

Section D – Laurencekirk to Hurlie substation

Potential Alignment

The Potential Alignment in Section D (within Route D4) starts to the northwest of Laurencekirk, avoiding clusters of properties as it initially passes through gently undulating farmland. It crosses a number of minor roads in a generally northeastern direction, where it passes between the settlement of Fordoun to the southeast and the village of Auchenblae to the northwest. As the alignment moves further to the northeast, avoiding Auchenblae Conservation Area, it also increases distance from higher ground associated with the Braes of the Means Special Landscape Area (SLA).

The alignment navigates a pinch point of properties and Fordoun Aerodrome and avoids being within key views of a Listed Building at House of Redhall. The alignment then crosses the B966 public road close to the location of commercial sites on land formerly used for a military airfield.

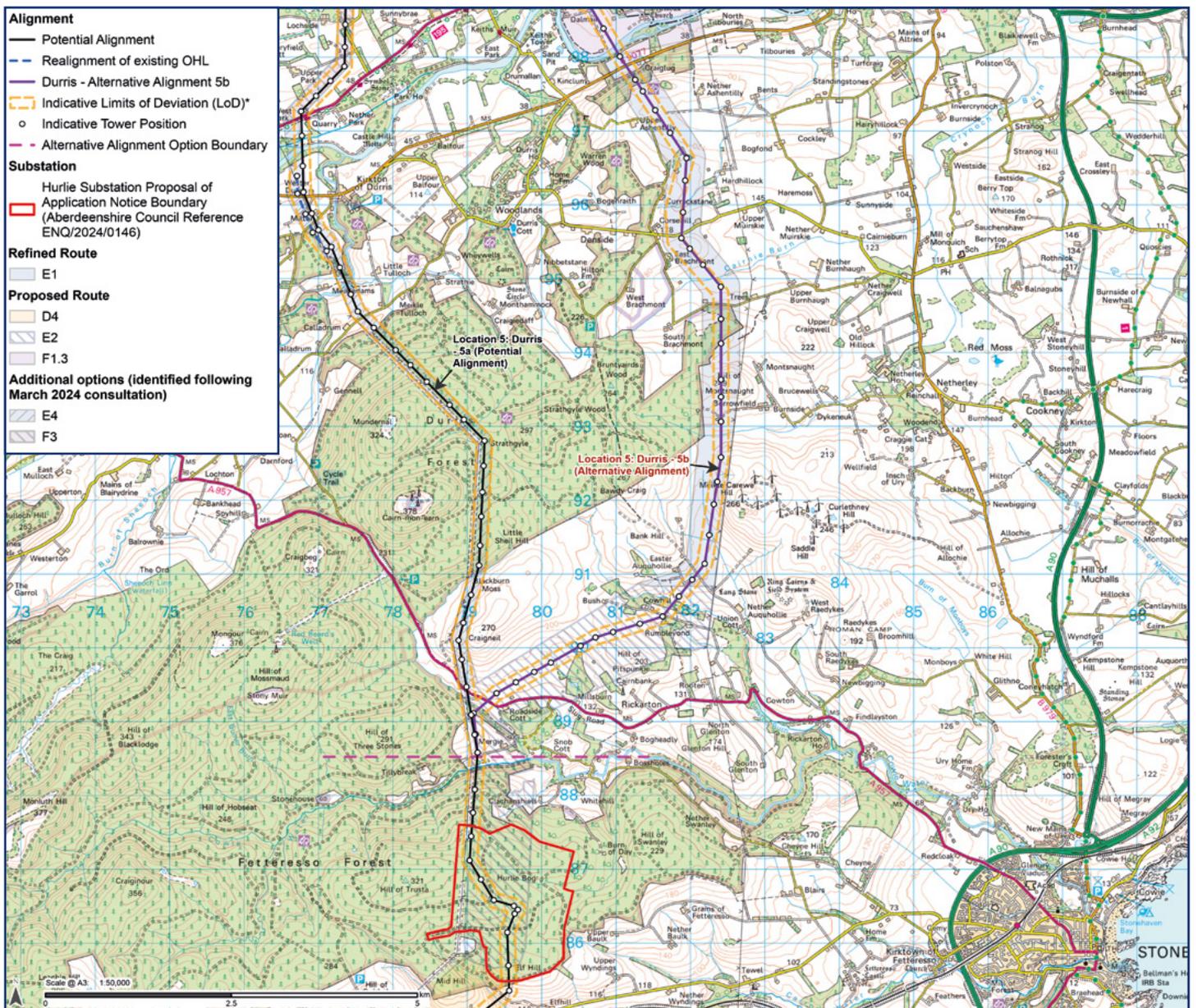
It continues in a northern direction over more undulating topography past the settlement of Monboddoo, crossing the Bervie Water in a valley to the west of Glenbervie village, avoiding Glenbervie Garden and Designed Landscape (GDL). The alignment passes northwards over steeply rising ground following the lower southern and eastern slopes of Droop Hill to avoid complex hydrology and a site with planning permission for a windfarm. At Cotbank, the alignment then follows a northeastern direction through an undulating landscape with several wind turbines, then uphill across a varied and undulating upland landscape with occasional woodland shelterbelts. It then runs steeply uphill towards the site of the new proposed 400kV substation at Hurlie in Fetteresso Forest.

Alternative Alignment Options

Following the identification of route option D4 in the November 2023 Report on Consultation (RoC) (**Kintore to Tealing OHL RoC November 2023**), work began to identify an alignment and possible alternative alignments within route D4 (and route option D5). During the alignment development work, no alternative alignments were identified and a Potential Alignment was designed taking account of the varying technical, land use and environmental constraints throughout Section D. The alignment proposed in D4 offers a technically feasible option and avoids or limits interactions with environmental and community constraints.



Section E – Hurlie substation to River Dee



This leaflet summarises the information provided in the Kintore to Tealing Alignment Consultation Document, which can be found here: ssen-transmission.co.uk/TKUP.

Section E – Hurlie substation to River Dee



Potential Alignment

The Potential Alignment in Section E (within Route E2 and Route E4) begins at the proposed new Hurlie 400 kV substation site in Fetteresso Forest and passes in a northern direction through Fetteresso Forest and then over high ground at Craigneil Hill and Durriss Forest following the line of an existing 275 kV OHL to the immediate west of the alignment. The alignment then continues in a northern direction to the west of the village of Kirkton of Durriss before crossing the River Dee north of Wester Durriss. The Potential Alignment crosses the A93 Aberdeen to Banchory public road between West Park and Nether Park and to the west of Park House Garden and Designed Landscape (GDL) before following a northerly course over gently rising ground adjacent to the Loch of Park Site of Special Scientific Interest (SSSI) (which would be avoided to the west of the alignment) and continuing through to Coldstream Plantation¹.

Alternative Alignment Options

There is one location where Alternative Alignments have been considered in Section E; at Location 5: Durriss (two alternatives). The key environmental, technical and cost considerations which differentiate between Alternative Alignment 5a (Potential Alignment) and Alternative Alignment 5b include:

Environmental

- Both alternative alignments are likely to have groundwater dependent terrestrial ecosystem (GWDTE), however due to locations and extents, there is more flexibility to avoid these areas in Alternative Alignment 5b.
- The 480 metre wide floodplain extent of the River Dee cannot be spanned between adjacent OHL towers where Alternative Alignment 5a crosses the watercourse, which may compromise the quality and/or quantity of surface waters. In comparison, Alternative Alignment 5b is less likely to result in impacts to water flow pathways to surface and groundwater due to the shorter span required to cross the floodplain.
- Although the alternative alignments are considered to have similar constraints in relation to ornithology, there is a larger extent of suitable habitat for certain birds of conservation concern (BoCC), such as waders, in Alternative Alignment 5b in comparison to the Alternative Alignment 5a.
- Alternative Alignment 5a is located closer to Park House GDL than Alignment 5b, however it is further from Drum Castle

¹ The Potential Alignment described from the River Dee crossing to Coldstream Plantation is located in Section F of the Proposed Route for the OHL. It is included in this handout for Section E because the Alternative Alignments appraised in Section E both continue for approximately 4km into Section F before meeting at a common point northwest of Drumoak. The appraisal of these alternatives has been undertaken from their common points at Hurlie (in the south) and Coldstream Plantation (in the north) to facilitate an objective comparison and irrespective of the Route sections in which they are located. A separate handout is available for Section F at ssen-transmission.co.uk/TKUP.

GDL and the associated Category A Listed Building at Drum Castle, which are key constraints for Alternative Alignment 5b (see also separate handout on Section F available at: ssen-transmission.co.uk/TKUP).

- Alternative Alignment 5b is located closer to a larger number and density of residential properties, particularly at Drumoak (including a primary school), than Alternative Alignment 5a, and therefore is considered to be more constrained in relation to proximity to dwellings, sensitive receptors, views and visual amenity.

Technical

- Alternative Alignment 5b has a significantly higher interaction with high pressure gas pipelines in comparison to Alternative 5a and will require more mitigation to resolve interference through induced voltage. Both alternative alignments cross two A-roads and the River Dee, with similar constraints associated with these crossings. Alternative Alignment 5a would require realignment of the existing Kintore - Fetteresso OHL, which would include network outages.
- Alternative Alignment 5a passes through a wider area of surface and river flood risk, however it is expected that tower micro-siting and mitigation will sufficiently manage any risks associated with tower installation in these areas.
- Alternative Alignment 5b has a significantly higher number of angle structures (towers) overall, is a longer route and is close to a higher number of properties throughout the route than Alternative Alignment 5a.

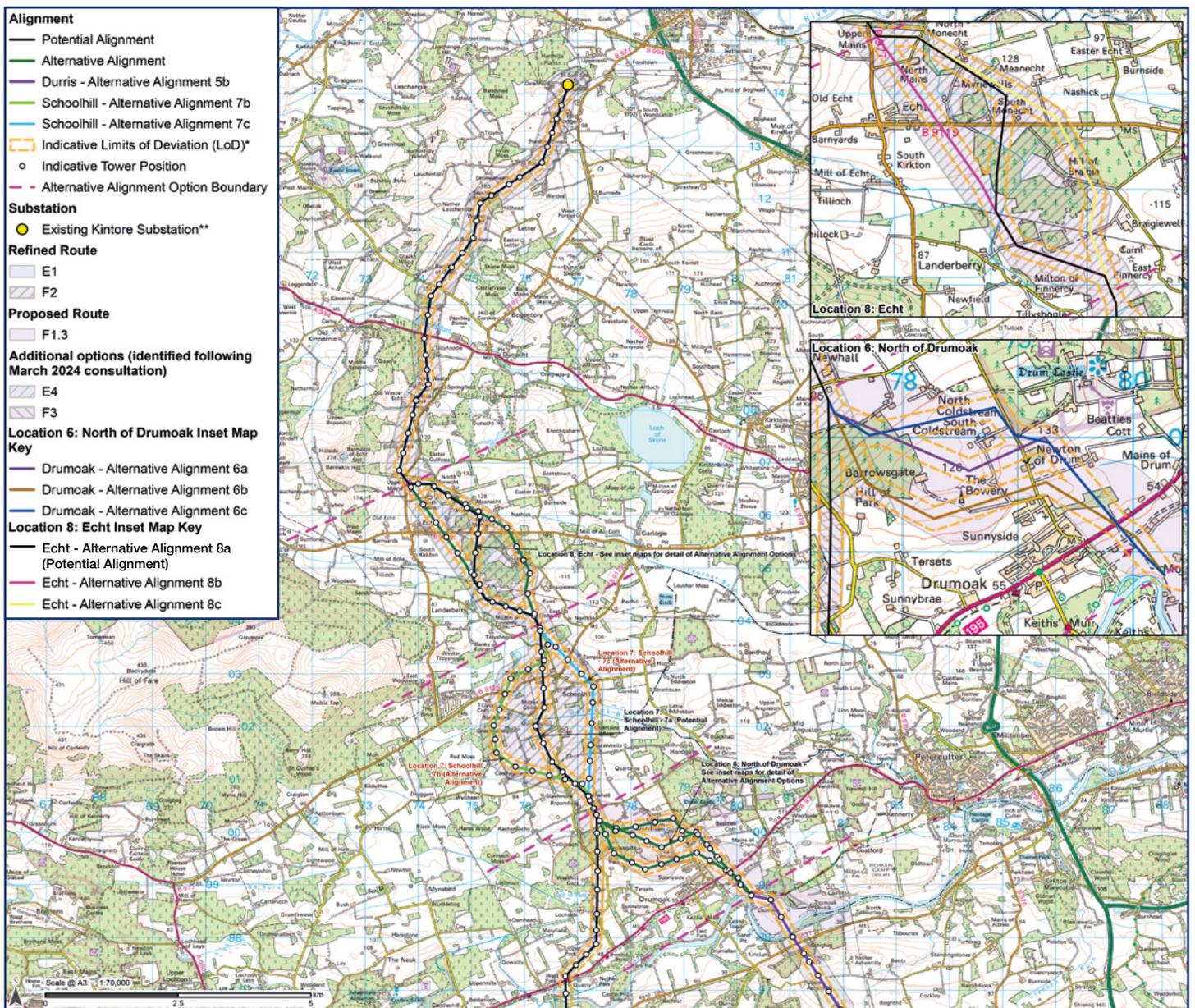
Cost

- Alternative Alignment 5a has a marginally lower cost than Alternative Alignment 5b principally due to its shorter length.

Conclusion

Alternative Alignment 5a has been taken forward as the Potential Alignment over Alternative Alignment 5b as it is less constrained technically however it would involve realignment of the existing Kintore – Fetteresso OHL (currently being updated from 275 kV to 400 kV) which is technically complex. Alternative Alignment 5a is also the lower cost of the two alignment options considered. There is no clear overall preference across the various environmental criteria which have been appraised. Alternative Alignment 5a would be located close to fewer residential properties than Alternative Alignment 5b and is therefore less constrained in relation to proximity to dwellings, sensitive receptors, and visual amenity.

Section F – River Dee to Kintore



This leaflet summarises the information provided in the Kintore to Tealing Alignment Consultation Document, which can be found here: ssen-transmission.co.uk/TKUP.

Potential Alignment

The Potential Alignment in Section F (within Route F2 and F3) begins north of the River Dee having crossed at Wester Durris. The alignment crosses the A93 Aberdeen to Banchory public road between West Park and Nether Park, avoiding Park House Garden and Designed Landscape (GDL), before following a northerly course over gently rising ground adjacent to the Loch of Park Site of Special Scientific Interest (SSSI) (which would be avoided to the west of the alignment) and continuing through to Coldstream Plantation.

The alignment then follows a course in a north-northwestern direction crossing the B9125 public road to the west of the settlement of Schoolhill and passing to the east of the village of Echt, where it also crosses the B9119 public road. The alignment then follows a generally northeastern direction to the east of the prominent high ground of Barmekin Hill Fort Scheduled Monument, with its summit hilltop and parallel to the Dunecht Garden and Designed Landscape (GDL), with the Loch of Skene Special Protection Area (SPA)/SSSI/Ramsar site located further to the east. The alignment crosses the A944 Westhill to Alford public road on undulating ground to the west of Dunecht village and passes through an open agricultural landscape with occasional plantations for 5 kilometres before connecting with the existing Kintore Substation at the northern end of the section.

Alternative Alignment Options

There are three locations where Alternative Alignments have been considered in Section F; Location 6: North of Drumoak (three alternatives), Location 7: Schoolhill (three alternatives) and Location 8: Echt (three alternatives). The Alternative Alignments in Location 5: Durris are discussed in the separate handout for Section E, because whilst the northern end of these options lie within Section F, they are predominantly located in Section E (see separate handout on Section E available at ssen-transmission.co.uk/TKUP).

Section F Location 6 – North of Drumoak

The key environmental, technical and cost considerations which differentiate between Alternative Alignments 6a (the Potential Alignment), 6b and 6c North of Drumoak include:

Environmental

- Alternative Alignment 6a does not cross any wide floodplain areas, watercourses, known Private Water Supply (PWS) sources or known abstractions, however Alternative Alignments 6b and 6c are both constrained by potential PWS abstraction sources.
- All alternative alignments pass close to Drum Castle Garden and Designed Landscape (GDL) and within 2 kilometres of two Scheduled Monuments (Bogton Cairn, Field System and Trackway and Normandykes Roman Camp). Alternative Alignment 6c would cut across the southwest corner of the GDL and would disturb an area of ancient woodland. It would adversely impact upon the setting of the designated area and potentially on views from the nearby Category A listed Drum Castle. Although Alternative Alignment 6a and Alternative Alignment 6b may also compromise the setting of Drum Castle, they would be less likely to be visible in key views of the Castle compared to Alternative Alignment 6c.
- Alternative Alignment 6a is located at a greater distance from the settlement of Drumoak than Alternative Alignment 6b and is considered to have lower potential for changes to landscape character and woodland loss than Alternative Alignment 6c.

Technical

- All alternative alignments cross a number of major high pressure gas pipelines which would require mitigation to resolve interference through induced voltage. They also cross the A93 public road which would require mitigation.
- Alternative Alignment 6a and Alternative Alignment 6c require angle towers with steeper angles, with Alternative Alignment 6b requiring more towers, but with less steep angles. Alternative Alignment 6b has the highest number of residential properties in close proximity and also passes close to two communications masts on the hillside above Drumoak.

Cost

- There is no significant cost difference between the alternative alignments. Alternative Alignment 6a (the Potential Alignment) and Alternative Alignment 6c are slightly shorter in length than Alternative Alignment 6b but have additional angle tower requirements which include steeper angle structures.

Conclusion

Alternative Alignment 6a is considered to be the least constrained option from an environmental perspective. The technical preference is Alternative Alignment 6b due to having less steeper angle structures required. There is no significant difference in cost between the options. Alternative Alignment 6a would be taken forward as part of the Potential Alignment should Alternative Alignment 5b proceed instead of Alternative Alignment 5a at Location 5 Durris (see separate handout on Section E available at ssen-transmission.co.uk/TKUP).



Section F Location 7 – Schoolhill

The key environmental, technical and cost considerations which differentiate between Alternative Alignments 7a (the Potential Alignment), 7b and 7c at Schoolhill include:

Environmental

- Alternative Alignment 7b is constrained by Candyglirach Local Nature Conservation Site (LNCS) where some tree felling would be required to install an OHL. The other two alternative alignments would not be constrained by this site.
- Although all alternative alignments cross watercourses and the floodplain of the Gormack Burn, there is more opportunity in Alternative Alignment 7a to avoid the flood risk area and associated watercourses.
- Alternative Alignment 7b has the potential to compromise the setting of two Scheduled Monuments, at Tillyhorn Moated Homestead and East Finnercy Cairn, to a greater extent than Alternative Alignment 7a and Alternative Alignment 7c due to its closer proximity.
- The effects of woodland loss associated with Alternative Alignment 7b would have greater constraints on landscape character than for the other two alternatives.

Technical

- All alignments cross flood risk zones, however Alternative Alignment 7a could be designed to span the floodplain whereas Alternative Alignments 7b and 7c would require towers to be sited within the floodplain.
- Alternative Alignment 7c requires a greater number of angle towers than the other options. All alternative alignments cross high pressure gas pipelines, however Alternative Alignment 7b crosses them at a preferable angle, compared to Alternative Alignment 7a and Alternative Alignment 7c which have a higher likelihood of requiring mitigation to resolve interference through induced voltage.

Cost

- Alternative Alignment 7a (the Potential Alignment) presents the lowest cost due to overall length and number of tower structures.



Conclusion

Alternative Alignment 7a is considered to be least constrained from both an environmental and engineering perspective and is the lowest cost option. It has therefore been selected to form part of the Potential Alignment.



Section F Location 8 – Echt

The key environmental, technical and cost considerations which differentiate between Alternative Alignments 8a (the Potential Alignment), 8b and 8c at Echt include:

Environmental

- Although Alternative Alignment 8b has towers situated in the flood risk areas near Landerberry, there are opportunities to microsite towers outwith these areas. There are no associated sensitive habitats constraining the alignment. Alternative Alignment 8b intersects fewer areas of long-established woodlands of plantation origin (LEPO) in comparison to Alternative Alignment 8a and 8c and it is less constrained generally in relation to habitat sensitivity and biodiversity.
- All alternative alignments pass close to the southwestern edge of Dunecht House Garden and Designed Landscape (GDL). However, there is considered to be flexibility to position the alignments to avoid any direct impact on the designated area. Alternative Alignments 8a and 8b follow a course for a slightly greater distance than Alignment 8c to the south of the GDL.
- Alternative Alignment 8b is located closer to a larger number and density of residential properties at Echt (which includes a primary school), than Alternative Alignments 8a and 8c, and therefore is considered to be more constrained in relation to proximity to dwellings, sensitive receptors and visual amenity. There are also more sensitive visual residential receptors with potential views of an OHL for Alternative Alignment 8b, especially in the vicinity of Echt village, when compared to the other two alternative alignments.
- Alternative Alignment 8b partially intersects the boundary of a planning application within the northeast part of Echt village for 25 dwelling houses. There is limited flexibility to avoid this constraint and achieve, as far as possible, the target distance of 170 m between the OHL and the planned residential properties. Alternative Alignment 8a and Alternative Alignment 8c do not cross any locations with proposed or consented planning applications.

Technical

- All alternative alignments cross an existing 132kV overhead line near Landerberry which would require modification to both the existing and proposed OHL circuits to ensure they are easily maintained in the future. All alternative alignments also cross the B9119 public road which would require careful management during construction.
- Alternative Alignment 8b passes through more watercourse and surface water flood risk areas compared to Alternative Alignment 8a and Alternative Alignment 8c. However, it is expected that during micro-siting no towers would need to be situated within the flood risk areas.

- Alternative Alignments 8a and 8c have a larger number of angle towers in total. This is technically more challenging from a constructability and maintainability perspective.
- Alternative Alignment 8b passes between the residential properties at Echt and South Monecht whereas Alternative Alignments 8a and 8c push the alignment further to the east, reducing the number of properties it interfaces with.
- None of the alternative alignments cross any high pressure gas pipelines, however Alternative Alignment 8c does run in parallel for approximately 1 kilometre which would require mitigation to resolve interference through induced voltage.

Cost

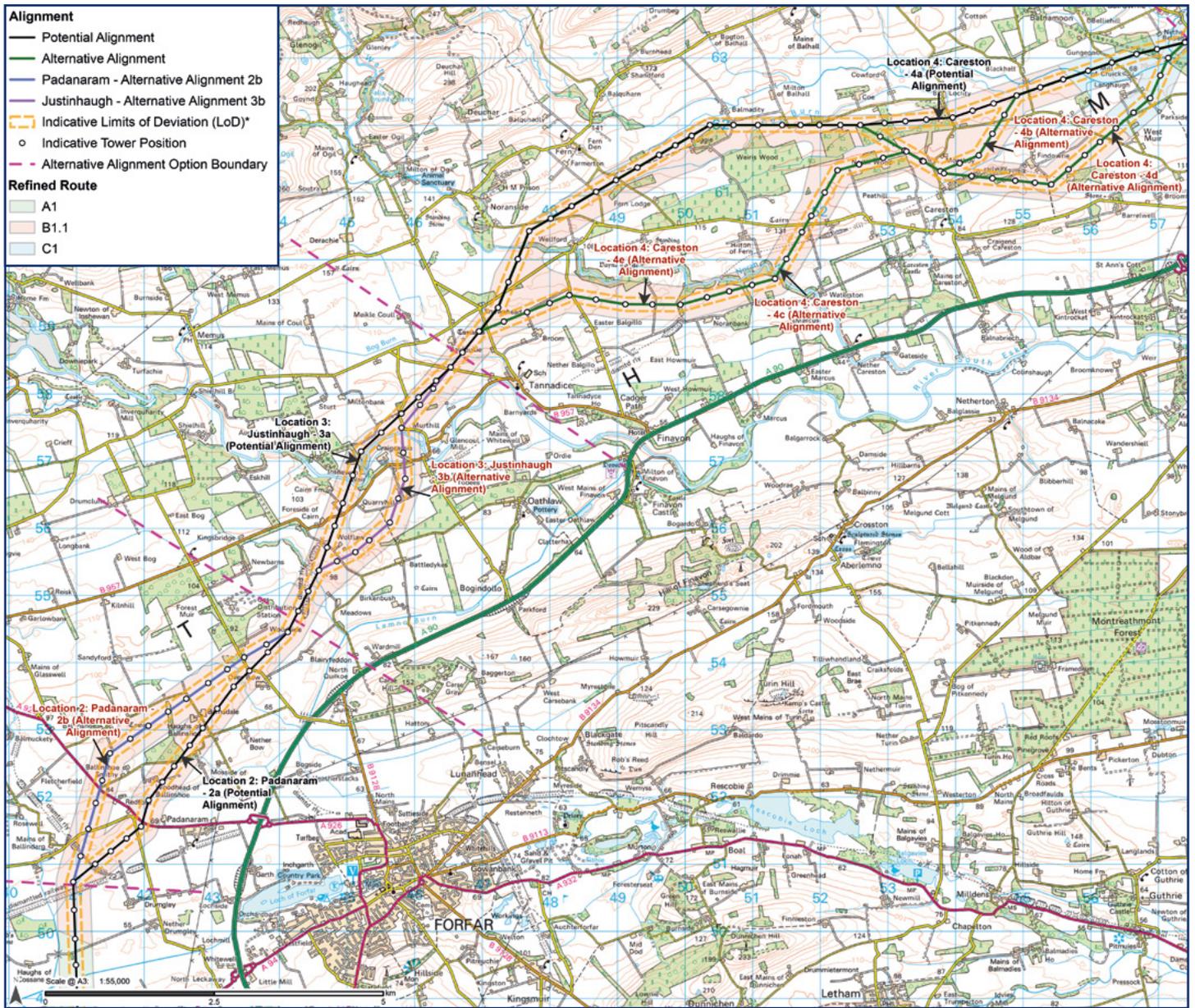
- Alternative Alignment 8b is the preferred alignment option from a cost perspective as it is the lowest cost with the lowest number of towers.

Conclusion

Alternative Alignment 8a is not considered to be the least constrained option from a technical and environmental perspective across all criteria. Alternative Alignment 8a would however be located close to fewer residential properties than Alternative Alignment 8b and is therefore less constrained in relation to proximity to communities, sensitive receptors, and visual amenity. On balance, Alternative Alignment 8a has therefore been taken forward as part of the Potential Alignment. Opportunities to mitigate environmental effects will be progressed through the detailed design and EIA.



Section B – Forfar to Brechin



Please also see additional figures overleaf showing the five alternative alignment options at Location 4 Careston.

This leaflet summarises the information provided in the Kintore to Tealing Alignment Consultation Document, which can be found here: ssen-transmission.co.uk/TKUP.

Section B – Forfar to Brechin

Location 4: Careston Potential Alignment 4a



Location 4: Careston Alternative Alignment 4b



Location 4: Careston Alternative Alignment 4c



Location 4: Careston Alternative Alignment 4d



Location 4: Careston Alternative Alignment 4e




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Potential Alignment

The Potential Alignment in Section B (within Route B1.1) starts to the west of Forfar and initially passes in a northeast direction to the west of the settlement of Padanaram, and south of the Scheduled Monument at Ballinshoe Castle, spanning the Woodside Local Nature Conservation Site (LNCS) at its narrowest section. The alignment then crosses the A926 and B957 public roads and spans the River South Esk (a Special Area of Conservation designated for protected aquatic species) to the west of Justinhaugh Bridge.

The alignment continues to the northeast passing approximately 1 kilometre to the west of Tannadice village and crosses the Noran Water to the west of the settlement of Wellford, spanning a strip of ancient woodland on the banks of the river. The alignment continues in a northeastern direction to the north of Roughmount Wood and Weiris Wood then following a southeasterly course through Duns Wood and Lochty Wood past the settlement of Careston, located approximately 1.5 kilometres to the south of the alignment. The alignment continues in a northeastern direction across largely open agricultural land avoiding clusters of properties in the vicinity of Findowrie as it passes towards Little Brechin Wood into Section C.

Alternative Alignment Options

There are three locations where Alternative Alignments have been considered in Section B; at Location 2: Padanaram (two alternatives), Location 3: Justinhaugh (two alternatives) and Location 4: Careston (five alternatives).

Section B Location 2 – Padanaram

The key environmental, technical and cost considerations which differentiate between Alternative Alignment 2a (the Potential Alignment) and 2b at Padanaram include:

Environmental

- Both alignments cross some small areas of woodland, however it is considered that Alternative Alignment 2a offers greater opportunity than Alternative Alignment 2b to minimise the potential for felling through the southern edge of Forrestmuir Wood, which is also part of the Woodside LNCS. However Alternative Alignment 2a is slightly more constrained by long-established woodlands of plantation origin (LEPO) than Alternative Alignment 2b.
- Although both Alternative Alignments 2a and 2b avoid direct interaction with designated cultural heritage assets, Alternative 2b is considered to compromise the setting of two Scheduled Monuments, Ballinshoe Castle and Fletcherfield Enclosure. Whilst Alternative Alignment 2a would have some potential to compromise the setting of Ballinshoe Castle, it would be located further from the Scheduled Monument than Alternative Alignment 2b.
- Although the alternative alignments are considered to be similarly constrained for proximity to properties, Alternative Alignment 2a offers greater flexibility to ensure the OHL is located beyond 200 metres from residential properties. Alternative Alignment 2a also offers greater flexibility to locate the OHL further from sensitive visual receptors.
- Alternative Alignment 2b crosses an area of coniferous plantation woodland near Haughs of Ballinshoe which is slightly less preferred compared to Alternative Alignment 2a, which avoids interaction with areas of commercial forestry.

Technical

- Both alternative alignments would require towers to be situated within a floodplain, however Alternative Alignment 2b represents a higher technical risk. Alternative Alignment 2b maintains lower angles in comparison to Alternative Alignment 2a but runs in parallel with a high-pressure gas pipeline for a significant length which increases the mitigation required to resolve interference through induced voltage.

Cost

- Alternative Alignment 2a represents the marginally lower cost option primarily due to the overall length being shorter and requiring fewer towers.

Conclusion

Alternative Alignment 2a is considered to be least constrained from both an environmental and technical perspective and is the lower cost option. It has therefore been selected to form part of the Potential Alignment.

Section B Location 3 – Justinhaugh

The key environmental, technical and cost considerations which differentiate between Alternative Alignments 3a (Potential Alignment) and 3b at Justinhaugh include:

Environmental

- Both alternative alignments cross areas of riparian woodland along the River South Esk, a designated Special Area of Conservation (SAC), however Alternative Alignment 3b is assessed as being more constrained in relation to habitat biodiversity than Alternative Alignment 3a. Tower sizing and micrositing will help mitigate ecological constraints at the river crossing from construction, as well as reducing tree felling required of the riparian woodland.
- Alternative Alignment 3b cannot avoid the placement of towers in the 200-year future flood extent of the River South Esk, there is therefore greater potential for this alignment to compromise quality and/or quantity of surface or groundwater.
- Alternative Alignment 3a intersects the southeastern edge of Inshewan House Non-Inventory Designed Landscape (NIDL), however as this part of the designed landscape comprises open arable farmland without key designated features, an OHL alignment here could be located away from the core elements of the NIDL and would not intrude into key views from the House.
- Alternative Alignment 3b passes over an undulating elevated landform to the northwest of Battledykes, where the visual prominence of the OHL and its intervisibility with the surrounding area would be increased representing a slightly greater landscape and visual constraint than for Alternative Alignment 3a.

Technical

- Alternative Alignment 3b has a higher number of angle structures, which results in a technically more challenging alignment in terms of construction and operation, as well as a higher land take per tower. Alternative Alignment 3b also has more challenging crossing points with existing infrastructure and environmental aspects when considering the river and roads in the area.
- Both alternative alignments cross and are close to the River South Esk, which also has an associated flood risk, adding complexity to the constructability. However, Alternative Alignment 3a parallels these banks as well as crossing them, potentially increasing the associated risk of erosion.
- Alternative Alignment 3b crosses a high-pressure pipeline twice and runs in parallel with this pipeline for a longer distance than Alternative Alignment 3a, which will likely increase the mitigation required to resolve interference through induced voltage. There are some steep slopes associated with Alternative Alignment 3a which may increase the risk of constructability.

Cost

- There is no clear difference in relation to the estimated cost of the alternative alignments.

Conclusion

Alternative Alignment 3a is considered to be least constrained from both an environmental and engineering perspective and there is no clear difference in cost. It has therefore been selected to form part of the Potential Alignment.

