of Green (Low) for both route options based on the assessments carried out thus far as it is not considered to be a risk.

Both route options are assigned a RAG Rating of Green (Low) for Terrain. The majority of the length of both routes is located on sloped terrain between 5-20° and have a comparable distance which is located on terrain with a slope between 20-40°. Route Option E2 contains the highest maximum slope of 31°. It is considered likely that this could be reduced further at the alignment stage. Whilst approximately 5-20% of the route lengths in both route options cross Class 3 and 5 peatland, neither route option crosses any Class 1 or 2 peatland areas and as such has been assigned a RAG Rating of Green (Low) and should not be considered a significant risk for either route option.

There are no local public roads located a distance of greater than 1 km from either route option. Both route options are considered to be comparable in this regard and have been assigned a RAG Rating of Green (Low) for Access. Route Option E3 has been assigned a RAG Rating of Amber (Intermediate) for Angle Towers as it contains one more angle tower than Route Option E2, although these numbers should be taken as indicative only at this stage. Dependent on final alignment, sharp angle towers of greater than 60° may be required in certain locations in Route Option E3 due to proximity to dwellings.

The Clearance Distance for both route options is assigned a RAG Rating of Green (Low) and is not expected to be a constraint. Both routes have a low quantity of buildings in close proximity. The southern section of Route Option E2 passes through Hurlie Bog and will likely remain clear of buildings until the route approaches Mergie. The route option then passes to the north of two small areas containing scattered buildings as the route deviates towards the northeast. Route Option E3 passes woodland areas towards the east but passes by a small collection of buildings near Rickarton and Rooten as the route option deviates north and will likely remain in close proximity during the alignment process.

In relation to windfarms, Route Option E2 is considered to be more constrained due to the close proximity of the windfarm located at Craigneil Hill to the north of the route option and has been assigned a RAG Rating of Amber (Intermediate). No windfarms or wind turbines have been identified within Route Option E3 and has been assigned a RAG Rating of Green (Low). No communication masts have been identified within either route option and has been assigned a RAG Rating of Green (Low).

No significant urban developments are located within either route option and as such, both route options have been assigned a RAG Rating of Green (Low). Route Option E2 passes to the west of a small cluster of commercial, residential and non-residential buildings where the route has the most extreme angle deviations.

In terms of Metallic Pipes, both route options were assigned a RAG Rating of Amber (Intermediate) as both routes cross one major gas pipeline. It is likely that once the alignment has been defined, through conversations with the pipeline operators, this risk could be reduced.

In conclusion, whilst the RAG scoring indicates E2 to be preferred the differences between the two are minor. E2 has the opportunity to utilise the existing operational corridor of XS1/XS2 and minimise the amount of new infrastructure in new locations. E2 is seen as preferred as it reduces the overall impact of the construction works both on forestry and also on people by keeping the existing and new OHLs in close proximity to one another.

APPENDIX C. APPRAISAL OF NEW ROUTE OPTION IN SECTION F

This appendix presents the baseline constraints and the findings of the appraisal of key environmental and technical constraints for the new Route Option F1.3 in Section F.

The appendix provides the findings of the environmental and technical appraisal for the new route option within Section F and details the RAG Ratings applied to the route identified under each environmental and technical topic as per SSEN Transmission's Routeing Guidance.

The environmental topics consider the following: natural heritage, cultural heritage, people, landscape and visual, land use and planning.

The technical topics are as follows: infrastructure crossings, environmental design, ground conditions, construction / maintenance and proximity.

This appendix follows the structure:

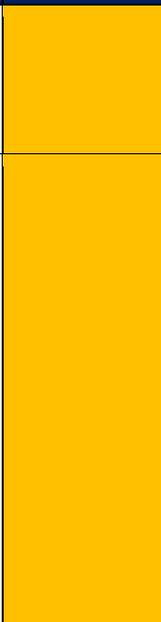
- Environmental Appraisal
- Technical Appraisal

Environmental Appraisal
Table C1: Environmental Appraisal for Route Option F1.3

Topic	Constraints	Evaluation	RAG Score
Natural Heritage			
Designations	<p>International, European or National Designations</p> <p>There is one statutory European designation located within the route option (see Figure 6.1):</p> <ul style="list-style-type: none"> The River Dee SAC (NGR NO 814 983) crosses the width of the southern section. The site is designated for freshwater pearl mussel, Atlantic salmon and otter. <p>There are a number of non-statutory national designations within the route option. There is a single area of woodland classified as Ancient Woodland on the AWI¹. This is located at Forest of Drum (NGR NJ 790 001) in the north of the southern section of the route option (see Figure F5.1). It is noted on the NWSS to comprise partially of native woodland including some extents of upland birchwood, native pinewood and wet woodland.</p> <p>In addition, there are blocks of woodland classified on the AWI as LEPO² (see Figure 6.1). The key areas are located at:</p> <ul style="list-style-type: none"> Woodland blocks at Cairnton Wood (NGR NO 812 989), Moss-side plantation (NGR NO 80866 99067) and Old Manse Wood (NGR NO 810 987) span approximately half the width of the southern section of the route near the River Dee. Areas are listed on the NWSS as largely native pinewood with some extents of upland birchwood. Woodland near Drumoak (NGR NO 795 994) is located within the centre of the route, noted on the NWSS to comprise native pinewood and lowland mixed deciduous woodland. 	<p>This route option has been assigned an Amber RAG rating because the route option may compromise the conservation status of the designating features of a statutory European designated site (the River Dee SAC) and non-statutory nationally designated sites (LEPO woodland).</p> <p>There is potential for the route to compromise the conservation status of the River Dee SAC as it crosses this site. Much of the River Dee SAC within the route option is lined by trees and woodland which provide important riparian stability and terrestrial and aquatic habitats. Crossing the river at these points would require wayleaves which could affect the river habitat and therefore the designated features. Design and mitigation measures would be implemented to protect the water environment (for details see 'Hydrology / Geology / Hydrogeology' section below).</p> <p>There is potential for the route to compromise the conservation status of one AWI woodland (Forest of Drum) and non-statutory nationally designated LEPO woodlands. The route is constrained in several areas by LEPO woodland. This includes; Cairnton Wood, Moss-side plantation, Old Manse Wood, and woodland near Drumoak which may not be entirely avoidable.</p> <p>The requirement to provide OHL wayleaves would require felling of trees adjacent to the River Dee and in LEPO woodlands; this would be mitigated to some extent by selecting an OHL alignment wherever possible through the narrowest sections of woodland, considering tower siting and design, and applying mitigation to retain woodland through sensitive construction techniques.</p>	

¹ Ancient Woodland Inventory: <https://www.nature.scot/doc/guide-understanding-scottish-ancient-woodland-inventory-awi>

² LEPO woodlands comprise categories 1b and 2b on the AWI. These woodlands are described by NatureScot (2021) as: "interpreted as plantation from maps of 1750 (1b) or 1860 (2b) and continuously wooded since. Many of these sites have developed semi-natural characteristics, especially the oldest ones, which may be as rich as Ancient Woodland."

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> Coldstream Plantation (NGR NO 775 999) extends across two thirds of the width of the route and noted on the NWSS to be lowland mixed deciduous woodland and native pinewood. Recent field surveys confirmed the plantation has been felled. <p>Regional Designations</p> <p>There are three regionally designated sites located within the route boundary (see Figure 6.1):</p> <ul style="list-style-type: none"> River Dee LNCS (NGR NO 814 983) and River Dee Corridor LNCS (NGR NO 817 984) span the width of the southern section of the route option. The sites comprise the river (designated as an SAC, see ‘International, European or National Designations’ above) supporting a range of plants and animals. The LNCS are noted for semi-natural grassland, water margin vegetation, breeding and overwintering birds, and shingle beaches providing spawning areas for Atlantic salmon. Old Manse Wood LNCS (NGR NO 810 987) is located within the southern section of the route near to the western boundary. The site is noted for semi-mature Scots pine plantation with a good ground flora. 	<p>In the longer term it may be possible to enhance the condition of riparian habitats along the River Dee SAC and of LEPO woodlands through new planting and sensitive management, particularly in areas where the baseline value has been affected by invasive non-native species and /or commercial forestry.</p> <p>This route option has been assigned an Amber RAG rating because the route option may compromise the conservation status of an LNCS and/or the conservation status of the designated features of the sites.</p> <p>It would not be possible to avoid crossing the River Dee LNCS and River Dee Corridor LNCS. The LNCS boundaries largely follow the boundary of the River Dee SAC (see ‘International, European or National Designations’ above), and encompass the mature woodland that lines the majority of the length of the LNCS within the route option.</p> <p>Old Manse Wood LNCS is located wholly within the south of the route option. It would be avoidable and is not considered to significantly constrain the route option.</p>	
Protected Species	<p>European Protected Species</p> <ul style="list-style-type: none"> There are watercourses along the route which are likely to be used by otter, primarily the River Dee. Smaller watercourses and field drains are also likely to be used by otter. 15 records of otter were identified within 10 km of the route option and within the last 15 years. The closest record was noted in 2012 on the River Dee within the route option. Bats may be present roosting in the woodlands and trees along the route and are likely to use linear features such as treelines, hedgerows and watercourses throughout the route option for foraging and commuting. Approximately 160 records of bat were identified within 10 km of the route option and within the last 15 years. 32 records of soprano pipistrelle were also identified from the 1 km square that covers Drum Castle (2009-2022), approximately 0.5 km northeast of the route option. 	<p>This route option has been assigned a Green RAG rating because the route option is unlikely to compromise the conservation status or suitable habitat for EPS.</p> <p>The route may be constrained by the presence of EPS in specific locations, but it is assumed that these areas/habitats would be avoidable and where this is not possible, suitable best practice mitigation can be applied with appropriate NatureScot licences in place. Pre-construction surveys would be required to determine likely presence or absence of EPS with a particular focus on key supporting habitats. Species-specific mitigation that may be required is dependent on field survey results and alignment design. It is anticipated that mitigation would be feasible, particularly where features and habitats of greater ecological potential is avoided.</p>	

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> There is some limited potential for great crested newt to be present in non-flowing waterbodies such as ponds. Habitat suitability in northeast Scotland is considered suboptimal³ and the distribution of this species is limited^{Error! Bookmark not defined.}. There are no publicly available records of great crested newt within 10 km of the route option within the last 15 years. 	<p>Mitigation would follow those methods set out in SSEN Transmission's standard Species Protection Plans (SPPs⁴) with additional mitigation agreed and implemented where field survey data indicates a requirement.</p> <p>It may be possible to enhance habitats for protected species (see Biodiversity below), in line with priorities identified by the North East Scotland Biodiversity Partnership⁵.</p>	
	<p>UK Biodiversity Action Plan (BAP) Species (Red/Amber List)</p> <ul style="list-style-type: none"> Pine marten and red squirrel are likely to be present in the woodlands along the route. Six records of pine marten were identified within 10 km of the route option and within the last 15 years, the closest of which was approximately 1.3 km south of the route option in Ashentilly Wood in 2013. Almost 6,000 records of red squirrel were identified within 10 km of the route option within the last 15 years. Saving Scotland's Red Squirrels online map^{Error! Bookmark not defined.} indicates there have been sightings of red squirrel in woodland throughout the route option. Water vole records are limited within the area, although there are records to the east near Cults and to the west near Drumoak^{Error! Bookmark not defined.} indicating potential for presence in suitable habitat along the route. The route crosses the River Dee which has potential for fish listed on the UK BAP (eg brown trout). Brown hare is likely to be present in farmland, with 19 records of brown hare identified within 10 km of the route option in the last 15 years, the closest of which was approximately 0.7 km east of the route option near Schoolhill in 2017. Hedgehog is likely to be present on woodland edges and in gardens. Fourteen records of hedgehog were identified within 10 km of the route option in the last 15 years, the closest of which was approximately 0.8 km northeast of the route option in 2013 near Drum Castle. 	<p>This route option has been assigned a Green RAG rating because the route option is unlikely to compromise the conservation status or suitable habitat of UK BAP, protected or notable species.</p> <p>The route may be constrained by the presence of UK BAP species and/or badger in specific locations such as woodland habitats, but these areas/habitats can likely be avoided as they would not extensively constrain the route. Pre-commencement surveys would be required to determine presence or likely absence of protected species with a particular focus on key supporting habitats. Species-specific mitigation that may be required is dependent on field survey results and alignment design. It is anticipated that mitigation would be feasible, particularly where features and habitats of greater ecological potential are avoided.</p> <p>Mitigation would follow those methods set out in SSEN Transmission's standard SPPs⁴, with additional mitigation agreed and implemented where field survey data indicates a requirement.</p> <p>It may be possible to enhance habitats for UK BAP, protected and notable species (see Biodiversity below), in line with priorities identified by the North East Scotland Biodiversity Partnership^{Error! Bookmark not defined.}.</p>	

³ O'Brien, D., Hall, J., Miro, A., and Wilkinson, J. (2017). Testing the validity of a commonly-used habitat suitability index at the edge of a species' range: great crested newt *Triturus cristatus* in Scotland. *Amphibia-Reptilia* 38 (2017): 265-273.

⁴ SSEN (2018) Appendix E Species Protection Plans Combined.

⁵ North-East Scotland Biodiversity Partnership. Available at: <https://www.nesbiodiversity.org.uk/>

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> Reptiles such as slow worm may be present in gardens, grasslands, woodland edges and hedges. Twelve records of common lizard were recorded within 10 km of the route option in the last 15 years, the closest of which was approximately 1.3 km northeast of the route option near Peterculter in 2023. Amphibians such as common frog and common toad may be present in gardens and wetland habitats. 20 records of common toad were identified within 10 km of the route option within the last 15 years; the closet record was approximately 0.4 km east of the route option in 2015 near Peterculter. <p>Other Protected and Notable Species</p> <p>There is potential for badger in areas of woodland and farmland. Field data from surveys in 2023 confirm that badger is present within the route option. There are no publicly available records of water shrew identified on NBN Atlas within 10 km.</p>		
Habitats	<p>Annex 1 Habitats</p> <p>Desk study and field survey data indicate that habitats within the route option are similar to those in route option F1, being dominated by farmland comprising a mix of arable with pasture and pockets of woodland. There is potential for pockets of Annex 1 habitats, particularly where there are remnant extents of semi-natural woodland.</p> <p>Groundwater Dependent Terrestrial Ecosystems</p> <p>The habitats along the route are similar to those in route option F1, being dominated by farmland comprising a mix of arable and pasture with pockets of woodland, principally of commercial forestry.</p> <p>There may be limited pockets of GWDTE habitats within the route option.</p>	<p>This route option has been assigned a Green RAG rating because the route option is unlikely to compromise the conservation status of Annex 1 Habitats. It is unlikely that there are large areas of Annex 1 habitats along the route due to the intensively managed, lowland agricultural nature of the area. Desk study and field evidence indicate that semi-natural habitats are confined to relatively limited areas due to the dominant patterns of land use. Where pockets of potential Annex 1 habitat are present within the route, it is assumed that these would be avoided through detailed design of the OHL alignment such that they would not extensively constrain the route.</p> <p>This route option has been assigned a Green RAG rating because it is unlikely to compromise the integrity of GWDTE habitats. It is unlikely that there are large extents of GWDTE within the route option due to the intensively managed, lowland agricultural nature of the habitats that dominate the route. Desk study and field evidence indicate that semi-natural habitats (and therefore potential for GWDTE) are confined to relatively limited</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>Biodiversity</p> <p>The density of Biodiversity Units derived from habitats within the route option is calculated to be 9.21 BU/ha. Irreplaceable habitats density is 0.21 BU/ha. Watercourses BU density is calculated to be 0.21 BU/ha.</p>	<p>areas due to the dominant patterns of land use. Where any pockets of GWDTE are confirmed to be present within the route following further survey, it is assumed that these would be avoided (or spanned) through detailed design of the OHL alignment such that they would not extensively constrain the route.</p> <p>This route option has been assigned a Green RAG rating because the BU density is lower than 110% of the least impacted option (F1 in this section, with 8.44 BU/ha).</p> <p>Specific habitat and enhancement recommendations are dependent on field survey results and design of the alignment. The route option is covered by the North East Scotland Biodiversity Partnership and there may be opportunities to contribute to priorities identified in their Habitat Statements. This may include actions such as:</p> <ul style="list-style-type: none"> Consider woodland enhancement projects (eg, LEPO woodlands) to increase biodiversity value (eg, through removal of invasive non-native species and/or restoration of habitats impacted by commercial forestry), including for example at Skene Moss. Enhance riparian habitats where the route crosses watercourses, such as the River Dee SAC and LNCS. 	
Ornithology	<p>Designated Sites</p> <p>The route option F1.3 does not coincide directly with any SPA, however, it does show connectivity with the core foraging ranges of qualifying features (greylag geese; 15-20 km) of the Loch of Skene SPA (6.5 km to the south of the route option).</p> <p>The national conservation status of the greylag goose and goosander populations is considered to be favourable; the status of goldeneye is unfavourable (red-list BoCC) – all are likely sensitive to operational effects of OHLs due to potential collision.</p> <p>As such, the route option may affect foraging of the qualifying features of the Loch of Skene SPA.</p>	<p>The route option has been RAG rated as Amber as it may compromise an internationally or nationally designated area and/or the conservation status of the qualifying features of the site, for example by passing near to it and having assumed connectivity.</p> <p>The Loch of Skene SPA represents a potential constraint for the route option with likely significant effects (LSE) predicted for key qualifying species, in particular wintering geese, due to potential for collision of birds with the OHL conductors, for birds making flights between the designated area and core foraging areas to the north and within the route option. The designated feature, greylag goose has reduced in numbers substantially at the SPA following a northward redistribution of their Scottish wintering population in recent years.</p> <p>Information on the historic distribution of feeding greylag geese suggests that collision risk is a possible constraint throughout the option due to the OHL</p>	

Topic	Constraints	Evaluation	RAG Score
		<p>alignment between the SPA and feeding fields, although field use to the north of this section near Garlogie and south of Kemany appears preferred (Mitchel, 2012)⁶. Further appraisal (HRA) would be required to determine the potential for adverse impacts on integrity of the designated site which would be permanent (for the lifetime of the OHL). Opportunity exists to align an OHL away from frequently used feeding fields, however, these can change annually if the cropping regime alters their suitability. At this distance from the SPA, large concentrations of geese in flight near to roosting areas are less likely within the route option. Concentrations may still occur however, in association with good feeding areas.</p> <p>Line-marking with bird diverters would be required as design mitigation in locations where conductors are likely to pose collision risk to susceptible birds. Nevertheless, in close proximity to roosts, bird diverters may be less effective when large flocks encounter poor visibility at dawn and dusk or due to weather conditions.</p>	
	<p>Schedule 1 Birds</p> <p>The route option contains habitats that have the potential to support populations of Schedule 1 birds. Woodland habitat may support Schedule 1 raptors including species such as osprey, red kite and goshawk. Watercourses, including rivers, streams and ditches and adjacent wetland may support Schedule 1 kingfisher and little ringed plover. Breeding populations of Schedule 1 species may be sensitive to disturbance during construction, including some raptor and owl species, and some specialist species including little ringed plover and kingfisher. During operation, some Schedule 1 raptor species may be sensitive to collision impacts.</p> <p>Records of breeding red kite are known from woodland associated with the route option. The route option lies near the area of release of 101 birds between 2007 and 2009.</p>	<p>The route option has been RAG rated as Amber since it has the potential to compromise the conservation status of Schedule 1 bird populations in the region or nationally.</p> <p>The route option area supports mixed agricultural and woodland, largely comprising enclosed pasture, hedgerows and plantation woodland. The route option is known to support regionally significant populations of the Schedule 1 bird red kite, both nesting and roosting, stemming from the local release program. In addition, osprey is also known to nest close to the route option, with potential for foraging birds to fly through/near the OHL to and from foraging excursions.</p> <p>Implementation of good practice as set out in SSEN Transmissions standard SPPs will ensure that all breeding attempts will be safeguarded during construction. Operational constraints may arise as a result of collision risk, and if habitat supports high numbers of individuals susceptible to collisions, eg.</p>	

⁶ Mitchell, C. 2012. Mapping the distribution of feeding Pink-footed and Iceland Greylag Geese in Scotland. Wildfowl & Wetlands Trust / Scottish Natural Heritage Report, Slimbridge.

Topic	Constraints	Evaluation	RAG Score
		Schedule 1 raptors like red kite and osprey, then line markers will reduce collision risk.	
	<p>Birds of Conservation Concern (BoCC)</p> <p>The route option may support populations of birds on the Red and Amber lists of BoCC, some of which are also on Schedule 1. Farmland and moorland areas, including arable, pasture, heath, wet grassland and hedgerows with higher ground (moorland) also present, may support Red-listed waders including lapwing, curlew, oystercatcher and ringed plover, farmland specialists like grey partridge and Red-listed passerines including skylark, starling, house sparrow, corn bunting and yellowhammer. Woodland patches may support red-listed species like spotted flycatcher and tree sparrow. Wetland areas, including rivers and ditches, may support red-listed ducks and grebes. Herring gulls may also be present on farmland and wetland habitats.</p>	<p>The route option has been RAG rated as Green since this option is unlikely to compromise the conservation status of populations of a red or amber listed species or essential breeding, passage or wintering habitat.</p> <p>Populations of BoCC red-listed species mainly comprise farmland and woodland passerines and low densities of breeding waders. The breeding sites of both groups will be safeguarded during construction through implementation of good practice as set out in SSEN Transmission's standard SPPs and passerines are also relatively tolerant of disturbance. The anticipated low densities of breeding waders means that any short-term potential disturbance will not compromise the conservation status of these populations in the region.</p>	
Hydrology / Geology / Hydrogeology	<p>Surface and Groundwater Drinking Water Protected Areas (DWPA)</p> <p>The entire route option is within a groundwater DWPA.</p> <p>The route option lies between two surface water DWPAs; the River Dee at Banchory DWPA (ID 23332) is over 10 km upstream (west) of the route option and the River Dee near Peterculter DWPA (ID 23315) is approximately 3 km east (downstream) of the route option (see Figure 6.2).</p> <p>SEPA CAR licence abstraction data indicates that there are no abstractions within the route option.</p> <p>There are no Regulated (Type A⁷) PWS within the route option.</p>	<p>The route option has been RAG rated as Green as it is unlikely to result in water flow pathways to surface and groundwaters and is unlikely to compromise the quality and/or quantity of surface water or groundwaters which provide public supply.</p> <p>The River Dee DWPA lies approximately 3 km downstream of the route option and there is no proposed development within the DWPA.</p> <p>During early design iterations, a minimum buffer of 50 m from infrastructure will be applied to watercourses and water features where possible, and with the implementation of construction mitigation (eg SSEN Transmission's GEMPs and following SEPA best practice guidance), it is considered that this option is unlikely to result in water flow pathways to surface and groundwaters.</p>	
	<p>Aquifer Providing Regional / Local Resources</p> <p>The aquifers within this route option are classified as low productivity (Class 2C), within which virtually all flow is through fractures and discontinuities</p>	<p>The route option has been RAG rated as Green as it is considered unlikely to result in water flow pathways to surface and groundwaters, which could affect aquifers providing regional and local resources.</p>	

⁷ Regulated supplies are supplies for over 50 people and/or supplies for commercial or public supplies. These were previously known as Type A supplies. All noted Type A/ Regulated supplies provided by councils were included in this criterion, as the council does not differentiate between commercial or supplies for >50 people in their data.

Topic	Constraints	Evaluation	RAG Score
	<p>within the bedrock. There are no highly productive aquifers within the route option.</p> <p>PWS data from Aberdeen City and Aberdeenshire Council indicates that there are 8 known properties that are supplied by small PWS (Type B⁸) within this route option.</p> <p>There may be pockets of potential GWDTE habitats within the route option.</p>	<p>There is space within the route option to avoid PWS and GWDTE; and these will be avoided where possible during the design of the alignment.</p> <p>SSEN Transmission has stringent construction mitigation measures to protect PWS and undertakes pre works, during and post works monitoring of all PWS which are close to the OHL. As such, it is considered that the quantity and quality of water supplies within the route option would not be adversely affected.</p>	
	<p>Surface Waters or Aquifer Providing Water for Agricultural or Industrial Use</p> <p>There is one mapped watercourse shown on 1:50K OS mapping within the route option. This is:</p> <ul style="list-style-type: none"> River Dee Banchory to Peterculter (Waterbody ID 23316) which was classified as overall 'Moderate' by SEPA in 2020⁹. <p>Based on SEPA Future Flood maps¹⁰, the flood risk area associated with the River Dee crossing location is between 200 m and 350 m wide (see details in Engineering section).</p>	<p>The route option has been RAG rated as Green as it is unlikely to result in water flow pathway(s) to surface and groundwaters.</p> <p>Within this route option there is one watercourse (the River Dee) which crosses the entire width of the option and it has a wide flood extent where it is crossed. However, the flood extent of the Dee could be spanned during the OHL alignment design.</p> <p>Stringing the OHL over watercourses would not affect their beds and banks and new watercourse crossings (eg for access tracks) would be avoided as much as possible during design. Following SEPA guidance¹¹, all surface watercourses and waterbodies would be buffered by a minimum of 50 m from OHL infrastructure and construction working areas, where possible. As the route option is 1 km wide, waterbodies within the route could likely be avoided.</p> <p>Mitigation measures would be incorporated into the design and construction to reduce impacts on the surface water environment, which would include best practice pollution control measures and implementation of relevant SSEN Transmission GEMPs to prevent sediment laden run-off entering the water environment, via a range of measures including sediment traps, filter trenches, silt fences, swales and settlement ponds. These are standard mitigation for preventing the potential adverse impacts of construction activities on surface water quality.</p>	

⁸ Type B PWS classification relates to smaller, domestic supplies.

⁹ SEPA. Water Classification Hub. Available at: <https://www.sepa.org.uk/data-visualisation/water-classification-hub/>

¹⁰ SEPA. Scottish Flood Hazard and Risk Information – future flood maps. Available at: <https://map.sepa.org.uk/floodmaps/FloodRisk/FutureFloodMaps>

¹¹ SEPA General Scoping Guidance for Large Infrastructure Projects, appended to SEPA's pre-application consultation response for the Kintore to Tealing 400 kV OHL project routing consultation, dated 22 June 2023

Topic	Constraints	Evaluation	RAG Score
		<p>With careful siting of infrastructure components, including appropriate buffers from water features, avoiding flood risk areas and the implementation of accepted good practice mitigation during construction, the remaining constraint in relation to surface waters would be minimised and the option is unlikely to result in water flow pathway(s) to surface and groundwaters or compromise their quality and quantity.</p>	
Cultural Heritage			
Designations	<p>World Heritage Sites (WHS), Scheduled Monuments (SM), Inventory Gardens and Designed Landscapes (GDL), Inventory Historic Battlefield (BTL)</p> <p>There are no World Heritage Sites, Scheduled Monuments or Properties in Care within the route option, and no part of the route option crosses any Inventory Historic Battlefield. Within the route option there is:</p> <ul style="list-style-type: none"> One Inventory Garden and Designed Landscape (GDL): Drum Castle GDL (GDL 141), of heritage value at the national level and of high sensitivity. <p>There are many designated heritage assets in the wider landscape around the route option, most are unlikely to be constraints for this route option. Two Scheduled Monuments are within 1 km of the route option boundary and are shown on Figure 6.3.</p> <p>The designations most likely to constrain the route option are:</p> <ul style="list-style-type: none"> Drum Castle GDL (GDL 141): this designed landscape is situated on a ridge to the north of the River Dee valley and the southern edge of the GDL is clipped by the northern boundary of the route option. The designed landscape forms the setting for Category A Listed Drum Castle (LB 3113) and other associated listed buildings. Wide panoramic views from the top of the castle tower are afforded to the surrounding landscape in all directions, and there are also glimpses of hills to the north from the parkland around the Castle. There are open views to the east from the walled garden, overlooking woodland backdropped by the wooded slopes of Newmill Hill and a viewing platform, looking towards the east, has recently been constructed in the northwestern corner of the walled 	<p>The route option has been RAG rated as Amber as, although it would avoid direct interaction, with or disturbance to, any designated assets, it may compromise the settings of a number of such assets that lie within the route option, or in close proximity to the route option.</p> <p>In particular, the settings of the following heritage assets are identified as being key constraints:</p> <ul style="list-style-type: none"> Drum Castle GDL (GDL 141). Normandykes, Roman Camp (SM 2478). Bogton Cairn, Field System and Trackway (SM 7877). <p>Drum Castle GDL: The exclusively rural setting of the GDL, and views from and to the GDL, are key aspects of its setting, contributing to appreciation of its character and cultural significance. A small area of the GDL is located within the route boundary, and the route option could intrude into key views from the GDL out to the south, especially from the Castle Tower, which forms a key element of the GDL and could detract from the current setting of the GDL. Designing the OHL alignment to avoid proximity to the GDL and siting towers so that they are not in direct line of sight in key views from, or to, the GDL may reduce the degree of the constraint from the GDL's setting to a non-significant level.</p> <p>Normandykes Roman Camp (SM 2478): The route option crosses farmland that forms part of the wider landscape setting of the Roman Camp and could detract from an appreciation of the monument's setting where the route option crosses the River Dee valley, intruding into a key view west from the monument along the River Dee. Designing the OHL alignment to avoid proximity to the</p>	

Topic	Constraints	Evaluation	RAG Score
	<p>garden. The mixed woodland of the GDL contributes to the surrounding scenery but there are few views into the GDL from the surrounding roads.</p> <ul style="list-style-type: none"> • Normandykes, Roman Camp (SM 2478) (NGR NO 829 799): the site of this Roman Camp lies on top of a broad hill, to the north of the River Dee. The camp, which survives largely as buried remains visible as cropmarks on aerial photographs, has evidently been sited to have been a prominent feature within the surrounding landscape and to exert control over the land around it and at a crossing point on the River Dee. The location of the camp provides a good vantage point to view the surrounding area, commanding views across and along the River Dee valley, and would have controlled movement along and across the river valley. An existing high voltage OHL runs past the western side of the Roman Camp, crossing the lower slopes of the broad hill on which the camp is located. At its closest this existing OHL is around 500 m from the Scheduled Monument. • Bogton Cairn Field System and Trackway (SM 7877) (NGR NO 812 996): the remains of this prehistoric field system survive in farmland to the south of the North Deeside Road, towards the southern end of the route option. The scheduled area stands towards the centre of the route option and creates a pinch point just south of the North Deeside Road. The settlement site lies on locally high ground, surrounded by fertile grazing land, and the quality of the land for agriculture and grazing is likely to have been a determining consideration in its placement. An existing high voltage OHL runs around 470 m east of the monument. The relationship of the monument with the immediate surrounding farming landscape is a key aspect of its setting. 	<p>Scheduled Monument may reduce the degree of the constraint from the Scheduled Monument's setting to a non-significant level.</p> <p>Bogton Cairn, Field System and Trackway (SM 7877): The route option, crossing farmland that forms part of the setting of the prehistoric field system, could intrude into key views out to the immediate surrounding farmland. Designing the OHL alignment to avoid proximity to the Scheduled Monument may reduce the degree of the constraint from the Scheduled Monument's setting to a non-significant level.</p> <p>Overall, there is scope, through adoption of effective mitigation at the alignment design stage, to reduce, but not remove, the constraints from most of the designated heritage assets likely to be affected by this route option.</p>	
	<p>Sites and Monument Record Entries</p> <p>There is one archaeological site, the findspot of Mesolithic worked flints (NO89NW0017), within the route option recorded in the SMR as being of 'Regional Significance' and of medium sensitivity. The location and extent of this is shown on Figure 6.3.</p>	<p>The route option has been RAG rated as Green for SMR sites as, although there is one 'Regionally Significant' site within the route option, it is considered that the archaeological site identified does not represent a significant constraint for the route option.</p> <p>The constraint could be minimised through effective mitigation at the design stage (ie avoidance through siting of towers/access, within the demarcated area). Where a direct impact on the SMR site cannot be avoided during the alignment design stage, the constraint could be mitigated through a</p>	

Topic	Constraints	Evaluation	RAG Score
		<p>programme of works (ie trial trench evaluation and excavation, or watching briefs) in advance of construction works to a scope of work agreed by the local authority.</p>	
Cultural Heritage Assets	<p>Cultural heritage assets within the route option and within 1 km of the route option are shown on Figure 6.3.</p> <p>Within the route option there are:</p> <ul style="list-style-type: none"> Five Listed Buildings (two B Listed, of heritage value at the regional level and of medium sensitivity, and three C Listed, of heritage value at the local level and of low sensitivity). <p>There are no Category A Listed Buildings within the route option.</p> <p>There are no NIDLs within the route option.</p> <p>There are no Conservation Areas within the route option or within 1 km of the route option.</p> <p>Listed buildings (A, B and C)</p> <p>There are Listed Buildings in the wider landscape around the route option boundary, most of which are unlikely to be constraints. Eight Listed Buildings (two A Listed, three B Listed and three C Listed) are within 1 km of the route option boundary. The listed buildings in the route option are largely grouped together at Drumoak towards the southern end of the route option. They comprise mostly of small residential properties (ie farmsteads, cottages,) small parish kirks or bridges, all of which have generally localised settings and are not significant constraints.</p> <p>One Category A Listed Building, Drum Castle (LB 3113), of heritage value at the national level and of high sensitivity may be a constraint in regards its settings.</p> <ul style="list-style-type: none"> Category A Listed Drum Castle (LB 3113) (NGR NO 796 007) stands on a ridge to the north of the River Dee, towards the southern edge of Drum Castle GDL (GDL 141)) (see above). The principal elevation of the Castle is orientated south overlooking parkland, the view being closed by woodland. The Castle incorporates an earlier 13th century tower house from the top of which wide panoramic views can be gained, with views to the northwest taking in rising hills, and those to the south overlooking the 	<p>The route option has been RAG rated as Amber as it could compromise the setting of the following Listed Building that lies in close proximity to the route option.</p> <ul style="list-style-type: none"> Drum Castle (LB 3113, A Listed): Panoramic views from the Castle's tower house, across the River Dee valley, and to hillslopes beyond is a key aspect of the Castle's setting. The route option crosses farmland that forms part of the wider landscape setting of the Castle and could detract from an appreciation of the Castle's setting where the route option crosses the River Dee valley, intruding into a key view across the valley from the Castle tower. Whilst there would be some flexibility of an OHL to reduce the intrusion into these views and minimise its proximity to the Castle, the route option would remain constrained with regard to the setting of the Castle. 	

Topic	Constraints	Evaluation	RAG Score
	<p>River Dee valley. Views to the Castle from the surrounding area are generally limited by woodland that surrounds the Castle and edges the parkland policies. The key aspects of the Castle setting are the woodland/parkland policies in which it stands, the relationship with other listed buildings and designed features within the GDL and the panoramic views afforded from the top of the tower house.</p>		
People			
Proximity to Dwellings	<p>The route option extends for a length of approximately 4 km and passes the northern edge of Drumoak and a number of individual dwellings. Drumoak and individual residential properties form a constraint to OHL development where they reduce the available route width, resulting in ‘pinch points’ between properties.</p> <p>There are a number of locations through the route where concentrations and distribution of dwellings constrains the route in this way, including in particular:</p> <ul style="list-style-type: none"> • along the A93 east of Drumoak; and • to the north of the settlement boundary at Drumoak. 	<p>The route option has been RAG rated as Amber to reflect that in a number of more constrained areas, development of an OHL alignment may require location of the infrastructure to be within approximately 200 m of dwellings (which is within the range of two to four times the nominal height of the OHL towers).</p> <p>At the routing stage it is not possible to be fully definitive with respect to the distances that the OHL can be maintained from individual residential properties. In the constrained locations identified around some settlements in the route, detailed alignment work may require the OHL to be located less than 200 m from dwellings. This could have implications for amenity issues associated with general proximity to electricity infrastructure. Mitigation through optimal alignment to maximise set back from dwellings taking account of other constraints would be deployed.</p>	
Landscape and Visual			
Designations	<p>Approximately 2 km of the southern part of the route is located within the Dee Valley SLA (see Figure 6.4). Aberdeenshire Council’s LDP (2022) Appendix 13: Aberdeenshire Special Landscape Areas¹² lists the following ‘aspects and features’ (equivalent to special qualities) that are recognised through the SLA designation:</p> <ul style="list-style-type: none"> • Broad, meandering river, with wooded banks rising to moorland hills and occasional limestone outcrops. 	<p>The route option has been RAG rated as Amber as the route option may compromise the special qualities of the Dee Valley SLA.</p> <p>Approximately 2 km of the route, between the B9077 and the A93 at Drumoak, is within the SLA. As such, there is potential for the OHL to compromise some of the special qualities of the SLA. The characteristic “broadleaf woodland” which “contributes to visual diversity” and “forms part of an intact habitat network” would be compromised if removal of woodland is required to</p>	

¹² Aberdeenshire Council (2023). Appendix 13: Aberdeenshire Special Landscape Areas. Available at: <https://online.aberdeenshire.gov.uk/ldpmedia/LDP2021/Appendix13AberdeenshireSpecialLandscapeAreas.pdf>

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> Broadleaf woodland contributes to visual diversity and habitat value all along the valley, and reflect the long history of estate development. The woodland along the Dee forms part of an intact habitat network, including policy woodland, plantations and riparian woodland, providing connectivity between the lowlands and uplands of Aberdeenshire. Mature woodland also provides diversity and richness of landscape character. Key routes through the valley include the Royal Deeside Railway, the Deeside Tourist Route, long-distance walking, cycling and horse riding trails. The valley is seen by large numbers of people using these routes. A wealth of distinctive built heritage, including well known castles and mansion houses such as Crathes, Drum and Inchmarlo, and the relatively untouched granite architecture of Deeside settlements such as Kincardine O'Neil. The granite architecture of Deeside settlements is an essential part of the character of Aboyne and Banchory, as well as smaller villages. Deeside is representative of Aberdeenshire's identity, with its Royal connections and is a popular tourist destination, both in itself and as a link between Aberdeen and the National Park. At its western end, increasing glimpses to the higher hills mark the approach to the National Park. Locations along the River Dee are host to some of the most photographed places in Aberdeenshire. <p>The pattern of historic routeways running north to south across the Dee at strategic crossing points highlights, more than anywhere else, the connection between the highlands and the lowlands.</p>	<p>accommodate the OHL. The OHL may also appear prominent in relation to "wooded banks", and in views from the many "key routes through the valley" that are "seen by large numbers of people".</p> <p>Other special qualities are unlikely to be affected, including the granite architecture, Royal connections, and the approach to the National Park.</p> <p>Mitigation through detailed alignment work would seek to locate the OHL so as to minimise disruption of sensitive landscape elements and views. Such mitigation would aim to reduce potential effects on the special qualities of the SLA. Alignment should seek to use existing gaps in woodland within the Dee Valley to minimise tree loss as far as possible.</p>	
Landscape Character	The route is within Aberdeen and Lower Deeside as defined by NatureScot's <i>Landscapes of Scotland</i> (2012) ¹³ . Considering NatureScot's 2019 national	The route option has been RAG rated as Amber as an OHL in this route may compromise characteristic elements that contribute to landscape character. Areas of constraint occur where an OHL passes through or over key features	

¹³ NatureScot (2024). Landscape variety in Scotland. Available at: <https://www.nature.scot/landscapes-and-habitats/about-scotlands-landscapes/landscape-variety-scotland>

Topic	Constraints	Evaluation	RAG Score
	<p>dataset of Landscape Character Types (LCT)¹⁴, the route is within the Broad Wooded and Farmed Valley LCT (see Figure 6.5).</p> <p>The landscape generally is undulating, with frequent characteristic woodlands. These are often associated with estate policies, and include mixed and native woodlands and shelterbelts. The landscape is settled but rural, with large arable fields and smaller areas of pasture. There are occasional low hills, and long views towards the hills to the west.</p> <p>The route crosses the wooded River Dee, and the Coldstream Plantation north of Drumoak.</p> <p>The route option boundary includes the northern part of Drumoak, and crosses the A93 in the Dee Valley.</p>	<p>that contribute to landscape character, or where the OHL would be highly prominent within the landscape.</p> <p>Areas of native woodland, particularly at the River Dee and parkland landscapes, form a constraint as they partially extend across the route width, reducing opportunities for designing the OHL alignment without impacts. These areas of woodland contribute to landscape character and removal of them to accommodate an OHL would compromise this characteristic element of the landscape at the local level. Mitigation through detailed alignment would seek to minimise woodland and individual tree loss as far as possible, to reduce potential effects on these features that contribute to local landscape character.</p> <p>The undulating terrain forms a constraint, as locating an OHL on high ground would result in the OHL being more prominent in the landscape, with wider potential effects on landscape character, including its rural nature. Avoiding hills will reduce the OHL's prominence in the landscape, with potential for back-clothing against higher land. This route crosses high ground southwest of Drum Castle, with limited opportunity to avoid this local hill.</p>	
Visual Amenity	<p>The route option extends for a length of approximately 4 km and passes around or close to key areas where sensitive visual receptors are located. These visual receptors have potential to form constraints and include:</p> <ul style="list-style-type: none"> • Those living and moving around Drumoak, where open views to the wider surrounding landscape are available; • Scattered residential properties within the route and those located within close proximity of the route; • Users of Core Paths within the Dee Valley, who are likely to have open views of the surrounding landscape from open stretches of path; • Users of NCN Route 195 and the Dee Valley Path along the Dee Valley, who would cross the route; 	<p>The route option has been RAG rated as Amber as an OHL alignment in this route may compromise views or visual amenity experienced by a range of sensitive visual receptors. Due to the distribution and density of visual receptors in the route option, the level of constraint is considered such that there is potential for the OHL to compromise views or visual amenity in some locations.</p> <p>Due to its likely prominence, there is potential for an OHL in this route to compromise the amenity of views from Drumoak. The route offers some flexibility to avoid close proximity to Drumoak and to reduce the degree to which views from the settlement may be compromised. There remains a risk that visual amenity from individual properties would be compromised, due to the density of dwellings in parts of the route. In the area between Drumoak and the Drum Castle estate, the combination of views experienced by residential and recreational receptors may constrain this route.</p>	

¹⁴ NatureScot (2023). Scottish Landscape Character Types Map and Descriptions. Available at: <https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/scottish-landscape-character-types-map-and-descriptions>

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> Those travelling along the local road network, including the A93 and several B class roads and many minor roads, who experience sequential views of the surrounding landscape; and People visiting Drum Castle. Indicative Viewpoints to Represent Sensitive Visual Receptors: <ul style="list-style-type: none"> NCN Route 195 (NGR NO 80411 98789) – represents views experienced by recreational receptors within the Dee Valley. Northern edge of Drumoak (NGR NO 79199 99477) - represents views experienced by residential receptors at the northern edge of Drumoak. 	<p>Amenity of views experienced by recreational and travelling receptors in the Dee Valley may be compromised by the presence of the OHL crossing the valley. Careful siting of the crossing point, and the individual towers, would be required to reduce impacts on visual amenity.</p> <p>The OHL is likely to be highly visible from some sections of the road network, although road users are generally considered to be less sensitive to change and do not represent a substantive constraint on this route.</p> <p>There are opportunities to route the OHL away from Drum Castle. Views from this location would remain a consideration at the alignment stage but are less likely to represent a substantive constraint on this route.</p>	
Land use			
Agriculture	Approximately 7 ha (less than 2%) of land in route option F1.3 is Class 3.1 (capable of producing consistently high yields of a narrow range of crops and/or moderate yields of a wide range) (see Figure 6.6). There is a limited area of Class 3.1 land in the centre of the route. The rest of the route consists of lower land classification.	The route option has been RAG rated as Green because the area of Class 3.1 land is limited to one strip of land parallel to the A93 covering the width of the route option. Through alignment it may be possible to span the area of best and most versatile agricultural land (Class 3.1). Therefore, this route option would only affect lower quality agricultural land.	
Forestry	There are no areas identified as forming part of the National Forest Estate (managed by Forestry and Land Scotland) within the route. There are several areas of commercial conifer woodland, including at Coldstream Plantation to the northwest of Drumoak that spans the majority of the width of the route (and which has recently been felled), and at Moss-Side Plantation to the east of Drumoak that spans approximately half of the width of the route option. There are a number of other woodland blocks characterised by commercial conifer species which are located in the route option but which do not span the whole width of the route. These include Cairnton Wood to the east of Drumoak, the southern edge of Drumhill Wood, west of Drum Castle.	<p>The route option has been assigned a RAG rating of Amber as it crosses the edge of, or passes close to and through several areas of commercial forestry where interaction with the forestry operations may compromise their commercial returns.</p> <p>In several locations, the route option is somewhat constrained by the presence of woodlands with some commercial forestry activity present. At these points the development of an OHL alignment and associated wayleave within the route has potential to cross close to, or within the edges, of the woodland blocks and therefore to have some potential to compromise commercial returns from these enterprises as some felling may be required to create a wayleave. Additionally, where coniferous species are present, further felling may be required to ensure a wind firm edge.</p> <p>It is considered likely that Moss-Side Plantation could be avoided by an alignment to the west of the woodland and the commercial returns for the</p>	

Topic	Constraints	Evaluation	RAG Score
		<p>forestry operations are unlikely to be compromised. This woodland is not considered to be a constraint.</p> <p>There is one pinch point in the route due to the presence of constraints (particularly residential properties) which would result in an OHL crossing through sections of commercial forestry. Coldstream Plantation is likely to be unavoidable due to the presence of residential properties to the east of the plantation and it is considered that there is some potential for commercial returns of the forestry operation to be compromised.</p> <p>The alignment design would seek to avoid commercial woodland. Where the alignment cannot avoid woodland, towers would be positioned, where possible, in the narrowest sections or towards the edge of the woodland blocks to reduce the extent of felling required. It is not considered that the integrity of the principal woodland areas and commercial operations would be significantly affected.</p>	
Recreation	<p>Paths and Trails</p> <p>A core path is present within the route option (see Figure 6.7). Core paths are designated under the <i>Land Reform (Scotland) Act 2003</i>¹⁵ as the main paths for public access throughout the area. The route which forms a potential constraint is:</p> <ul style="list-style-type: none"> The Deeside Way comprising the Coalford to Mosside Plantation Road Link section and the Mosside Plantation to Drumoak section, which span the width of the route in the southern section. <p>NCN Route 195 crosses the southern end of the route to the east of Drumoak. There are no Scottish Great Trails within or near the route.</p> <p>Recreation and Tourism Facilities</p> <p>There is one small-scale recreational and tourism facility located within the route boundary. Dalmaik Cottage Annex, a holiday let, is located adjacent to Drumoak Church in the southern section of the route.</p>	<p>The route option has been RAG rated as Green as the route avoids interaction with public footpaths or national cycle routes and does not interact with notable areas known for recreation and tourism.</p> <p>Paths and Trails</p> <p>The route would need to span one core path (Deeside Ways) which crosses the width of the option area as well as NCN route 195.</p> <p>Whilst there is potential for some users to experience amenity effects (including visually) in the vicinity of these crossings, it is not considered that the recreational use of these core paths or NCN route 195 would be compromised. There are relatively few other core paths or trails along the route option albeit likely some quieter minor roads will be used for informal recreation by some people. Additionally, the Deeside Way Core Path is crossed by an existing high voltage OHL located on the eastern boundary of the route option.</p> <p>The construction of the OHL and associated access tracks may result in some temporary disruption to use of core paths and NCN route 195 crossed by the</p>	

¹⁵ Land Reform (Scotland) Act 2003: <https://www.legislation.gov.uk/asp/2003/2/contents>

Topic	Constraints	Evaluation	RAG Score
	<p>Thornton Cottage is a holiday let located at the southern end of the route to the south of Mains of Drum approximately 150 m east of the route option.</p> <p>There are also a number of recreation and tourism facilities which are outside of the route option boundary and within the vicinity of the route at a distance of up to 1 km, such as Drum Castle which located approximately 650 m northeast of the route option.</p>	<p>line (and would be mitigated with temporary diversions) however, these would be short-term in nature. Changes in amenity for some users would be transient and would not significantly affect the amenity of the facilities. Users of paths at the edges of the route option would be predicted to have limited interaction with an OHL alignment and the core paths are not considered to be a significant constraint.</p> <p>Recreation and Tourism Facilities</p> <p>The recreation and tourism facilities identified within the route option are typically of a local nature with an absence of major tourist attractions or recreational facilities.</p> <p>The majority of the recreation and tourism facilities (holiday lets) within the route are afforded some screening by the landscape or woodland. The facilities in the route option are not considered to constrain the route significantly or to compromise their recreational use.</p> <p>Within the route, an alignment should aim to create as much distance as possible between the recreation and tourism facilities that represent a principal constraint to the route.</p> <p>Other recreation and tourism facilities are located up to 1 km from the outer edge of the route option boundary are not considered to be a constraint to the route due to their distance from it.</p>	
	<p>Fishing</p> <p>The following locations of game fishing let on a commercial basis have been identified within the route option:</p> <ul style="list-style-type: none"> The Upper Drum and Lower Durriss fishing beat to the east of Drumoak on the River Dee, is a fishing beat for salmon and sea trout. The fishing beat extends downstream for two miles on both banks. The beat covers approximately half of the southern section of the route from the western edge and joins with the Tilbouries fishing beat. 	<p>The route option has been RAG rated as Green. The route option may interact with areas used for commercial highland sports (fishing) however, this is not considered to be a significant constraint as the effects would be localised and are not considered to have the potential to compromise their commercial viability.</p> <p>ENA guidance¹⁶ advises angling no closer than 30 m from an OHL that crosses or runs parallel to the watercourse. A section of up to approximately 80 m of the fishing beat on each bank could be sterilised from use by anglers taking account of this buffer distance and the width of the OHL conductor arrays.</p>	

¹⁶ Energy Network Association (2016). Angling Guidance Information Sheet. Available at: <https://www.energynetworks.org/assets/images/Resource%20library/Angling%20Guidance%20Information%20Sheet%20Final.pdf?1698659970>

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> The Tilbouries fishing beat is located to the east of Drumoak on the River Dee. It extends for two miles along the right bank. The beat starts from the end of the Upper Drum and Lower Durris fishing beat and extends from the middle of the route to the eastern edge of the route. The beat is opposite Middle Drum fishing beat. The Middle Drum fishing beat to the east of Drumoak on the River Dee extends for one mile on the left bank. It starts from the end of the Upper Drum and Lower Durris fishing beat and extends from the middle of the route to the eastern edge of the route. It is opposite Tilbouries fishing beat. 	<p>The full width of the route option is assumed to be constrained by commercial fishing beats on the River Dee. Therefore, an alignment in the route option would not be able to avoid the constraints and may interact with the fishing beats. However, since the fishing lets on this watercourse extend for a substantial length of the river it is not considered that the route option would compromise the commercial viability of the fishing enterprises.</p>	
Planning			
Policy	<p>Relevant National Planning Policy and Development Plans have been considered to support evaluation of likely compliance of the route option with national, regional and local planning policy.</p> <p>Planning Policy</p> <p>The NPF4 policies relevant to this route option are:</p> <ul style="list-style-type: none"> Policy 3(b) Biodiversity Policy 4(b-d & f) Natural Places Policy 5(b-c) Soils Policy 6(b) Forestry, woodland and trees Policy 7(h and i) Historic assets and places Policy 11(e)(ii) Landscape and visual impacts Policy 22(a) Flood risk and water management <p>Aberdeenshire LDP 2023 policies relevant to this route option are:</p> <ul style="list-style-type: none"> Policy R1 Special Rural Areas Policy R2 Development Proposals Elsewhere in the Countryside Policy P1 Layout, Siting and Design Policy E1 Natural Heritage Policy E2 Landscape 	<p>Key planning policies have been considered in the context of the appraisal findings for other criteria in this table and commentary is provided on those of note in the evaluation in relation to NPF4 and LDP policies.</p> <p>Planning Policy</p> <p>A very small section of the eastern edge of the route option falls within the Aberdeen South West Green Belt (Policy NE1) and River Dee and Leggart Den Green Belt (Policy R1). The policies state that essential infrastructure developments, including electricity grid connections, are permissible in the Green Belt. It is likely however that these areas can be avoided by an OHL alignment to the west.</p> <p>However, the route option has been RAG rated as Amber as it may be contrary to the following Aberdeenshire LDP and Aberdeen LDP policies, and similar NPF4 policies:</p> <ul style="list-style-type: none"> NPF Policy 4 & Aberdeenshire LDP Policy E1 and Aberdeen LDP Policy NE2 and NE3 due to the potential impact on natural heritage and ornithology, see Natural Heritage above. Any impacts would need to be appropriately assessed and mitigated. To comply with these policies, public economic or social benefits would need to clearly outweigh any negative effects on the protected resource, and there would need to be no reasonable alternative sites. 	

Topic	Constraints	Evaluation	RAG Score
	<ul style="list-style-type: none"> • Policy E3 Forestry and Woodland • Policies HE1 and HE2 Protecting Listed Buildings, Scheduled Monuments and Archaeological Sites, Historic, Cultural and Conservation Areas • Policy PR1 Protecting Important Resources • Policy C3 Carbon Sinks and Stores • Policy C4 Flooding <p>Aberdeen LDP 2023 policies relevant to this route option are:</p> <ul style="list-style-type: none"> • Policy WB1 Healthy Developments • Policy NE1 Green Belt • Policy NE2 Green and Blue Infrastructure • Policy NE3 Our Natural Heritage • Policy NE4 Our Water Environment • Policy NE5 Trees and Woodland • Policy D4 Landscape • Policy D5 Landscape Design • Policy D6 Historic Environment • Policy I1 Infrastructure Delivery and Planning Obligations <p>Planning Allocations and Designations</p> <p>The Aberdeenshire LDP sets out the following sites within 200 m from the southern boundary of the route option:</p> <ul style="list-style-type: none"> • Drumoak – housing allocation on land to the north of Sunnyside Farm – Site OP1 • Drumoak – reserved for a future cemetery expansion – Site R1 • Drumoak – protected areas of woodland and open space – Sites P1, P2, P3, P4, P5 and P6 <p>The route option does not impact any designated sites allocated within the Aberdeen (City) LDP.</p>	<ul style="list-style-type: none"> • NPF4 Policy 11 & Aberdeenshire LDP Policy E2 and Aberdeen LDP Policy D4 and D5 – due to the potential impact on the landscape and features of the landscape which contribute towards the areas character and ‘sense of place’. Any adverse effects would need to be clearly outweighed by social, environmental or economic benefits of at least local importance, and the development will need to provide opportunities for conservation or enhancing other landscape features. • NPF4 Policy 11 & Aberdeen LDP Policy D5 – to be compliant, a statement of landscape design objectives, hard and soft landscape design plans and specifications, and detailed maintenance proposals will need to be provided. • NPF4 Policy 6 & Aberdeenshire LDP Policies E3 and C3 and Aberdeen Policy NE5 – there is a presumption against the removal of trees, woodlands and hedgerows. See Natural Heritage above. In order to comply with these policies significant public benefits would need to outweigh any loss and compensatory planting would need to be provided. • NPF4 Policy 5 & Aberdeenshire LDP Policy PR1 and Aberdeen LDP Policy NE3 – due to the potential impact on prime agricultural land, peat, carbon rich soils, and important trees and woodland. Any negative effects on these protected resources would need to be outweighed by public, economic or social benefits to be permissible. • NPF4 Policy 7 & Aberdeenshire LDP Policies HE1 and HE2 and Aberdeen LDP Policy D6 – due to the potential impact on a number of heritage assets (see Cultural Heritage above). Development that would have an adverse impact on heritage assets is resisted, if unavoidable, development needs to be minimised and justified in order to comply with the policies. • NPF4 Policy 22 & Aberdeenshire LDP Policy C4 and Aberdeen LDP Policy NE4 – due to the extent of the floodplain. Essential infrastructure development may be permissible if an alternative lower risk location is not available and alleviation can be incorporated into the scheme. • NPF4 Policy 3 & Aberdeenshire LDP Policy R2 and P1 – to be compliant with these policies, siting and design will be the primary driver for the proposed development. Policy P1 requires consideration for participation 	

Topic	Constraints	Evaluation	RAG Score
		<p>in a Design Review Process, although this is likely for commercial / residential developments. Measures for biodiversity enhancement and biodiversity net gain should also form part of the development; either on or off-site.</p> <ul style="list-style-type: none"> Aberdeen LDP Policy WB1 – to be compliant, a Health Impact Assessment needs to be provided setting out potential health impacts and benefits and any required mitigation. <p>Planning Allocations and Designations</p> <p>The route option may affect the following LDP designations:</p> <ul style="list-style-type: none"> Aberdeenshire LDP village of Drumoak – the route option crosses the northern portion of the settlement boundary. It is partially constrained by protected areas P1, P4, P5 and P6 which are noted for their contribution to character of the settlement, and form part of the green-blue network. The route option is located to the north of site OP1 which is designated for 11 houses which may introduce additional receptors to the area. <p>A number of these possible policy conflicts may be removed following further OHL alignment / design development and environmental assessment and mitigation development. Regard will be given to the NPF4 and LDP policies.</p>	
Proposals	<p>The following planning proposals have been identified within the route option:</p> <ul style="list-style-type: none"> A consented planning application for the erection of 11 houses is located immediately outwith and south of the route boundary in the northern part of Drumoak village (APP/2020/1955). A planning application for the erection of a house and garage is located to the north of Drumoak, along the northern edge of the route boundary (APP/2022/1230). A planning consent for the erection of a house and change of use of agricultural land to domestic garden ground is located to the northwest of Drumoak along the northern edge of the route boundary (APP/2020/1330). 	<p>The option has been given a RAG rating of Green as there are no projects known to the planning system which may interact with the route option.</p> <ul style="list-style-type: none"> The consented housing site at Drumoak remains undeveloped at the time of appraisal but if constructed would be within the existing settlement boundary and would not significantly further constrain the route. The proposals near Drumoak are located at the edges of the route option. They are considered a minor constraint as an OHL alignment could avoid the proposal locations. 	

Technical Appraisal

Infrastructure crossings. Infrastructure creates a constraint on an OHL often requiring additional clearance, enhanced reliability and protection provision to the infrastructure during construction and maintenance. Each crossing of infrastructure therefore has the potential to constrain the route option.

- Major crossings include other OHLs of 132 kV and above, railways, rivers and lochs over 200 m wide, navigable waterways, motorways and other major roads, major pipelines and other significant infrastructure. These crossings require specific OHL solutions and can constrain the OHL design.
- The minor roads sub-criteria includes all road crossings excluding those considered under the major crossings criteria. Private tracks and driveways may also be included where there is a requirement to maintain access or where relatively high traffic volumes are anticipated. Whilst the impact on OHL design is considered to be less for these crossings than for the minor road crossings, measures are still required to enable these crossings and collectively they can constrain a route option.

Environmental design. The terrain, land features and atmosphere all have the potential to constrain the design of an OHL; the ease and safety of routeing an OHL, construction of an OHL and maintenance of an OHL can be impacted. Furthermore, the environment which an OHL crosses can impose long term risks from pollution and flooding. Route options with multiple or significant environmental features have a higher risk of constraint when routeing an OHL. Environmental constraints associated with the OHL are discussed in the **Environmental Appraisal** of this appendix, and in Section 6 of the main Consultation Document.

- High elevations increase wind and ice loading on the overhead lines which requires shorter spans between angle towers or stronger structures. This can constrain route options and increase the cost. Additionally, access for construction and maintenance is often more difficult at higher altitudes and the risk of severe weather events is greater.
- Contaminated land poses a significant health risk to construction and maintenance operatives, and is potentially expensive to mitigate, dispose of or remediate. As such, the presence of contaminated land in a route option would be a significant constraint. For assessment purposes, the presence of unexploded ordnance (UXO), is also considered in this section as it has similar implications.
- Areas vulnerable to flooding pose a potential risk during construction as they may prevent maintenance tasks from being undertaken, and can pose a physical risk to structures during flood events. As such, route options with large areas of land that are vulnerable to flooding would be assigned a higher risk of constraint.

Ground conditions. Ground topography and condition can impact the choice of route options, access to the OHL, as well as construction and maintenance of the OHL. Route options with larger areas of challenging ground conditions are more likely to be significantly constrained.

- Steep or mountainous slopes present a significant difficulty for routeing, access, construction and the maintenance of an OHL. Route options with a large proportion of the route option which traverse ground with steep or mountainous slopes are more likely to be constrained and it would therefore be more difficult and costly to build and maintain an OHL.
- Peat, particularly deep peat, represents a significant constraint for access, construction and the maintenance of an OHL, particularly as it is an important habitat and the construction of a new OHL could cause long-term damage. Route options which cross larger areas of peatland are more likely to be constrained and it would therefore be more difficult and costly to build and maintain an OHL.

Construction / Maintenance. OHLs should be routed in consideration to the requirements of construction and maintenance, as the preferred route option can have a significant impact on the safety and cost of the Proposed Development throughout its lifetime.

- The construction of temporary accesses are a significant project cost. Route options that are remote and are located at a distance from existing tracks and the public road network have the potential to incur large costs due to the requirement to construct road access. Furthermore, access for inspection and maintenance is a requirement throughout the life of the asset. Route options that are remote from the existing access routes represent a significant constraint and have a higher potential to be constrained.
- OHLs with a higher number of angle supports tend to be more challenging to construct due to the number of angle pull throughs, and often require more extensive access. As such, a route option with a larger number of angle supports is at a greater risk of being constrained.

Proximity. Existing features can constrain a route option as they often are required to be avoided to reduce or avoid any impacts. These features include properties, windfarms, telecommunications masts, urban area and metallic pipes.

- Dispersed buildings and properties are a common feature across the Scottish landscape. Placing OHLs in close proximity to these features is avoided where possible. Route options where many pinch points occur due to the potential close proximity to buildings and residential properties are considered to be more constrained. The proposed routes are approximately 1 km or more in width and the route centreline has been identified to allow sufficient space for refinement of the OHL design at the alignment stage to increase the distance of an OHL to buildings within close proximity.
- Windfarms pose a risk to OHLs as they can disrupt the airflow and as such, the OHLs need to be routed around any wind turbines and windfarms at a distance of three times the rotor diameter wherever possible.
- OHLs can block existing line of sights for telecommunication masts and therefore the line of sights from communication masts can constrain route options and structure locations.
- As with dispersed buildings and properties, urban areas represent a significant constraint whereby the route option will need to be routed around.
- Metallic pipes have to be avoided by individual angle supports as they are often expensive to reroute, and, ideally, the final alignment should avoid running in parallel to a metallic pipe, to avoid any potential electrical impacts on the pipelines. As such, metallic pipes represent a constraint to route options.

Table C2: Technical Baseline and RAG Rating Table for Route Options F1 and F1.3

Criteria	Sub-criteria	Route F1.3	RAG Rating
Infrastructure Crossings	Major Crossings	A93 4x gas pipeline	
	Minor Roads	B9077 and 2x local/minor road crossings.	
Environmental Design	Elevation	Length through 50-100 m: 1,298 m. Length through 100-200 m: 1,263 m. Length through 200-300 m: 0 m. Length through 300-450 m: 0 m. Min Elevation: 21 m. Max Elevation: 126 m.	

Criteria	Sub-criteria	Route F1.3	RAG Rating
	Contaminated Land	No landfill, COMAH within route and deemed low risk in terms of UXO based on studies carried out so far.	
	Flooding	Distance through river flood risk: 240 m. Distance through surface water flood risk: 0 m. River crossings: six.	
Ground Conditions	Terrain	Length through 0-5° slope: 2,140 m. Length through 5-10° slope: 1,577 m. Length through 10-20° slope: 150 m. Length through 20-40° slope: 0 m. Max. slope: 18°.	
	Peat	Distance through Class 1 Peatland: 0 m. Distance through Class 2 Peatland: 179 m. Distance through 0-0.5 m peat depth: 0 m. Distance through 0.5-1 m peat depth: 0 m. Distance through 1-1.5 m peat depth: 0 m. Distance through 1.5 m or more peat depth: 0 m.	
Construction / Maintenance	Access	Distance through 50-100 m from access roads: 722 m. Distance through 100-300 m from access roads: 2,874 m. Distance through 300-1,000 m from access roads: 330 m.	
	Angle Towers	6 angle supports.	
Proximity	Clearance Distance	Residential Buildings within 5 m: zero. Commercial Buildings within 5 m : zero. Other Buildings within 5 m: zero. Residential Buildings within 170 m: 32. Commercial Buildings within 170 m: 1. Other Buildings within 170 m: 16.	

Criteria	Sub-criteria	Route F1.3	RAG Rating
		Residential Buildings within 500 m: 237. Commercial Buildings within 500 m: 7. Other Buildings within 500 m: 230.	Yellow
	Wind Farms	No windfarms/turbines in close proximity to route.	Green
	Communication Masts	Potential communication masts located within route option.	Yellow
	Urban Developments	Urban development at Drumoak	Yellow
	Metallic Pipes	Six crossings.	Yellow

Technical Appraisal of New Route Option F1.3

Route Option F1.3. This is a revised route option for Section F which has been confirmed following consultation feedback and route appraisal reviews. This combines elements of the previously preferred route option F1 with parts of route option F2. Route option F1.3 extends between the A93, for 2.5km heading to the north west to Newhall, where it joins route option F2. This route F1.3 combined with F2 will help avoid significant community and environmental receptors and constraints. Route Option F1.3 has been assigned a Red RAG Rating for Major Crossings due to the crossing of a number of major gas pipelines as well as the A93. In terms of Minor Roads, Route Option F1.3 crosses four B-roads and a number of minor roads and as such, has been assigned a RAG Rating of Green.

From an Elevation perspective, Route Option F1.3 traverses land with relatively low elevations, and is not located above 200 m Above Ordnance Datum (AOD), and is assigned a RAG Rating of Green. In terms of Contaminated Land, Route Option F1.3 is assigned a RAG rating of Green as there is a low risk of UXO based on the assessments carried out thus far. There are also no landfill or COMAH sites within the route option.

Route Option F1.3 has been assigned a RAG Rating of Green for Flooding. Route Option F1.3 crosses the River Dee in the southern section of the route option and is constrained by properties and road crossings. The River Dee floodplain spans 200-300 m, although it is expected to be spannable by the selected conductors. There is a flood risk near Tillyshogte which would require further investigation at the alignment stage. There is also a pinch point located near Echt due to a flood risk area and multiple dwellings within close proximity.

In terms of Terrain, Route Option F1.3 has been assigned a RAG Rating of Green as the route option does not traverse any areas of land with a slope exceeding a maximum of 20 degrees, with the majority of the route traversing slopes of less than 10°. Route Option F1.3 crosses a small area of Class 2 peatland. Neither of these areas are expected to significantly constrain the route as it is expected that these sections of peat will be able to be spanned and as such, Peatland has been assigned a RAG Rating of Green.

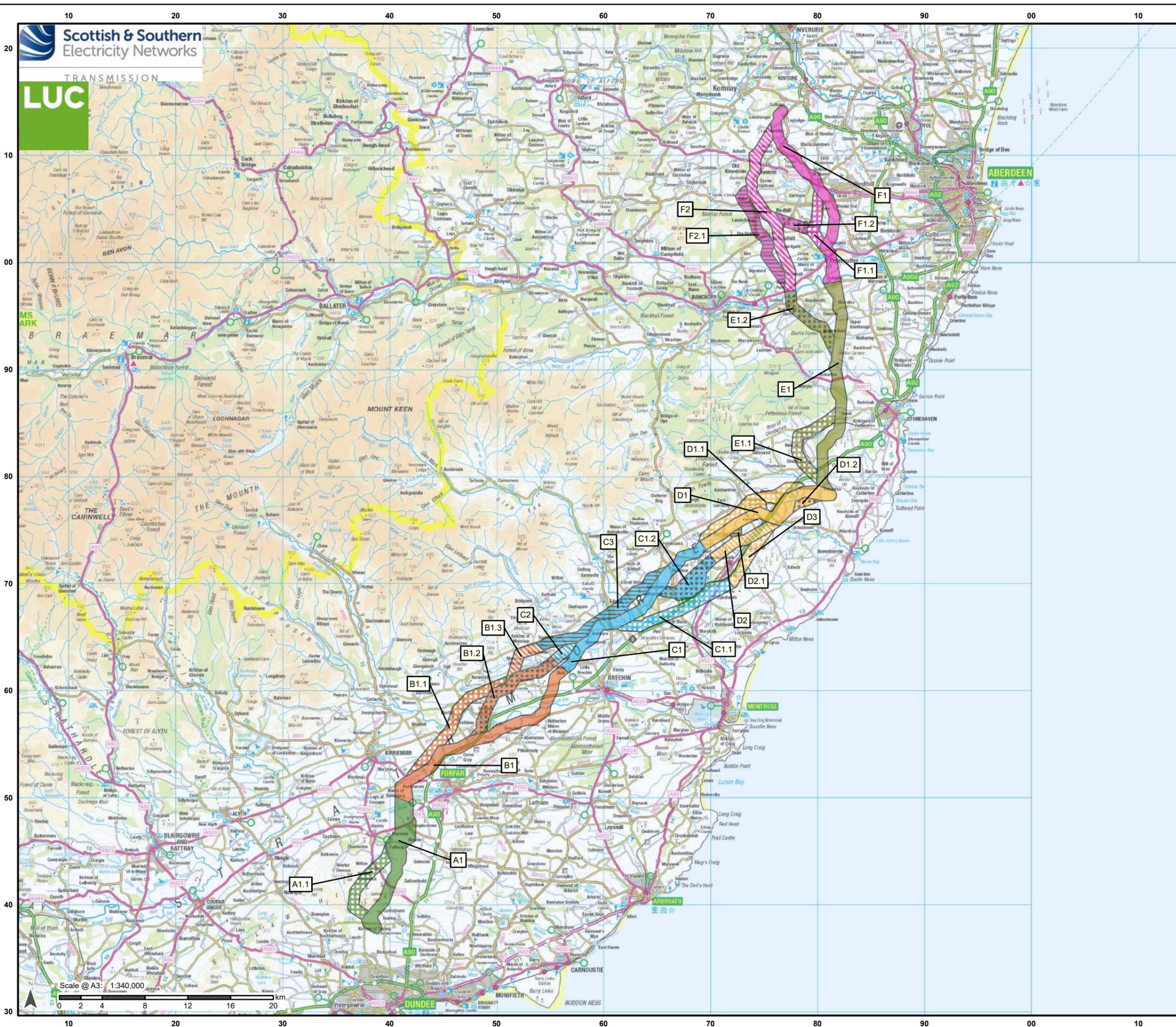
In relation to Access, Route Option F1.3 has been assigned a RAG Rating of Green due to the vast network of existing public and local roads throughout the route enabling the route option to be located within 1 km of the existing public road network. The RAG Rating for Angle Towers has been assigned as Red due to the number of angle towers being greater than 110% of the lowest number of angle towers in the section when compared to F1 and F2 routes. The number of angle towers should be considered as indicative only at this stage of the project and should not be a defining factor in selecting a Preferred Route.

Route Option F1.3 has been assigned a RAG Rating of Amber due to pinch points. The most challenging pinch point in Section F1.3 is located near Drumoak when crossing the River Dee.

There are no windfarms or turbines identified in Route Option F1.3, and as such the RAG Rating is Green for Windfarms. There is a communications mast in the centre of Route Option F1.3 and further investigations would be required to understand the impact and as such, Route Option F1.3 has been assigned a RAG Rating of Amber for Communication Masts.

Although Route Option F1.3 enables an alignment to be routed away from Peterculter and Westhill, the settlement at Drumoak represents a constraint to the route and as such, an Amber RAG Rating has been assigned for Urban Developments.

Route Option F1.3 crosses a number of major gas pipelines. The RAG Rating has been assigned as Amber due to known mitigation practices. The RAG Rating may change once a final alignment has been identified and further engagement has been held with the pipeline operators.



- Section A (Tealing to Forfar)**
 - A1 (preferred option)
 - A1.1
- Section B (Forfar to Brechin)**
 - B1 (preferred option)
 - B1.1
 - B1.2
 - B1.3
- Section C (Brechin to Laurencekirk)**
 - C1 (preferred option)
 - C1.1
 - C1.2
 - C2
 - C3
- Section D (Laurencekirk to Fiddes)**
 - D1 (preferred option)
 - D1.1
 - D1.2
 - D2
 - D2.1
 - D3
- Section E (Fiddes to River Dee)**
 - E1 (preferred option)
 - E1.1
 - E1.2
- Section F (River Dee to Kintore)**
 - F1 (preferred option)
 - F1.1
 - F1.2
 - F2
 - F2.1



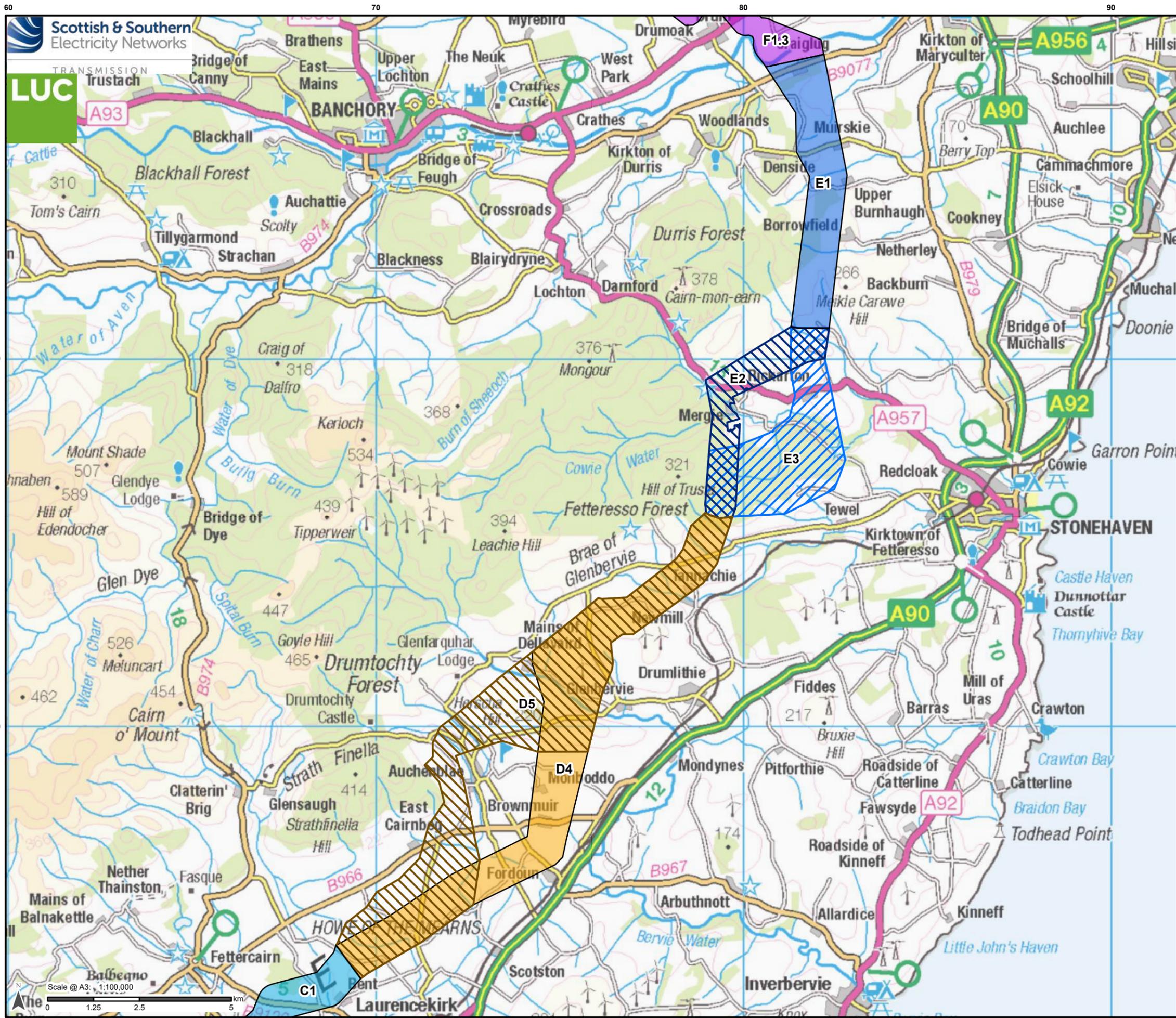
Reproduced by permission of Ordnance Survey on behalf of HMSO.
 Crown copyright and database right 2024 all rights reserved.
 Ordnance Survey Licence number 0100022432.

Project No: LT455
 Project: Kintore to Tealing 400kV Overhead Line

Title:
 Proposed Route May 2023 Consultation

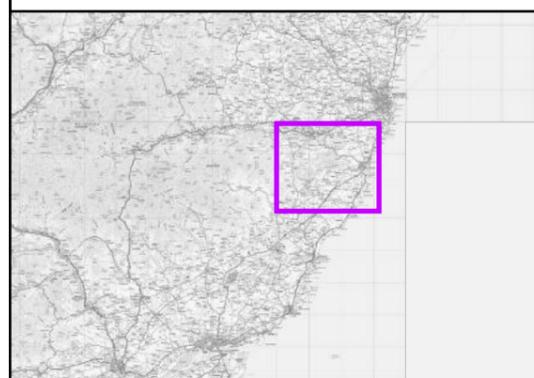
Drawn by: CW Date: 12/02/2024

Figure: 1.1



60
70
80
90
60
70
80
90

- Proposed Routes**
- C1
 - E1
- Route Options**
- D5
 - D4
 - E2
 - E3
 - F1.3



Reproduced by permission of Ordnance Survey on behalf of HMSO.
Crown copyright and database right 2024 all rights reserved.
Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

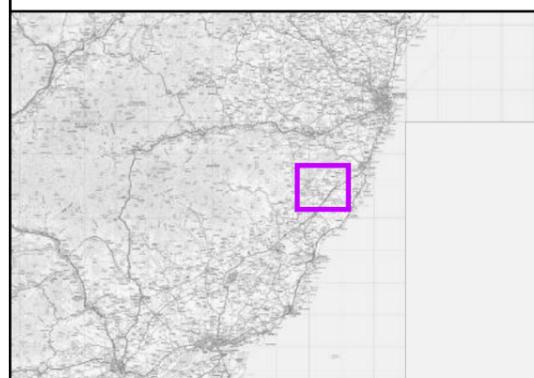
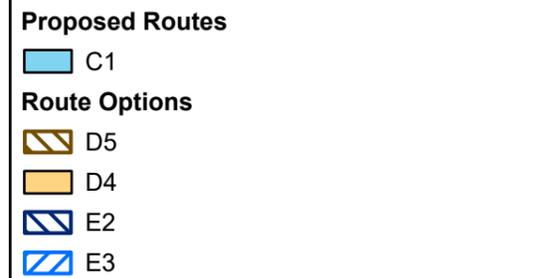
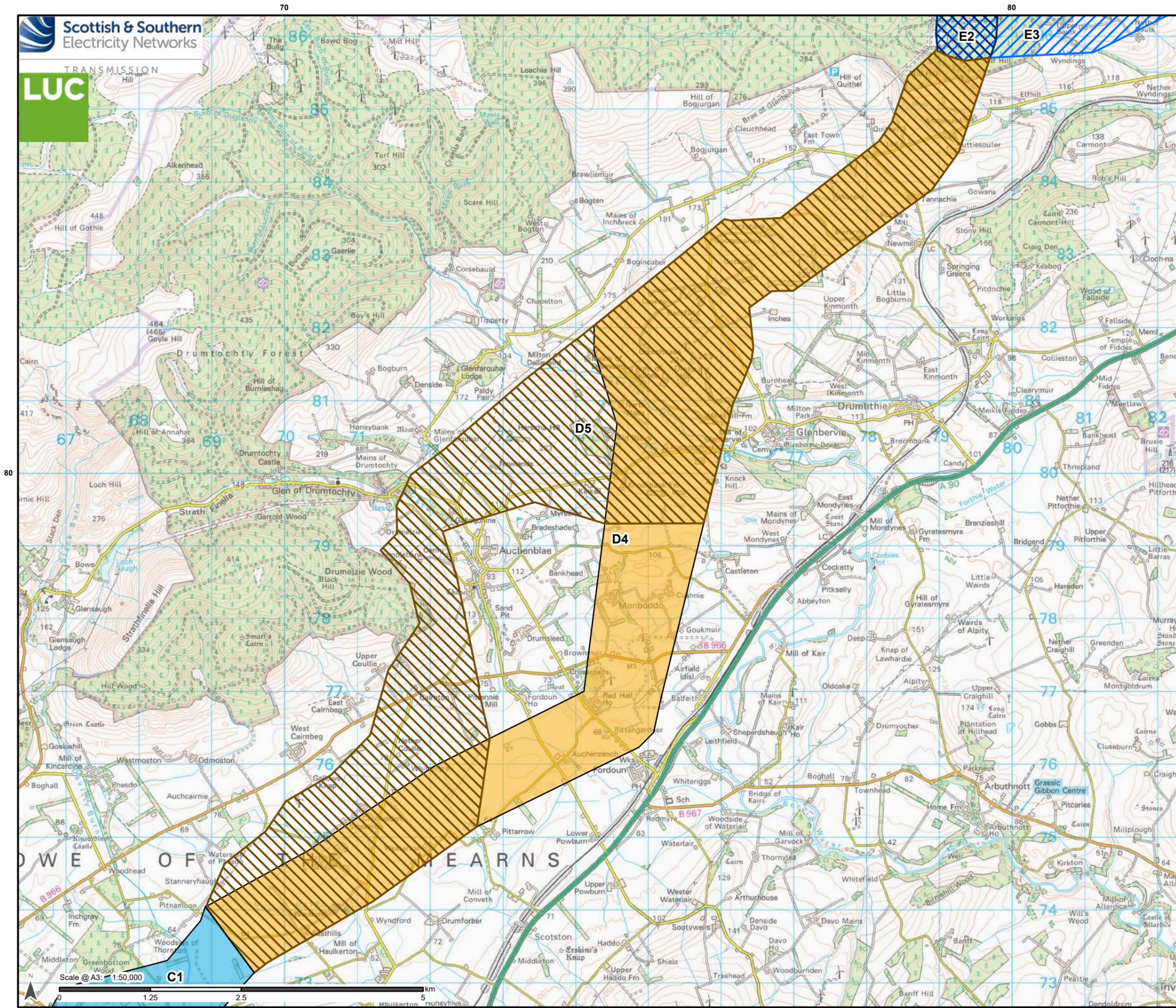
Title:
New Route Options to Connect to Hurlie Substation

Drawn by: CW
Date: 20/02/2024

Figure: 1.2

Scale @ A3: 1:100,000
0 1.25 2.5 5 km

Scottish & Southern Electricity Networks
LUC



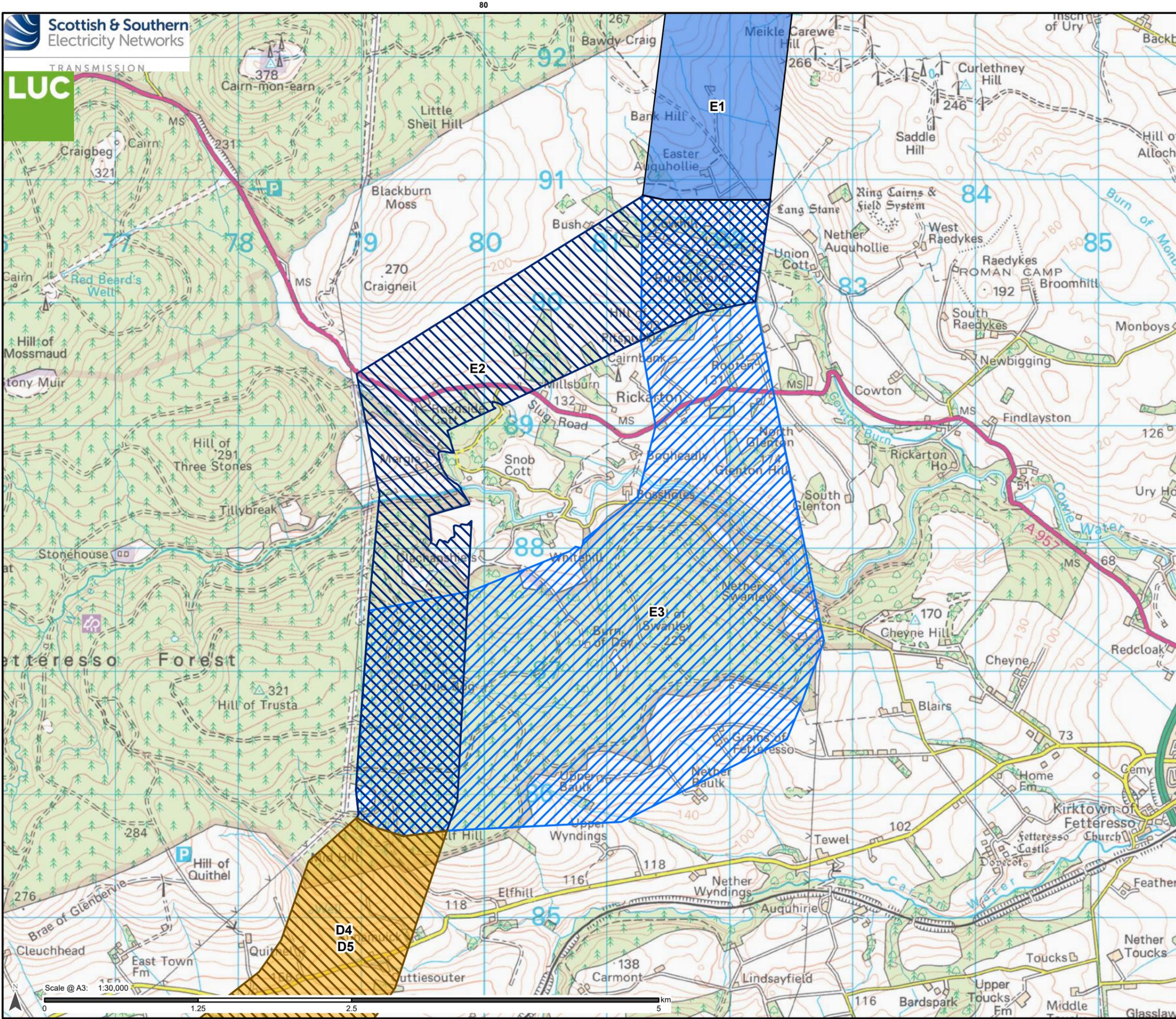
Reproduced by permission of Ordnance Survey on behalf of HMSO.
Crown copyright and database right 2024 all rights reserved.
Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Section D Route Options

Drawn by: CW Date: 19/02/2024

Figure: 4.1

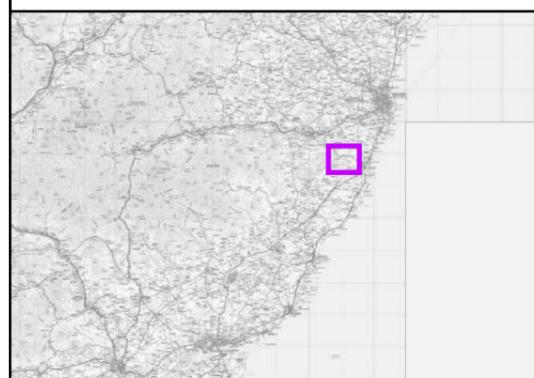


Proposed Routes

- E1

Route Options

- D5
- D4
- E2
- E3



Reproduced by permission of Ordnance Survey on behalf of HMSO.
Crown copyright and database right 2024 all rights reserved.
Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

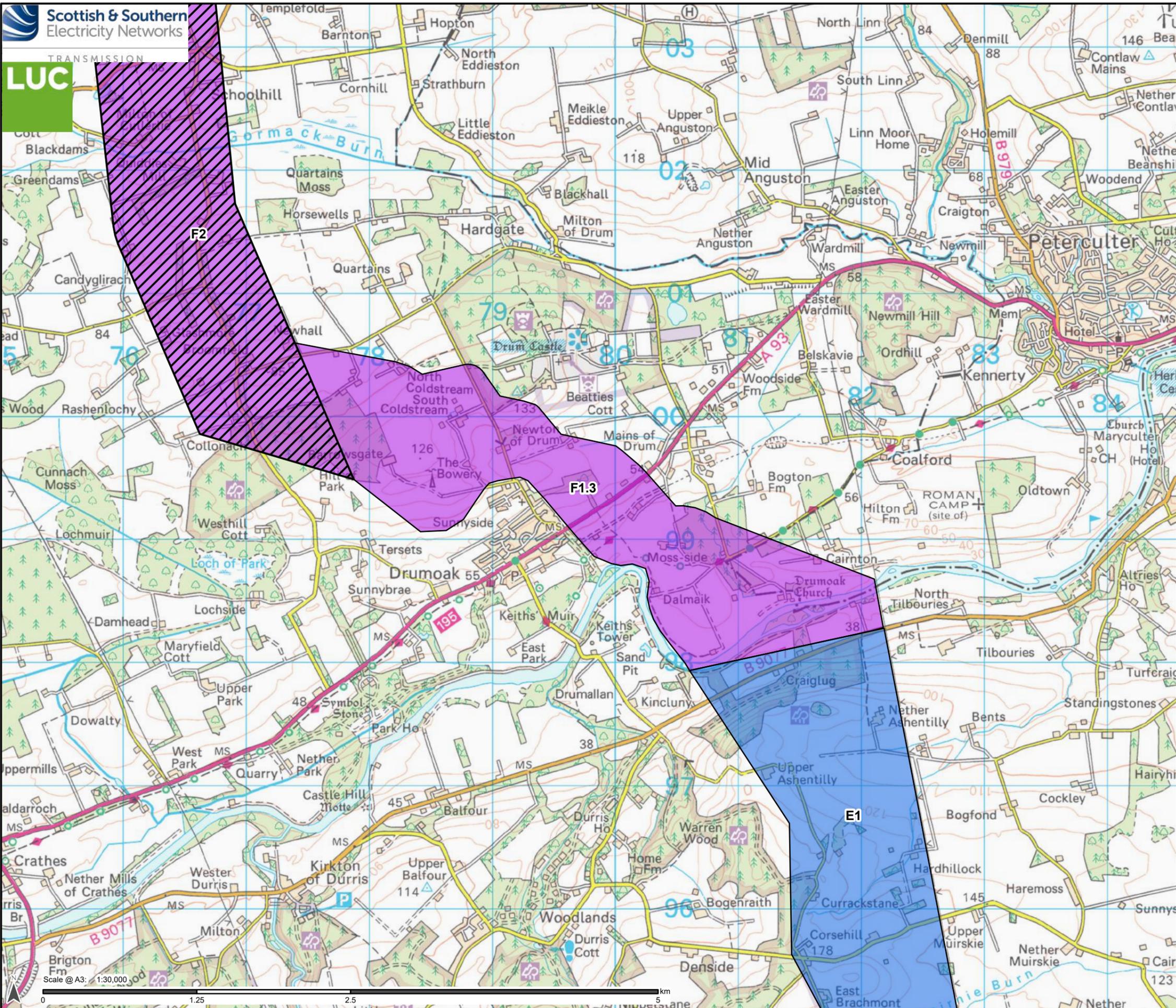
Title:
Section E Route Options

Drawn by: CW
Date: 19/02/2024

Figure: 4.2

Scale @ A3: 1:30,000

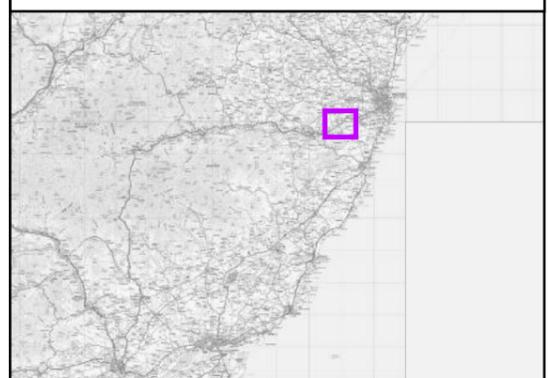




Proposed Routes



Route Options



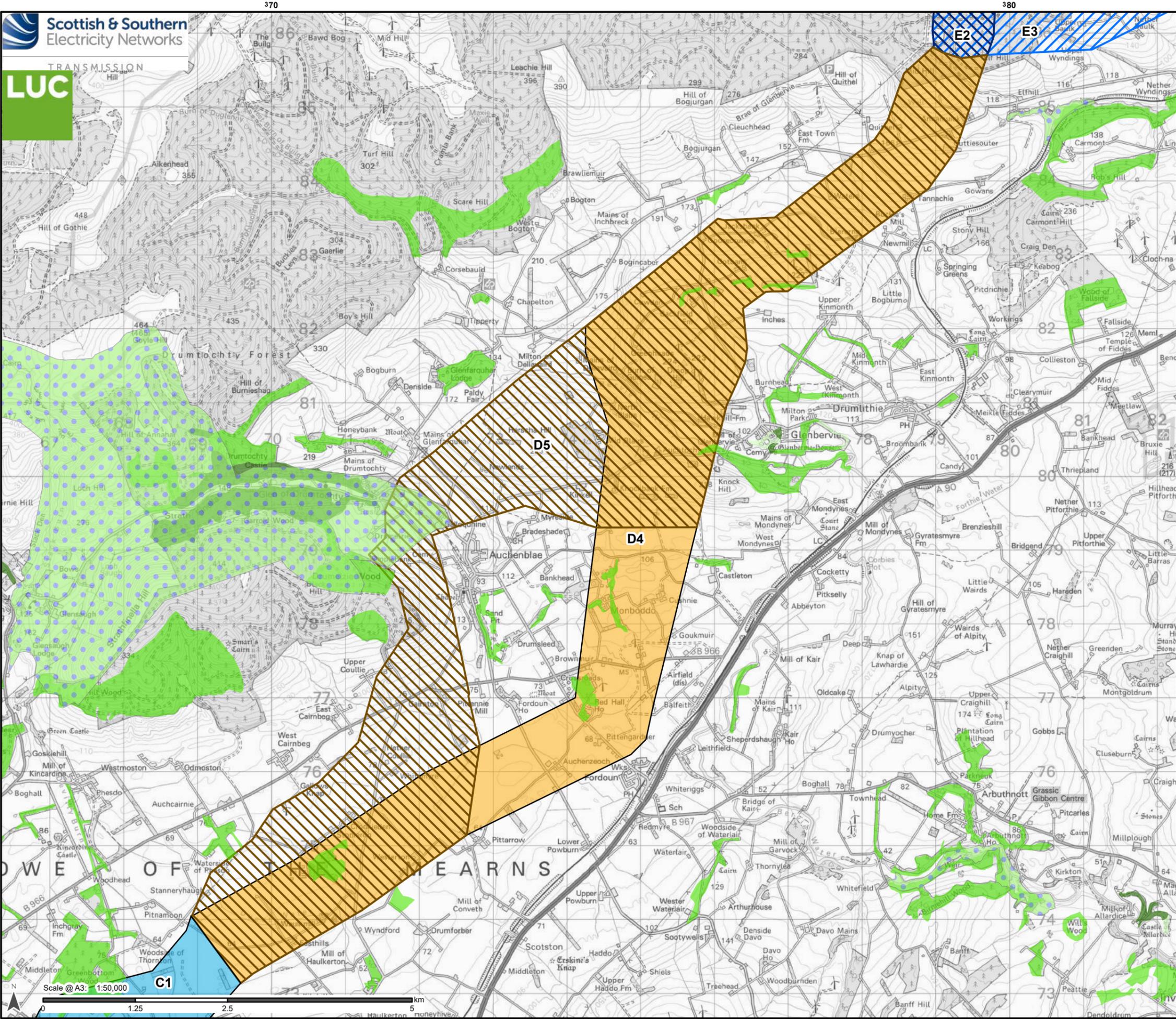
Reproduced by permission of Ordnance Survey on behalf of HMSO.
Crown copyright and database right 2024 all rights reserved.
Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Section F1.3 Route Option

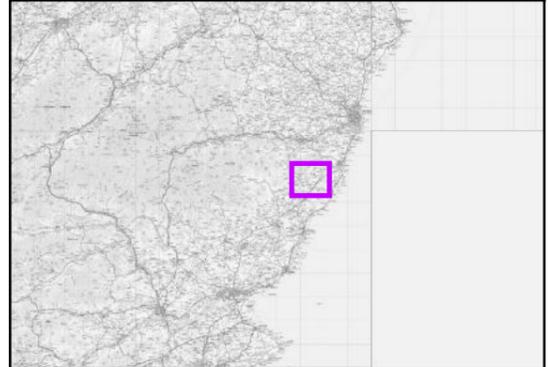
Drawn by: HW Date: 19/02/2024

Figure: 4.3



- Proposed Routes**
- C1
- Route Options**
- D5
 - D4
 - E2
 - E3
- Ecology Constraints**
- Local Nature Conservation Sites (LNCS)
- Ancient Woodland Inventory**
- Ancient (of semi-natural origin)
 - Long-Established (of plantation origin)
 - Other (on Roy map)

Data reproduced with the permission of RSPB. © Crown Copyright. Ordnance Survey licence number 100021787 (2023). © Scottish Wildlife Trust (2023). Contains OS Data. © Crown copyright and database right 2023. Contains public sector information licensed under the Open Government Licence v3.0. © NatureScot Contains Ordnance Survey data © Crown copyright and database right (2023)



Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Ecology Constraints - Section D

Drawn by: CW Date: 20/02/2024

Figure: 5.1

780000m.N

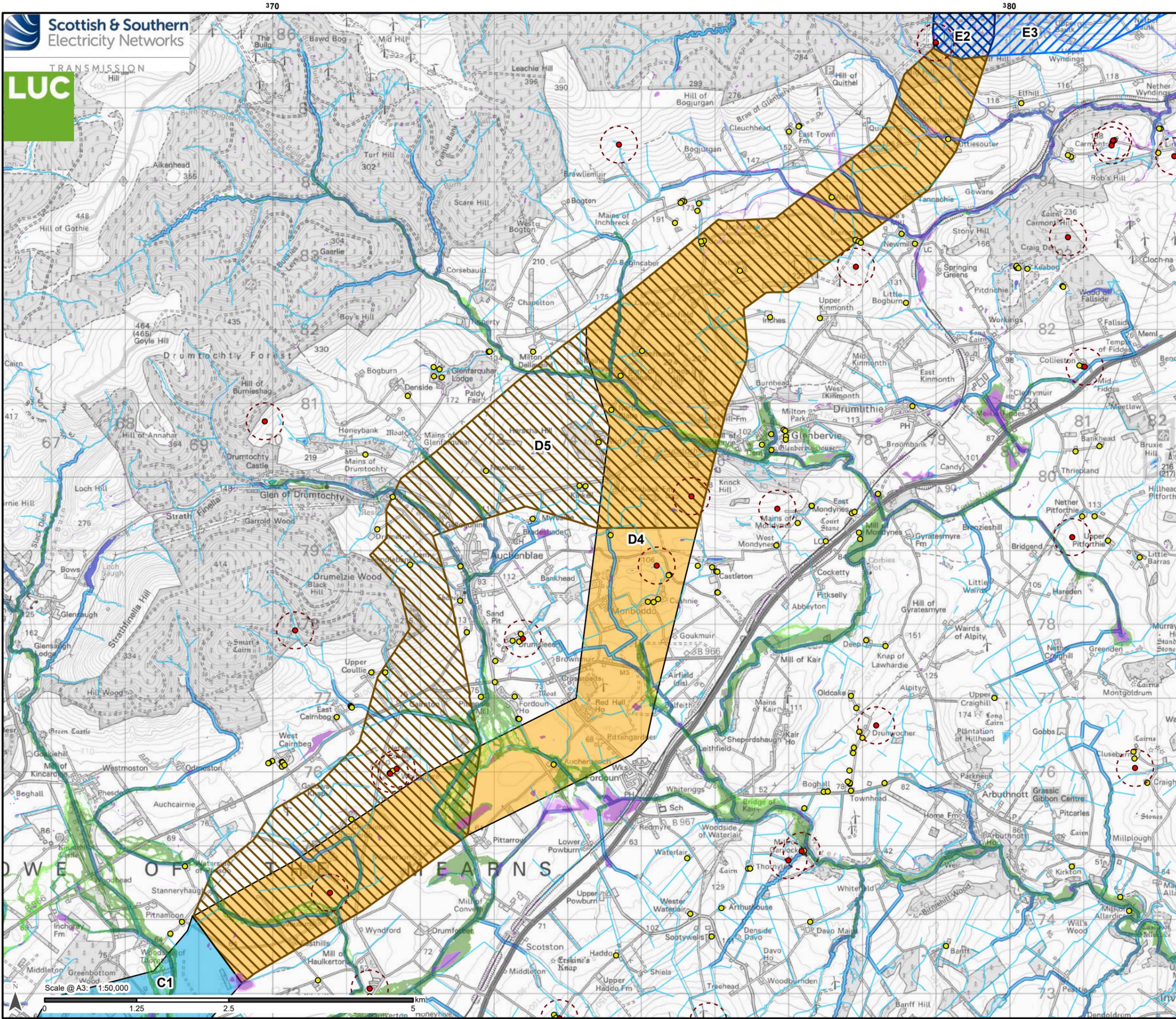
780

Scale @ A3: 1:50,000



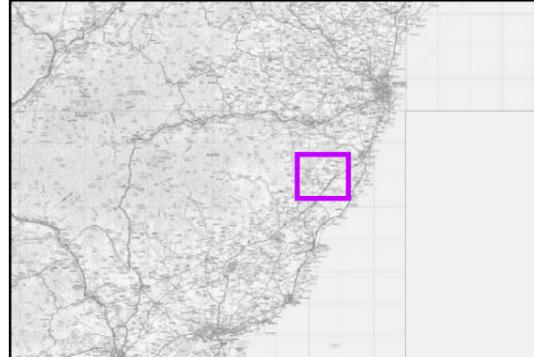
370000m.E

380



- Proposed Routes**
- C1
- Route Options**
- D5
 - D4
 - E2
 - E3
- Hydrology Constraints**
- Flood Risk Management - Surface High (10 year)
 - Flood Risk Management - Surface Medium (200 year)
 - Flood Risk Management - Surface Low (1000 year)
 - Flood Risk Management - Rivers High (10 year)
 - Flood Risk Management - Rivers Medium (200 year)
 - Flood Risk Management - Rivers Low (1000 year)
 - Surface Water Line
 - Surface Water Area
 - Main watercourses (Open Rivers)
 - PWS source buffer (250m)
 - PWS property locations
 - PWS source locations where known (unverified)

©SEPA 2023; this SEPA product is licenced under the Open Government Licence 3.0.



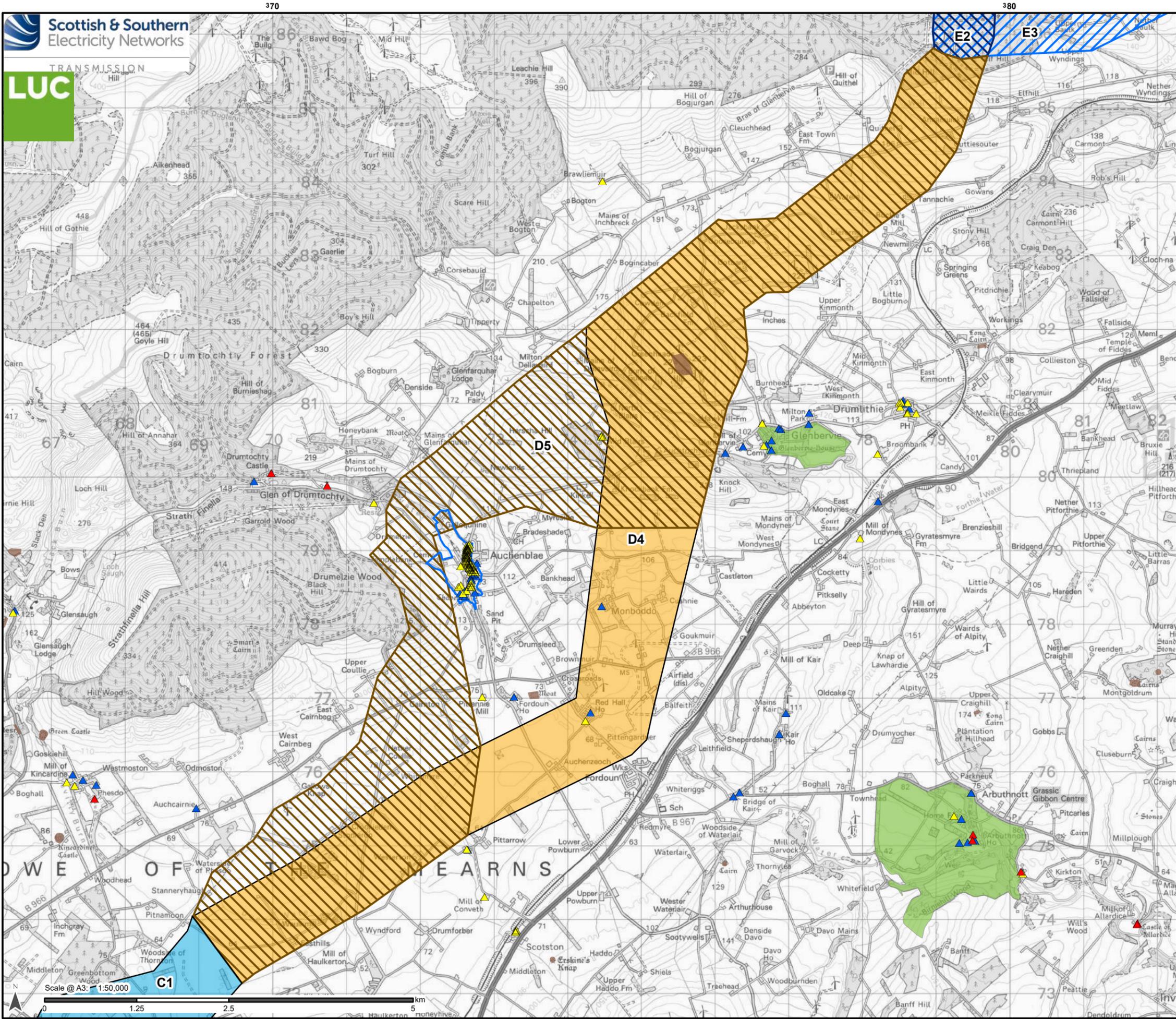
Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Hydrology Constraints - Section D

Drawn by: CW Date: 20/02/2024

Figure: 5.2



Proposed Routes

- C1

Route Options

- D5
- D4
- E2
- E3

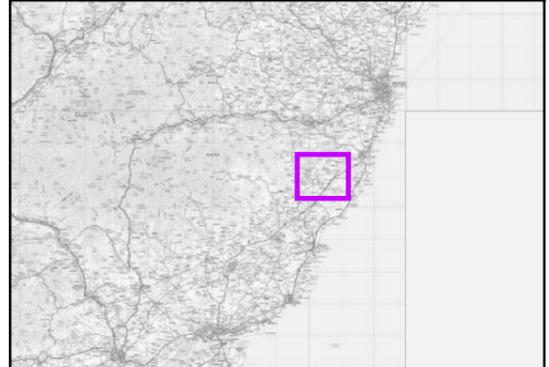
Cultural Heritage Constraints

Listed Building

- A
- B
- C

- Gardens and Designed Landscape
- Scheduled Monument
- Conservation Area

Contains Historic Environment Scotland and Ordnance Survey data © Historic Environment Scotland - Scottish Charity No. SC045925 © Crown copyright and database right 2023



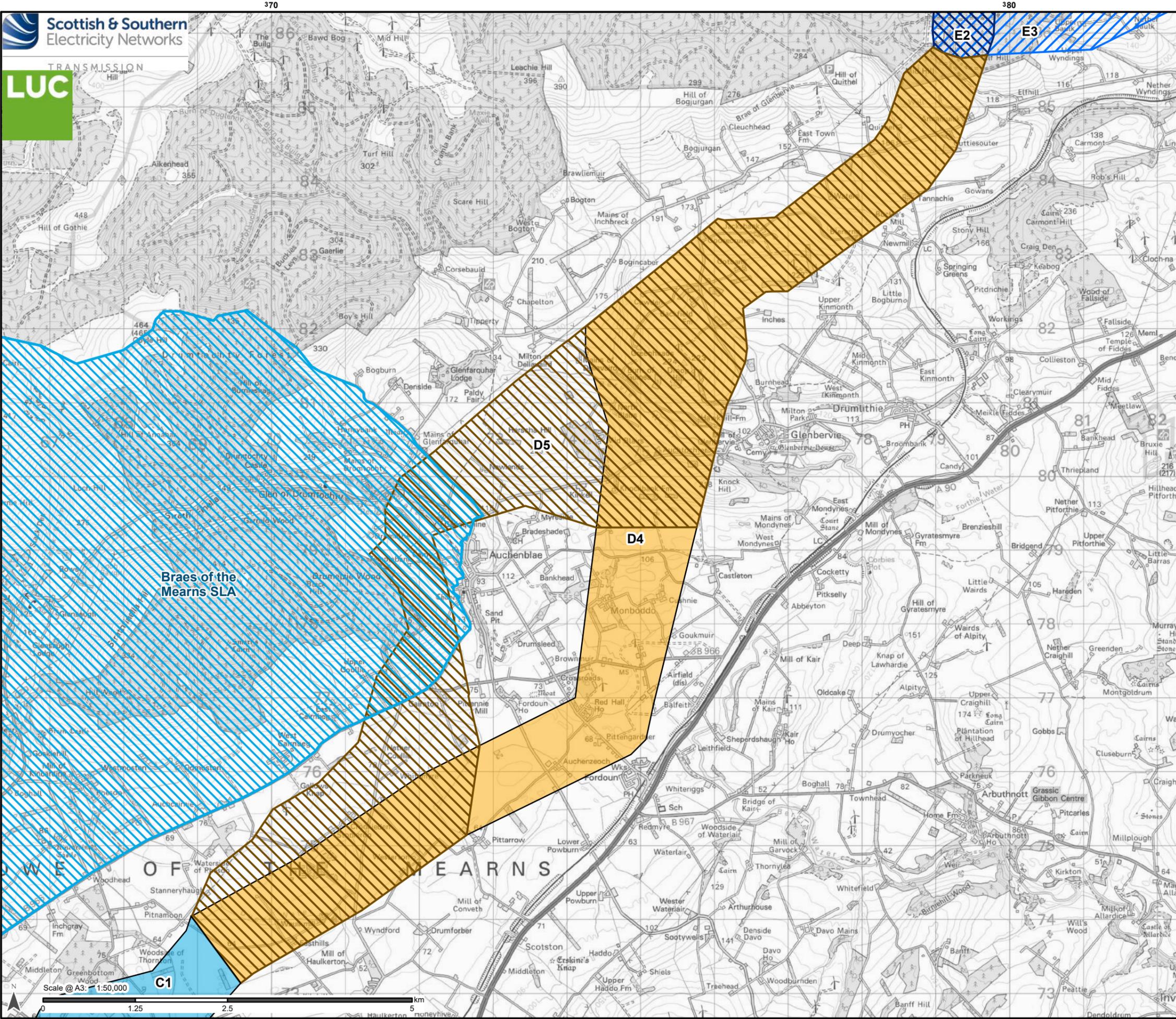
Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Cultural Heritage Constraints - Section D

Drawn by: CW
Date: 20/02/2024

Figure: 5.3

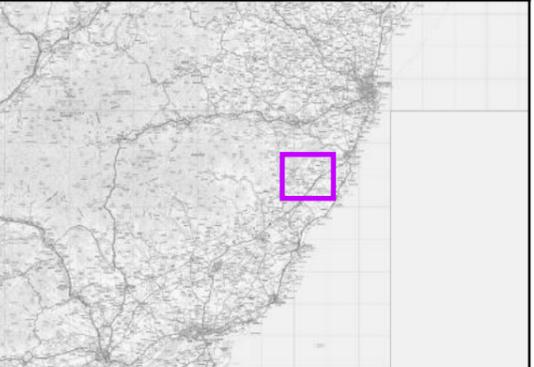


- Proposed Routes**
- C1
- Route Options**
- D5
 - D4
 - E2
 - E3
- Landscape and Visual Constraints**
- Special Landscape Area (SLA)

780000m.N

780

Contains public sector information licensed under the Open Government Licence v3.0.



Reproduced by permission of Ordnance Survey on behalf of HMSO.
 Crown copyright and database right 2024 all rights reserved.
 Ordnance Survey Licence number 0100022432.

Project No: LT455
 Project: Kintore to Tealing 400kV Overhead Line

Title:
 Landscape Constraints - Section D

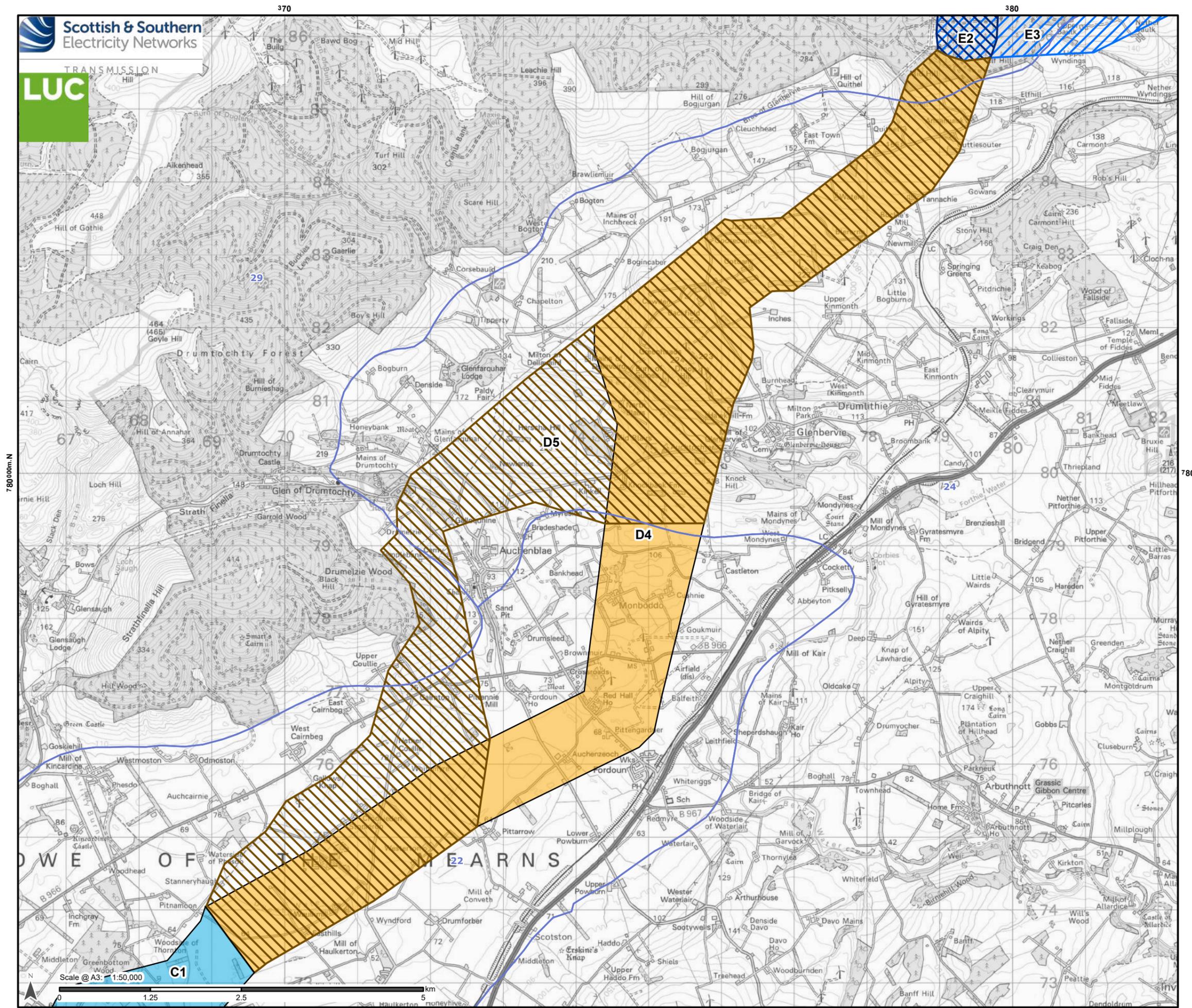
Drawn by: CW Date: 19/02/2024

Figure: 5.4



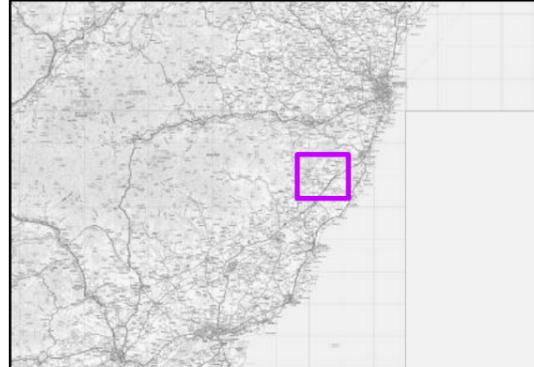
370000m.E

380



- Proposed Routes**
- C1
- Route Options**
- D5
 - D4
 - E2
 - E3
- Landscape Character Types**
- 22: Broad Valley Lowlands - Aberdeenshire
 - 24: Coastal Farmed Ridges and Hills - Aberdeenshire
 - 29: Summits and Plateaux - Aberdeenshire

Contains public sector information licensed under the Open Government Licence v3.0.



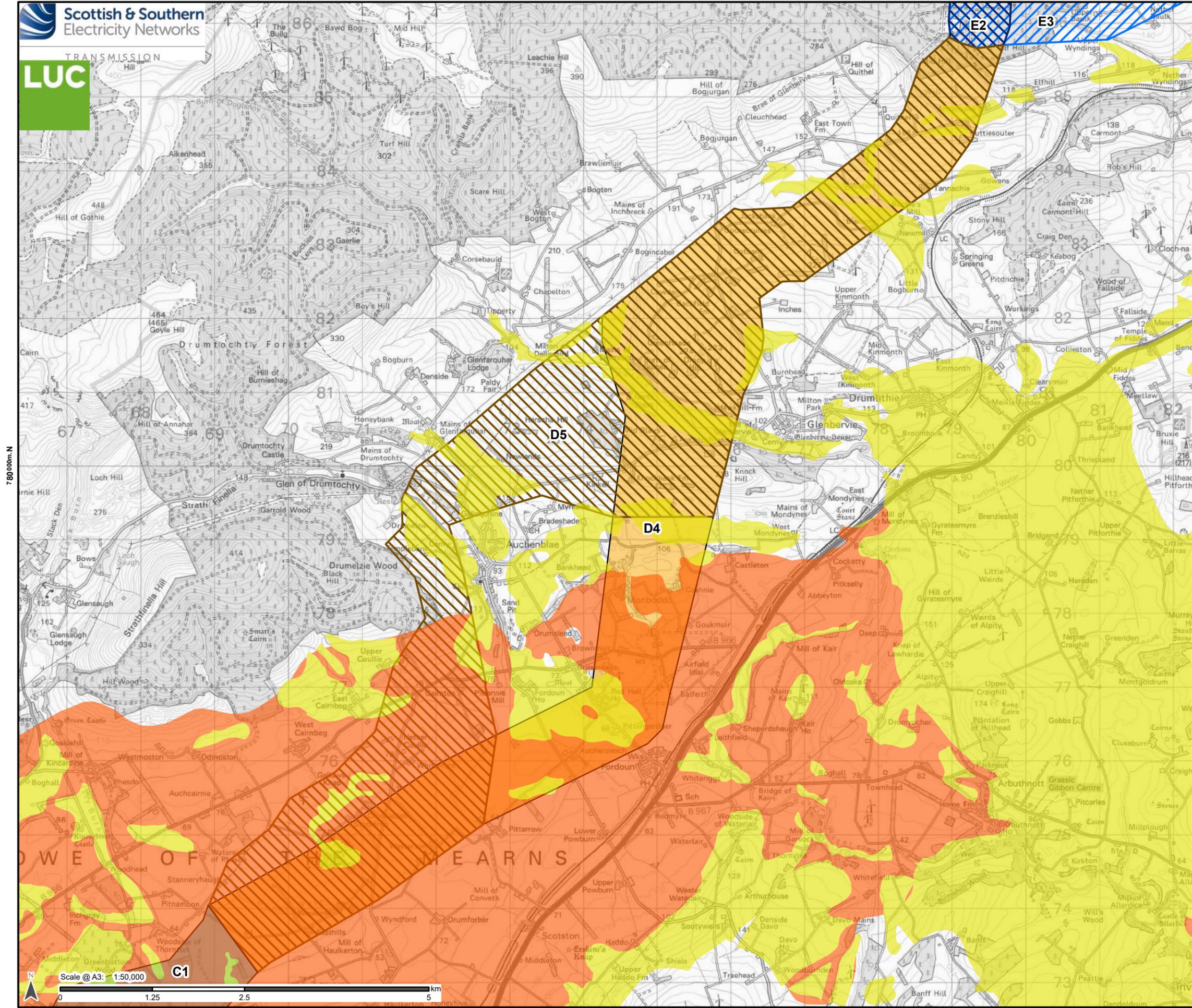
Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Landscape Character Types - Section D

Drawn by: CW Date: 19/02/2024

Figure: 5.5



Proposed Routes

C1

Route Options

D5

D4

E2

E3

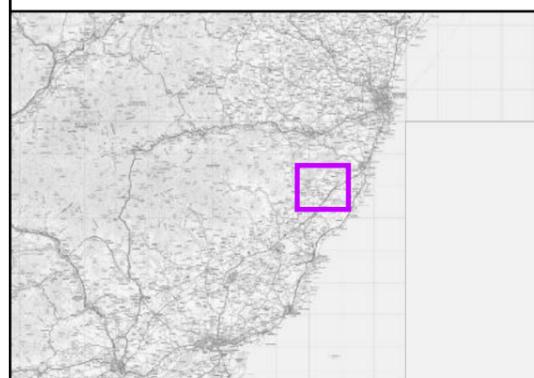
Land Capability for Agriculture

2 - Land capable of producing a wide range of crops.

3.1 - Land capable of producing consistently high yields of a narrow range of crops and/ or moderate yields of a wider range. Short grass leys are common.

Note: Only classes 1, 2 and 3.1 (collectively prime agricultural land) have been mapped

Contains JHI data



Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455

Project: Kintore to Tealing 400kV Overhead Line

Title:
Land Capability for Agriculture Constraints - Section D

Drawn by: CW Date: 19/02/2024

Figure: 5.6

780 000m.N

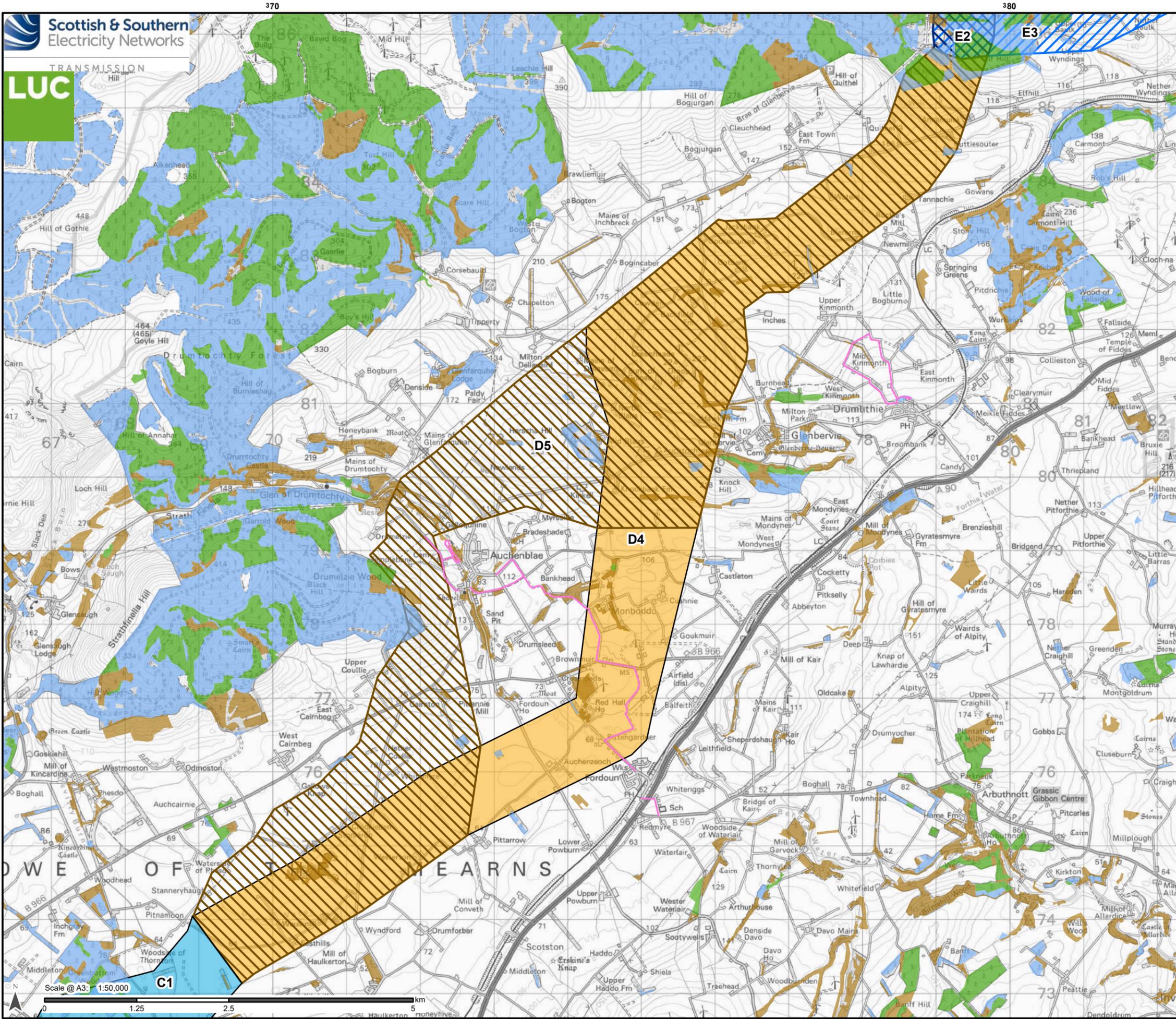
780

Scale @ A3: 1:50,000



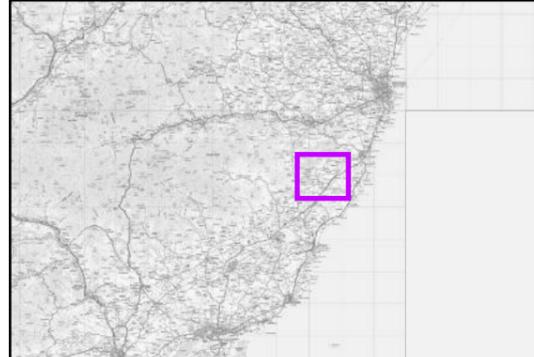
370 000m.E

380



- Proposed Routes**
- C1
- Route Options**
- D5
 - D4
 - E2
 - E3
- Land Use Constraints**
- National Forest Inventory
- Broadleaved; Mixed mainly broadleaved; Coppice; Coppice with standards; Young trees; Assumed woodland
 - Conifer; Mixed mainly conifer
 - Other
- Local Path Networks
- Core path

Sustrans National Cycle Network data contains Ordnance Survey data © Crown copyright and database rights (2023). Contains Forestry Commission information licensed under the Open Government Licence v3.0. Contains LDWA data.



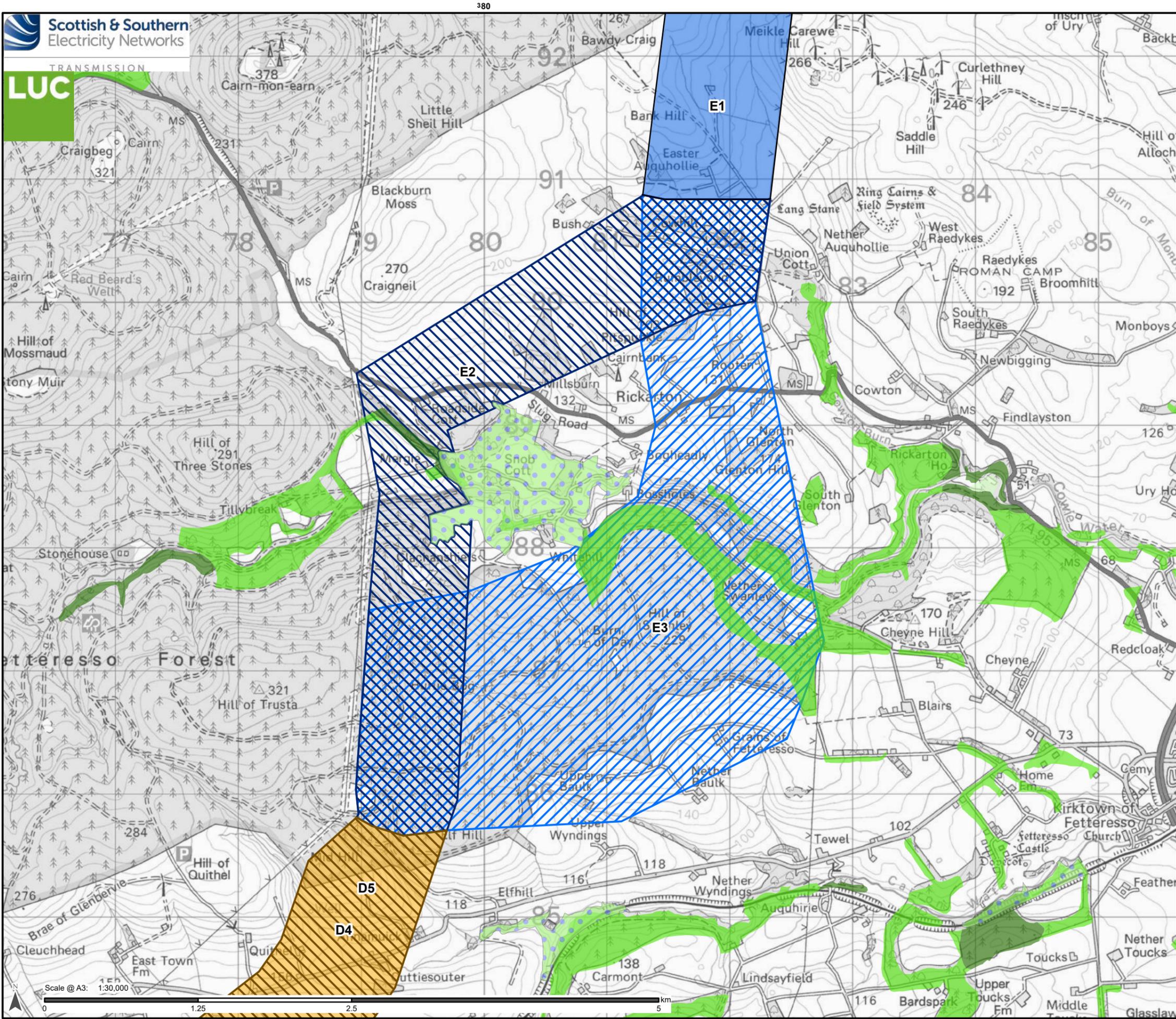
Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
 Project: Kintore to Tealing 400kV Overhead Line

Title:
 Land Use Constraints - Section D

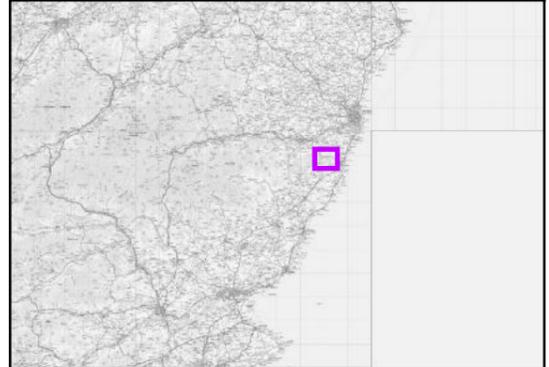
Drawn by: CW
 Date: 19/02/2024

Figure: 5.7



- Proposed Routes**
- E1
- Route Options**
- D5
 - D4
 - E2
 - E3
- Ecology Constraints**
- Local Nature Conservation Sites (LNCS)
- Ancient Woodland Inventory**
- Ancient (of semi-natural origin)
 - Long-Established (of plantation origin)
 - Other (on Roy map)

Data reproduced with the permission of RSPB. © Crown Copyright. Ordnance Survey licence number 100021787 (2023). © Scottish Wildlife Trust (2023). Contains OS Data. © Crown copyright and database right 2023. Contains public sector information licensed under the Open Government Licence v3.0. © NatureScot Contains Ordnance Survey data © Crown copyright and database right (2023)



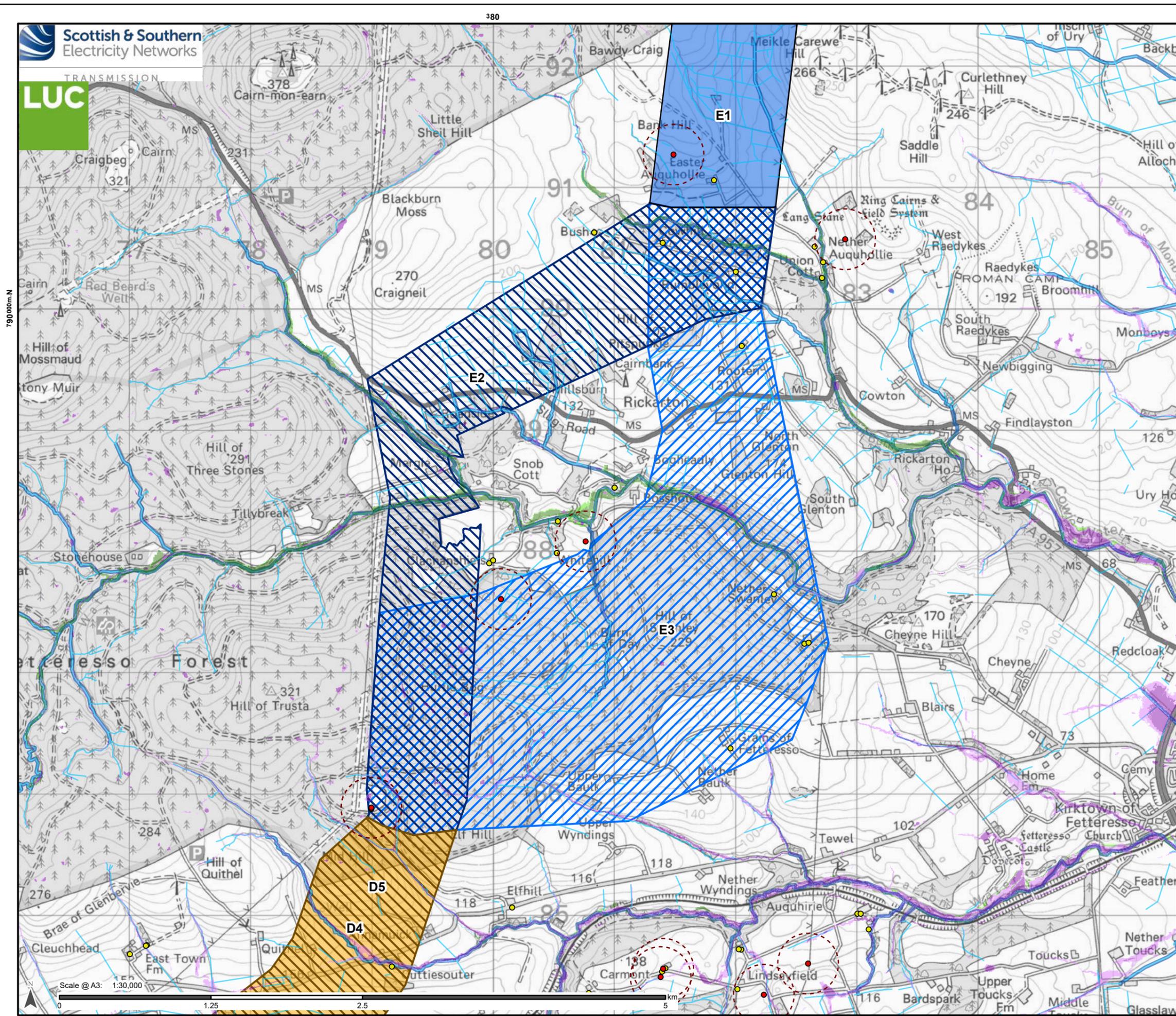
Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Ecology Constraints - Section E

Drawn by: CW Date: 20/02/2024

Figure: 5.8



Proposed Routes

- E1

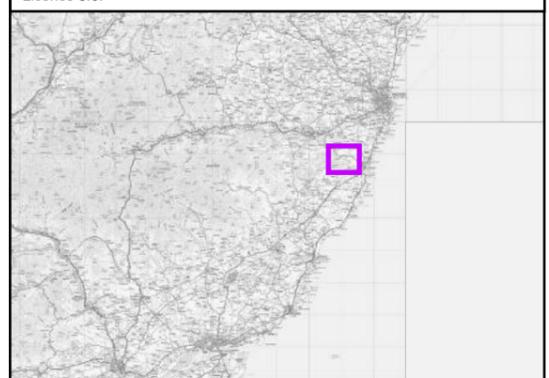
Route Options

- D5
- D4
- E2
- E3

Hydrology Constraints

- Flood Risk Management - Surface High (10 year)
- Flood Risk Management - Surface Medium (200 year)
- Flood Risk Management - Surface Low (1000 year)
- Flood Risk Management - Rivers High (10 year)
- Flood Risk Management - Rivers Medium (200 year)
- Flood Risk Management - Rivers Low (1000 year)
- Surface Water Line
- Surface Water Area
- Main watercourses (Open Rivers)
- PWS source buffer (250m)
- PWS property locations
- PWS source locations where known (unverified)

©SEPA 2023; this SEPA product is licenced under the Open Government Licence 3.0.



Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
 Project: Kintore to Tealing 400kV Overhead Line

Title:
 Hydrology Constraints - Section E

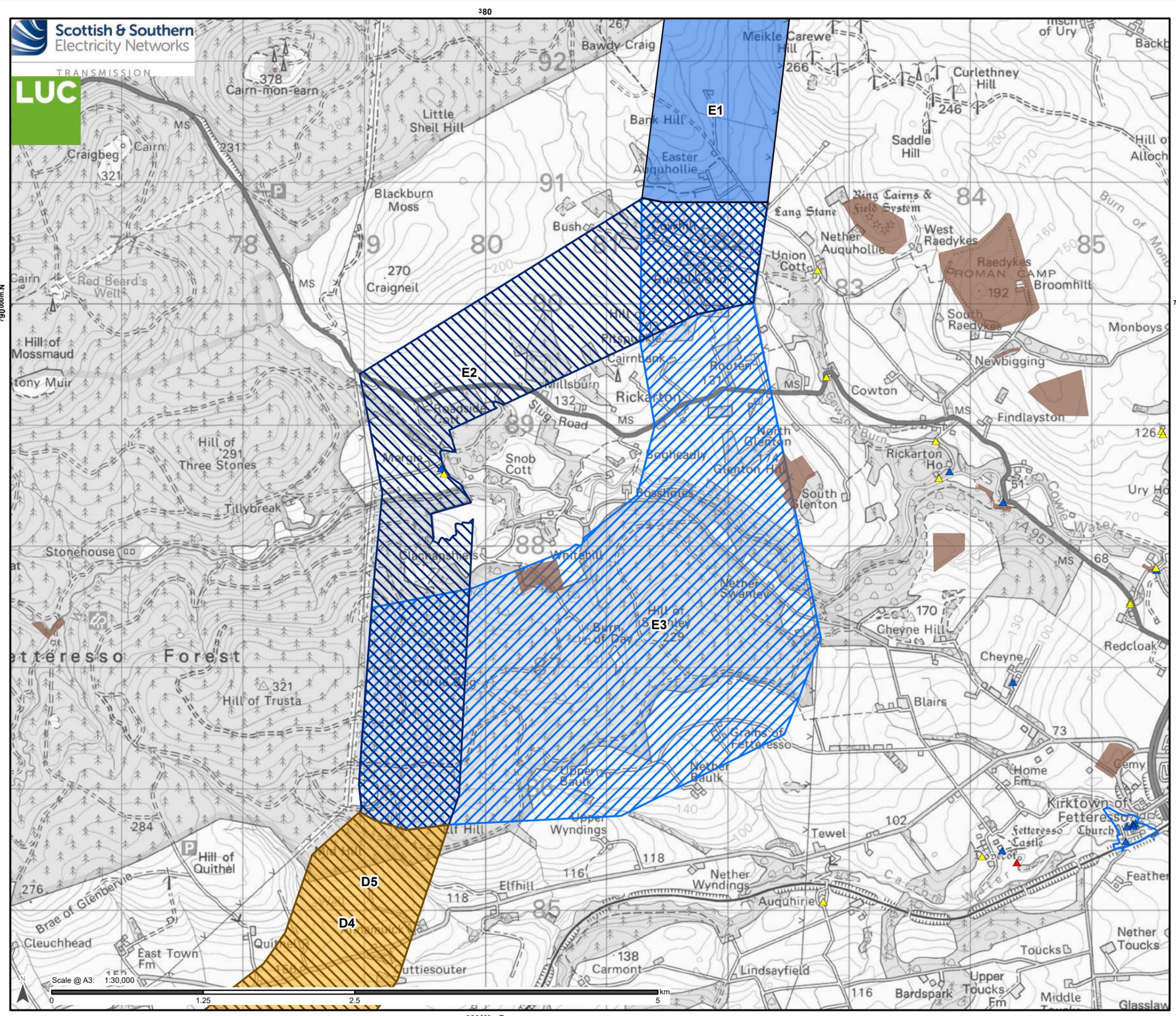
Drawn by: CW Date: 20/02/2024

Figure: 5.9

Scale @ A3: 1:30,000



380000m.E



Proposed Routes

- E1

Route Options

- D5
- D4
- E2
- E3

Cultural Heritage Constraints

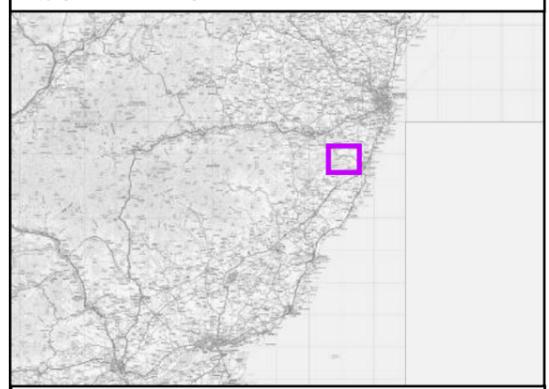
Listed Building

- A
- B
- C

Scheduled Monument

Conservation Area

Contains Historic Environment Scotland and Ordnance Survey data © Historic Environment Scotland - Scottish Charity No. SC045925 © Crown copyright and database right 2023



Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Cultural Heritage Constraints - Section E

Drawn by: CW
Date: 20/02/2024

Figure: 5.10

Scale @ A3: 1:30,000



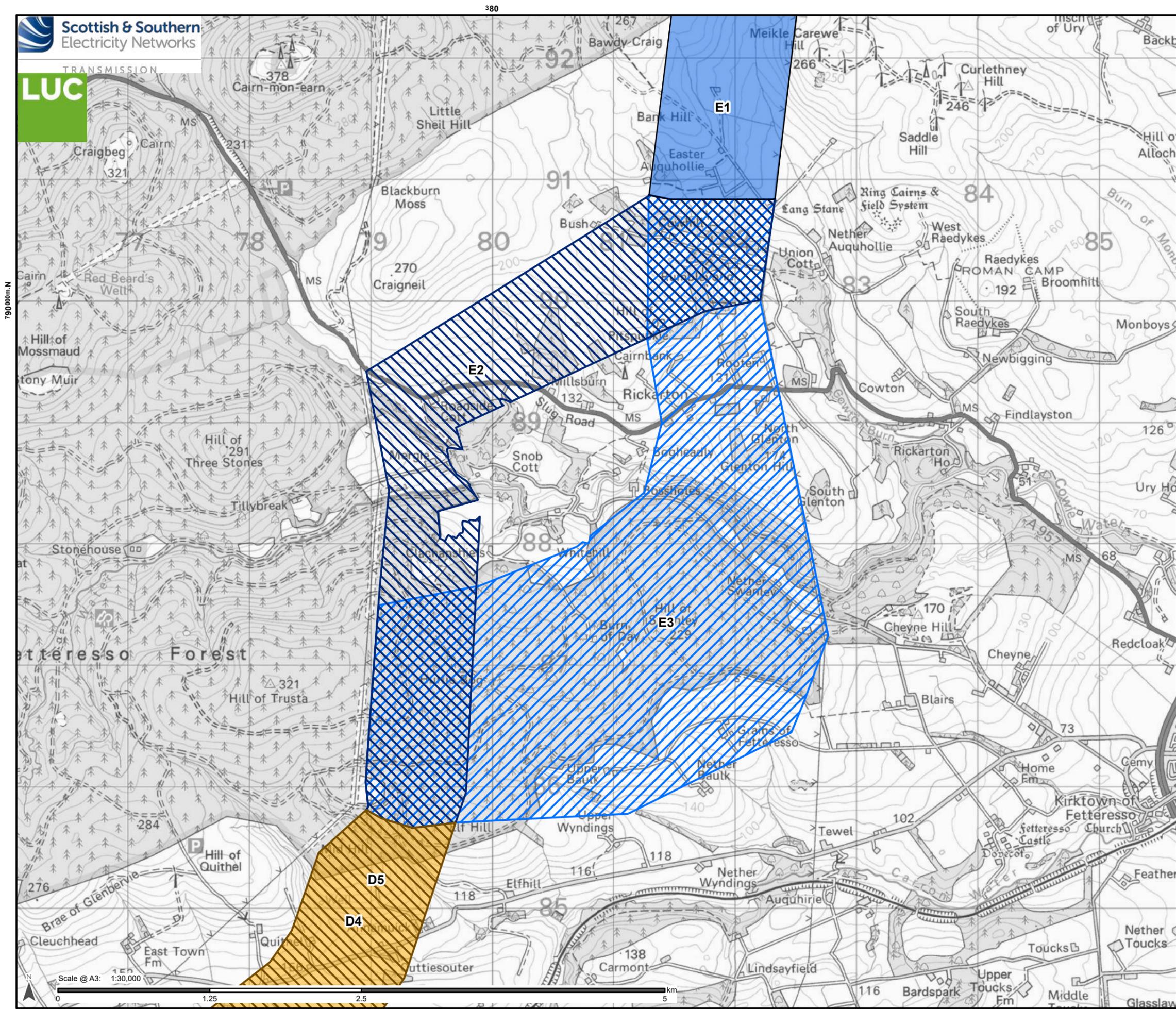
380000m.E

790000m.N

790

380

380000m.E



Proposed Routes

- E1

Route Options

- D5
- D4
- E2
- E3

Landscape and Visual Constraints

- Special Landscape Area (SLA)

Contains public sector information licensed under the Open Government Licence v3.0.



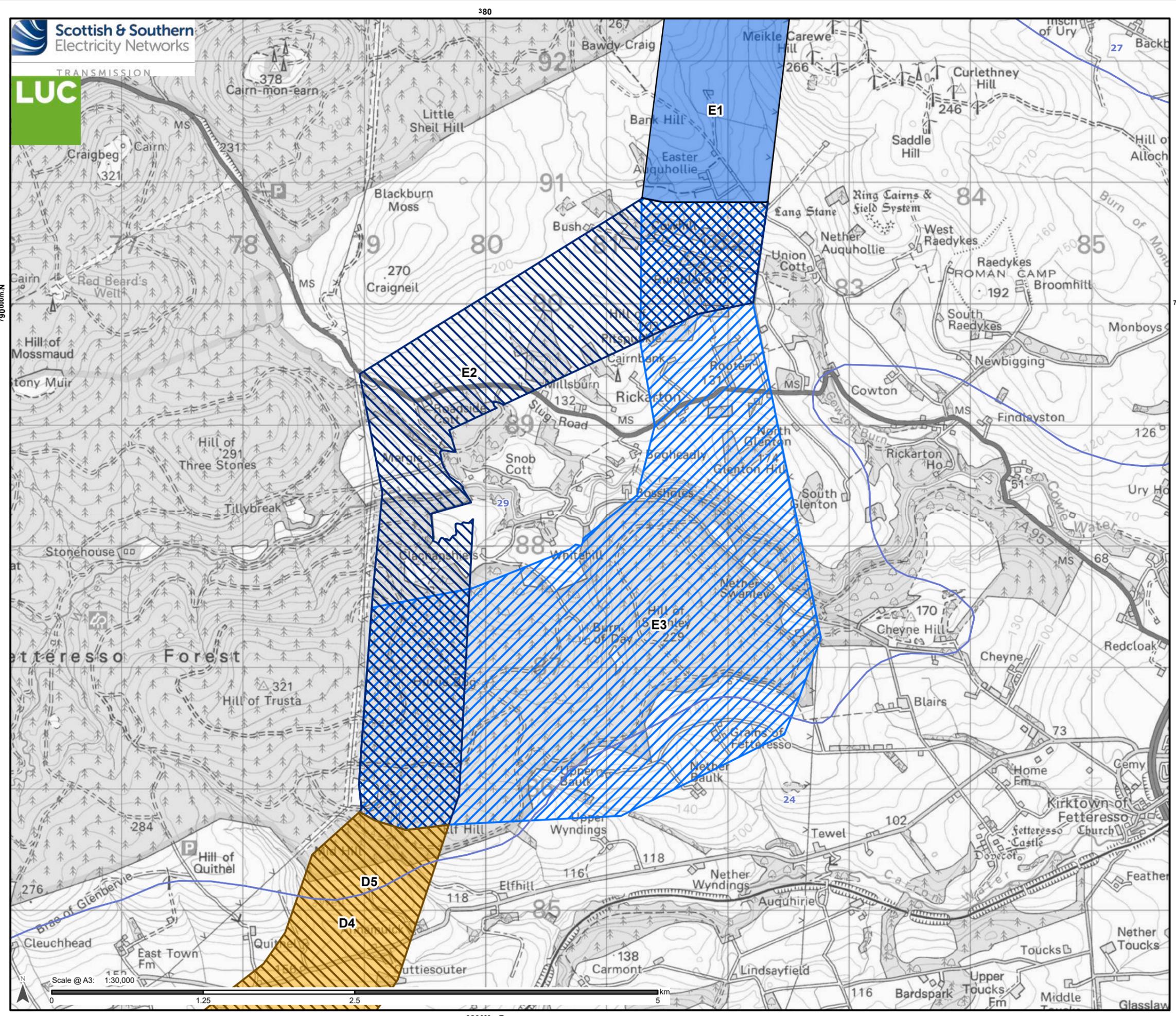
Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Landscape Constraints - Section E

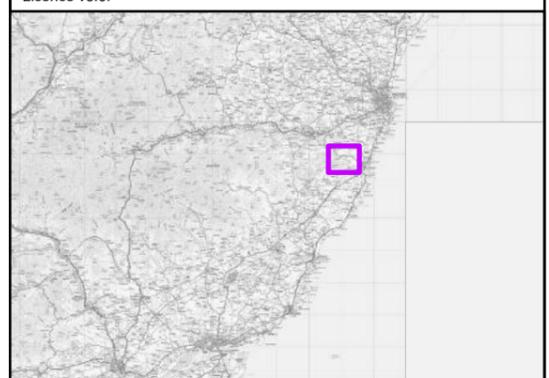
Drawn by: CW Date: 19/02/2024

Figure: 5.11



- Proposed Routes**
- E1
- Route Options**
- D5
 - D4
 - E2
 - E3
- Landscape Character Types**
- 24: Coastal Farmed Ridges and Hills - Aberdeenshire
 - 27: Farmed Moorland Edge - Aberdeenshire
 - 29: Summits and Plateaux - Aberdeenshire

Contains public sector information licensed under the Open Government Licence v3.0.



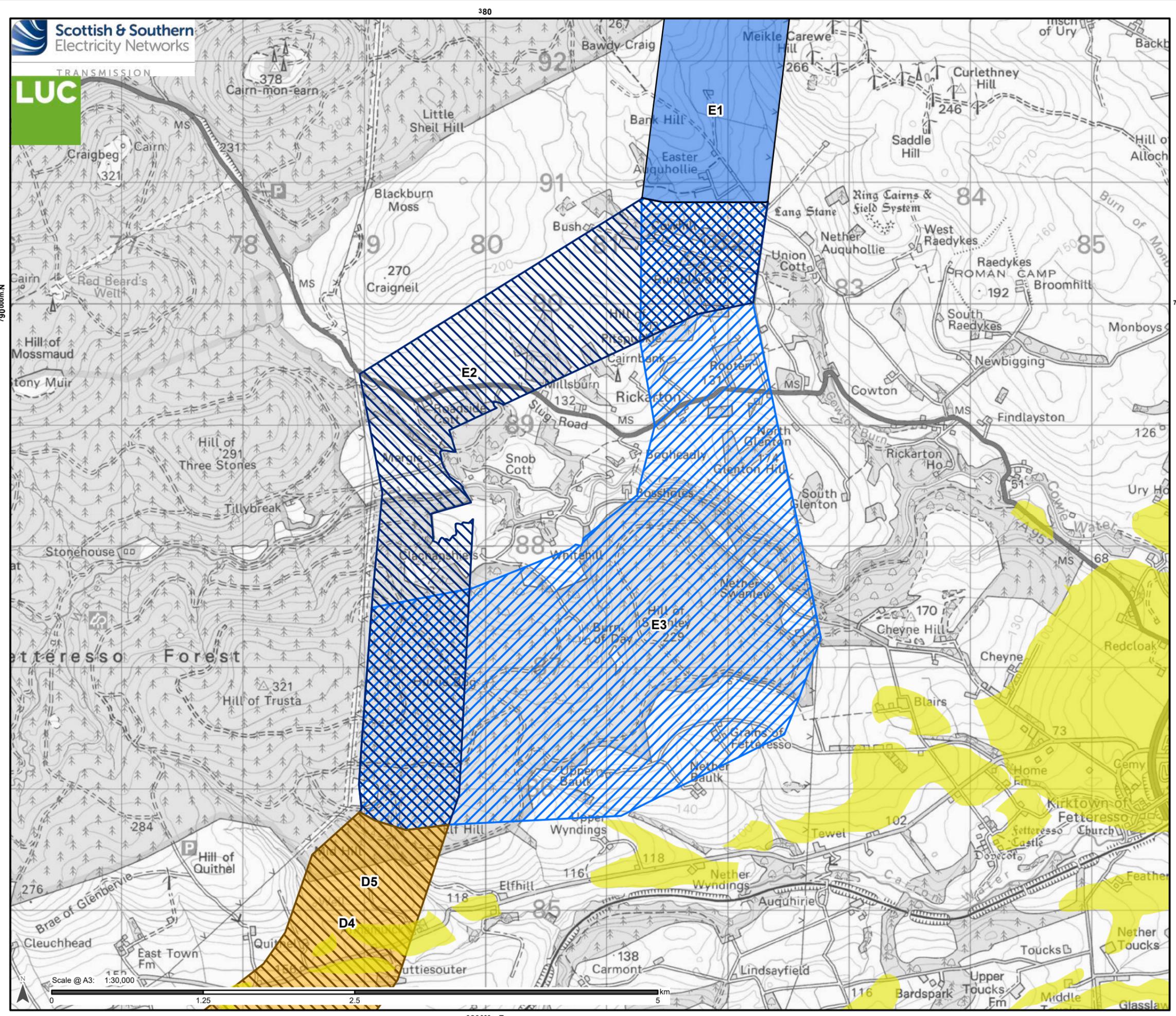
Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
 Project: Kintore to Tealing 400kV Overhead Line

Title:
 Landscape Character Types - Section E

Drawn by: CW Date: 19/02/2024

Figure: 5.12

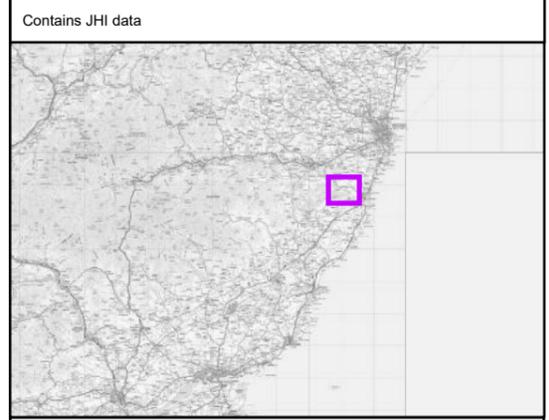


Proposed Routes
E1

Route Options
D5
D4
E2
E3

Land Capability for Agriculture
3.1 - Land capable of producing consistently high yields of a narrow range of crops and/ or moderate yields of a wider range. Short grass leys are common.

Note: Only classes 1, 2 and 3.1 (collectively prime agricultural land) have been mapped



Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

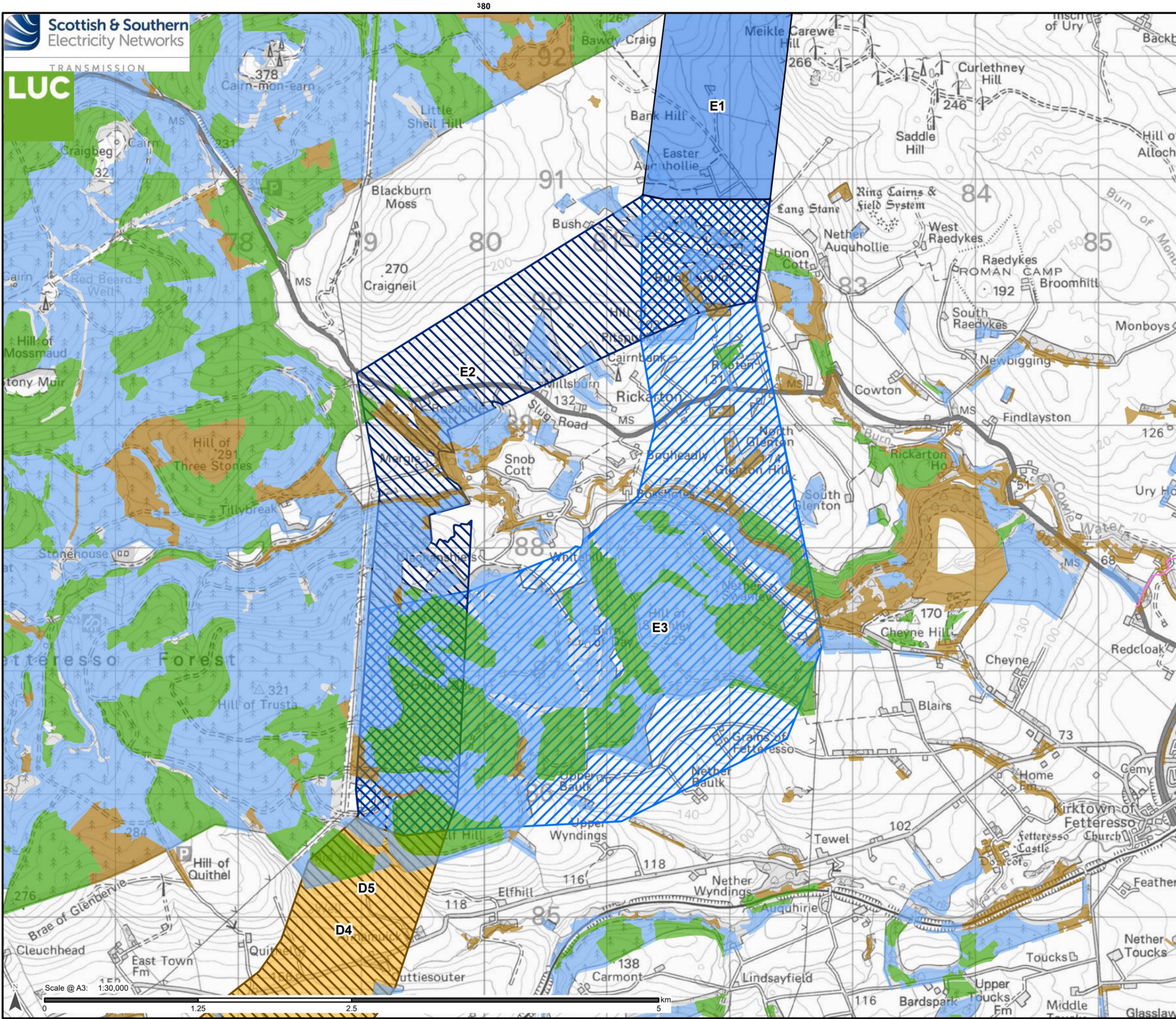
Title:
Land Capability for Agriculture Constraints - Section E

Drawn by: CW
Date: 19/02/2024

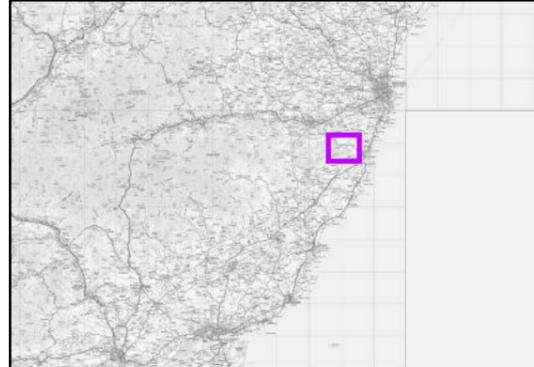
Figure: 5.13

Scale @ A3: 1:30,000





Sustrans National Cycle Network data contains Ordnance Survey data © Crown copyright and database rights (2023). Contains Forestry Commission information licensed under the Open Government Licence v3.0. Contains LDWA data.



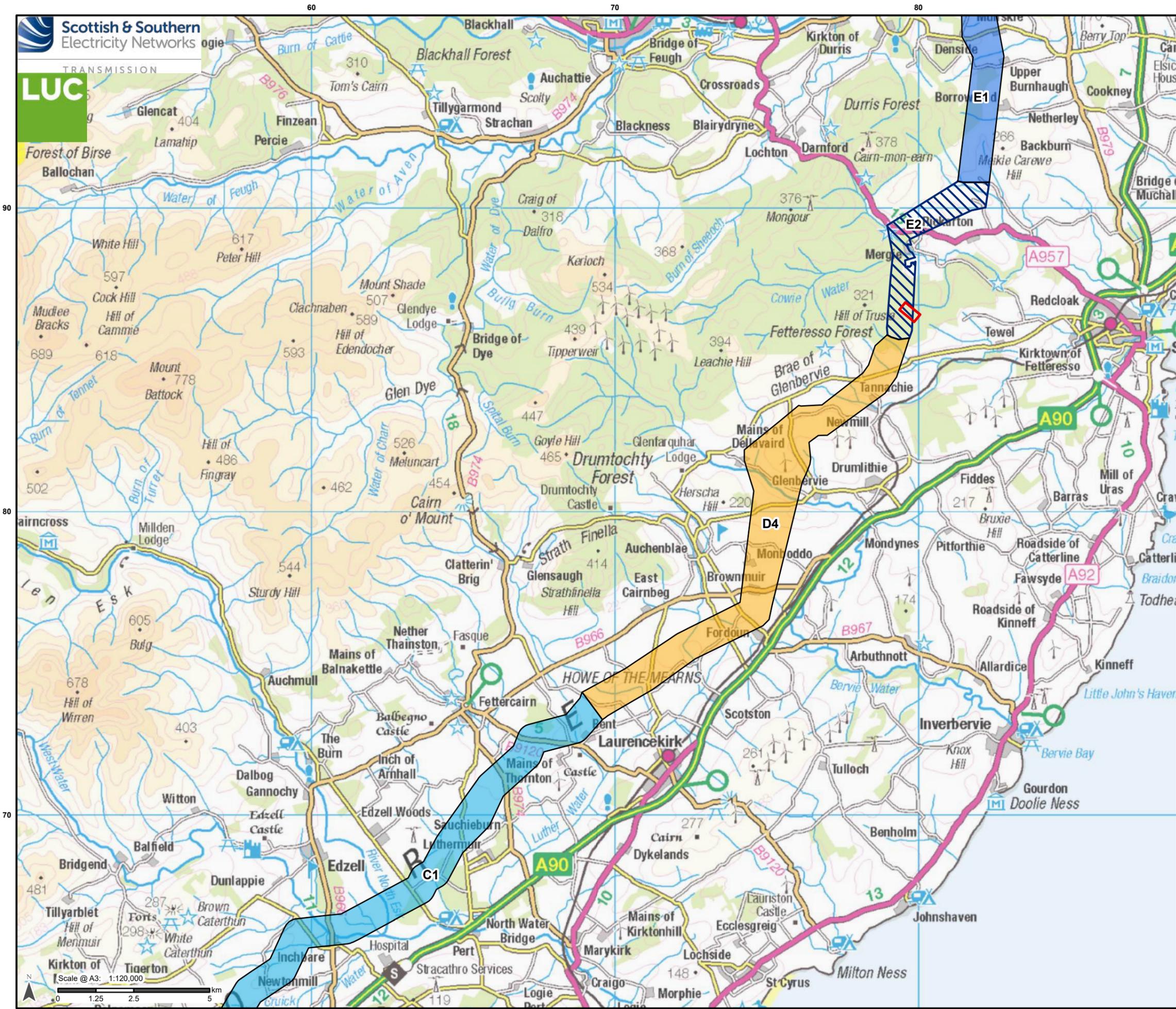
Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Land Use Constraints - Section E

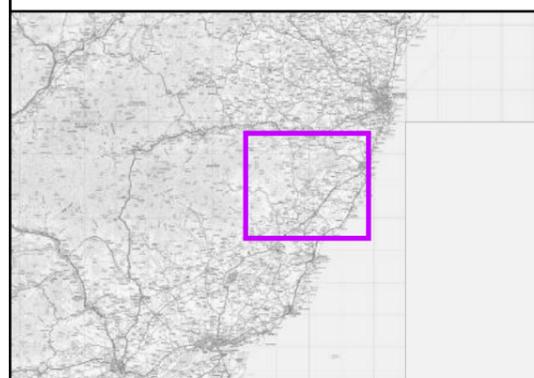
Drawn by: CW
Date: 19/02/2024

Figure: 5.14



Route Options

- C1
- D4
- E1
- E2
- Indicative Hurlie Substation Boundary



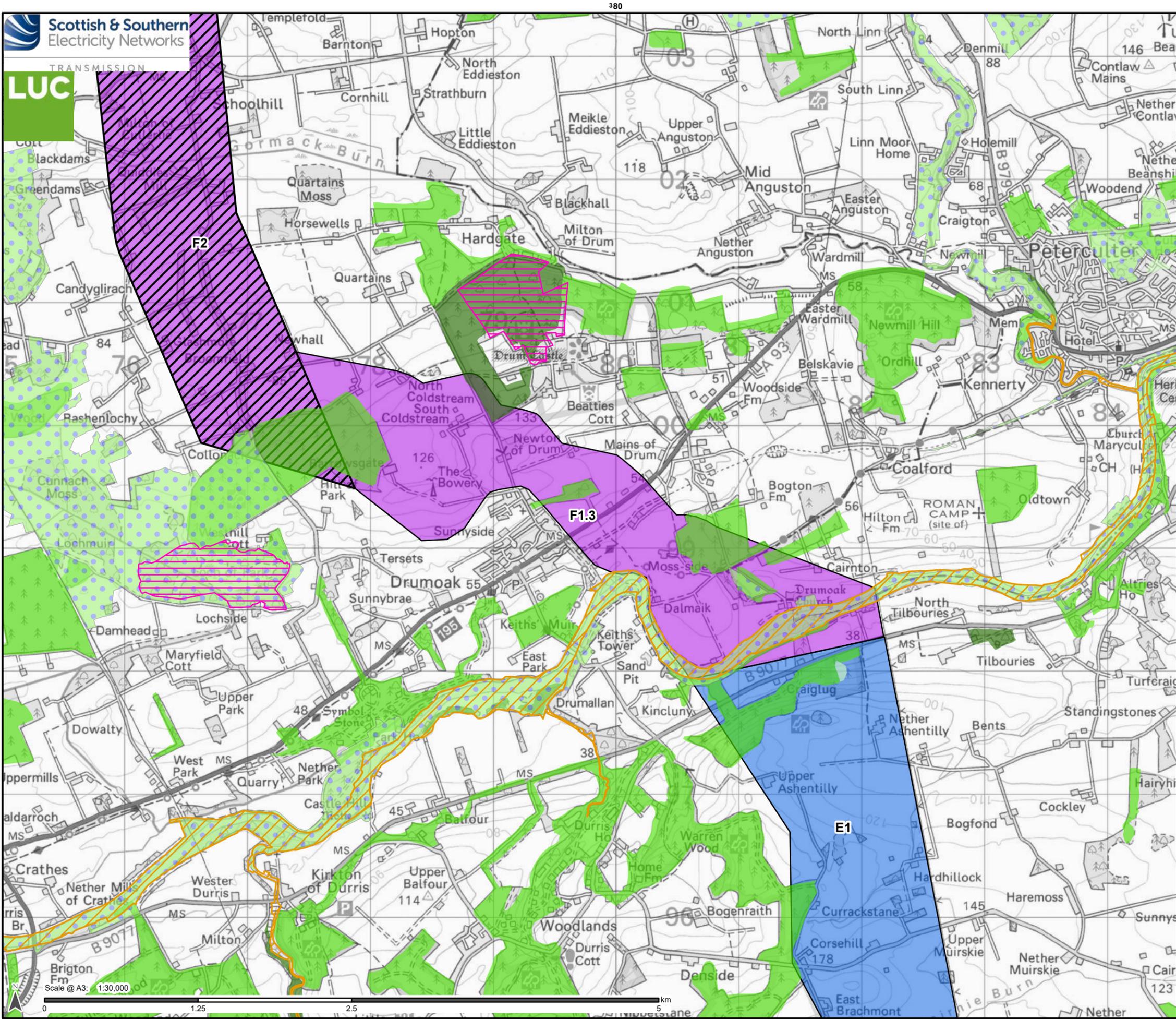
Reproduced by permission of Ordnance Survey on behalf of HMSO.
Crown copyright and database right 2024 all rights reserved.
Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Preferred Route Options into and out of Hurlie Substation

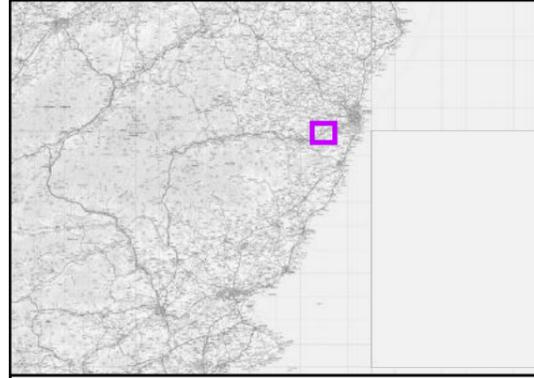
Drawn by: CW Date: 20/02/2024

Figure: 5.15



- Proposed Routes**
- E1
 - F2
- Route Options**
- F1.3
- Ecology Constraints**
- Special Area of Conservation
 - SSSI
 - Local Nature Conservation Sites (LNCS)
- Ancient Woodland Inventory**
- Ancient (of semi-natural origin)
 - Long-Established (of plantation origin)
 - Other (on Roy map)

Data reproduced with the permission of RSPB. © Crown Copyright. Ordnance Survey licence number 100021787 (2023). © Scottish Wildlife Trust (2023). Contains OS Data. © Crown copyright and database right 2023. Contains public sector information licensed under the Open Government Licence v3.0. © NatureScot Contains Ordnance Survey data © Crown copyright and database right (2023)



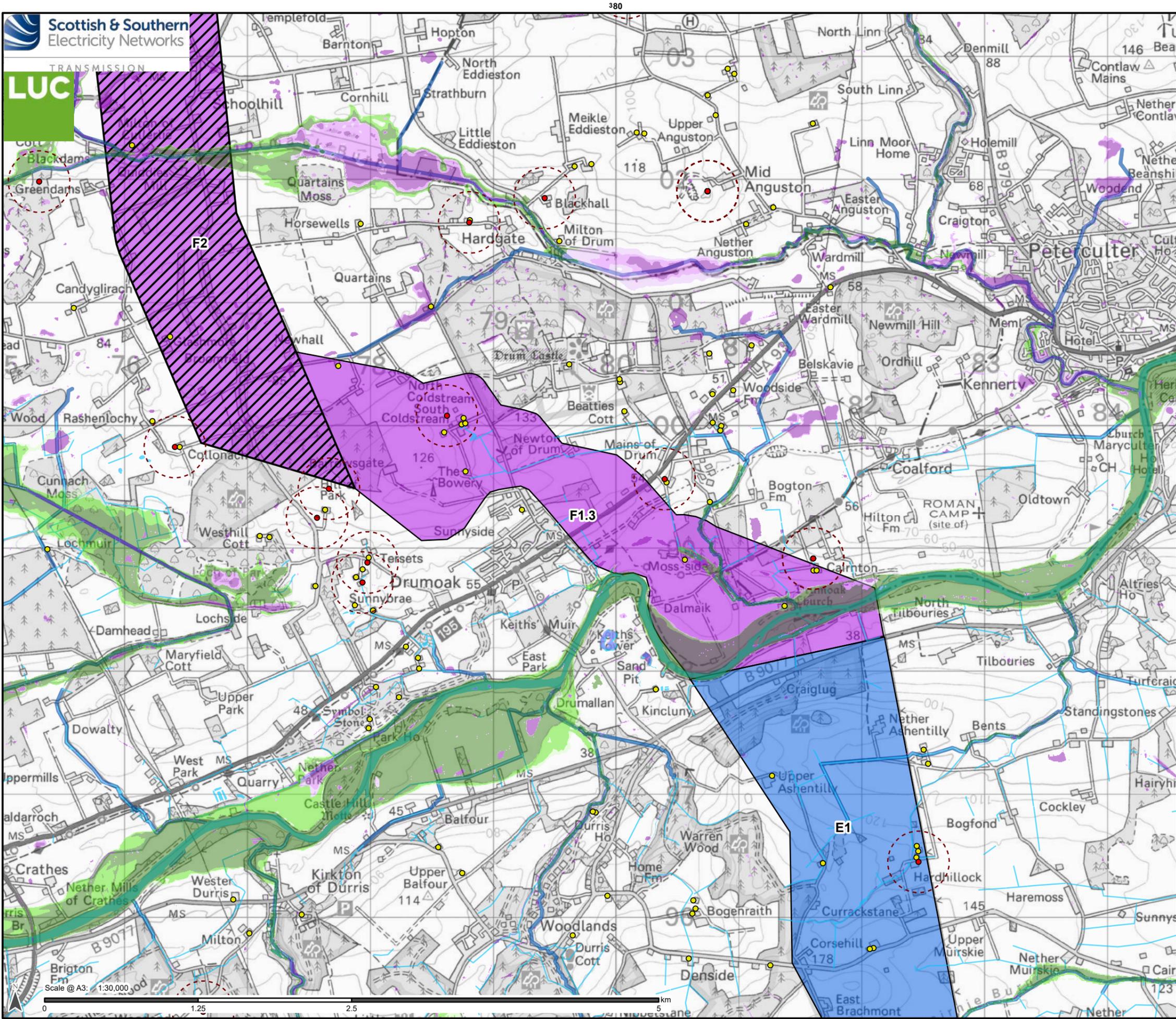
Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Ecology Constraints - Section F

Drawn by: CW Date: 20/02/2024

Figure: 6.1



Proposed Routes

- E1
- F2

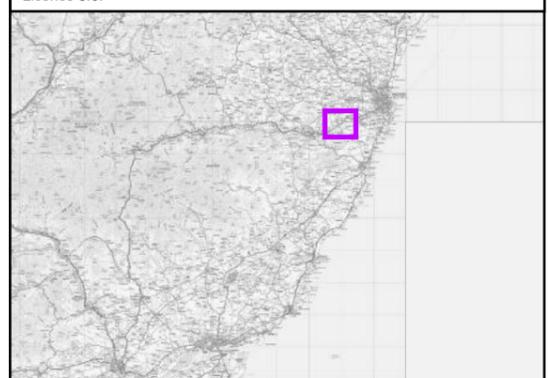
Route Options

- F1.3

Hydrology Constraints

- Flood Risk Management - Surface High (10 year)
- Flood Risk Management - Surface Medium (200 year)
- Flood Risk Management - Surface Low (1000 year)
- Flood Risk Management - Rivers High (10 year)
- Flood Risk Management - Rivers Medium (200 year)
- Flood Risk Management - Rivers Low (1000 year)
- Surface Water Line
- Surface Water Area
- Main watercourses (Open Rivers)
- PWS source buffer (250m)
- PWS property locations
- PWS source locations where known (unverified)

©SEPA 2023; this SEPA product is licenced under the Open Government Licence 3.0.



Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Hydrology Constraints - Section F

Drawn by: CW Date: 20/02/2024

Figure: 6.2

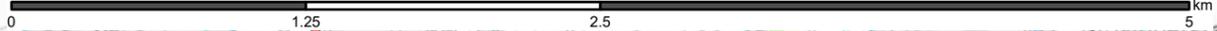
800000m.N

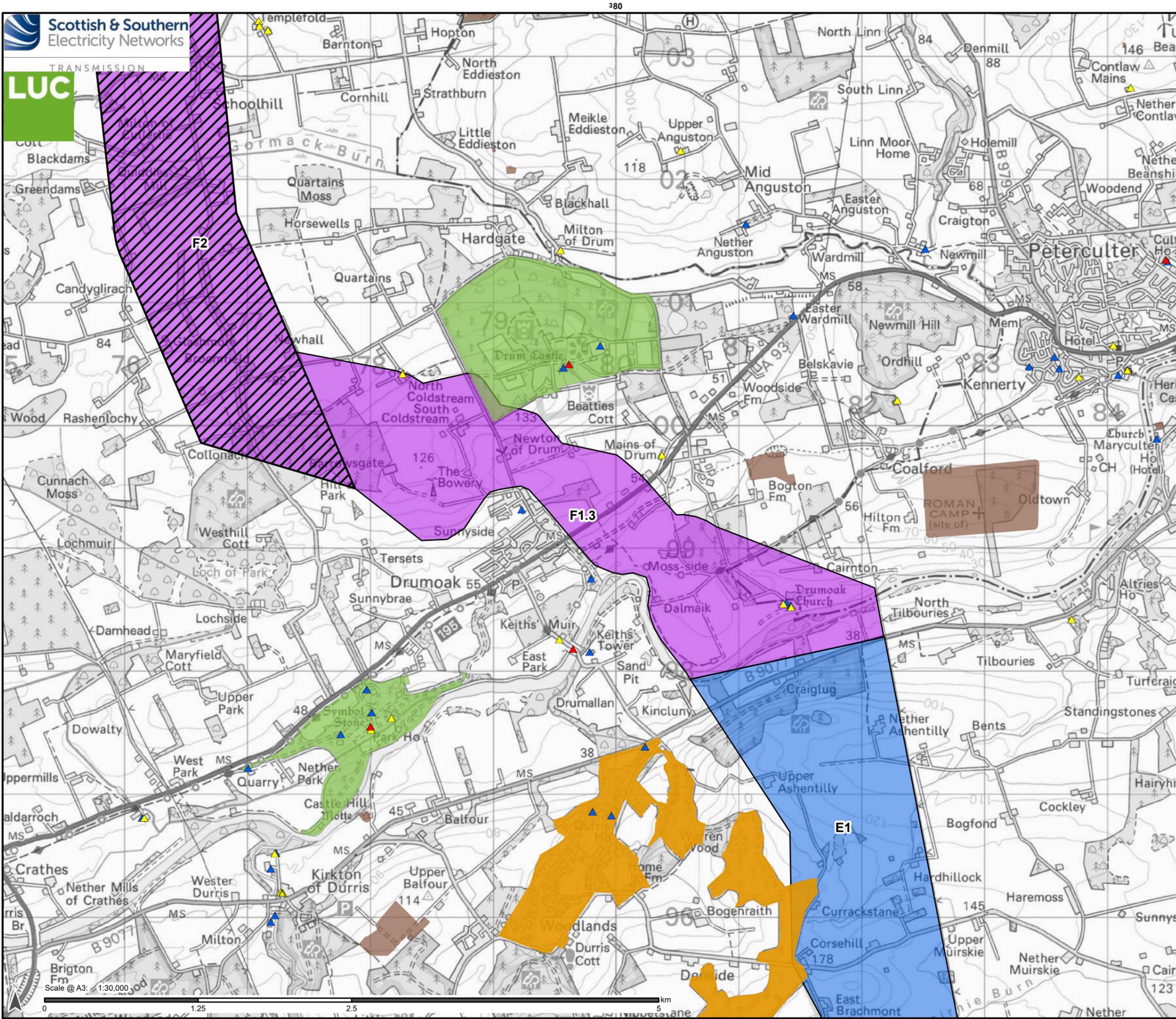
800

380

380000m.E

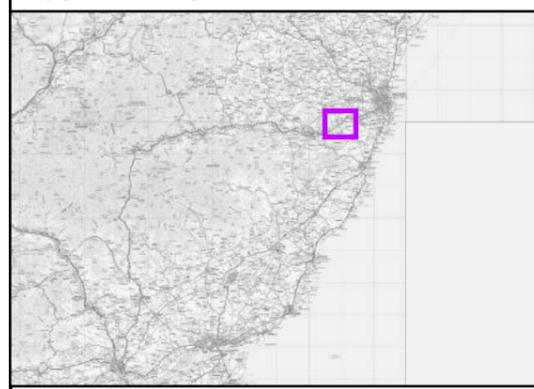
Scale @ A3: 1:30,000





- Proposed Routes**
- E1
 - F2
- Route Options**
- F1.3
- Cultural Heritage Constraints**
- Listed Building
- A
 - B
 - C
- Gardens and Designed Landscape
 - Scheduled Monument
 - Non-Inventory Designed Landscapes (NIDLs)

Contains Historic Environment Scotland and Ordnance Survey data © Historic Environment Scotland - Scottish Charity No. SC045925 © Crown copyright and database right 2023



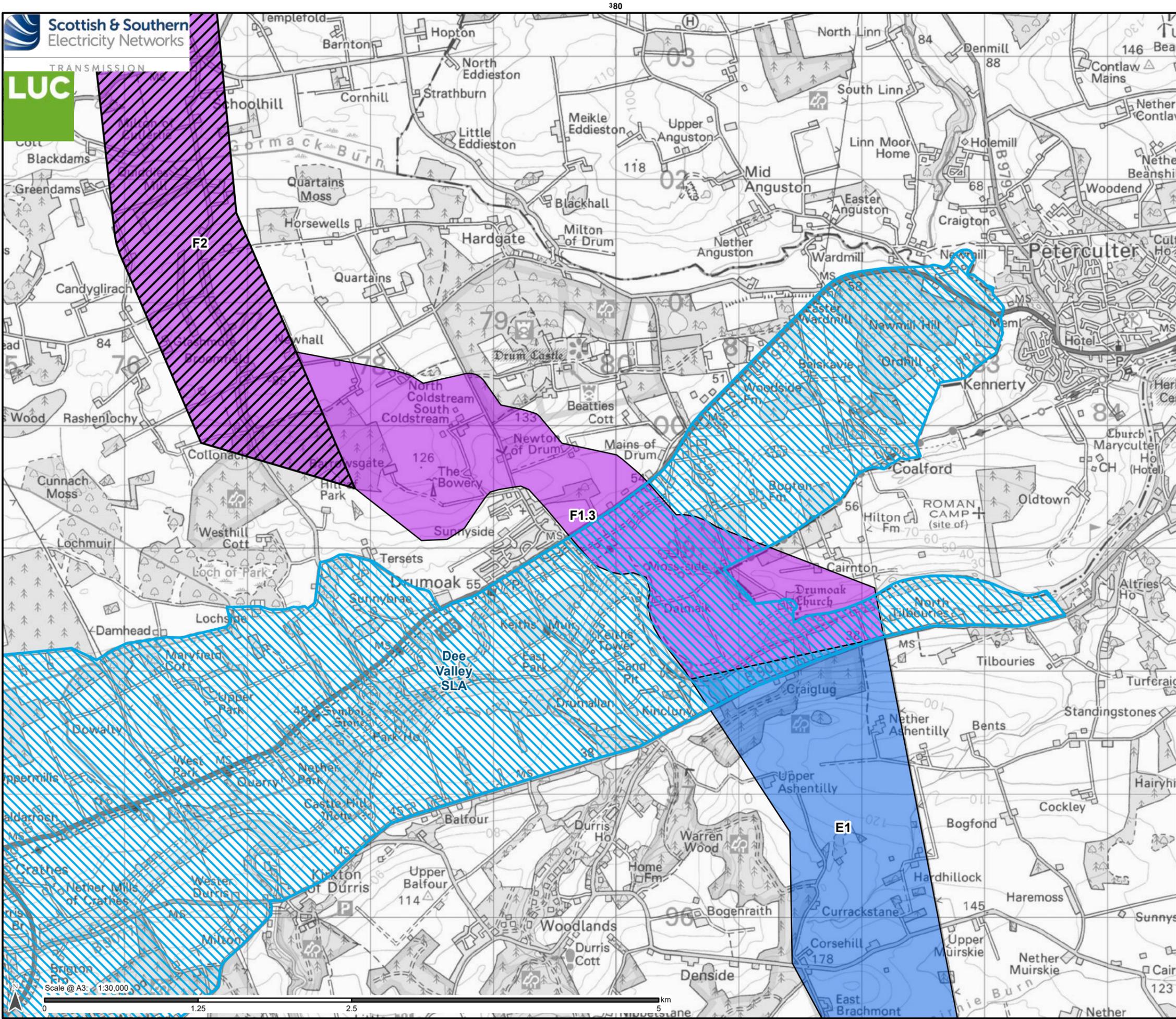
Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Cultural Heritage Constraints - Section F

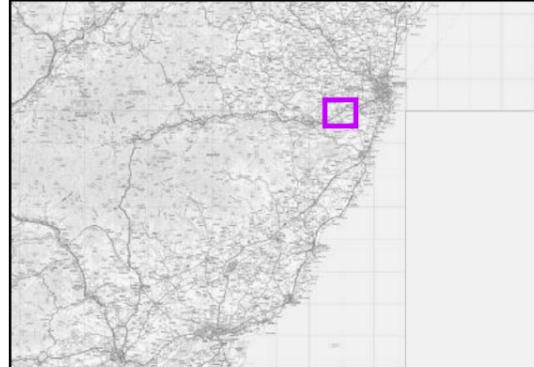
Drawn by: CW
Date: 20/02/2024

Figure: 6.3



- Proposed Routes**
- E1
 - F2
 - F1.3
- Route Options**
- F1.3
- Landscape and Visual Constraints**
- Special Landscape Area (SLA)

Contains public sector information licensed under the Open Government Licence v3.0.



Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Landscape Constraints - Section F

Drawn by: CW
Date: 19/02/2024

Figure: 6.4

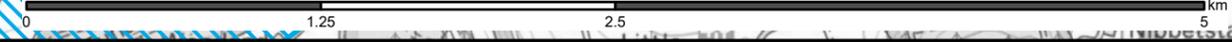
800000m.N

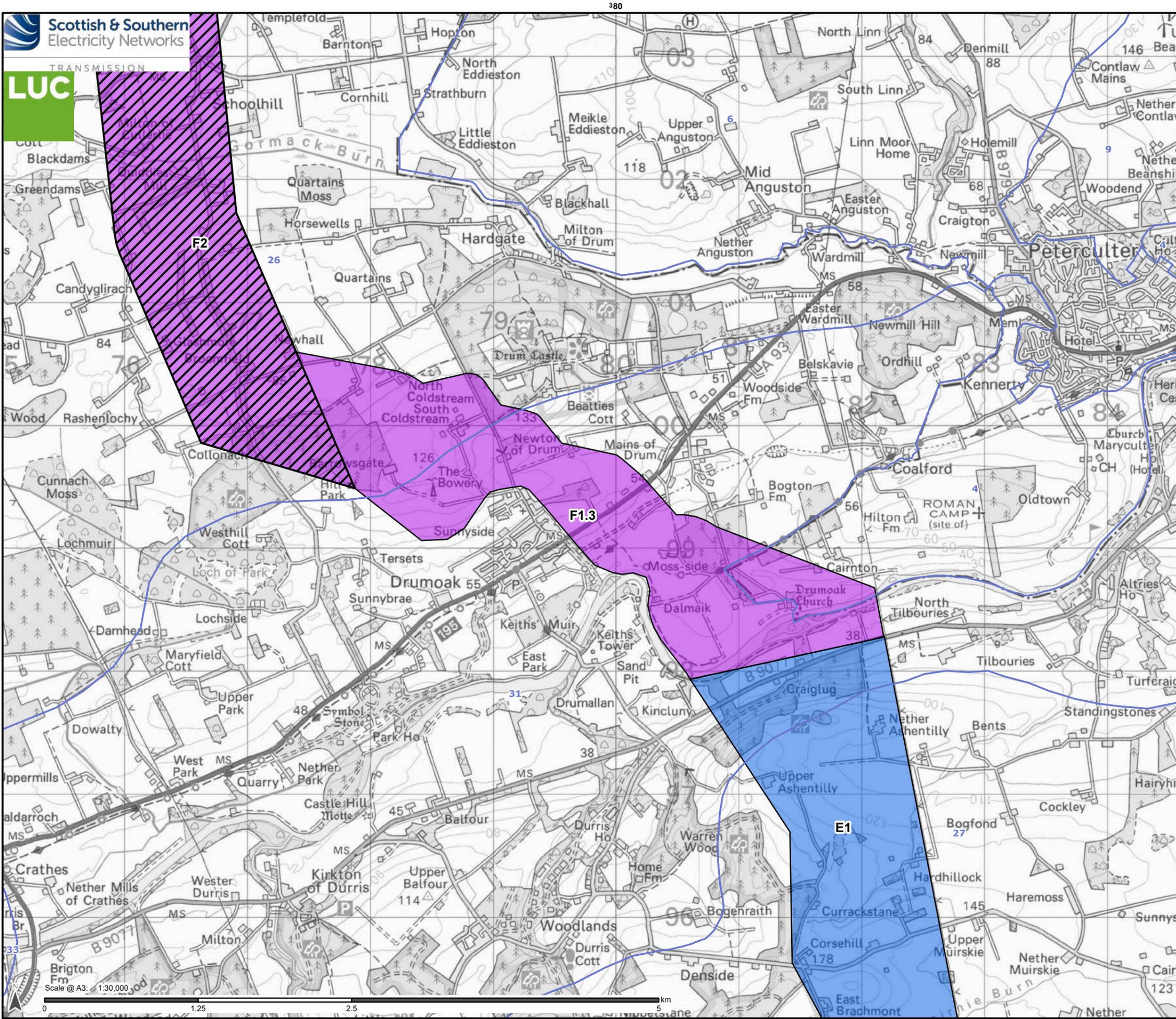
800

380

380000m.E

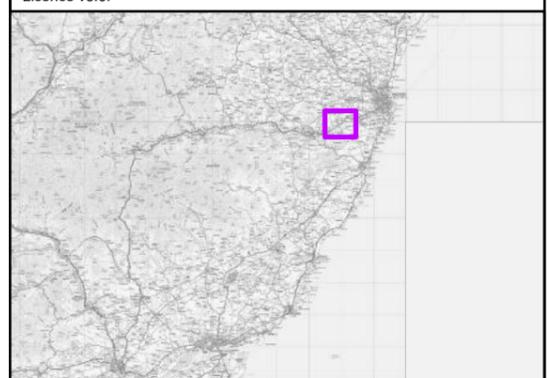
Scale @ A3: 1:30,000





- Proposed Routes**
- E1
 - F2
- Route Options**
- F1.3
- Landscape Character Types**
- 4: River Valley - Aberdeen
 - 6: Undulating Open Farmland
 - 9: Wooded Estates - Aberdeen
 - 26: Wooded Estates - Aberdeenshire
 - 27: Farmed Moorland Edge - Aberdeenshire
 - 31: Broad Wooded and Farmed Valley
 - 33: Broad Wooded Valley with Estates

Contains public sector information licensed under the Open Government Licence v3.0.



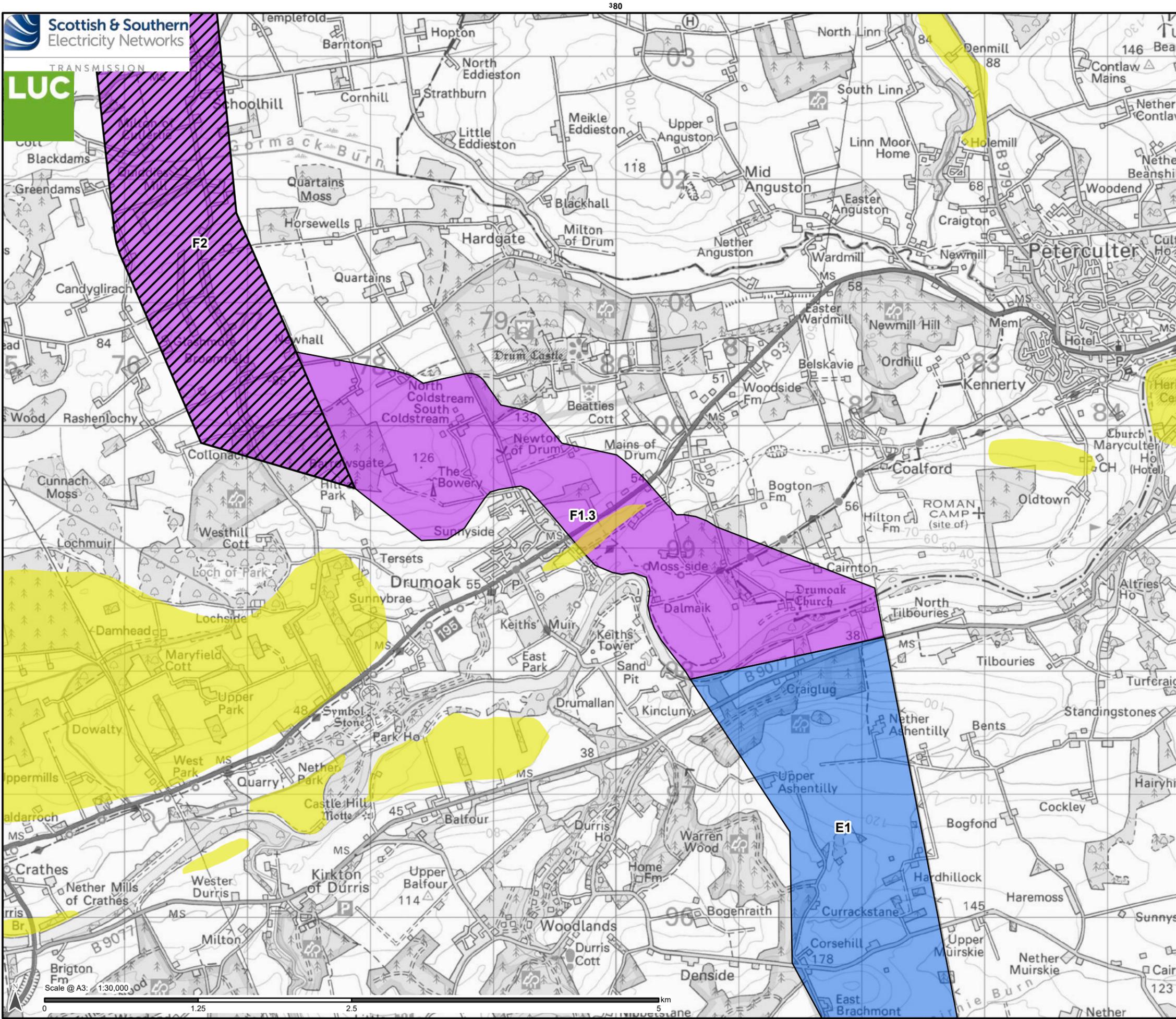
Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Landscape Character Types - Section F

Drawn by: CW Date: 19/02/2024

Figure: 6.5

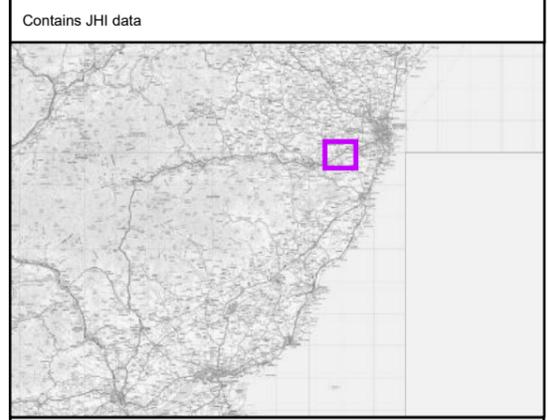


- Proposed Routes**
- E1
 - F2
- Route Options**
- F1.3

Land Capability for Agriculture

3.1 - Land capable of producing consistently high yields of a narrow range of crops and/ or moderate yields of a wider range. Short grass leys are common.

Note: Only classes 1, 2 and 3.1 (collectively prime agricultural land) have been mapped



Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Land Capability for Agriculture Constraints - Section F

Drawn by: CW Date: 19/02/2024

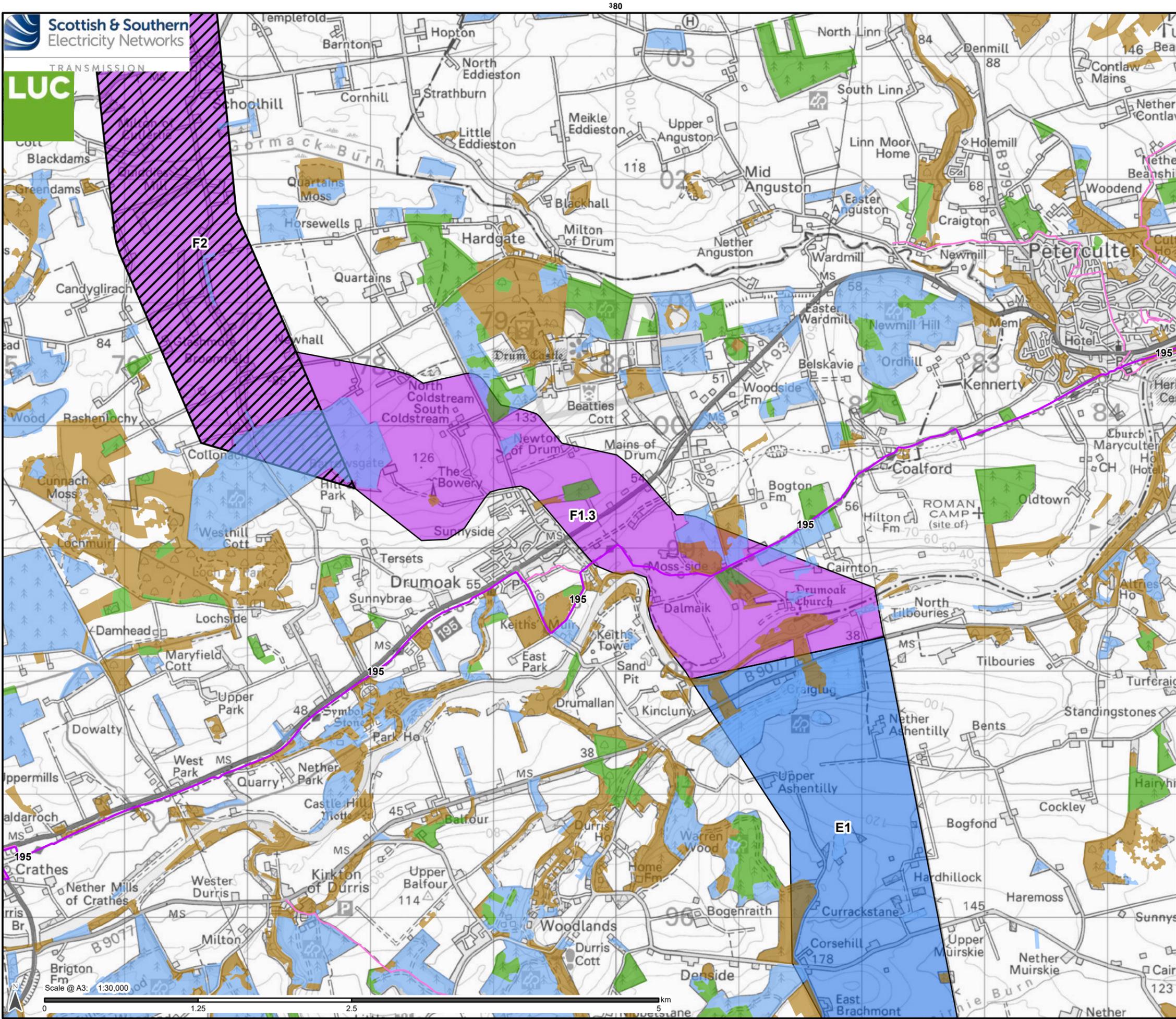
Figure: 6.6

Scottish & Southern Electricity Networks

TRANSMISSION

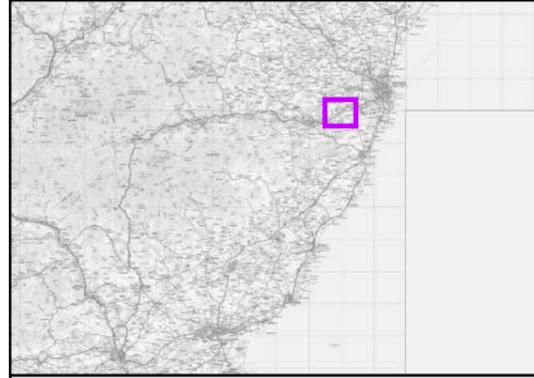
LUC

Scale @ A3: 1:30,000



- Proposed Routes**
- E1
 - F2
- Route Options**
- F1.3
- Land Use Constraints**
- National Forest Inventory
- Broadleaved; Mixed mainly broadleaved; Coppice; Coppice with standards; Young trees; Assumed woodland
 - Conifer; Mixed mainly conifer
 - Other
- Cycle Route
- National Cycle Network (NCN)
- Local Path Networks
- Core path

Sustrans National Cycle Network data contains Ordnance Survey data © Crown copyright and database rights (2023). Contains Forestry Commission information licensed under the Open Government Licence v3.0. Contains LDWA data.



Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Land Use Constraints - Section F

Drawn by: CW Date: 19/02/2024

Figure: 6.7

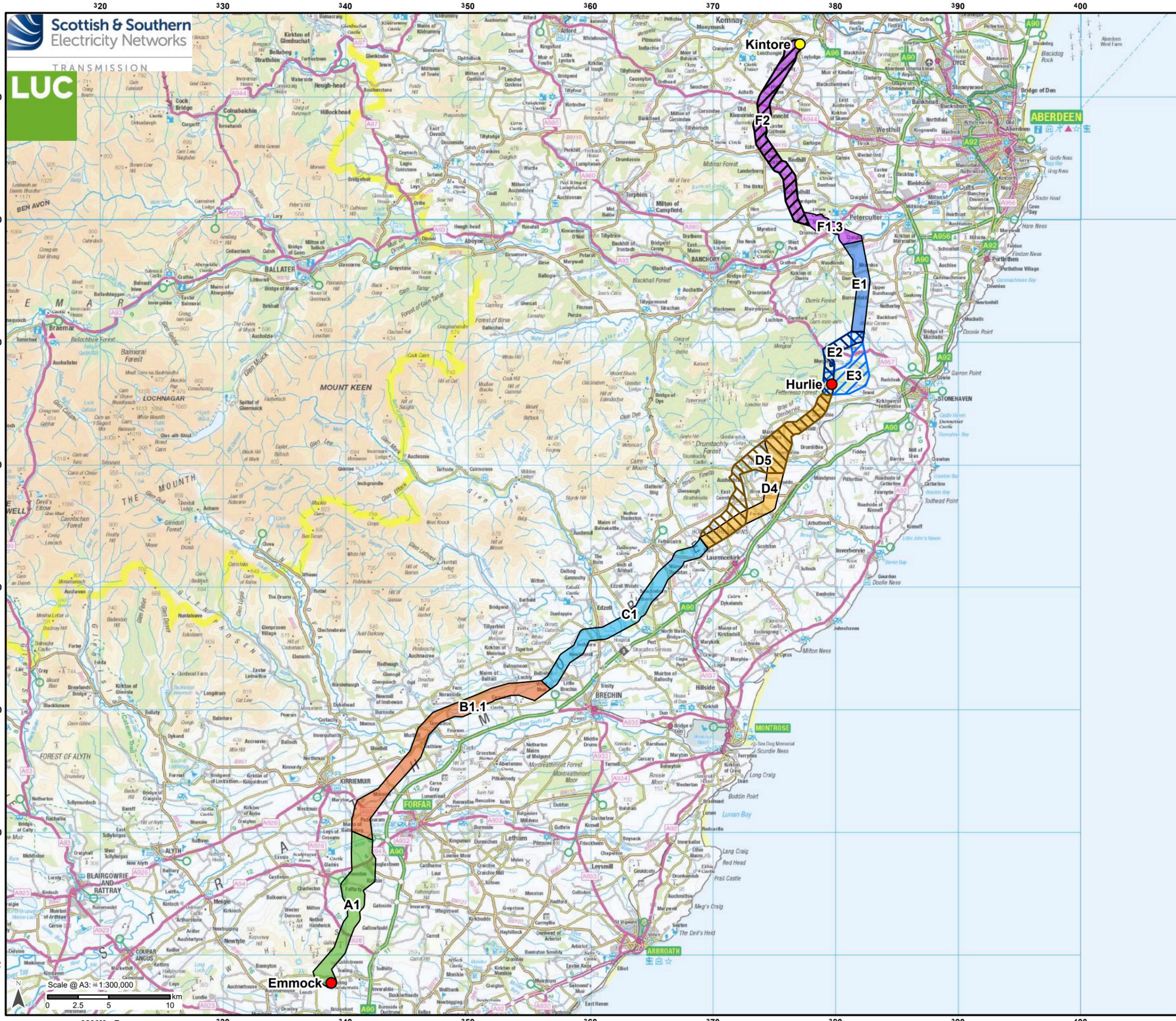
800000m.N

380

380000m.E

Scale @ A3: 1:30,000





Proposed Routes

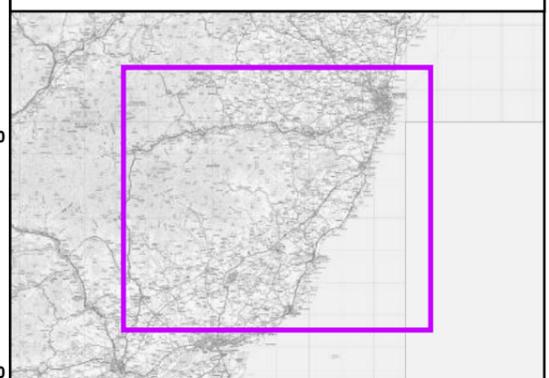
- A1
- B1.1
- C1
- E1
- E2
- E3
- F1.3
- F2

Route Options

- D5
- D4

Substations

- Existing Kintore substation
- Proposed substation



Reproduced by permission of Ordnance Survey on behalf of HMSO. Crown copyright and database right 2024 all rights reserved. Ordnance Survey Licence number 0100022432.

Project No: LT455
Project: Kintore to Tealing 400kV Overhead Line

Title:
Preferred Route (Subject to Feedback)

Drawn by: HW
Date: 19/02/2024
Figure: 6.8