

**08.**

**Detailed  
Routeing –  
Route Options**

## 8. Detailed Routeing – Route Options

### 8.1 Identification of Route Options

Route options have been developed taking account of the appraisal of Strategic Route Corridors as well as the potential substation sites. The identification of route options has focused on those route corridor and site options identified in Table 15 and illustrated in Figure 14.

*Table 15 Options taken forward from Strategic Routeing and Substation Siting*

Substations sites taken forward	Route Corridors and Links taken forward
• Substation site TEV-01	• Route Corridor A
• Substation site TEV-02	• Route Corridor C
• Substation site TEV-03	• Route Corridor D
• Substation site TEV-05	• Corridor Link A-B.1
• Substation site TEV-06	• Corridor Link A-B.2

Route options are narrower corridors within the Strategic Route Corridors which are considered to provide opportunities to develop a continuous OHL route. The route options have been identified having regard to the routeing objectives and considerations described in section 5 and Appendix F. Given the potential length of route options, for ease of identification and appraisal they have been split into four sections illustrated on Figure 14 and outlined below:

- Section A Proposed Gala North Substation to River Tweed
- Section B River Tweed to the A7
- Section C A7 to new Teviot Substation
- Section D New Teviot Substation to Scotland-England border

The identification and appraisal of route options considers:

- **Route options:** these are relatively narrow corridors routed wholly or partly through a section and within which a detailed OHL could be developed.
- **Route links:** these are relatively narrow corridors which connect route options and provide some flexibility for how routeing considerations are addressed within a section.

**PROJECT**  
Cross Border Connection -  
Gala North Substation to Border

**CLIENT**  
SP Energy Networks

**KEY**  
Study  
Potential Substation Site  
Route Option Section  
A  
B  
C  
D

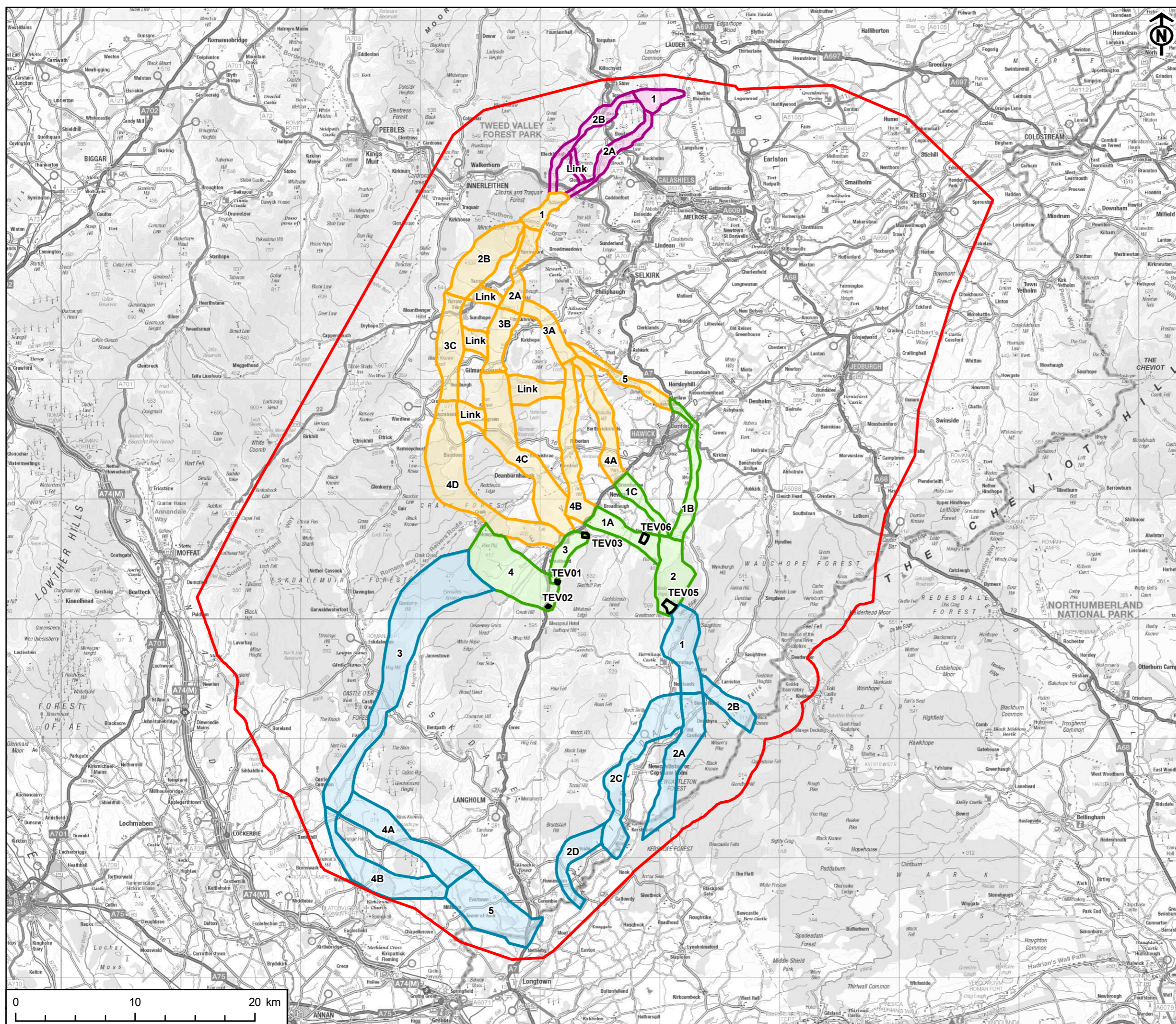
**TITLE**  
Figure 14  
Route Options and Substation Sites

**REFERENCE**  
GH\_20240827\_RS\_14\_v1

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## 8.2 Appraisal of Route Options (Section A)

### Overview of Section A - Proposed Gala North Substation to the River Tweed

Section A extends from the proposed Gala North Substation to the River Tweed. The proposed substation is located adjacent to C77 Lauder-Galashiels Road approximately 4km southwest of Lauder. From here Section A extends southwards over undulating uplands to the River Tweed valley.

The following sections summarise the appraisal of route options and route links within Section A. These are illustrated in Figure 15. A more detailed appraisal of the route options and links taking account of the routeing and siting objectives and considerations is contained in Appendix H (Table H.1).

### Section A -Route Option 1

Route Option 1 is required for any route west out of the proposed Gala North Substation to the River Tweed. It is routed west/southwest from the proposed substation towards the existing Long Park Wind Farm. The option gradually widens as it heads west allowing for onwards options passing to the north and west or east and south of the wind farm. This section crosses open agricultural land which is rising in a western direction up to around 380mAOD. It crosses the Allan Water which is flowing in southern direction towards the River Tweed. There are some scattered woodland blocks within the option largely coinciding with field boundaries.

Route Option 1 extends west from the proposed Gala North Substation over an undulating upland and plateau landscape. This avoids ecological designations of the highest or high environmental value to the south including Threepwood Moss SAC and SSSI and Colmsliehill Junipers SSSI as well as avoids larger settlements including Galashiels to the south as well as Stow to the northwest. With the exception of some scattered individual properties there are no areas of highest or high environmental value within or immediately adjacent to Route Option 1. Landform and woodland blocks within Route Option 1 provide some opportunities to integrate an OHL into the landscape including screening and/or backclothing of an OHL route within Route Option 1.

### Section A - Route Option 2

Route Option 2 comprises two sub-options, Route Option 2a and Route Option 2b from Long Park Wind Farm to the River Tweed as well as route link from 2b to 2a.

#### Section A - Route Option 2a

Route Option 2a is routed to the south and east of Long Park Wind Farm along the slopes of William Law towards the Gala Water and A7/River Tweed. It crosses to the south of Bowland Garden and Designed Landscape and follows the B710 along the slopes of Mains Hill toward Caddon Mill, west of Clovenfords. From here it enters SLA 3 - Tweed, Ettrick and Yarrow Confluences and crosses the Caddon Water and River Tweed SAC and SSSI ending on the lower slopes of Ashiestiel Hill.

Route Option 2a avoids Bowland Garden and Designed Landscape, however, there is the potential to impact on views from within it towards and along the Gala Water as well as its

affect its setting. Similarly direct physical impacts on scheduled monuments and listed buildings are or can be avoided, however, there is the potential for some setting effects. While there is a requirement for multiple crossings of watercourses which are part of the River Tweed SAC and/or SSSI impacts on these can be avoided through careful positioning of towers. Key routeing constraints affecting Route Option 2a relate to the potential impact on Clovenfords to the south of the route options as well as from the removal of woodland including the potential loss of an area of Ancient Woodland where the route crosses the River Tweed.

#### Section A - Route Option 2b

Route Option 2b is routed to the north and west of Long Park Wind Farm over Sell Moor and Torsonce Hill and crossing a valley through which the Gala Water and A7 pass. From here it continues in a southwestern direction crossing Crumshank Hill and Bowshank Hill through a gap between the Moorfoothills SAC and SSSI to the west and Bowland Garden and Designed Landscape to the east. It is routed to the west of Stantling Craig Reservoir and crosses over a number of undulating hills until it crosses the A72 and River Tweed SAC and SSSI to the east of Traquair Forest ending on the lower slopes of Ashiestiel Hill. The southern part of Route Option 2b from Darny Burn is within SLA 2 – Tweed Valley.

With the exception of crossings of the River Tweed SAC and SSSI and some scattered residential properties, Route Option 2a largely avoids areas or sites of the highest or high environmental value. While this option is routed between the Moorfoot Hills SAC and SSSI and Bowland Garden and Designed Landscape neither site is likely to be affected. It is sufficiently set back from the SAC/SSSI so as not to affect its designated features and is routed to the north and west of Bowland where substantial woodland surrounds the site and views from within it are orientated to the south. A small part of Route Option 2a crosses through SLA 2 – Tweed Valley, however, there is considered to be some scope to mitigate effects on the site.

#### Section A - Route Link 2b to 2a

The Route Link is a short option which provides the opportunity to switch from Route Option 2a to Route Option 2b. It begins to the west of Stantling Craig Reservoir and is routed in a southeastern direction over the Caddon Water (twice) and Blackhaugh before connecting to Route Option 2b to the southwest of Caddon Water before it crosses the River Tweed. A short part of the Route Link is within SLA 3 - Tweed, Ettrick and Yarrow Confluences.

The route link largely requires the use of Route Option 2b switching to 2a to the west of Knowes Hill. As result it avoids the impacts on Bowland Garden and Designed Landscape that would occur if only routeing within Route Option 2a, however, it would introduce additional crossings of the Caddon Water (which is part of the River Tweed SAC) and crosses River Tweed SAC and SSSI at the same location as Route Option 2a where impacts on Clovenfords could occur while woodland removal would also be required.

**PROJECT**  
Cross Border Connection -  
Gala North Substation to Border

**CLIENT**  
SP Energy Networks

- KEY**
- Study Area
  - Route Option Section A
  - Route Option Section - Other
  - Proposed Gala North Substation Location
  - Category A / Grade I Listed Building
  - Category B / Grade II\* Listed Building
  - Category C / Grade II Listed Building
  - Scheduled Monument
  - Garden and Designed Landscape
  - Inventory Battlefield
  - Special Area of Conservation (SAC)
  - Site of Special Scientific Interest (SSSI)
  - Ancient Woodland Inventory Site
  - Woodland identified in the Native Woodland Survey of Scotland
  - National Scenic Area
  - Locally Designated Landscape
  - Long Distance Trail
  - Wind Turbine Location (Status)
    - Operational
    - Wind Turbine Location - 2x Rotor Diameter
  - Carbon and Peatland 2016
    - Class 1
    - Class 3
    - Class 4
    - Class 5
  - Existing Transmission System
    - 132 kV Substation
    - 132kV OHL
    - 400kV OHL

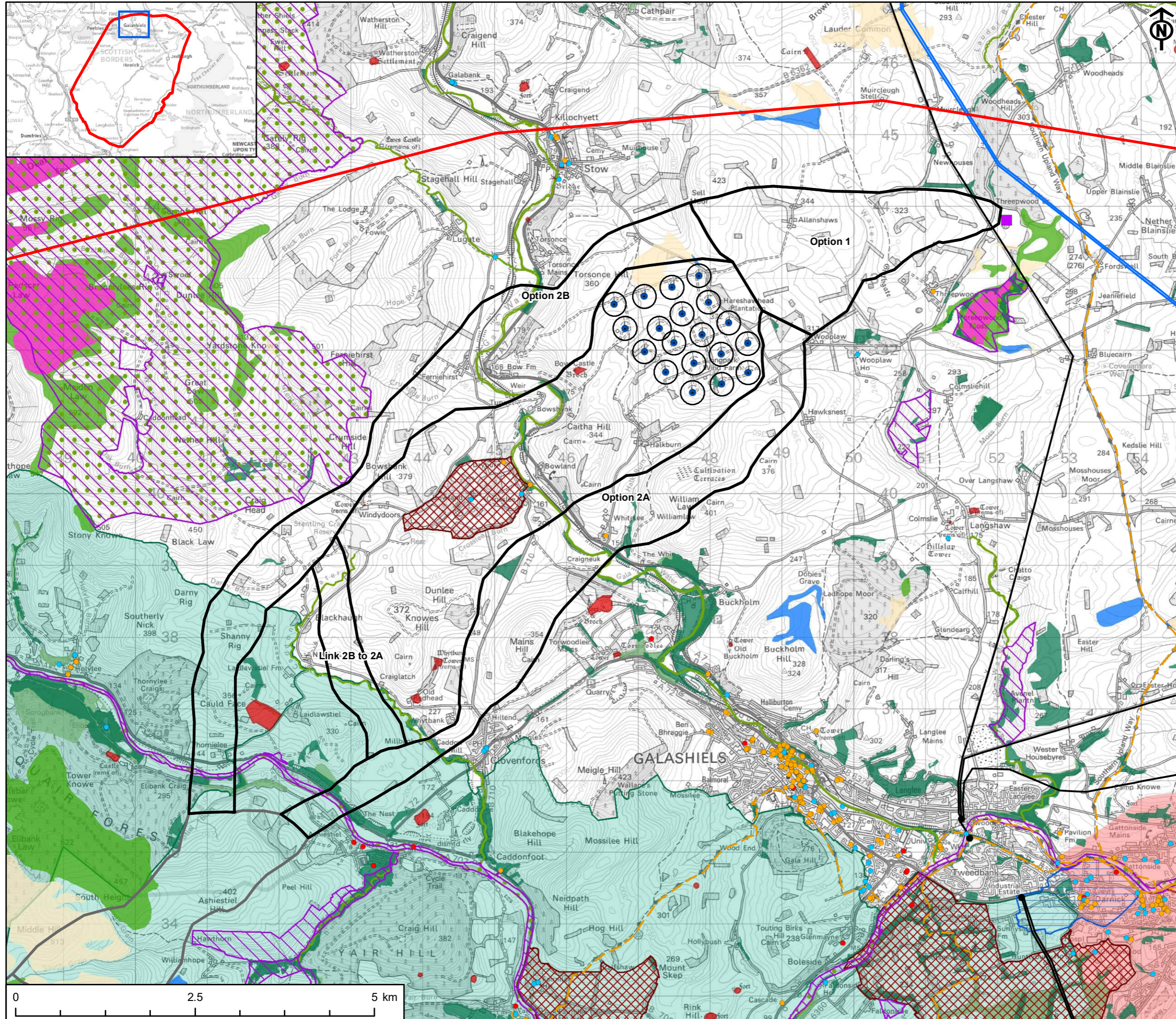
**TITLE**  
Figure 15  
Section A Route Options

**REFERENCE**  
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## 8.3 Appraisal of Route Options (Section B)

### Overview of Section B - River Tweed to the A7

Section B extends from the River Tweed valley and over the Tweedsmuir Hills and a mix of upland moorland and forestry towards the Yarrow Water. From here it comprises the Ettrick Hills extending in a southeastern direction towards the River Teviot and the A7 to the west of the proposed Teviot Wind Farm.

The following sections summarise the appraisal of route options and route links within Section B. These are illustrated in Figure 16. A more detailed appraisal of the route options and links taking account of the routeing and siting objectives and considerations is contained in Appendix H (Tables H.2, H.3 and H.4).

### Section B - Route Option 1

Route Option 1 is located entirely within SLA 3 - Tweed, Ettrick and Yarrow Confluences and is common for any route south of the River Tweed. It is routed up Ashiestiel Hill with Traquair Forest to the north and Williamhope SSSI to the south. It is routed toward the peak of Brown Knowe around 520mAOD and widens out over the peak where the Route Option meets the Southern Upland Way and would connect to Route Options 2a or 2b.

The route option has been developed to avoid most areas of highest or high environmental value, however, it crosses relatively steep slopes ascending land to the south of the River Teviot which also coincides with SLA 3 Tweed, Ettrick and Yarrow Confluences. The SLA cannot be avoided, however, there is some scope to reduce effects on it by utilising the existing forestry plantation to the north as well as landform. The Southern Upland Way and Cross Borders Drove Road lie to the south where Route Option 1 meets Options 2a and 2b and extend across the route option. As result there is the potential to impact on users of the long-distance trails.

### Section B - Route Option 2

Route Option 2 comprises two sub-options, Route Option 2a and Route Option 2b from Brown Knowe to the Yarrow Water as well as route link from 2b to 2a.

#### Section B - Route Option 2a

Route Option 2a heads south from the Southern Upland Way and crosses a series of hills from Brown Knowe to Old Hill some of which form relatively steep-sided valleys through which a number of small watercourses flow. This section of Route Option 2a crosses two SLAs, firstly SLA 3 - Tweed, Ettrick and Yarrow Confluences between the Southern Upland Way and Old Hill, and secondly through part of SLA 1 - Tweedsmuir Uplands from Old Hill to A708. From Old Hill the route option crosses the A708 and the Yarrow Water and crosses an upland area until it reaches Black Knowe Head.

With the exception of the Yarrow Water which is part of the River Tweed SAC and SSSI, Route Option 2a largely avoids sites of the highest or high environmental value. Due to a combination of their size and/or orientation, it cannot avoid routeing across two SLAs (SLA 3 Tweed, Ettrick and Yarrow Confluences and SLA 1 Tweedsmuir Uplands) as well as the Southern Upland Way and Cross Borders Drove Road. The landscape is generally considered

capable of accommodating an OHL route but there are areas of increased sensitivity associated with the long-distance trails and crossing the Yarrow Water.

#### Section B - Route Option 2b

Route Option 2b heads west/southwest from the Southern Upland Way crossing part of the Tweed Valley Forest Park. Coming out of the commercial forestry the route option crosses a series of hills some of which form steep-sided valleys through which watercourses drain southeast towards the Yarrow Water. It finishes just north of the Yarrow Water on Snouthead and Peat Law. A small part of Route Option 2b is located with SLA 3 - Tweed, Ettrick and Yarrow Confluences, however, the remainder is located entirely within SLA 1 - Tweedsmuir Uplands.

Route Option 2b avoids areas of the highest or high environmental value but as with Option 2a is routed entirely within locally designated landscapes crossing SLA 3 Tweed, Ettrick and Yarrow Confluences and SLA 1 Tweedsmuir Uplands. This is the most westerly route considered with the potential to increase overall route length and crosses very elevated upland areas which are typically between 450 and 500mAOD and requires to route across a number of steep slopes.

#### Section B - Route Link 2b to 2a

Route Link 2b to 2a provides an opportunity to connect Route Option 2b to Route Option 2a and onwards to Route Options 3a or 3b, as alternative to continuing south from Route Option 2b to Route Option 3c. The Route Link is a short section from Whitefield to Wester Kershope crossing the A708 and the Yarrow Water where it is a part of the River Tweed SAC and SSSI. With the exception of the River Tweed SAC and SSSI the route link does not have the potential affect sites or areas of the highest or high environmental value. A short section of the route link crosses SLA 1 – Tweedsmuir Uplands and is routed across the Yarrow valley. This short section of the link has the potential to result in landscape effects on the enclosed valley.

#### **Section B - Route Option 3**

Route Option 3 comprises three sub-options, Route Options 3a, 3b and 3c which provide alternative routes across the Ettrick Hills and the Ettrick Water as well as a route link from 3c to 3b.

#### Section B - Route Option 3a

Route Option 3a starts to the north of Ettrickbridge on Black Knowe Head and is routed in a southeastern direction just cutting across the southern margins of SLA 3 - Tweed, Ettrick and Yarrow Confluences. It crosses the Ettrick Water, part of the River Tweed SAC and SSSI, and the B7009 continuing in a southeastern direction. It ascends Hutlerburn Hill and finishes to the east of the Dod, north/northeast of Langhope Rig Wind Farm from where it would connect to Route Options 4a, 4b or 5.

There are a number of areas or sites of highest or high environmental value which influence Route Option 3a including a crossing of the Ettrick Water which is part of the River Tweed SAC and SSSI, scheduled monuments within and near to the route option as well as Ancient Woodland Inventory sites which extend across the option making some tree removal unavoidable. Route Option 3a crosses the Ettrick Water to the east of Ettrickbridge in a more



sensitive location in landscape and visual terms on the margins of SLA 3 with limited opportunities to mitigate effects.

#### Section B - Route Option 3b

Route Option 3b starts to the southwest of Black Knowe Head and is routed in a southern direction crossing over a series of hills including Nether Hill, Peat Rig, Newhouse Kip and Singlie Hill. From Singlie Hill it descends towards Hyndhope. It crosses the B7009 and Ettrick Water, part of the River Tweed SAC and SSSI at Hyndhope finishing on the lower slopes of White Hill.

Route Option 3b crosses a remote upland landscape within which settlement is sparse and the large-scale rolling landform with simple land use increases the ability of the landscape to accommodate an OHL option. There are a small number of areas or sites of the highest or high environmental value including the River Tweed SAC and SSSI and a scheduled monument and listed building at Kirkhope. Potential effects on these can be avoided or reduced, however, there is some potential for setting effects.

#### Section B - Route Option 3c

Route Option 3c starts on Snouthead and Peat Law descending the hills in a southern direction and crossing over Feuars Hill towards the Yarrow Water, part of the River Tweed SAC and SSSI. The route option crosses the Yarrow Water at Sundhope continuing south on the east facing slopes of Eldinhope Knowe. It crosses over a series of hills including Scar Hill as it continues south towards the B7009 and the Ettrick Water, also part of the River Tweed SAC and SSSI. Route Option 3c crosses over the Ettrick Water between the proposed Brown Rig Wind Farm to the west and Gilmanscleuch to the east. From here it begins to rise up crossing over Cop Law and finishing at Stanhope Law.

Route Option 3c is comparable to the 3b crossing a sparsely settled upland landscape with the exception of where it crosses the Yarrow valley and the Ettrick valley where some isolated or scattered properties are present. This option crosses the River Tweed SAC and SSSI in two locations (Yarrow Water and Ettrick Water), however, these are unavoidable and would not prevent an OHL route. Peatland is present within Route Option 3c with the extent and distribution meaning that it cannot be avoided.

#### Section B Route Link 3c to 3b

The route link connects Route Option 3c to 3b from approximately from Scar Hill within 3c to Singlie Hill within 3b. It is a relatively short link with topography generally falling in an eastern or southeastern direction crossing over Sundhope Height to Long Knowe.

The route link requires the use of Route Option 3c switching to 3b part way through it. This would enable some areas of class 3 peatland within Route Option 3c to be avoided otherwise it does not offer any significant environmental benefits with the exception of potentially reducing route length as part of an overall OHL.

#### **Section B -Route Option 4**

Route Option 4 comprises four sub-options, Route Options 4a, 4b, 4c and 4d which provide alternative routes to the River Teviot and A7 as well as two alternative route links from Route Option 4d to 4c and from Route Option 4c to 4b.

#### Section B - Route Option 4a

Route Option 4a begins at Wester Essenside and is routed in a southern direction crossing Todrig Road and Todrig Burn, the latter of which is part of the River Tweed SAC. From here it extends over Leap Hill and continues to ascend rising landform towards and over Cringie Law. From Cringie Law land begins to slope towards the Borthwick Water. The Borthwick Water is also part of the River Tweed SAC. Route Option 4a crosses the B711 and Borthwick Water in a southern direction at Highchesters/Todshawhaugh. It extends over Todshaw Hill and Branxholmpark Hill crossing the Roman and Reivers Way as well as the River Teviot, part of the River Tweed SAC and SSSI at Branxholme where the Route Option finishes.

Route Option 4a requires multiple crossings of watercourses which are part of the River Tweed SAC and/or SSSI. These are unavoidable and potential adverse effects can be avoided or reduced through the design of a detailed route alignment. There are also a number of scheduled monuments and listed buildings present within or close to Route Option 4a and while direct physical impacts can be avoided some setting impacts may occur. This route option is considered to be constrained in landscape and visual terms routeing across an area which is considered to be more sensitive to an OHL as well as closer to larger settlements including Hawick. Other notable routeing constraints include a crossing of the Roman and Reivers Road long distance trail.

#### Section B - Route Option 4b

Route Option 4b starts to the east of Langhope Rig Wind Farm and is routed in southern direction. It is routed over a series of undulating hills including Whitslaid Hill, Barrel Law, Wester Rig and Hangingshaw Hill as it approaches the Borthwick Water. It crosses the watercourse, part of the River Tweed SAC to the west of Robertson and continues southwards ascending Parkhill and Chapel Hill (where it crosses Roman and Reivers Way) and continuing over Hott Hill. From here it descends in a southeastern direction towards Teindside crossing the A7 and the River Teviot (part of the River Tweed SAC and SSSI) finishing at Northhouse.

In landscape and visual terms Route Option 4b is comparable to 4a although located slightly further west and therefore further away from Hawick. Nevertheless, it passes smaller settlements including Robertson and Burnfoot with the potential for visual effects. With regard to areas or sites of highest or high environmental value, Route Option 4b requires multiple crossings of watercourses which are part of the River Tweed SAC and/or SSSI and also encompasses Slaidhills Moss SSSI. There are no scheduled monuments or listed buildings directly within Route Option 4b but some are present on the margins of the option with the potential for setting effects. Other notable routeing constraints include a crossing of the Roman and Reivers Road long distance trail.

#### Section B - Route Option 4c

Route Option 4c starts at White Hill south of the Ettrick Water. It is routed in a southern direction crossing over a series of undulating hills some of which contain forestry. From the B711 Route Option 4c is routed in a southeastern direction crossing the Ale Water and over Byrelee Hill and Mid Hill descending the hillslopes towards the Borthwick Water which is part of the River Tweed SAC. It crosses the Roman and Reivers Way and then Route Option widens out over Commonsides Moor. From there is scope to connect onto Route Option 4b at

Slaidhill or continue over Commonsides Moor crossing the River Teviot, part of the River Tweed SAC and SSSI and the A7 finishing on the lower slopes of Crom Rig.

Route Option 4c crosses a large scale, simple landscape which is relatively remote and with characteristics which are indicative of lower sensitivity to an OHL route. There are some areas of increased sensitivity largely coinciding with narrow valleys which require to be crossed and in which an OHL would be more prominent. As with other options, Route Option 4c requires multiple crossings of watercourses which are part of the River Tweed SAC and/or SSSI. There are no scheduled monuments or listed buildings directly within Route Option 4c but some are present on the margins of the option with the potential for setting effects. Larger areas of forestry and peatland are present within Route Option 4c with the potential for impacts on both. Similar to other sub-options it also requires a crossing the Roman and Reivers Way with the potential to impact on users of the trail.

#### Section B - Route Option 4d

Route Option 4d starts at Stanhope Law and is routed southwards over a series of undulating hills including Cakra Hill, Stand Knowe, Craig Hill, Annelshope Hill and Home Law till it reaches the B711. From here Route Option 4d is routed across Craik Forest crossing a series of hills including Kirk Hill, Under Hill Head and Bald Hill. It crosses the Borthwick water, part of the River Tweed SAC, to the northeast of Craik and continues in an eastern direction over Calfshaw Head towards the River Teviot, part of the River Tweed SAC and SSSI. Route Option 4d connects to Route Option 4c at Commonsides and continues over Colterscleuch crossing the River Teviot and A7 finishing to the southwest of Crom Rig.

Route Option 4d is similar in landscape terms to 4c but is located further west on more elevated land. There are greater amounts of forestry present with a large part of the option routeing through Craik Forest which provides some opportunities to avoid or reduce potential impacts. As with other options, Route Option 4d requires multiple crossings of watercourses which are part of the River Tweed SAC and/or SSSI. There are no scheduled monuments or listed buildings directly within Route Option 4d but some are present on the margins of the option with the potential for setting effects. Much of the upland area would require routeing through peatland so potential impacts would be unavoidable.

#### Section B - Route Link 4d to 4c

This route link connects Route Option 4d to 4c crossing west to east from Stand Knowe to Thorniecleuch Hill.

The route link requires the use of a very short section of Route Option 4d then switches to 4c. In practice it would connect OHL routes from Route Option 3c onto 4c largely avoiding 4d. Overall, it does not offer any significant environmental benefits. While it could potentially reduce the length an overall OHL route, the route link crosses an area of identified peatland which could be avoided by continuing south through Route Option 4d.

#### Section B - Route Linke 4c to 4b

This route link connects Route Option 4c to 4d. It starts at Dodhead southeast of Hyndhope and extends eastwards through forestry, within which there are two small lochs, towards Muckle Dod south of the existing Langhope Rig wind Farm.

This route link requires the use of a very short section of Route Option 4c then switches to 4d. While it would enable OHL routes to avoid peatland within Route Option 4c, peatland would require to be crossed within the route link. Overall, there may be a slightly lower impact on peatland as the area within the route link is less than that in Route Option 4c, however, any onwards route would have to address other routeing considerations within Route Option 4b as outlined above.

### **Section B - Route Option 5**

Route Option 5 starts to the southeast of Hutlerburn Hill where Route Option 3a finishes and is routed in a southeastern direction over undulating hills which gradually slope down to the Ale Water. It crosses the Ale Water into Salenside Plantation, forestry which covers much of Ashkirk Hill. It continues southeast from the forestry into more open farmland finishing at the A7 north of Hawick.

Route Option 5 provides an alternative route from uplands to the Teviot Valley crossing to the north of Hawick (compared to Route Options 4a-d which cross to the south of Hawick). Route Option 5 stops at the A7 just short of the River Teviot, however, it still requires a crossing of the Ale Water which is part of the River Tweed SAC. Key factors which make Route Option 5 less preferable are largely landscape and visual considerations. Landscape character is considered to be more sensitive to OHL routes due to its openness and the proximity to settlements and transport routes.

**PROJECT**  
Cross Border Connection -  
Gala North Substation to Border

**CLIENT**  
SP Energy Networks

- KEY**
- Study Area
  - Potential Substation Site
  - Route Option Section B
  - Route Option Section - Other
  - Category A / Grade I Listed Building
  - Category B / Grade II\* Listed Building
  - Category C / Grade II Listed Building
  - Scheduled Monument
  - Garden and Designed Landscape
  - Inventory Battlefield
  - Special Area of Conservation (SAC)
  - Site of Special Scientific Interest (SSSI)
  - Ancient Woodland Inventory Site
  - Woodland identified in the Native Woodland Survey of Scotland
  - National Scenic Area
  - Locally Designated Landscape
  - Wild Land Area
  - Long Distance Trail
  - Wind Turbine Location (Status)
    - Operational
    - Consented
    - Design/Scoping; Scoping
    - Refused
  - Wind Turbine Location - 2x Rotor Diameter
  - Carbon and Peatland 2016
    - Class 1
    - Class 3
    - Class 4
    - Class 5
  - Existing Transmission System
    - 132 kV Substation
    - 132kV OHL

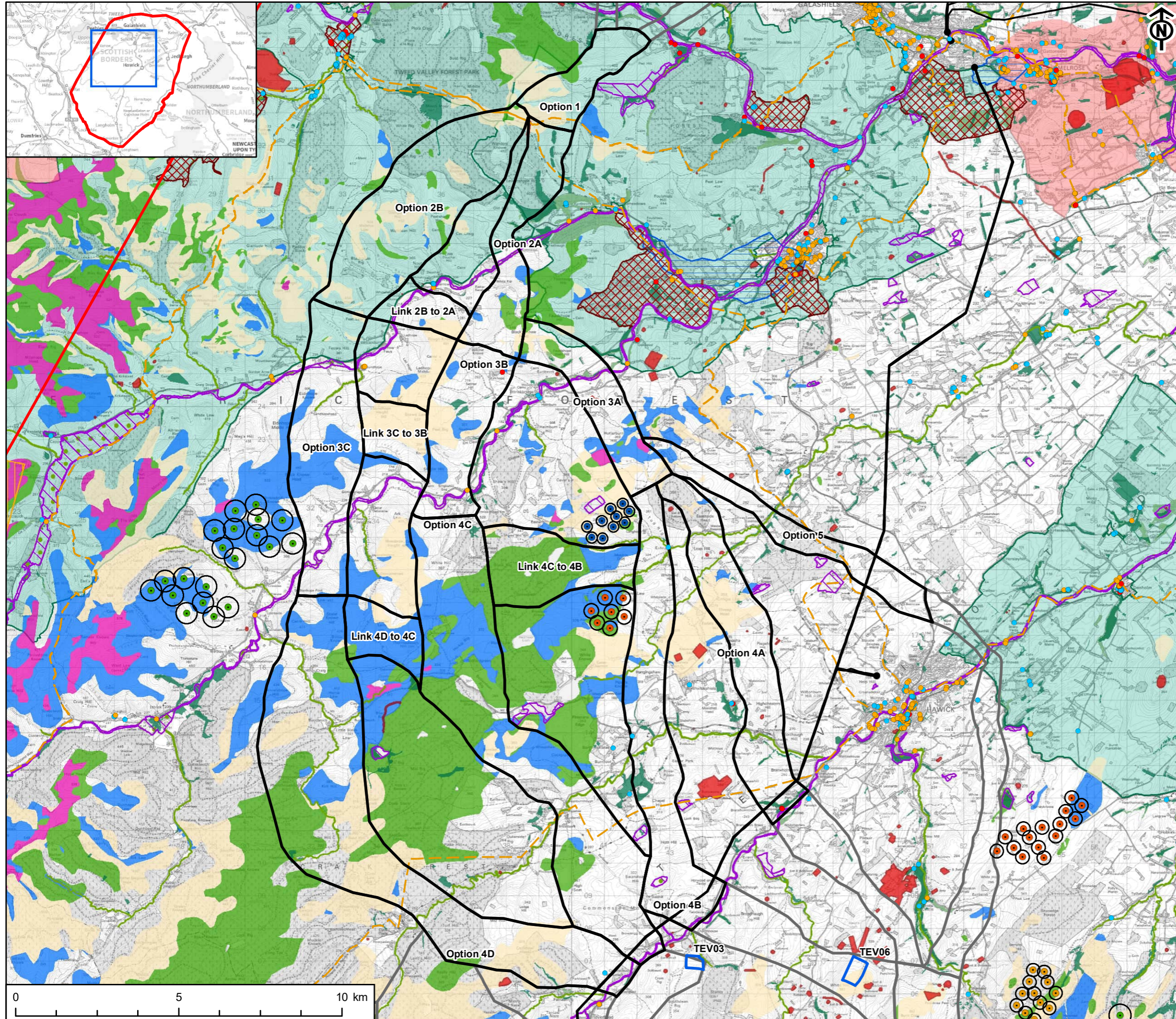
**TITLE**  
Figure 16  
Section B Route Options

**REFERENCE**  
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**SHEET NUMBER** 1 of 1 **DATE** 27/08/24

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## 8.4 Appraisal of Route Options (Section C)

### Overview of Section C - A7 to new Teviot Substation

Section C comprises Route Options from the Teviot Valley where the A7 and Teviot Water are present and extends south/southeast to potential substation sites to the west, north and east of the proposed Teviot Wind Farm.

The following sections summarise the appraisal of route options and route links within Section C. These are illustrated in Figure 17. A more detailed appraisal of the route options and links taking account of the routeing and siting objectives and considerations is contained in Appendix H (Tables H.5 and H.6).

### Section C - Route Option 1

Route Option 1 comprises three sub-options which provide alternative routes from the Teviot Valley to potential substation sites to the north (TEV-06) and onwards to the east (TEV-05) of the proposed Teviot Wind Farm. Note that a connection to TEV-05 would require Route Option 2.

#### Section C - Route Option 1a

Route Option 1a starts in the Teviot Valley and extends in an eastern/southeastern direction towards TEV-06 and Route Option 2. It rises from the River Teviot quite steeply over the slopes of Broadhaugh Hill and Inner Hill and from there crosses relatively gently undulating until it reaches White Hill which coincides with TEV-06. It crosses White Hill and finishes within a valley formed by Penchrise Burn where it meets Route Option 2.

There are a number of cultural heritage and archaeological designations present within or on the margins of Route Option 1a which are the key constraint on this option. While the scheduled monuments can be avoided the number and distribution of them crossing White Hill increases the potential for setting effects. In landscape and visual terms the sensitivity of Route Option 1a tends to reduce moving eastwards through the route. At its western extent the Teviot valley is considered to be more sensitive, but this reduces crossing a more open, elevated landscape to the east.

#### Section C -Route Option 1b

Route Option 1b starts at the A7 to the north of Hawick and is routed around the settlement to north and east. Land to the north of Hawick forms a much more open valley as altitudes are lower and landform much more gentle compared to elsewhere within the Study Area. As the route option crosses the A698 it turns and heads south towards Route Option 2. The land it traverses begins to increase in altitude with the route option crossing over a series of hills or traversing side slopes.

There a number of sites or areas of highest or high environmental value within or close to Route Option 1b including a crossing of the River Tweed SAC and SSSI at the River Teviot as well as a number of scheduled monuments on the margins of the option. In landscape and visual terms, this option has potential for significant effects. This is partly due to landscape character as well as the number of potentially sensitive receptors to the north and east of

Hawick including properties on the edge of Hawick as well as scattered properties in the wider area.

### Section C - Route Option 1c

Route Option 1c starts in the Teviot Valley crossing steep slopes to the east as it rises up from the River Teviot. It continues in a southeastern direction over a series of hills with largely gentle or shallow slopes until reaches Route Option 2.

Route Option 1c is comparable to 1a given their proximity. The key considerations influencing the route option relate to landscape and visual considerations as well as potential setting effects on scheduled monuments within and on the margins of the route option. In landscape terms the western part of the route option coming out of Teviot valley is considered sensitive to OHLs due to the scale of the landscape.

### **Section C - Route Option 2**

Route Option 2 comprises a single route option which connects Route Options 1A, B and C onwards to the potential substation site TEV-05 to the east of the proposed Teviot Wind Farm. Its starts at Penchrise Peel and is routed southwards over Burnt Craig into commercial plantation forestry finishing at TEV-05 at Black Rig just on the southern boundary of the forestry.

While in landscape and visual terms this Route Option is considered to be feasible with opportunities to utilise forestry to mitigate impacts, the key constraints are a requirement to cross the Catrail, a scheduled monument formed by a linear earthwork which extends across the option, as well as areas of peatland. Direct physical impacts on the scheduled monument can be avoided as it could be spanned by an OHL or and OHL could routed through the gap in the earthwork, however, there is potential to impact its setting.

### **Section C - Route Option 3**

Route Option 3 comprises a single route option which connects Section B Route Options 4c and 4d to TEV-01 or TEV-03. It also provides opportunities to connect to TEV-02 via Section C Route Option 4. The Route Option broadly extends north to south to the east of the A7. It is routed across a small number of undulating hills including Crom Rig, Far Height and Bink's Hill. Subject to substation site selection it could also provide opportunities for route options from TEV-01, TEV-02 or TEV-03 onwards to the Scotland-England border.

There are a number of routeing considerations within or immediately adjacent to the route options including ecological and archaeological sites of highest or high environmental value. This includes the River Teviot, part of the River Tweed SAC and SSSI which is parallel to the Route Option 3 as well as a small number of scheduled monuments. The River Teviot is not considered to be a significant constraint in the context of this option. Similarly, the scheduled monuments would not prevent the development of an OHL route, however, given their proximity could result in setting effects. In landscape and visual terms Route Option 3 provides a relatively short connection to the substation options within the more open landscape context running parallel to the A7 within which the OHL would run along the plateau on top of the valley ridgeline predominantly impacting the corridor of the A7 and the receptors and settlement within it. This could create a wirescape with the existing 132kV OHL to the west of the A7 and a new OHL to the east.

### **Section C - Route Option 4**

Route Option 4 is routed southeast from within Craik Forest over Blackcleuch Rig and the Teviot Water, part of the River Tweed SAC and SSSI and crossing over Limmie Hill towards the A7 where it finishes. Route Option 4 provides a number of routeing opportunities including connecting Section B Route Option 4d to TEV-02 or TEV-03 or subject to substation site selection route options south towards the Scotland-England border via Section D Route Option 3.

There are a small number of routeing considerations within Route Option 4 including multiple crossings of watercourses which are part of the River Tweed SAC and SSSI as well as routeing across areas of peatland. While these do not necessarily prevent an OHL route they could make it less favourable when evaluating an overall route. Route Option 4 lies predominantly within a landscape containing large tracts of forestry which could accommodate an OHL although the eastern section would require crossing of steep slopes where towers would appear as prominent elements within the landscape crossing the narrow A7 corridor.



**PROJECT**  
Cross Border Connection -  
Gala North Substation to Border

**CLIENT**  
SP Energy Networks

- KEY**
- Study Area
  - Potential Substation Site
  - Route Option Section C
  - Route Option Section - Other
  - Category A / Grade I Listed Building
  - Category B / Grade II\* Listed Building
  - Category C / Grade II Listed Building
  - Scheduled Monument
  - Special Area of Conservation (SAC)
  - Site of Special Scientific Interest (SSSI)
  - Ancient Woodland Inventory Site
  - Woodland identified in the Native Woodland Survey of Scotland
  - Locally Designated Landscape
  - Long Distance Trail

- Wind Turbine Location (Status)**
- Consented
  - Application Submitted
  - Design/Scoping; Scoping
  - Refused
- Wind Turbine Location - 2x Rotor Diameter

- Carbon and Peatland 2016**
- Class 1
  - Class 3
  - Class 4
  - Class 5

- Existing Transmission System**
- 132 kV Substation
  - 132kV OHL

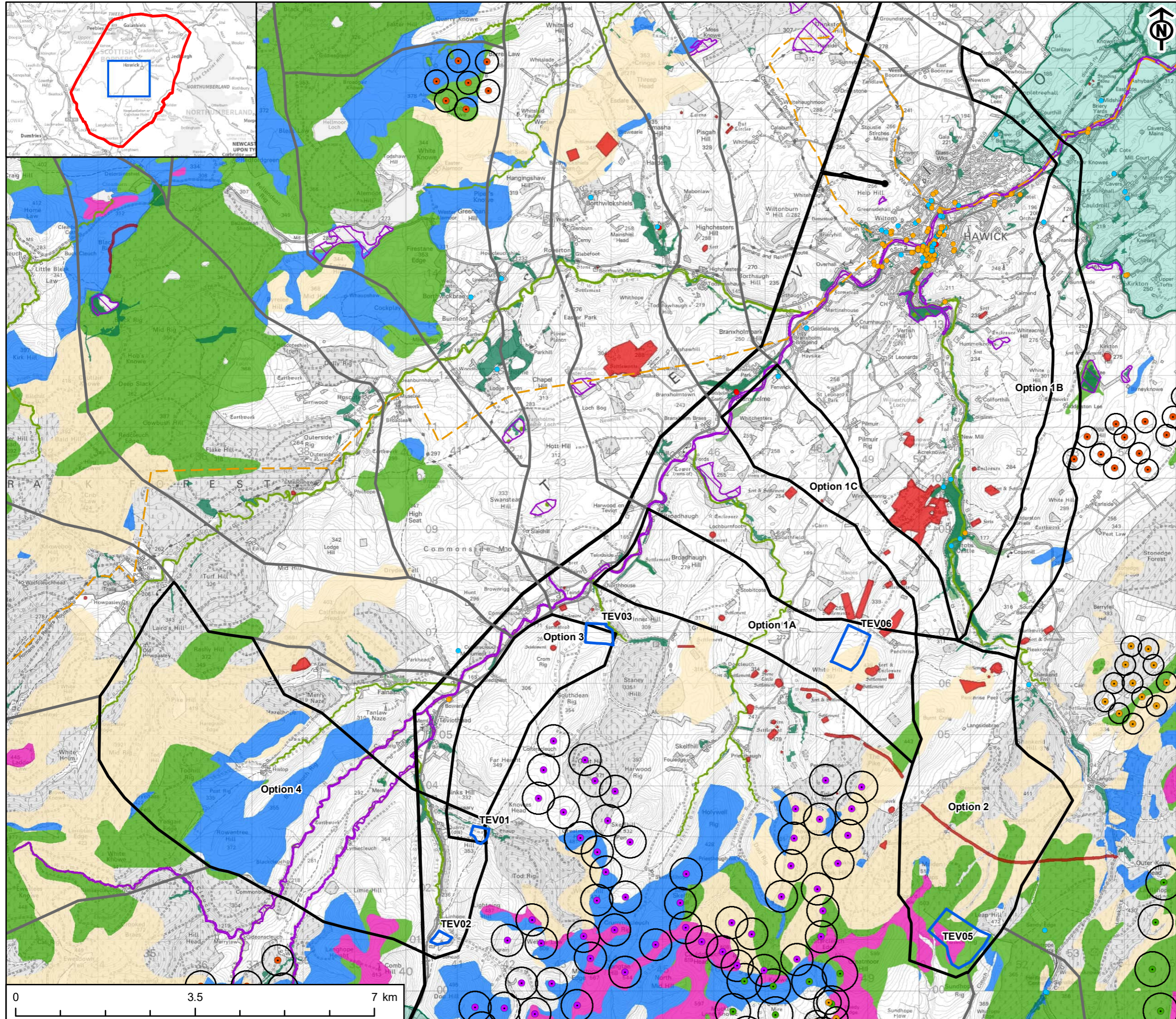
**TITLE**  
Figure 17  
Section C Route Options

**REFERENCE**  
GH\_20240827\_RS\_17\_v1

**SHEET NUMBER** 1 of 1 **DATE** 27/08/24

Project Management Initials: DR Designer: LC Checked: DF Approved: DR

Scale @ A3 1:70,000



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## 8.5 Appraisal of Route Options (Section D)

### **Overview of Section D - New Teviot Substation to Scotland-England Border)**

Section D comprises route options from potential substation sites at the proposed Teviot Wind Farm to the Scotland-England border. This includes route options to the west of the Study Area crossing over part of the Moffat Hills in Dumfries and Galloway as well as to the east of the Study Area following the Liddel Valley in the Scottish Borders.

The following sections summarise the appraisal of route options and route links within Section D. These are illustrated in Figure 18. A more detailed appraisal of the route options and links taking account of the routeing and siting objectives and considerations is contained in Appendix H (Tables H.7 and H.8).

### **Section D - Route Option 1**

Route Option 1 is required for any route south from TEV-05 to the Scotland-England border. It is routed south from Sundhope Rig crossing over the B6399 and routeing south through commercial forestry until Blackwood Hill. From here it continues over Anton Fell finishing between the B6399 to the west and the B6357 to the east.

Route Option 1 is in close proximity to Hermitage Castle, a scheduled monument and regionally important visitor attraction. Subject to detailed OHL routeing has the potential for setting impacts, however there are opportunities to avoid or reduce these by routeing to the east of the option and using landform to reduce potential intervisibility. Other notable environmental routeing considerations including crossing an area of peatland between TEV-05 and Roughley at the head of the Liddel Valley.

### **Section D - Route Option 2**

#### Section D - Route Option 2a

Route Option 2a is a continuation of Route Option 1 extending south from Cleuch Head crossing the B357 and Liddel Water into commercial forestry at Newcastleton Forest. It continues south through the forestry on the east side of the Liddel Valley crossing the Scotland-England border at Kershope into Kershope Forest.

The main routeing considerations influencing Route Option 2a are landscape and visual. With regard to areas or sites of highest or high environmental value, the route option largely avoids or provides opportunities to avoid them including Kershope SSSI at the border as well as some cultural heritage and archaeological interests. In landscape and visual terms there are opportunities to develop an OHL route utilising Newcastleton Forest, however, this increases the potential to affect users of the forest including those utilising the trails which are present. While Route Option 2a has been developed to avoid the proposed Liddesdale Wind Farm consideration would need to be given to potential visual effects of the OHL being viewed against the backdrop of the wind farm.

#### Section D - Route Option 2b

Route Option 2b is a short direct route from Route Option 1 extending in southeast direction over the lower slopes of Rain's Hill and across the B6357 and over the steep slopes of Larriston Fells to the Scotland-England border at Kielder Forest.

While Route Option 2b provides the shortest and most direct route to the Scotland-England border it is not considered preferable. The route option crosses open upland adjacent to Newcastleton Forest edge, rising perpendicularly up the steep hillside of Larriston Fell, which will accentuate localised impacts on landscape character. While the route option largely avoids areas or sites of the highest or high environmental value it would cross over into a highly constrained area at Kielder in which components of the Border Mires Kielder-Butterburn and Kielder Mires SSSI are present and would be likely to constrain onwards routeing within England.

#### Section D - Route Option 2C

Route Option 2C starts to the west of Cleuch Head and is routed across the Hermitage Water and B6399 to the lower slopes of North Birney Fell. It continues in a southern or southwestern direction along the west side of the Liddel Valley crossing over a number of undulating hills until it reaches the Scotland-England border on the Liddel Water to the southeast of Greena Hill.

Route Option 2c traverses the western side of the Liddel Valley to the east of the Langholm-Newcastleton SPA and SSSI. While the option is located close to the designation, effects on it are considered unlikely. Other sites of highest or high environmental value include a small number of scheduled monuments on the hillslopes. While these can be avoided there is the potential for some setting effects to occur.

#### Section D - Route Option 2D

Route Option 2d is a continuation of Route Option 2c which would enable the Scotland-England border to be crossed in a different location. It is routed from Greena Hill in a southwestern direction crossing Tinnisburn Forest. It gradually turns southeast crossing the B6357 and continues to the Scotland-England border on the Liddel Water.

In the context of the SP Energy Networks Project, Route Option 2d only increases route length and introduces some additional routeing considerations including crossing peatland and the loss of woodland including potentially Ancient Woodland. With regards landscape and visual amenity Route Option 2d is not considered to provide any benefit as it directly impacts a more sensitive enclosed, narrow valley landscape as it approaches the border. Routeing along the valley-side following its contours provides opportunities to backcloth the OHL and could assist in limiting wider effects on the more sensitive valley landscape.

#### **Section D - Route Option 3**

Route Option 3 starts within Eskdalemuir Forest where it meets Section C Route Option 4. It is routed southwest through the forest from Lamblair Edge to Blaeberry Hill where it turns south. The Route Option follows the forestry but extends to open moorland to the east. It is partly routed through Castle O'er Forest crossing the River Esk and B7079 to the east of Castle O'er. It continues in a southwestern direction crossing a series of hillslopes including

Mid Height, Hart Fell and Whitecastles Fell until it reaches Stridrigg to the west of the existing Ewe Hill Wind Farm.

Route Option 3 is required for any route located to the west of the Study Area. It extends through Eskdalemuir Forest and would potentially require a large amount of tree removal while also potentially affecting areas or sites of the highest or high environmental value. This includes a potential crossing of Worms Cleugh part of the River Tweed SAC, as well as setting impacts on scheduled impacts and listed buildings within and on the margins of the route. Route Option 3 also requires to cross a number of areas of peatland. In landscape terms the forestry provides opportunities for OHL routeing either within or on the forestry edge helping to reduce potential landscape effects. Further south Route Option 3 crosses more open terrain and altitudes begin to reduce with the landscape forming a transitional landform from the upland to lowland.

#### **Section D - Route Option 4**

##### Section D - Route Option 4a

Route Option 4a is routed in a southeastern direction. It extends from Stidrigg across a series of undulating hills heading towards Winterhope reservoir. It narrows slightly as the route option crosses over Gowd Moor to the north of the existing Solway Bank Wind Farm continuing to widen out at crosses over less elevated farmland until it finishes at Outer Hill.

There are a small number of constraints present on and near Route Option 4a including cultural heritage and archaeological sites as well as peatland and Ancient Woodland. Much the route option passes through open, locally undulating landscape with isolated settlements and proximity to the A708. Increased wirescape could occur where it contains a section of existing 132 kV OHL around Crawthat Hill, aligned to the end of woodland/forestry, however, overall the route option is considered to be feasible.

##### Section D -Route Option 4b

Route Option 4b continues south from Stidrigg over Linnhall to the east of the existing Minsca Wind Farm. It turns southeast and routes over High Muir to the south of the existing Solwaybank Wind Farm and continues east to the River Sark where it finishes.

Route Option 4b is comparable with 4a. While there are environmental constraints present the main routeing consideration relates to visual amenity. This option crosses a comparatively more settled landscape with the potential for an OHL to impact on Waterbeck and multiple isolated properties, adding to existing views of the existing 132 kV OHL and other voltage lines exacerbating the wirescape present in views.

#### **Route Option 5**

Route Option 5 continues from Route Options 4a and 4b to the Scotland-England border. It starts at Outer hill and is routed over low-lying farmland in a southeastern direction crossing the B6357 centred on Evertown. It is routed to the north of Scotsdike and extend eastwards crossing the A7 and River Esk at the Scotland-England border.

Route Option 5 is required for any route coming from the west of the Study Area to cross the Scotland-England border. There a small number of environmental routeing considerations present including scheduled monuments, listed buildings, woodland and peatland. There is

some limited woodland in an otherwise open and largely flat landform. The smaller scale landform and pattern increases sensitivity of the landscape to an OHL but would not prevent the development of an OHL through this area.

**PROJECT**  
Cross Border Connection -  
Gala North Substation to Border

**CLIENT**  
SP Energy Networks

**KEY**  
Study Area  
Potential Substation Site  
Route Option Section D  
Route Option Section - Other

Category A / Grade I Listed Building  
Category B / Grade II\* Listed Building  
Category C / Grade II Listed Building  
Scheduled Monument

Special Protection Area (SPA)  
Special Area of Conservation (SAC)  
Site of Special Scientific Interest (SSSI)  
Ancient Woodland Inventory Site  
Woodland identified in the Native  
Woodland Survey of Scotland  
Locally Designated Landscape  
Long Distance Trail

**Wind Turbine Location (Status)**  
Operational  
Consented  
Appeal/Public Inquiry  
Application Submitted  
Design/Scoping; Scoping  
Refused  
Wind Turbine Location - 2x Rotor Diameter

**Carbon and Peatland 2016**  
Class 1  
Class 3  
Class 4  
Class 5

**Existing Transmission System**  
132 kV Substation  
400 kV Substation  
132kV OHL  
400kV OHL

**TITLE**  
Figure 18  
Section D Route Options

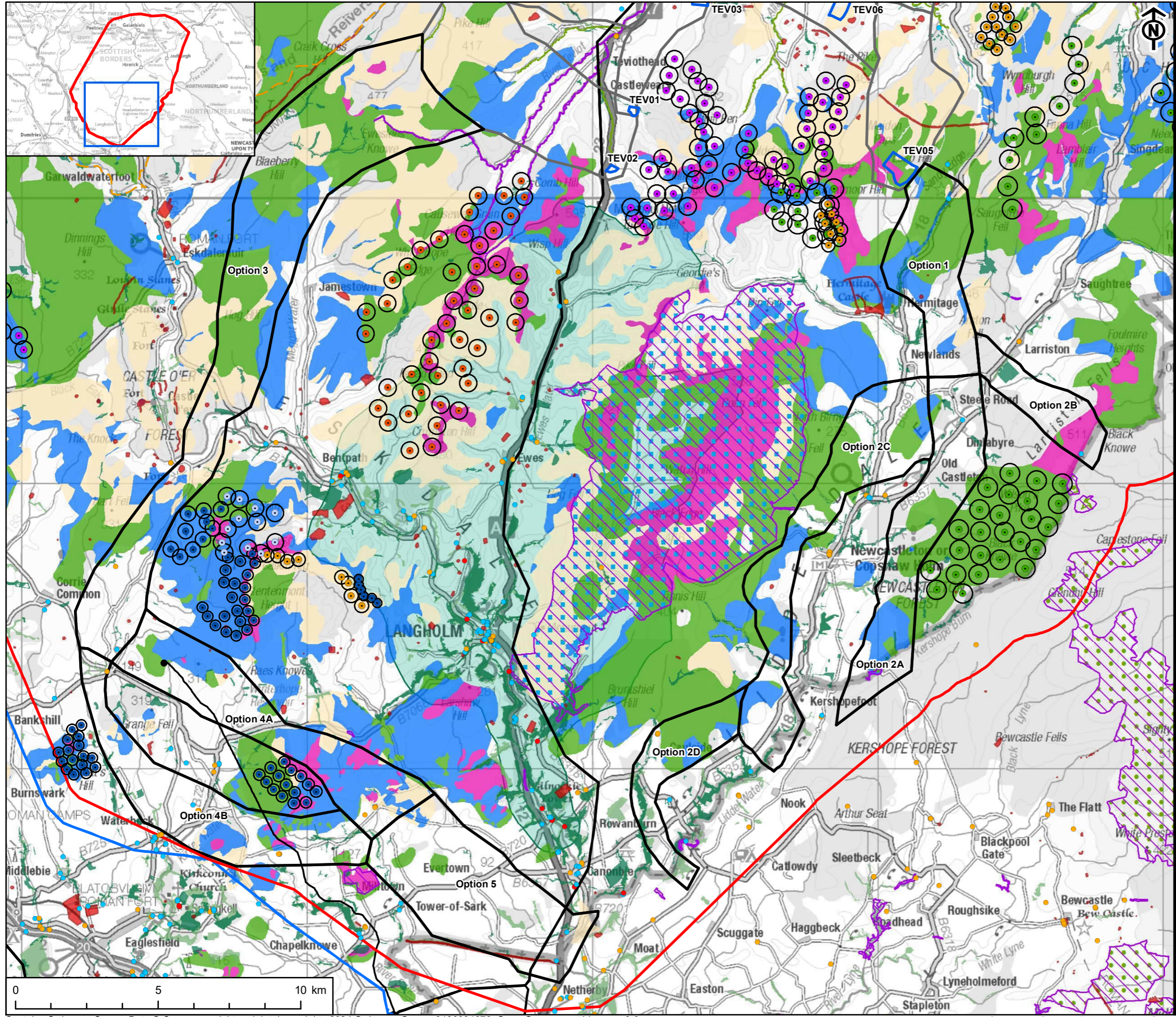
**REFERENCE**  
GH\_20240827\_RS\_18\_v1

**SHEET NUMBER**  
1 of 1

**DATE**  
27/08/24

Project Management Initials: DR Designer: LC Checked: DF Approved: DR

Scale @ A3 1:125,000



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## 8.6 Route Option Appraisal Conclusions

The Study Area was split into four sections for the purposes of identifying and assessing potential route options between the proposed Gala North Teviot Substation, alternative sites for the new Teviot Substation and the Scotland-England border. Table 16 provides a summary of the key findings of the appraisal including highlighting relevant comparative considerations between route options and links. It should be read with reference to Appendix H which provides a detailed appraisal. Figure 19 illustrates the outcomes of the appraisal.

**Table 16 Summary of Appraisal of Route Options and Links**

Section	Route Options	Summary of Key Findings
<b>Section A Proposed Gala North Substation to River Tweed</b>	<ul style="list-style-type: none"> <li>Route Option 1</li> </ul>	Route Option 1 is considered to provide a feasible option in which to develop an OHL route. Landform and woodland provide opportunities to integrate an OHL route into the landscape and reduce its potential effects.
	<ul style="list-style-type: none"> <li>Route Option 2a</li> </ul>	Route Option 2b is considered slightly preferable to Route Option 2a due to the potential effects of 2a on various routeing considerations including Bowland Garden and Designed Landscape and the village of Clovenfords.
	<ul style="list-style-type: none"> <li>Route Option 2b</li> <li>Route Link 2b to 2a</li> </ul>	Route link 2b to 2a is not considered to provide any significant benefits in routeing terms. While it would utilise part of Option 2b avoiding Bowland Garden and Designed Landscape it introduces additional crossings of the River Tweed SAC across the Caddon Water and would utilise part of 2a which impacts Clovenfords and impacts woodland.
<b>Section B River Tweed to the A7</b>	<ul style="list-style-type: none"> <li>Route Option 1</li> </ul>	Route Option 1 crosses relatively steep slopes to the south of the River Teviot and routes across SLA 3 Tweed, Ettrick and Yarrow Confluences. The SLA cannot be avoided, however, there is some scope to reduce effects on it by utilising the existing forestry plantation to the north as well as landform.

Section	Route Options	Summary of Key Findings
	<ul style="list-style-type: none"> <li>• Route Option 2a</li> <li>• Route Option 2b</li> <li>• Route Link 2b to 2a</li> </ul>	<p>Route Options 2a and 2b are broadly comparable with regard to environmental routeing considerations including crossing of local landscape designations. The main difference is that 2b is further west crossing more elevated land which makes it slightly less preferable to option 2a.</p> <p>Route link 2b to 2a is not considered to provide any significant benefit in routeing terms as it crosses the Yarrow within a steep section where the landscape is considered to be more sensitive to an OHL route.</p>
	<ul style="list-style-type: none"> <li>• Route Option 3a</li> <li>• Route Option 3b</li> <li>• Route Option 3c</li> <li>• Route Link 3c to 3b</li> </ul>	<p>Route Options 3a, 3b and 3c all require crossings of watercourses which are part of the River Tweed SAC and SSSI noting that 3c requires more crossings overall. In comparative terms Route Option 3a is considered to be slightly more constrained as it is narrower than Route Options 3b and 3c with greater potential to affect the setting of the scheduled monuments within it. Route Option 3a is also least preferred in terms of landscape and visual considerations as its crosses the Ettrick valley in a more sensitive location on the edge of a locally designated landscape. While 3b and 3c are comparable with both having traverse areas of peatland, Route Option 3c is slightly less preferable due to the landform crossing steep slopes with localised high points in excess of 500mAOD.</p> <p>The route link requires the use of Route Option 3c switching to 3b part way through it. This would enable some areas of class 3 peatland within Route Option 3c to be avoided otherwise it does not offer any significant environmental benefits with the exception of potentially reducing overall route length.</p>
	<ul style="list-style-type: none"> <li>• Route Option 4a</li> <li>• Route Option 4b</li> <li>• Route Option 4c</li> <li>• Route Option 4d</li> </ul>	<p>Route Options 4a, 4b, 4c and 4d provide alternative routes to the Teviot valley south of Hawick while Route Option 5 provides an alternative route to the north of Hawick. All of the route options involve crossing the more sensitive Teviot Valley landscape in which impacts on landscape character and visual amenity are more difficult to avoid.</p> <p>In broad terms Route Options 4a and 4b and then 4c and 4d are comparable to each other. This is largely due to the relative proximity of the options to each other as well as the nature of</p>



Section	Route Options	Summary of Key Findings
	<ul style="list-style-type: none"> <li>Route Option 5</li> <li>Route Link 4d to 4c</li> <li>Route Link 4c to 4b</li> </ul>	<p>the landform that they cross. Route options 4a and 4b are located to the east closer towards Hawick while options 4c and 4d cross less sparsely populated upland areas further to the west. Route options 4a and 4b also contain or are closer to cultural heritage or archaeology sites of the highest or high environmental value. While both 4a and 4b can avoid such sites their increased proximity increases the potential for setting effects, particularly compared to options 4c and 4d which do not contain any such sites. Options 4c and 4d provide greater scope to avoid designated sites of the highest or high environmental value but are required to cross areas of peatland. Route Options 4c and 4d are preferable on landscape and visual grounds as they are predominantly located within upland landscapes which are large scale, simple landscapes, relatively remote and with characteristics which indicate lower sensitivity to OHLs. Route Options 4a and 4b cross the Teviot Valley in a comparatively more sensitive location which makes these options less preferable in landscape and visual terms.</p> <p>Route Option 5 was identified to be less preferable due to landscape and visual considerations. It crosses the Teviot valley in a sensitive location due to its open character and proximity to settlements and transport routes.</p> <p>Route link 4c to 4b would enable OHL routes to avoid peatland within Route Option 4c, peatland would require to be crossed within the route link. Overall, there may be a slightly lower impact on peatland as the area within the route link is less than that in Route Option 4c, however, any onwards route would have to address other routeing considerations within Route Option 4b</p> <p>The route link requires the use of a very short section of Route Option 4d then switches to 4c. In practice it would connect OHL routes from Route Option 3c onto 4c largely avoiding 4d. Overall, it does not offer any significant environmental benefits. While it could potentially reduce the length an overall OHL route, the route link crosses an area of identified peatland which could be avoided by continuing south through Route Option 4d.</p>

Section	Route Options	Summary of Key Findings
<b>Section C A7 to new Teviot Substation</b>	<ul style="list-style-type: none"> <li>Route Option 1a</li> <li>Route Option 1b</li> <li>Route Option 1c</li> </ul>	<p>Route Options 1a, 1b and 1c provide alternative routes to TEV-05 and/or TEV06 routeing across the north of the proposed Teviot Wind Farm. Route Options 1a and 1c are located to the south of Hawick while Route Option 1b is routed from the north/northeast of Hawick.</p> <p>While Route Option 1b requires a crossing of the River Teviot where it is part of the River Tweed SAC and SSSI and Route Options 1a and 1c do not this is because of where route options stop and start (i.e. the River Teviot is already crossed by route options within section B which connect onto 1a and 1c). As a result, ecological designations of the highest or high environmental value are not a significant differentiating factor between options. Key environmental routeing considerations relate to cultural heritage and archaeological sites of the highest or high environmental value with a number of sites within or close to Route Options 1a and 1c. While direct impacts on the sites can be avoided there is high likelihood of setting impacts due to their proximity.</p> <p>Route Options 1a and 1c are preferred in landscape and visual terms compared with 1b which lies partly within the locally designated landscape SLA 5 Teviot Valleys as well as adjacent landscapes which are more sensitive to the introduction of an OHL as a result of the varying scale and irregular, undulating landform. Route Options 1a and 1c are comparable with both Options exhibiting landscape characteristics which assist in accommodating OHLs and limited visual receptors other than where the Options rise out of the Teviot valley.</p>
	<ul style="list-style-type: none"> <li>Route Option 2</li> </ul>	<p>Route Option 2 is required for any route connecting to substation site TEV-05. While in landscape and visual terms this Route Option is considered to be feasible with opportunities to utilise forestry to mitigate impacts, the key constraints are a requirement to cross the Catrail, a scheduled monument formed by a linear earthwork which extends across the option, as well as areas of peatland. Direct physical impacts on the scheduled monument can be avoided as it could be spanned by an OHL or and OHL could be routed through the gap in the earthwork, however, there is potential to impact its setting.</p>

Section	Route Options	Summary of Key Findings
	<ul style="list-style-type: none"> <li data-bbox="465 316 705 343">Route Option 3</li> </ul>	<p data-bbox="786 316 1953 751">Route Option 3 provides for a connection to the alternative substation sites to the west of the proposed Teviot Wind Farm (TEV-01, 02 or 03). There are a number of routeing considerations within or immediately adjacent to the route options including ecological and archaeological sites of highest or high environmental value. This includes the River Teviot, part of the River Tweed SAC and SSSI which is parallel to the Route Option 3 as well as a small number of scheduled monuments. Effects on the River Teviot are avoidable, however, with regard to the scheduled monuments there is the potential for setting effects. In landscape and visual terms Route Option 3 provides a relatively short connection to the substation options within the more open landscape context running parallel to the A7 within which the OHL would run along the plateau on top of the valley ridgeline predominantly impacting the corridor of the A7 and the receptors and settlement within it. This could create a wirescape with the existing 132kV OHL to the west of the A7 and a new OHL to the east.</p>
	<ul style="list-style-type: none"> <li data-bbox="465 794 705 821">Route Option 4</li> </ul>	<p data-bbox="786 794 1953 927">Route Option 4 has the potential to serve a number of purposes including providing a connection to and/or from the substation sites on the west of the proposed Teviot Wind Farm (TEV-01, 02 or 03). In particular, parts of Route Option 4 would be required to develop an onward OHL route on the west of the Study Area towards the Scotland-England border.</p> <p data-bbox="786 959 1953 1214">There are a small number of routeing considerations within Route Option 4 including multiple crossings of watercourses which are part of the River Tweed SAC and SSSI as well as routeing across areas of peatland. While these do not necessarily preclude an OHL route they could make it less favourable when evaluating an overall route. Route Option 4 lies predominantly within a landscape containing large tracts of forestry which could accommodate an OHL although the eastern section would require crossing of steep slopes where towers would appear as prominent elements within the landscape crossing the narrow A7 corridor.</p>
<p data-bbox="197 1246 436 1321"><b>Section D New Teviot Substation</b></p>	<ul style="list-style-type: none"> <li data-bbox="465 1246 705 1273">Route Option 1</li> </ul>	<p data-bbox="786 1246 1953 1347">Route Option 1 is in close proximity to Hermitage Castle scheduled monument and subject to detailed OHL routeing has the potential for setting impacts. It is considered that these can be avoided/reduced by routeing to the east of the option and using landform to reduce potential</p>

Section	Route Options	Summary of Key Findings
<b>to Scotland- England border</b>		<p>intervisibility. Other notable environmental routeing considerations including crossing an area of peatland between TEV-05 and Roughley at the head of the Liddel Valley.</p>
	<ul style="list-style-type: none"> <li>• Route Option 2a</li> <li>• Route Option 2b</li> <li>• Route Option 2c</li> <li>• Route Option 2d</li> </ul>	<p>Route Options 2a, 2b and 2c provide alternative approaches to crossing the Scotland-England border on the eastern side of the Study Area. Route Options 2a and 2c are routed on the east and west side of the Liddel valley respectively with Route Option 2b crossing Larriston Fells to the northeast of the Liddel valley.</p> <p>Route Option 2c is closer to the Langholm-Newcastleton Hills SPA and SSSI but is considered to be sufficiently far enough away that the designated site would not be affected by an OHL route. There are a small number of scheduled monuments and listed buildings within and on the margins of both options so this is not considered to be a significant differentiator. Route Option 2a is narrower where it crosses the edge of Newcastleton Forest adjacent to the proposed Liddesdale Wind Farm. In combination, the wind farm as well as the forestry (including its recreational use), are a constraint on an OHL route within Option 2a but would not prevent it. Route Option 2b would enable the shortest, most direct route across the Scotland-England border, however, it crosses into an area where the presence of designated sites including the Border Mires SAC and Kielder Mires SSSI would likely constrain onward route options and it is therefore not considered preferable.</p> <p>In landscape and visual terms Route Option 2b is least preferred on the basis that it crosses the steep hillside of Larriston Fell, appearing prominently within the landscape and increasing visual impact from the surrounding properties. Route Option 2a is slightly more preferable to Route Option 2c on landscape grounds due to the extensive upland forestry and larger scale landscape which is less sensitive to OHLs, however, this is tempered by the visual impact on the recreational users of the Newcastleton Forest trails. Route Option 2c comprises larger tracts of the more sensitive Upland Valley with Pastoral Floor landscape along with potential for increased visual impact from settlement in the valley and valley sides, however careful routeing using contours and landform would assist in reducing these effects.</p>

Section	Route Options	Summary of Key Findings
		<p>Route Option 2d is effectively an extension of 2c enabling an alternative crossing point of the Scotland-England border. In the context of the SP Energy Networks Project this only increases route length and introduces some additional routeing considerations including crossing peatland and the loss of woodland including potentially Ancient Woodland. With regards landscape and visual amenity Route Option 2d is not considered to offer any benefits over the southern extent of Route Option 2c as the former directly impacts the more sensitive enclosed, narrow valley landscape.</p>
	<ul style="list-style-type: none"> <li>Route Option 3</li> </ul>	<p>Route Option 3 is required for any route located to the west of the Study Area. It extends through Eskdalemuir Forest and would potentially require a large amount of tree removal while also potentially affecting areas or sites of the highest or high environmental value. This includes a potential crossing of Worms Cleugh part of the River Tweed SAC, as well as setting impacts on scheduled impacts and listed buildings within and on the margins of the route. Route Option 3 also requires to cross a number of areas of peatland. In landscape terms the forestry provides opportunities for OHL routeing either within or on the forestry edge helping to reduce potential landscape effects. Further south Route Option 3 crosses more open terrain and altitudes begin to reduce with the landscape forming a transitional landform from the upland to lowland.</p>
	<ul style="list-style-type: none"> <li>Route Option 4a</li> <li>Route Option 4b</li> </ul>	<p>Route Options 4a and 4b are similar with regard to the environmental routeing considerations which are present. Both options have the potential for some setting impacts of designated cultural heritage and archaeological sites subject to detailed routeing. Both options are also required to cross peatland as well as require tree removal. Route Option 4a and 4b are also broadly comparable in landscape terms as they lie within similar lowland and transitional landscapes. However, the main difference is with regard to potential visual impacts. Route Option 4b is likely to result in an increased visual impact on a greater number of receptors and therefore on balance is less preferred compared with Option 4a which also follows a more direct alignment</p>

Section	Route Options	Summary of Key Findings
	<ul style="list-style-type: none"><li data-bbox="465 316 705 343">Route Option 5</li></ul>	<p>Route Option 5 is required for any route coming from the west of the Study Area to cross the Scotland-England border. There a small number of environmental routeing considerations present including scheduled monuments, listed buildings, woodland and peatland. There is some limited woodland in an otherwise open and largely flat landform. The smaller scale landform and pattern increases sensitivity of the landscape to an OHL but would not prevent the development of an OHL through this area.</p>

**PROJECT**  
Cross Border Connection -  
Gala North Substation to Border

**CLIENT**  
SP Energy Networks

- KEY**
- Study Area
  - Potential Substation Site
  - Route Option Section
  - A
  - B
  - C
  - D
  - Less Preferred Option

**TITLE**  
Figure 19  
Route Options Appraisal Outcomes

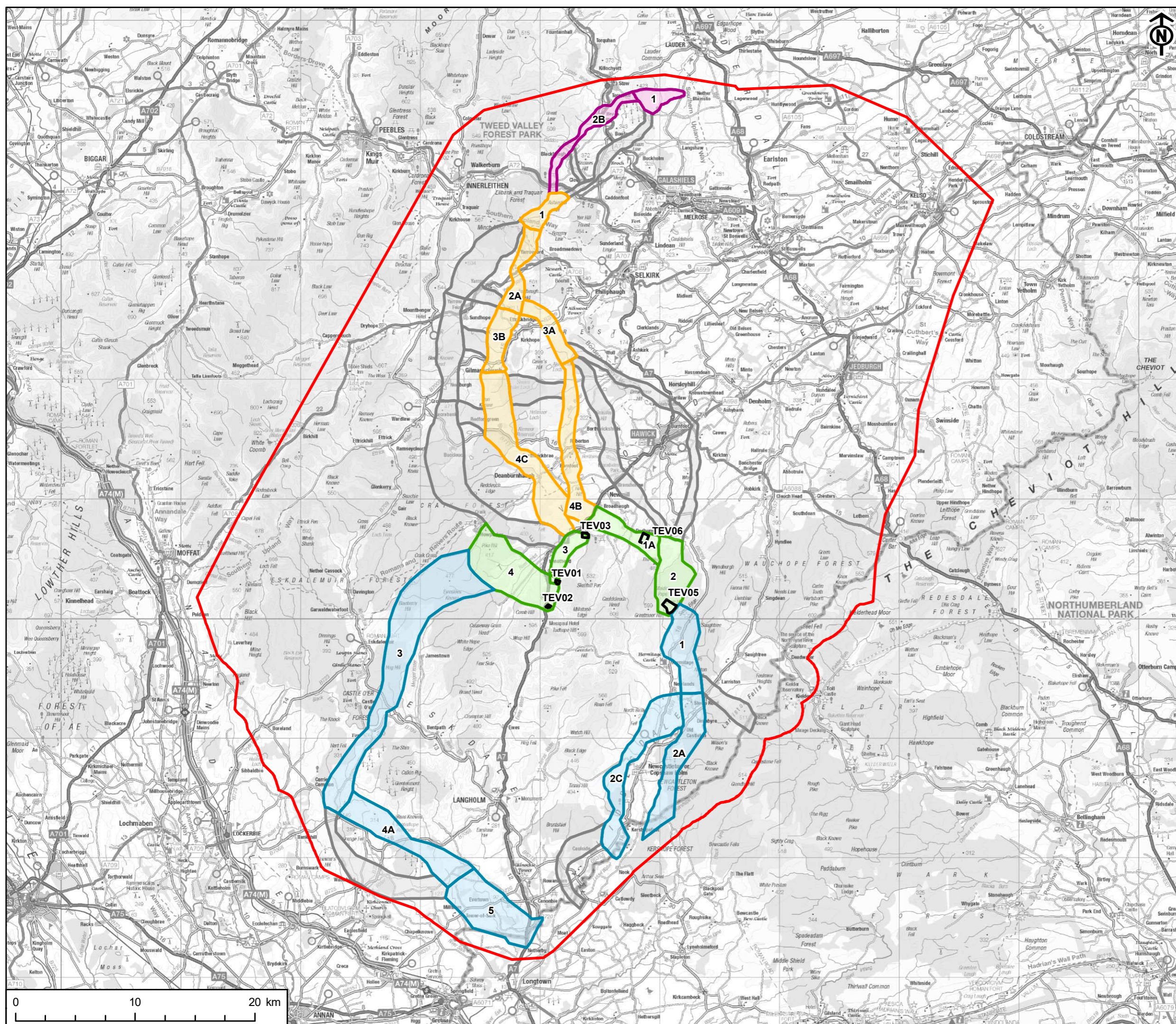
**REFERENCE**  
GH\_20240827\_RS\_19\_v1

**SHEET NUMBER**  
1 of 1

**DATE**  
27/08/24

Project Management Initials: DR Designer: LC Checked: DF Approved: DR

Scale @ A3 1:300,000



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