Chapter 6
Landscape and Visual Amenity

6 Landscape and Visual Amenity

Introduction

6.1 The assessment considers the potential effects of the Glenlee substation extension (hereinafter referred to as the substation extension or proposed development[1]) on:

- landscape character and resources, including effects upon the physical elements, character and/or qualities of the landscape; and
- visual amenity, including effects upon potential receptors (people) and viewing groups caused by change in the appearance of the landscape.

6.2 Landscape character and resources are considered to be of importance in their own right and are valued regardless of whether they are seen by people. Effects on views and visual amenity as perceived by people are clearly distinguished from, although closely linked to, effects on landscape character and resources. Landscape and visual impact assessments (LVIA) are therefore separate, although linked, processes.

6.3 The assessment methodology for the LVIA has been developed in accordance with the *Guidelines for Landscape and Visual Impact Assessment* (Version 3, 2013) (GLVIA3), and is detailed in **Appendix 6.1**. The assessment has been undertaken by Chartered Landscape Architects (Chartered Members of the Landscape Institute (CMLI)) at LUC with extensive experience in the assessment of landscape and visual effects.

6.4 This chapter deals with landscape and visual effects separately, including an assessment of cumulative landscape and visual effects in each of relevant section, and is supported by **Figures 6.1** to **6.3**. Accompanying visualisations are illustrated as **Figures 6.4** to **6.8**, and have been prepared in accordance with the methodology set out in **Appendix 6.2**.

6.5 This chapter should be read alongside the following appendices contained in **Volume 2** of the EIA Report:

- **Appendix 6.1: LVIA Assessment Methodology;** and
- **Appendix 6.2: Visualisation Methodology**.

6.6 Planning policies of relevance to this assessment are provided in **Chapter 5: Planning Policy Context**.

6.7 This chapter should be read in conjunction with the following chapters:

- **Chapter 3: Site Selection and Development Design**;
- **Chapter 4 : Development Description and Construction, Operation and Maintenance** which provides details of the proposed development; and
- **Chapter 9: Cultural Heritage**.

Scope of the Assessment

6.8 This section outlines the effects which have been considered potentially significant and which have been assessed in detail and also those which have been scoped out of detailed consideration. As noted in **Chapter 2: Approach to the EIA**, a separate EIA scoping exercise was not undertaken for the proposed development therefore the scope of the assessment has been informed by the Scoping Opinion received for the KTR Project, together with the professional judgement of the assessment team and specific consultation for the proposed development as detailed below.

[1] The 'proposed development' includes the Glenlee substation extension (as outlined in green on Figure 4.1) together with all associated works to be undertaken within the planning application site boundary as detailed within paragraphs 4.1-4.19 of Chapter 4 unless the context indicates otherwise.

Effects Assessed in Full

6.9 The following effects have been assessed in full:

- effects on the physical landscape within the Study Area;
- effects on the landscape character within the Study Area;
- effects which could be of relevance to the reasons for designation as described by key characteristics/special qualities of designated landscapes within the Study Area;
- effects on views and visual amenity experienced by visual receptors (people) at representative viewpoints;
- effects on views and visual amenity experienced by visual receptors within settlements;
- effects on views and visual amenity experienced by visual receptors at residential properties within close proximity of the substation extension;
- effects on views and visual amenity experienced by visual receptors travelling along routes in the Study Area; and
- cumulative landscape and visual effects (including potential combined, successive and sequential visual effects) arising in combination with other developments (as on shown on **Figure 6.1**).

6.10 In accordance with the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 ('the EIA Regulations'), the objective of the assessment is to identify, describe and assess the likely significant landscape and visual effects of the proposed development, and in combination with other existing and/or proposed developments (cumulative effects).

Effects Scoped Out

6.11 On the basis of the desk based and survey work undertaken, the professional judgement of the assessment team, experience from other relevant projects and policy guidance or standards, the following topic areas have been scoped out of the assessment:

- effects on visual receptors beyond a 2.5km radius from the proposed development, where it is judged that potential significant effects are unlikely to occur;
- effects on landscape character beyond a 0.5km radius from the proposed development, where it is judged that potential significant effects on landscape character are unlikely to occur;
- effects on designated landscapes beyond a 0.5km radius from the proposed development, from where it is judged that potential significant effects on key characteristics and/or special qualities, or views are judged unlikely to occur;
- effects on landscape and visual receptors that have minimal and/or very distant visibility, and are therefore unlikely to be subject to significant effects;
- effects on residential visual amenity in the event that the Residential Visual Amenity Assessment (RVAA) threshold is not reached[2]; and
- cumulative effects in combination with any other developments located beyond a 2.5km radius from the proposed development.

Legislation, Planning Policy, Guidance and Data Sources

6.12 Information relating to relevant international and Scottish planning policy and legislation is provided in **Chapter 5**. **Planning Policy Context** also provides detail relating to appropriate Scottish and local planning policy.

6.13 In summary, the LVIA has been carried out in accordance with, and with reference to the information and principles contained in:

[2] The RVAA threshold is detailed in Paras A6.1.21-A6.1.23 in Appendix 6.1: LVIA Assessment Methodology.

Assessment Guidance

- The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations (2017);
- Landscape Institute and the Institute of Environmental Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3);
- Scottish Natural Heritage (SNH) (2012) Assessing the cumulative impact of onshore wind energy developments[3];
- Swanick, Carys and Land Use Consultants (2002). Landscape Character Assessment Guidance for England and Scotland. Countryside Agency and Scottish Natural Heritage;
- SNH (2018) A Handbook on Environmental Impact Assessment, Appendix 2: Landscape and Visual Impact Assessment, Version 5;
- SNH (2017) Visual Representation of Wind Farms, Version 2.2[4];
- Landscape Institute Advice Note 01/11 Photography and photomontage in landscape and visual impact assessment;
- Landscape Institute (2017) Technical Guidance Note 02/17 Visual representation of development proposals;
- Landscape Institute (2019) Residential Visual Amenity Assessment (RVAA) Technical Guidance Note 2/19.

Design and Locational Guidance

- The Holford Rules: Guidelines for the Routeing of New High Voltage Overhead Transmission Lines (with National Grid Company plc (NGC) 1992 and Scottish Hydro-Electric Transmission plc (SHETL) 2003 Notes); and
- The Horlock Rules: NGC Substations and the Environment: Guidelines on Siting and Design (2006).

Data Sources

- Ordnance Survey (OS) 1:10,000, 1:25,000, 1:50,000 base mapping;
- OS Terrain® 5 mid-resolution height data (DTM); and
- Dumfries and Galloway Council Planning Portal (website) and Energy Consents Unit (ECU) (website) to inform the cumulative assessment.

Consultation

6.14 The details of specific issues raised in relation to the LVIA during the consultation process with the D&GC landscape architect, including the selection of assessment viewpoints, are set out in **Table 6.1** below.

Table 6.1: Consultation Responses

Consultee	Consultation Phase	Response/Issue Raised	Response/Action Taken
Dumfries and Galloway Council (D&GC)	LVIA 28th August 2017	The site lies within the Galloway Hills Regional Scenic Area. The Southern Upland Way runs within 1.5km of the site, taking in Waterside hill, a popular vantage point. Suggested 500m radius for the assessment of landscape and visual effects. Views from elevated locations beyond this area should also be considered including Waterside Hill, Mulloch Hill, and Dalry Church. Viewpoints should also be selected to assess potential impacts on residential dwellings closer to the site as proposed. Consider cumulative effects which may arise from the introduction of the substation extension and the overhead line components of the KTR Project. Landscape mitigation should aim to create 'natural' looking features (i.e. avoiding steep-sided or linear/geometric-shaped bunding) with locally-occurring tree/shrub species (there is an area of ancient woodland 'of semi-natural origin' uphill to the west of the site). The site is adjacent to an existing power station and substation, so landscape proposals should be proportionate. It lies within an otherwise rural setting, so landscape mitigation should include tree planting to the north-west and south-east of the proposed extension; whilst this will not screen views from all points of the compass, it should help soften potential visual impacts.	Landscape designations and sequential routes are considered within the assessment. All suggested viewpoints are considered within the wider 2.5km Study Area and focused 500m Study Area for the assessment of landscape effects. Cumulative effects are considered in the cumulative assessment. Landscape mitigation proposals have been informed by advice provided, as detailed on **Figure 4.3** (See detailed Planning drawing Landscape Mitigation Plan ref: **LUC_6118_LP_PLN_001**)
	LVIA 08th January 2018	Further information was provided to D&GC on the 20th December 2017.	The LVIA takes into consideration the previous response/issue raised on 28/08/2017.

[3] Although the guidance concentrates on the particular issue of assessing the cumulative effects of wind energy development, the methods are also useful when considering the cumulative landscape and visual effect of other forms of development.
[4] Although the guidance relates to the production of visualisations of wind farm development, elements of the methodology and approach are applicable for other types of development.

Study Area

6.15 Informed by the location and contained nature of the site, the scale of the proposed development, and the likely extent of potential material landscape and visual effects, a Study Area of 2.5km radius from the substation extension (but excluding the access along the U2s and the A762), as shown on **Figure 6.1**, has been adopted for the assessment of potential landscape and visual effects, as agreed with D&GC. Consideration of potential landscape effects within this area is limited to a radius of 0.5km, whilst visual effects on views from locations up to 2.5km are considered.

Field Survey Work

6.16 Field survey work was carried out during several visits under differing weather conditions between August 2017 and May 2019, and records were made in the form of field notes and photographs. Field survey work included visits to the site, viewpoints, designated landscapes and extensive travel around the Study Area to consider potential effects on landscape character and on experiences of views seen from designated landscapes, settlements, nearby residential properties and routes.

Assessment Methodology

6.17 The LVIA methodology was prepared in accordance with the principles contained within GLVIA3, and is described in detail in **Appendix 6.1: LVIA Assessment Methodology**. **Appendix 6.1** should be

referred to whilst reviewing the findings of this assessment to gain a clear understanding of how findings of significance have been informed.

Overview

6.18 The key steps in the methodology for assessing both landscape and visual effects were as follows:

- a Study Area of 2.5km radius as detailed in paragraph 6.15 was defined based on good practice guidance and consultation with D&GC, and is considered to be proportional to the proposed development;
- the proposed site and surrounding Study Area were analysed in terms of baseline landscape character and overall sensitivity;
- the visual baseline was recorded in terms of the different groups of people (visual receptors) who may experience views of the substation extension, the locations where they will experience views and the nature of these views and existing visual amenity;
- viewpoints were selected as representative of the range of views and types of viewer likely to be affected by the substation extension, based on consultation undertaken with D&GC;
- potentially significant effects on landscape and visual receptors were identified; and
- the significance of landscape and visual effects was judged with reference to the sensitivity of the resource/receptor (including a consideration of both its susceptibility and value) and the magnitude of change (including a consideration of the size/scale, geographical extent, duration and reversibility of effects).

6.19 It should be noted that a Zone of Theoretical Visibility (ZTV) to establish the extent of visibility of the substation extension within the Study Area was not prepared. A ZTV was deemed unnecessary given the limited footprint of the substation extension. Predicted visibility was informed by the visual relationship of the existing substation with receptors across the 2.5km radius Study Area.

Assessing Significance

6.20 The assessment of landscape and visual effects considers both the sensitivity of the landscape or visual receptor and the magnitude of effect. **Appendix 6.1: LVIA Assessment Methodology** provides full details of the criteria considered in judging the identified aspects of sensitivity (combining judgements of susceptibility and value) and magnitude of change (combining judgements of size/scale, geographical extent, duration and reversibility), and the grades used to describe each. It explains how these judgements are combined to make an informed professional judgment on the significance of each landscape and visual effect (see a diagrammatic indication of the process in **Diagram 1** contained in **Appendix 6.1: LVIA Assessment Methodology**).

6.21 The level (and significance) of landscape and visual effects are judged with reference to the sensitivity of the receptor (alternatively referred to as the nature of the receptor), and the magnitude of effect (or change) (alternatively referred to as nature of the effect), expected as a result of the introduction of the proposed development both individually and cumulatively (in combination with other proposed developments).

6.22 Where the magnitude of landscape or visual change that will occur as a result of the introduction of the proposed development in the LVIA is identified as being either low or barely perceptible, potential cumulative effects are not assessed in the cumulative assessment. In these instances it is considered that, owing to distance and/or the limited magnitude of landscape or visual change, there is unlikely to be potential for significant cumulative landscape or visual effects to arise from the proposed development.

6.23 Levels of landscape or visual effect are identified as **major**, **moderate**, **minor** or **none**. Major and moderate effects are considered significant in the context of EIA Regulations.

6.24 This determination requires the application of professional judgement and experience to take on board the many different variables which need to be considered, and which are given different weight according to site-specific and location-specific considerations in every instance. Judgements of potential landscape and visual effects which may arise from the introduction of the proposed development, either individually or cumulatively when considered in combination with other existing, consented or proposed developments, are made on a case by case basis, guided by the principles set out in **Diagram 1** in **Appendix 6.1** and the typical descriptions/definitions as detailed in **Table 6.2** below.

Table 6.2: Levels of Effect and Significance

Significance of Effect	Receptor	Description/Definition
Major	Landscape	The proposed development will result in an obvious change in landscape characteristics and character, likely affecting a landscape with a moderate or high susceptibility to that type of change. This level of effect may also occur when a medium scale of effect acts on a nationally valued landscape. The effect is likely to be long-term and affect a relatively large area.
	Visual	The proposed development will result in an obvious change in view, likely affecting a visual receptor with a moderate or high susceptibility to that type of change. This level of effect may also occur when a medium scale of effect acts on a nationally valued view and/ or a high susceptibility receptor. The effect is likely to be long-term and affect a relatively large area or relatively large number of people.
Moderate	Landscape	The proposed development will result in a noticeable change in landscape characteristics and character, likely affecting a landscape with a moderate susceptibility to that type of change. This level of effect may also occur when a smaller scale of effect acts on a more widely valued landscape, or a larger scale of effect acting on a landscape valued at a more local level. This level of effect may also occur when a large scale of effect occurs over a relatively short period or over a small area.
	Visual	The proposed development will result in a noticeable change in a view, likely affecting a viewer with a moderate susceptibility to that type of change and/ or locally valued view. This level of effect may also occur when a smaller scale of change acts on a higher susceptibility receptor or affects a large number of people, or a larger scale of effect acting on a lower susceptibility receptor or affecting fewer people. This level of effect may also occur when a large scale of effect occurs over a relatively short period or over a small area/ affects few people.
Minor	Landscape	The development will result in a small change in landscape characteristics and character over a long-term duration. This level of effect may also occur when a larger scale of effect is of short-term duration or confined to the site.
	Visual	The development will result in a small change in view over a long-term duration, likely affecting a smaller geographic extent and/ or fewer people. This level of effect may also occur when a larger scale of effect is of short-term duration or is confined in its geographical extent.
None	Landscape	The development will not result in a noticeable (barely perceptible) change in landscape characteristics/character.
	Visual	The development will not result in a noticeable (barely perceptible) change in views, either individually or cumulatively when considered in combination with other existing, consented or proposed developments.

Assessment Limitations

6.25 In accordance with Part 6 of Schedule 4 of the EIA Regulations, the EIA Report should state where any technical deficiencies have arisen. No substantial information gaps have been identified during the preparation of baseline information or undertaking of the assessment, and it is considered that there is sufficient information to enable an informed decision to be taken in relation to the identification and assessment of likely significant environmental effects on landscape and visual amenity.

Visualisations and Modelling

6.26 The methodology for production of the visualisations was based on current good practice guidance as set out by SNH[5]. Detailed information about the approach to viewpoint photography, and visualisation production is provided in **Appendix 6.2: Visualisation Methodology**.

6.27 Accompanying visualisations are illustrated as **Figures 6.4 to 6.8**.

Future Baseline in the Absence of the Development

6.28 In the absence of the proposed development it is likely that the land will continue under the same land use, and the character of the Study Area is therefore unlikely to change notably. However, the landscape and visual amenity of the Study Area is likely to be influenced by a number of *'forces of change'*. Forces for change are those factors affecting the evolution of the landscape and which may, consequently, affect the perception of the Study Area in the near or distant future. Although prediction of these is necessarily speculative, those of particular relevance are discussed briefly below.

Other Changes to Electricity Transmission Network

6.29 Further reinforcement and extension of the electricity transmission network, predominantly to connect further renewable energy generation, is likely to occur within the vicinity of the proposed development. There is evidence of this within the extent of the 2.5km radius Study Area used for the LVIA, and beyond up to 10km, **Figure 2.1** illustrates the location of similar existing and proposed developments[6].

Renewable Energy Development/Deployment

6.30 Deployment of onshore wind farm development is a clear force for change across the Study Area, and Dumfries and Galloway more widely, and is likely to continue. **Figure 2.1** illustrates the location and extent of operational, consented and proposed wind farms[6] within the wider Study Area for the cumulative assessment up to 2.5km, and beyond up to 10km. In addition, there is an increasing number of operational, consented and proposed domestic wind turbines of varying heights and rotor diameters located across the surrounding agricultural landscape. As farmers diversify income and seek opportunities to generate energy for domestic and commercial use, it is likely that interest in this type of development will continue.

Afforestation and Deforestation

6.31 Mature deciduous broadleaf woodland currently contains views of the substation extension site from the immediate vicinity and wider extents of the Study Area which is not anticipated to change substantially over time. Land dedicated to commercial forestry covers a relatively small proportion of the Study Area, and although a degree of certainty as to the rotational felling and replanting of particular areas of coniferous woodland within the Study Area is provided by current Forest Management Plans, there is also potential for felling and replanting plans to change in respect of both timing and extents due to unforeseen circumstances and events. However, the assessment of potential effects understandably does not take account of hypothetical scenarios which could occur during the operational lifespan of the proposed development.

Changes in Agricultural Land Use

6.32 Elsewhere within the Study Area agriculture continues to represent the dominant land use, predominantly focused on the rearing of cattle and sheep and dairy farming, with some evidence of arable farming in the low lying southern extents of the Study Area. It is expected that this will continue, and there is evidence that consolidation of farming operations to a smaller number of larger farms is occurring across Dumfries and Galloway leading to development of new agricultural buildings and infrastructure within the landscape.

[5] SNH (2017) Visual Representation of Wind Farms, Version 2.2

[6] Based on publicly available data accurate on 1st June 2019.

Implications of Climate Change

6.33 Qualitatively, the UKCP18[7] projects the following for Dumfries and Galloway:

- an increase in summer and winter temperatures;
- an increase in dry spells, particularly in summer months;
- an increase in winter rainfall; and
- an increase in wind speeds, including an increase in the frequency of winter storms.

6.34 A number of the above *'forces for change'* are likely to occur as a consequence of climate change and man-made responses to climate change. Of particular relevance to the landscape resource, changes in soils and vegetation, the form and distribution of agricultural land use and forestry, and the form of rivers and floodplains are likely to lead to potential physical and perceptible long-term and often irreversible changes in the landscape.

6.35 The deployment of further renewable energy generation development (e.g. hydro power and onshore wind energy) as part of the man-made decarbonisation of the energy system is a likely consequential response to climate change. This is likely to lead to further perceptibility of renewable energy development across the Study Area, and Dumfries and Galloway more widely. Although the presence of wind energy development is often highly perceptible due to its nature, scale and location, changes in the landscape and views are largely reversible.

6.36 The assessment of landscape and visual effects arising from the introduction of the proposed development presented in this chapter is not anticipated to change in the event that the climate change projections set out above occur during the lifetime of the project. There is potential for future cumulative landscape and visual effects to occur in relation to the deployment of further renewable energy generation development within the Study Area, however the contribution of the proposed development (individual connections and/or collectively) will not change from the effects presented in this assessment.

The 'Do Nothing' Scenario

6.37 Notwithstanding the UKCP18 projections described above, if the proposed development was not to proceed, it is likely there will be little or no change to the baseline condition of the Site. The current use of the land as improved grazing pasture will likely continue.

Micrositing

6.38 The final layout of the substation extension has been designed to avoid effects on the landscape as far as possible, and the design is considered to be sufficiently progressed that micrositing of the substation extension will not be required. Should any minor changes to the design be required, these would be within the site boundary and would be agreed with D&GC in advance.

Mitigation and Good Practice Measures

Construction Phase

6.39 All mitigation of potential landscape and visual effects arising from the construction phase of the proposed development, such as the protection of vegetation during construction and the restoration of disturbed areas after construction will be detailed in the Construction Environmental Management Plan (CEMP) (example provided as **Appendix 4.1**) which includes reference to construction method statements. Examples of good practice measures are set out in paragraph 6.40 below.

6.40 A number of good practice measures to avoid or minimise effects occurring during construction, and avoid long term effects persisting following completion of all post construction restoration activities are proposed. The following measures will be implemented throughout the construction phase of the

[7] UK Climate Projections (2019) [online], available at: http://www.metoffice.gov.uk/research/collaboration/ukcp Accessed August 2019

proposed development to ensure potential landscape and visual effects are avoided, minimised or reduced wherever possible.

- Construction activities will be conducted in accordance with the Construction Environmental Management Plan (CEMP).
- Existing landscape features such as hedgerows, woodland, tree belts and stone dyke field enclosures will be retained as far as practical.
- Any disturbance to or temporary removal of existing field boundaries (e.g. hedgerows, stone dykes or fences) to facilitate construction access through construction of the passing places will be undertaken sensitively to ensure successful reinstatement of these features following completion of construction activities.
- Delivery of equipment for enabling works and construction vehicles will access the site from the proposed access from the U2s.
- Construction vehicles will not track across undisturbed areas outside their defined working areas and access corridor.
- Materials and machinery will be stored tidily during the works. Machinery will not be left in place for longer than required for construction purposes to minimise effects on views and visual amenity.
- Following the introduction of the main components of the substation extension, which will remain during the operational phase, construction works (e.g. construction working areas, access tracks) and previously disturbed areas will be restored and revegetated during the construction phase.
- Topsoil, and the seedbank within it, will be carefully stripped and will be stored in areas where it will not be disturbed or tracked upon in low uncompacted mounds (proposed topsoil storage areas are shown on **Figure 4.1**). Stored topsoil will be used for the progressive restoration of disturbed areas in line with the landscape mitigation proposals shown on **Figure 4.2**. Soft materials will be used to regrade slopes prior to promotion of natural recolonisation of vegetation.
- Seeding will be undertaken using locally native species of plants, and to tie in with adjacent vegetation types, where considered appropriate and essential to prevent erosion.
- On completion of the construction phase, all equipment and temporary infrastructure not required for future operational use will be dismantled and removed, including removal of construction waste and its appropriate disposal; filling and compacting hollows and excavation trenches with the appropriate stockpiled materials.
- Slope regrading activities will be undertaken to provide sustainable and erosion resistant landforms compatible with the pre and post-construction land use and water management strategies.

6.41 During the construction phase, a number of existing mature oak trees close to the existing watercourse and areas of farmland will be removed to accommodate the substation extension and associated earthworks. Proposed mitigation planting will compensate for this loss of vegetation. Planting will comprise plant species of local provenance with stock in accordance with seed zone 108 as described in Seed Sources for Planting Native Trees and Shrubs in Scotland (Forestry Commission, 2006)[8] and informed by existing site vegetation identified during fieldwork.

Operational Phase

6.42 The avoidance or minimising of landscape and visual effects during the operational phase of the proposed development is predominantly the result of embedded mitigation which influenced both the siting and design of the substation extension as detailed in **Chapter 3: Site Selection and Development Design**. The site selection and design process was informed by the principles of the Horlock Rules for the siting and design of new substations, or substation extensions, to avoid or reduce the environmental effects of such developments[9], and considered a number of potential alternative options for the location of the required substation extension. A comparative appraisal was undertaken to determine the preferred option taking into account economic, technical and environmental considerations.

6.43 In relation to potential landscape and visual effects, the proposed option of extending the existing Glenlee substation (Option 1) was considered to be the preferred in landscape and visual terms, as it is contained to one side of the penstock and will not substantially increase the influence of infrastructure over a wider area. Whilst substantial cut and fill will be required, there are opportunities for screening of the substation and landscape mitigation planting has been considered to reduce visibility from nearby properties to the south-east in particular. The proposed alignments of the overhead lines connecting into the existing and substation extension site (the KTR Project connections) will contain the presence of transmission infrastructure within an area already occupied by existing infrastructure, thus avoiding the potential for extending landscape and visual effects over a wider area.

6.44 Proposed mitigation planting will compensate for the loss of mature broadleaf deciduous trees, and will provide screening in close proximity views looking towards the substation extension site from the north, east, west and in part the south, south-east. Planting will also help integrate the site into the wider rural landscape in longer distance views experienced from elevated positions including Waterside Hill to the north and Mulloch Hill to the east. Native broadleaf trees and shrubs are proposed adjacent to the north-western and south-eastern edges of the site beyond the extent of platform excavations; this was agreed in consultation with D&GC's Landscape Architect in August 2017.

6.45 The extent and form of the proposed landscape mitigation planting is described in **Chapter 4: Development Description and Construction, Operation and Maintenance** and shown on **Figure 4.3** (See detailed Planning drawing Landscape Mitigation Plan ref: **LUC_6118_LP_PLN_001**).

Existing Conditions – Landscape Baseline

Introduction

6.46 This section presents an overview of the landscape baseline including current landscape character (including constituent landscape elements), current landscape condition and any designations attached to the landscape.

The Site and Context

6.47 The existing Glenlee substation and proposed substation extension site, shown in **Figure 4.1**, are located directly north-west of the small community of Glenlee and approximately 1.5km south-west of the settlement of St. John's Town of Dalry in Dumfries and Galloway. In this chapter, references to the site are to the planning application site as shown on **Figure 4.1** unless the context indicates otherwise. Located south-west of the existing Glenlee substation, the proposed substation extension site comprises undulating semi-improved rough grassland with scattered mature deciduous trees. The site gently slopes from south-west to north-east from approximately 70m Above Ordnance Datum (AOD) to 50m AOD at the boundary of the existing substation.

6.48 The adjacent Glenlee hydro power station includes the hydro power station building, penstock and pipeline, which runs on a south-west to north-east alignment and descends from the elevated eastern flanks of Glenlee Hill to the west of the site. A number of residential properties are located directly adjacent to the eastern site boundary of the proposed substation extension, extending south-westwards along the U3s minor road.

6.49 The extents of proposed temporary construction works are shown on **Figure 4.1**. A construction compound to be used for the pre-enabling works will be located to the north of the U2s, utilising an area of existing hard standing (used for overflow parking) flanked by existing broadleaf woodland to the north and east. The proposed construction compound for the main works is located approximately 150m north-west of the existing hydro power station, whilst a temporary construction vehicle holding area will be situated to the south of the proposed substation extension platform. In addition, passing places will be temporarily upgraded or created along the U2s and A762 between the proposed site and the junction with the A713 near Earlstoun hydro power station.

The Study Area

6.50 The Study Area, shown in **Figure 6.1**, extends to a 2.5km radius from the proposed development (excluding the access along the U2s and the A762). Located at the transition between the Kenmure Valley floor and Kells Foothills, the landscape of the Study Area is predominantly characterised by pastoral fields, semi-improved grasslands and pockets of riparian woodland located along the Water of

[8] Forestry Commission Scotland (2006) Guidance Seed Sources for Planting Native Trees and Shrubs in Scotland
[9] The Horlock Rules were devised in 2003 and updated in 2006 by National Grid Company (NGC) plc

Ken and smaller tributaries including Coom Burn. The north-eastern extents of the Study Area around Coom Burn and the Water of Ken are relatively flat. Topography slopes upwards towards Glenlee Hill (271m AOD) in the west of the Study Area.

6.51 Key transport routes within the Study Area include the A762 (part of the Loch Ken and River Dee Biosphere Route, Galloway Kite Trail and Castle Route) and the A713 (part of the Galloway Tourist Route and the Loch Ken/River Dee Biosphere Route).

6.52 Recreational routes within the Study Area include the Southern Upland Way (SUW) long distance footpath which passes within approximately 1.2km north of the substation extension at its closest point, and which is crossed by the northern extent of the access along the A762. A network of core paths passes within close proximity to the north, north-west and south-west of the site including Core Path No. 30 Glenlee which passes within 100m to the north-west of the site of the substation extension.

6.53 St. John's Town of Dalry is the largest settlement within the Study Area located on the eastern side of the Water of Ken approximately 1.5km north-east of the Glenlee substation extension. In closest proximity to the existing substation and the substation extension is the linear development of residential properties close to the south-eastern boundary of Glenlee substation. There are a number of more scattered individual properties and farmsteads located within the Study Area. This includes clustered development within 1km east of the existing Glenlee substation and west of Courthill.

Landscape Baseline Overview

6.54 Landscape documents of relevance to the landscape assessment comprise:

- Scottish Natural Heritage (2019) Scottish Landscape Character Types Map and Descriptions;
- Land Use Consultants (1998) Dumfries and Galloway Landscape Assessment No. 94;
- Dumfries and Galloway Council (2017) Dumfries and Galloway Wind Farm Landscape Capacity Study (DGWFLCS);
- LUC on behalf of SP Energy Networks (2015) The Dumfries and Galloway Strategic Reinforcement Project: Routeing and Consultation Document; and
- Northlight Heritage for Galloway Glens Landscape Partnership (2017) Landscape Character Assessment & Historic Environment Audit for the Galloway Glens Landscape Partnership.

Landscape Character Types

6.55 In 2019, SNH published the National Landscape Character Assessment (LCA) in a digital map-based format detailing a national dataset of 389 Landscape Character Types (LCTs). The LCTs included in this Scotland wide dataset were based on a review of existing regional LCAs produced between 1994 and 1999 and included updates to these original LCAs taking into account advances in digital technology, development of complementary datasets and changes in development patterns and pressures[10]. The LCTs within the Study Area are shown on **Figure 6.2**[11] and detailed in

6.56 **Table 6.3** below.

6.57 This dataset updates and supersedes the original Dumfries and Galloway Landscape Assessment (1998) which described six Regional Character Areas and 26 LCTs within Dumfries and Galloway. In one Regional Character Area, the same LCT may occur as a number of different Landscape Character Units (LCUs), discrete geographical areas of relatively uniform character of landscape type. A description and the key characteristics of the LCTs considered in the assessment of landscape effects are detailed in the Landscape Assessment section below.

6.58 In 2017, the Galloway Glens Landscape Partnership commissioned a combined review of the local character of the landscapes within the area with an audit of the area's historic environment to inform a Landscape Conservation Plan. The Landscape Character Assessment & Historic Environment Audit identified finer grain detail Local Landscape Areas (LLAs) using as a starting point the LCT types identified in the Dumfries and Galloway Landscape Assessment (1998, LUC). The study highlighted potential changes in characteristics of the LCTs, and described more recent landscape change which has occurred since the original LCA was published in 1998. The LLAs do not necessarily nestle discretely within the 1998 LCTs, therefore particular local variances in the boundaries, as well as differences in characteristics and qualities identified are acknowledged where relevant, in the baseline information presented in

6.59 **Table** 6.3 below.

6.60 The assessment of landscape effects uses the SNH National Landscape Character Assessment (2019) as the basis for the assessment of effects on landscape character. Where relevant reference is made in the assessment to landscape documents detailed in the Landscape Baseline Overview section above.

6.61 The LCTs within 2.5km listed in

6.62 **Table** 6.3 below have been considered in respect of their landscape and visual relationship with the proposed development.

Table 6.3: Landscape Character Types

LCT (2019)	Intervisibility between the substation extension and LCTs with 2.5km
Upper Dale – Dumfries & Galloway LCT (165) (formerly LCT 9: Upper Dale – Glenkens LCU) (host, i.e. site located in this LCT)	The substation extension is located within the south-western extent of this LCT. **Considered within the assessment**.
Flooded Valley LCT (164) (formerly LCT 8: Flooded Valley – Ken Valley LCU)	The proposed substation extension is located approximately 0.7km outside this LCT to the west. Views of the existing Glenlee substation from this LCT are largely screened by vegetation to the north-east and east. Significant indirect effects on this LCT are therefore considered unlikely. Not considered further.
Foothills with Forest LCT (176) (formerly LCT 18a: Foothills with Forest – Rhinns of Kells LCU)	The proposed substation extension is located approximately 0.4km outside this LCT to the north-east. Visibility of the extension will be limited by landform and vegetation to the south and south-west, including the lower north-western slopes of Glenlee Hill and the mixed woodland of Black Bank Wood. Significant indirect effects on this LCT are therefore considered unlikely. Not considered further.

Landscape Capacity

6.63 In May 2015, LUC published the Dumfries and Galloway Strategic Reinforcement Project: Routeing and Consultation Document[12]. As part of this study, the ability of the landscape to accommodate electricity substation infrastructure was considered in greater detail. The methodology for this study is described below.

6.64 The 2002 Landscape Character Assessment Guidance[13] provided a starting point for the definition of landscape capacity: *"Landscape capacity refers to the degree to which a particular landscape character type or area is able to accommodate change without significant effects on its character, or overall change of landscape character type. Capacity is likely to vary according to the type and nature of change being proposed."*

6.65 SNH define landscape capacity as *"the extent to which a particular landscape type is able to accept a particular kind of change (e.g. mining, forestry, wind farms) without significant effects on its character. The capacity of a landscape for a specific type of change will depend upon the nature and magnitude of the change and the landscape's sensitivity."*[14]

6.66 As outlined in GLVIA3, an appraisal of landscape capacity *"cannot provide a substitute for the individual assessment of the susceptibility of the receptors in relation to change arising from the specific*

[10] https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/landscape-character-assessment-scotland
[11] Data from SNH and D&GC.
[12] LUC on behalf of SP Energy Networks (May 2015) The Dumfries and Galloway Strategic Reinforcement Project: Routeing and Consultation Document
[13] Swanick, Carys and Land Use Consultants (2002). Landscape Character Assessment Guidance for England and Scotland. Countryside Agency and Scottish Natural Heritage
[14] http://www.snh.gov.uk/protecting-scotlands-nature/looking-after-landscapes/tools-and-techniques/landscape-capacity-and-sensitivity/

development proposal."[15] The appraisal was presented in Appendix 3 of the Routeing and Consultation Document (2015), where landscape capacity[16] was considered with reference to the existing landscape characteristics and attributes of the landscape.

6.67 Accordingly, the Dumfries and Galloway Landscape Character Assessment (1998) was used as the starting point in determining the relevant landscape capacity of each LCT to accommodate electricity substation infrastructure. Each LCT was evaluated (on its susceptibility to being changed by type of development proposed) and categorised as having higher, medium or lower landscape capacity to accommodate electricity substation infrastructure. The appraisal relied on the application of professional judgement in the use of the LCA, and also drew on the principles set out in the Holford Rules and the Horlock Rules.

6.68 Where relevant, the assessment of landscape effects draws upon the findings of the 2015 appraisal of landscape capacity.

Nationally Designated Landscapes

6.69 There are no nationally designated landscapes (National Parks or National Scenic Areas) located within the Study Area.

Locally Designated Landscapes

6.70 Locally valued landscapes within Dumfries and Galloway have been designated as Regional Scenic Areas (RSAs), as noted in the Dumfries and Galloway Council Local Development Plan (LDP) (2014)[17] RSAs were designated for their special scenic qualities in the previous Structure Plan (1999)[18]. These were based on a review of existing designations and newly identified parameters in the context of the Dumfries and Galloway Landscape Assessment.

6.71 The Dumfries and Galloway Council Technical Paper Regional Scenic Areas (2014)[19] was produced alongside the LDP which explains the designation process and illustrates the boundaries of the RSAs. This supersedes the Identification of Regional Scenic Areas Technical Paper No. 6 (1999)[20]. As part of the LDP2 development process, the RSAs are currently under review, however selected characteristics of the Galloway Hills RSA, described in the Regional Scenic Areas Technical Paper (2018)[21], are detailed below, and the RSA is shown on **Figure 6.2**.

Galloway Hills RSA

6.72 The substation extension will be located within the Galloway Hills RSA. Page 20 of the 2018 technical paper provides a description of the Galloway Hills RSA, including the following characteristics:

- *"The relationship between the hills and the adjacent lowlands gives rise to sweeping and dramatic views of the hills, in particular from the western side of Wigtown Bay and certain sections of the perimeter valleys;*
- *The overall scale of the designated area results in some parts, particularly those areas included because of their contribution to the wider view, being of less internal scenic interest than others;*
- *The peripheral Narrow Wooded Valleys and the Coastal Flats of adjacent estuaries were included both for their own inherent characteristics and because of their scenic juxtaposition with the uplands. Scenic Area boundaries follow the immediate outward facing visual envelope of these valleys; and*
- *Much of the central area is uninhabited and is accessible only via forestry roads or on foot, other than via the scenic A712 'Queensway', and Rusko and Coarse of Slakes roads."*

6.73 The substation extension will be located at a relatively low elevation and visually contained by existing buildings, infrastructure and vegetation to the north, buildings to the east and wider elevated landform to the south, west and north. Intervisibility with the more dramatic range of the Galloway Hills is therefore largely limited and it is considered unlikely that the introduction of the substation extension will significantly compromise the characteristics of the RSA and is therefore not considered further.

Wild Land

6.74 There are no Wild Land Areas (WLAs) located within the 2.5km radius Study Area.

Galloway Forest Park

6.75 The Galloway Forest Park, as shown on **Figure 6.2** is located approximately 1.2km west of the substation extension. Although a non-statutory designation, forest parks are extensive areas of forest managed for multiple benefits with particular emphasis on recreation and are managed by Forestry and Land Scotland (FLS).

6.76 The substation extension will not directly affect the Galloway Forest Park. Given distance and screening by elevated landform south and west of the substation extension site, indirect effects on the existing underlying landscape character of the Galloway Forest Park, and effects on the visual amenity of visual receptors (people) visiting the area, are not considered further.

Galloway Forest Dark Sky Park

6.77 The Galloway Forest Dark Sky Park was the first Dark Sky Park in the UK and Europe, and was awarded Gold-tier status by the International Dark-Sky Association in November 2009. The Scottish Dark Sky Observatory is situated on the Craigengillan estate, just outside the Galloway Forest Dark Sky Park over 25km to the north-west of the proposed development.

6.78 D&GC has prepared draft supplementary guidance[22] which provides advice on good lighting practice within the Galloway Forest Dark Sky Park (DSP). This paper describes Core, Buffer and Transitional Zones, the Core and Buffer zone includes land mostly within the Galloway Forest Park. The substation extension will be located within the Buffer Zone of the Dark Sky Park.

6.79 Table 1 of the 2018 draft paper describes Buffer Zones and Transition Zones as:

"Predominantly rural, lightly populated areas which already have a good night time dark habitat (which should not be diminished). Includes some smaller settlements without street lighting."

6.80 Given the limited sources of artificial light required during the construction phase (described in **Chapter 4: Development Description and Construction, Operation and Maintenance**) and absence of artificial lighting for operational components of the substation extension, effects on the Dark Sky Park are not considered further.

Galloway and Southern Ayrshire Biosphere

6.81 The substation extension will be located within the Galloway and Southern Ayrshire Biosphere[23] , designated under the United Nations Educational, Scientific and Cultural Organisation's (UNESCO) Man and Biosphere (MAB) Reserve Programme. Biosphere Reserves, usually referred to as Biospheres, are places with world-class environments that are designated to promote and demonstrate a balanced relationship between people and nature. The original criteria for Biosphere Reserves were primarily about scientific conservation and research and sites were chosen to represent the main ecosystems of the planet. Most UK Biosphere Reserves were designated in 1976 under these criteria. The designation criteria changed to include the human dimension along with the natural environment after a review in 1995 (resulting in the Seville treaty). Since then, biosphere reserves must have three complementary functions[24]:

- *"Conservation – to preserve genetic resources, species, ecosystems and landscapes;*
- *Learning and Research – to support research, monitoring, education and information exchange related to local, national and global issues of conservation and development; and*
- *Sustainable Development – to foster sustainable economic and human development."*

[15] Landscape Institute & Institute for Environmental Management and Assessment (IEMA) (2013) Guidelines for Landscape and Visual Impact Assessment – Third Edition (GLVIA3)
[16] 'Capacity' in this document means: the (relative) ability of the landscape to accommodate electricity substation infrastructure.
[17] Dumfries and Galloway Council (2014) Local Development Plan
[18] Dumfries and Galloway Council (1999) Structure Plan
[19] Dumfries and Galloway Council (1999) Identification of Regional Scenic Areas Technical Paper No. 6
[20] Dumfries and Galloway Council (2014) Local Development Plan Technical Paper: Regional Scenic Areas
[21] Dumfries and Galloway Council (2018) Local Development Plan 2: Regional Scenic Areas Technical Paper
[22] Dumfries and Galloway Council Local Development Plan 2 Dark Skies Friendly Lighting Draft Supplementary Guidance - January 2018
[23] http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/europe-north-america/united-kingdom-of-great-britain-and-northern-ireland/galloway-and-southern-ayrshire-biosphere/
[24] http://www.gsabiosphere.org.uk/

6.82 The biosphere has three different management zones: the Core, Buffer and Transition zones, and reflects the physical characteristics of the natural environment. Although not a landscape designation, the broad natural heritage interests related to this large area include some appreciation of the landscape and scenic quality, however no formal landscape characteristics or qualities are identified which inform its designation.

6.83 The biosphere is based on the Galloway Hills (core), a water catchment for a large part of south-west Scotland feeding rivers radiating out from the upland to the coast. The wider transition area covers a large extent of Galloway and Ayrshire, extending as far north as Ayr. The substation extension is located within a transition zone of the biosphere.

6.84 The substation extension will therefore not affect the Core Zones of the Biosphere Reserve centred on the Galloway Hills and outside the Study Area for the LVIA. As such, effects on the biosphere are not considered further.

Existing Conditions – Visual Baseline

Introduction

6.85 This section identifies the extent of potential visibility of the substation extension, and identifies visual receptors that are assessed as part of the LVIA. This section also introduces the viewpoints that are used to assess effects on receptors, including reasons for their selection.

Analysis of Visibility of the Proposed Substation Extension

6.86 The site is relatively well contained; inward and outward views are limited by the existing Glenlee hydro power station buildings and infrastructure to the north, by landform, broadleaf deciduous woodland and vegetation to the south-east and residences along the north-eastern site boundary running along the U3s minor road. Broadleaf deciduous woodland across Black Bank Wood and the north-eastern flanks of Glenlee Hill (271m AOD) to the south-west provide backclothing of the existing BG Route Connection which descends towards the substation site from the south-west. The adjacent landform of Court Hill and the penstock pipe to the west, north-west contains views into the site from the west along the valley of the Garroch Burn.

6.87 Longer distance views of the site are gained from elevated areas of the wider landscape of the Glenkens Valley, including from parts of St John's Town of Dalry to the north-east and Waterside Hill situated on the route of the SUW to the north and Mulloch Hill on the route of Core Path 224 to the north-east. Visibility of the existing Glenlee substation from these locations is largely limited by intervening landform and screened and filtered by neighbouring broadleaf deciduous woodland and vegetation, however the existing Glenlee hydro power station, penstock pipeline, and steel lattice towers of R Route (which will be replaced by the proposed KTR Project) and BG Route are evident in these wider views across the valley.

Key Visual Receptors

6.88 Potential visual receptors include:

- residents, including properties within the small community of Glenlee;
- road users, (including tourists on the A762; and
- those engaged in recreational activities, e.g. walkers on the SUW and Core Path network.

Selection of Viewpoints for Assessment

6.89 The viewpoints that are used to represent and assess the visual effects of the proposed development are detailed below. The viewpoint list is a representative selection of locations agreed with D&GC; it is not an exhaustive list of locations from which the proposed development will be visible.

6.90 A total of five viewpoints were selected through desk study, site work and consultation. These viewpoints are all in locations which can be accessed by the public. The viewpoints include:

- locations selected to represent the experience of different types of receptor;
- locations at different distances to provide a representative range of viewing angles and distances (i.e. short, medium and long distance views);
- locations which illustrate key cumulative interactions with other existing, consented and/or proposed developments (i.e. either in combination or succession);
- locations which represent a range of viewing experiences (i.e. static views and points along sequential routes); specific viewpoints selected because they represent promoted views or viewpoints within the landscape; and
- illustrative viewpoints chosen specifically to demonstrate a particular visual effect or specific issue (which could include restricted visibility in particular locations).

6.91 The viewpoints used to assess the visual effects are listed in **Table 6.4** below and their locations are shown on **Figure 6.3**[25]. The viewpoints have been numbered according to their distance from the substation extension.

Table 6.4: Viewpoint Locations

No	Location	Reason for Selection	Grid Reference	Approx. Distance from substation extension (km)[26]
1	Rear of Residential Property: Rannoch	Represents views experienced by residential receptors.	260671 580419	<0.1km
2	Rear of Residential Property: Orrin	Represents views experienced by residential receptors.	260642 580334	<0.2km
3	Southern Upland Way at Waterside Hill	Represents views experienced by recreational receptors from this elevated section of the SUW.	260843 582064	1.4km
4	St. John's Town of Dalry Church	Representative of views gained from the 'B' Listed Dalry Parish Church And Churchyard and similar views gained from the settlement of St John's Town of Dalry.	261886 581102	1.25km
5	Mulloch Hill	Represents views experienced by recreational receptors from this elevated location south-east of St. John's Town of Dalry on Core Path 224 Mulloch Hill, Dalry.	263169 580700	2.4km

Settlements

6.92 Settlements are those defined as such within the Dumfries and Galloway Local Development Plan (LDP) 2014[27] and Proposed LDP 2018[28]. The LDP was adopted in September 2014 and is currently under review[29]. Further settlements/communities not defined as such within either LDP have also been considered where relevant, following comments received during consultation. These communities typically consist of clusters of residential properties with a geographical extent as defined on Ordnance Survey (OS) Mapping[30].

6.93 Settlements located within the Study Area and considered for inclusion in the assessment are detailed in

[25] Data from SNH, D&GC, and The National Byway.
[26] Distance between the viewpoint and the site boundary.
[27] Dumfries and Galloway Council (2014) Local Development Plan
[28] Dumfries and Galloway Council (2018) Local Development Plan Proposed Plan
[29] The Dumfries & Galloway Council Local Development Plan 2 (LDP2) is expected to be in place by September 2019 - https://www.dumgal.gov.uk/ldp2
[30] Communities defined as such on OS 1:50k base mapping have been considered.

Table 6.5 below. Those requiring consideration in detail in the LVIA comprise those identified to experience visibility during baseline study and fieldwork.

Table 6.5: Settlements

Settlements	Distance from the substation extension and predicted visibility[31]
Settlements[32] defined in the Dumfries and Galloway Local Development Plan 2014 (LDP) and Proposed Local Development Plan 2 2018 (LDP 2)	
St John's Town of Dalry	Within 1.5km, of the substation extension. The existing substation is largely screened by vegetation in views looking south-west from the settlement. Given viewing distance and likely screening by intervening features, significant visual effects are considered unlikely to be experienced from the settlement. Not considered in assessment, but representative views considered from representational viewpoint; **Viewpoint 4 – St John's Town of Dalry Church**.
Further Settlements/communities identified during scoping and consultation	
Glenlee	The community of Glenlee is located within 0.1km to the east of the substation extension; views of the existing substation are gained from parts of the community however the small cluster of residential properties is not defined as a settlement within the LDP. Although significant visual effects on views from some properties located at Glenlee are anticipated, owing to the presence of the existing adjacent Glenlee substation and the presence of intervening landform and screening, significant visual effects from the community as a whole are not predicted to arise. Not considered in assessment, but representative views[33] considered from representational viewpoints; **Viewpoint 1 - Rear of Residential Property: Rannoch** and **Viewpoint 2 – Rear of Residential Property: Orrin**

Routes

6.94 The potential for visual effects for views experienced by receptors travelling on roads, and recreational routes (long distance footpaths, Core Paths and cycle routes) located within the Study Area are considered in **Table 6.6** below. Those requiring consideration in detail in the LVIA have been limited to those identified to experience visibility during baseline study and fieldwork.

Table 6.6: Routes

Routes	Distance from the substation extension and predicted visibility
Roads[34], including Promoted Road Routes	
A762 (including the Loch Ken, River Dee Biosphere Route, and National Byway – South West Scotland)	Part of this road is included within the site for the proposed development and passes within approximately 0.4km to the north-east of the substation extension where it crosses the low lying floodplain west of the Water of Ken. The existing substation is largely imperceptible from this route, screened by intervening vegetation and woodland to the north of the U2s minor road. The substation extension is unlikely to be perceptible in views south-west from this route. However the provision of eight passing places on a section of the road will be evident between the intersection with the A713 to the north and U2s to the south-east. **Considered within the Assessment**.
A713 (including the Galloway Tourist Route, Loch Ken and River Dee Biosphere Route, and National Byway – South West Scotland)	The road passes within approximately 1.3km to the north-east of the substation extension. Existing views looking south-west towards the existing substation are largely screened by intervening woodland and roadside vegetation. Not considered further.
B7000	The road is located over 1.9km from the substation extension; visibility of the

[31] A ZTV was not produced for the LVIA, the predicted visibility of the substation extension was informed by the visual relationship of the existing substation within the Study Area.
[32] Appendix 1 of the Dumfries and Galloway LDP (2008) identifies a hierarchy of settlements ranging from large to small in the following order: Regional Capitals, District Centres, Local Centres and Villages. St John's Town of Dalry is classified as a "Local Centre". Balmaclellan and Laurieston are classified as "Villages".
[33] Viewpoints are used as a proxy for the assessment of visual effects from the community of Glenlee and represent the likely maximum case in terms of visual effects to be experienced from the closest residential properties
[34] https://www.dumgal.gov.uk/media/18023/List-of-public-roads/pdf/Rpt_LOPR_Full.pdf

Routes	Distance from the substation extension and predicted visibility
	existing substation is limited by distance and intervening features. Not considered further.
A702	The road passes within approximately 1.3km to the north-east of the substation extension. Existing views looking south-west towards the existing substation are largely screened by intervening woodland and roadside vegetation. Not considered further.
U2s (which forms a section of the National Byway – South West Scotland and SUW)	Located within 0.1km of the substation extension and used to access the proposed development; the existing substation is seen from sections of this route. **Considered within the Assessment**.
U3s (which forms a section of the National Byway – South West Scotland)	Located within 0.1km of the substation extension; the existing substation is seen from sections of this route. **Considered within the Assessment**.
Walking Routes	
Southern Upland Way long distance footpath (Core Path No. 504 within D&G)	Located approximately 1.2km north of the substation extension; the existing substation is seen in views south-west from sections of this route. **Considered within the Assessment** of views from representational viewpoint; **Viewpoint 3 – Southern Upland Way at Waterside Hill**.
Core Paths	
Core Path No. 30 Glenlee	Located within 0.1km north of the substation extension; the existing substation is largely screened from this route, however close proximity views of the temporary construction facilities and activities are predicted to occur from this route. **Considered within the Assessment**.
Core Path No. 21 Dalry to New Galloway	Located on the eastern side of the Water of Ken and within 0.5km of the substation extension. The existing substation is largely screened from this route. Not considered further.
Core Path No. 224 to Mulloch Hill, Dalry	Located beyond 1km from the substation extension; the existing substation is largely screened from views by intervening features. Not considered further.
Core Path No. 516 to New Galloway West	Located beyond 1km from the substation extension; the existing substation is largely screened from views by intervening features. Not considered further.

Identification of Schemes to be included in the CLVIA

6.95 The CLVIA considers the potential effects of the addition of the substation extension, against a baseline that includes existing transmission infrastructure (such as the pre-existing Glenlee substation infrastructure), Glenlee hydro power station, and the proposed KTR Project Connections (overhead transmission line infrastructure, as detailed above), that may or may not be present in the landscape in the future, following determination of Section 37 consent applications[35]. The developments included are assumed to be present in the landscape for the purposes of the CLVIA.

6.96 As the existing BG Route (subject to the BG Deviation) and R Route (north and south of Glenlee) will be relocated or decommissioned as part of the KTR Project, these developments are assumed not to be present in the landscape for the purposes of the CLVIA.

6.97 In line with GLVIA3[36], the assessment of cumulative landscape and visual effects is proportional to the proposed development. **Figure 2.1** indicates known operational, consented and proposed (subject to a valid application or subject to a current appeal/public inquiry process) developments within the wider landscape to a radius of 10km. For the purposes of the CLVIA only, developments located within the 2.5km radius Study Area for the LVIA have been considered, as shown on **Figure 6.1** and listed in **Table 6.7** below.

6.98 It was not considered appropriate to include schemes beyond the 2.5km Study Area in this instance, because of the likely very limited relationship the substation extension would have with developments over such a distance. Therefore the assessment of effects focuses on developments that are likely to give rise to significant cumulative effects, and concentrates on a more localised set of operational, consented and proposed developments within 2.5km.

6.99 The existing Glenlee substation and ancillary elements considered as part of the existing baseline for the LVIA.

Table 6.7: Developments within 2.5km and included in the CLVIA

Development	Status	Approximate Distance (km)
Polquhanity to Glenlee via Kendoon (P-G via K) connection of the KTR Project	Application	0.1km to the north of the existing Glenlee substation extending north-westwards in parallel with the A762.
Earlstoun to Glenlee (E-G) connection of the KTR Project	Application	0.1km to the north-east of the existing Glenlee substation extending north-westwards in parallel with the A762.
BG deviation of the KTR Project	Application	0.1km to the south-west of the existing Glenlee substation extending south-westwards through Black Bank Wood.
Glenlee to Tongland (G-T) connection of the KTR Project	Application	0.1km to the south-west of the existing Glenlee substation, utilising the existing BG Route alignment and extending south-westwards through Black Bank Wood.

6.100 It should be noted that there are no other proposed or consented electricity infrastructure, wind farm or large scale built developments located within the 2.5km radius Study Area. The removal of the existing R Route north and south of Glenlee substation, including the terminal tower within the north-western part of the existing substation site forms part of the P-G via K and G-T connections of the proposed KTR Project. These and are therefore considered within the cumulative assessment below.

Potential Landscape and Visual Effects

6.101 The assessment of landscape and visual effects follows the methodology presented in this chapter, and is based upon the project description outlined in **Chapter 4: Development Description and Construction, Operation and Maintenance**. The LVIA reports on construction and operational effects separately.

Construction Effects

6.102 During the proposed 34 month construction phase, there will be potential **short-term** (generally lasting 0 - 5 years) landscape and visual effects arising from construction activities associated with the introduction of the substation extension. Effects occurring during the construction phase are considered to be reversible unless otherwise stated e.g. creation of new landform which remains as a permanent feature beyond the lifespan of the operational phase (c.40 years) of the substation extension.

Construction Phase

6.103 The changes arising from the construction of the substation extension will include:

- road improvement works along the A762 and U2s, including provision of three passing places on the U2s and eight passing places on the A762, to be reinstated following completion of construction phase;

[35] The Section 37 consent applications for the individual connections which form The Kendoon to Tongland 132kV Reinforcement Project will be submitted in Autumn 2019, accompanied by an EIA Report. The cumulative assessment presented within this EIA Report assumes that the KTR Project is at the application stage.

[36] Landscape Institute and the Institute of Environmental Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3, Chapter 7 Assessing cumulative landscape and visual effects

- the introduction of a 2.5m high noise (acoustic) fence along the rear boundaries of properties east, south-east of the existing Glenlee substation and substation extension[37];
- the introduction of temporary site cabins to the overflow car park north-east of the existing Glenlee substation;
- the introduction of the temporary construction site compound, associated access and earth movements to the north of the existing Glenlee substation;
- the widening of construction access, located within the existing substation compound, adjacent to the residential properties of Carville, Rannoch and Tummel;
- the introduction of the temporary top soil storage areas and temporary vehicle holding area south of the existing Glenlee substation;
- removal of existing trees and vegetation, earthworks and drainage works, including diversion of the existing watercourse that crosses the field into a culvert underneath the substation;
- construction of substation extension platform and equipment;
- installation of a new 3m steel palisade security fence around the perimeter;
- installation of new electrical switchgear and plant;
- introduction of three terminal gantry structures of approximately 12m in height;
- a small extension to the existing building located adjacent to the access off the U2s (as shown on **Figure 4.2**); and
- associated movement of construction vehicles and activities.

6.104 At the temporary site cabins and construction compounds, security lighting will be required (activated by detected movement) during the hours of darkness. However, it is not expected that lighting will be required outside of the intended working hours for the construction phase.

6.105 The assessment of construction effects considers a maximum case effect scenario which assumes the greatest presence of construction activities prior to removal and reinstatement works (for example the presence of all access tracks, temporary construction compounds and erected infrastructure).

6.106 The majority of the effects which will occur during the construction phase will be **short-term** and largely **reversible**, associated with the temporary installation and presence of construction related components and activities. The key substation extension components (detailed above) introduced during this phase will however remain during the operational phase.

Operational Effects

6.107 The main potential effects of the substation extension on landscape and visual amenity once operational will be associated with the presence of the substation extension as described in **Chapter: 4: Development Description and Construction, Operation and Maintenance**.

Operational Phase

6.108 The elements of the substation extension introduced during or following the construction phase and retained during the operational phase which may potentially affect the landscape and visual resource include:

- a new 4.5m wide access track within the substation compound;
- a new 3m high steel palisade security fence;
- new electrical switchgear and plant;
- three terminal gantry structures of approximately 12m in height;
- retention of 2.5m high noise fence along the rear boundaries of properties of Carville, Tummel and Rannoch to east of existing Glenlee substation compound; and
- landscape mitigation planting (indicative plan illustrated on **Figure 4.3**)..

6.109 Judgements in relation to the duration of landscape and visual effects during operation are considered to be **long-term** (over 5 years > c.40 years) unless otherwise stated. All visible effects during the operational phase are considered to be **reversible** unless otherwise stated. In some instances effects may result in a permanent and irreversible change (e.g. creation of new landform) which is noted within the assessment.

Residual Construction Effects

6.110 The assessment of effects assumes all construction related mitigation measures are implemented; therefore the residual effects arising from construction will remain as identified in the assessment sections below.

6.111 No visualisations have been prepared to accompany the assessment of temporary construction effects, as it is generally considered that the short-term landscape and visual effects which will occur during the construction phase of the proposed development will not exceed those arising during the operational phase.

Residual Operational Effects

6.112 The assessment of operational effects assumes all proposed mitigation is implemented; therefore the residual effects arising during the operational phase of the substation extension will remain as identified unless otherwise stated. As the proposed mitigation planting will take a period of time to establish and deliver the anticipated mitigation of visual effects (at c.5 years maturity), where relevant the residual effect arising with this mitigation in place is recorded.

6.113 Photomontages of the substation extension from VP1: Rear of Residential Property: Rannoch and VP2: Rear of Residential Property: Orrin are shown on **Figure 6.4.4** and **Figure 6.5.4** respectively, and illustrate the implementation of proposed landscape mitigation planting detailed on **Figure 4.3** at c.5 years maturity.

6.114 Baseline photography was taken in the autumn/winter representing a maximum case effect scenario, and it is considered that seasonal variation in deciduous vegetation may further reduce visibility of the substation extension in some views.

Landscape Assessment

6.115 The assessment of landscape effects follows the methodology presented in **Appendix 6.1**, and is based upon the **Chapter: 4: Development Description and Construction, Operation and Maintenance**. The LVIA reports on effects which will occur during the construction, and operational, phases separately, and the magnitude and significance of landscape effects assessed assumes implementation of all the mitigation measures outlined in **Chapter 4**. Judgements of the magnitude and significance of residual landscape effects assessed assumes implementation of all the mitigation measures shown on **Figure 4.3** (See detailed Planning drawing Landscape Mitigation Plan ref: **LUC_6118_LP_PLN_001**).

6.116 Judgements on the potential for cumulative landscape effects are made with reference to the developments considered within the CLVIA which are listed in **Table 6.7** and shown on **Figure 2.1**.

Table 6.8: Landscape Effects on the Site of Proposed Substation Extension

Site of Proposed Substation Extension	
Location and baseline description	Located south-west of the existing Glenlee substation, the site of the proposed substation extension comprises undulating semi-improved rough grassland with scattered mature deciduous trees. The site gently slopes from south-west to north-east from approximately 70m AOD to 50m AOD at the boundary of the existing substation. The adjacent Glenlee hydro power station includes the power station building, penstock and pipeline, which runs on a south-west to north-east alignment and descends from the elevated eastern flanks of Glenlee Hill to the west of the site. A number of residential properties are located directly adjacent to the eastern site boundary of the substation extension, extending south-westwards along the U3s minor road.

[37] Noise fence to be installed to the rear of residential properties of Carville, Tummel and Rannoch will be retained permanently throughout the operational phase, whilst the noise fence to the rear of Tarbert, Navaar, Maree, Orrin and Garry will be removed following the completion of construction phase (further details are provided in **Chapter 10: Construction Noise**).

Site of Proposed Substation Extension	
	An existing watercourse passes through the southern part of the site and is culverted at the south-eastern extent of the existing substation. The landform rises more steeply to the west to Court Hill beyond the existing hydro power station penstock and pipeline. The eastern extent of the site is defined by the boundaries of residential properties within the small community of Glenlee. Existing accesses to the site include the access across the penstock to the west and gated access between the residential properties of Rannoch and Tarbert, and Orrin and Maree to the east. Existing man-made features in close proximity to the site include the existing Glenlee substation and hydro power station to the north and north-east, and the penstock pipe and associated palisade fence to the north-west. The overhead line of the existing R Route passes over the U2s into the substation, the existing BG Route passes over the southern part of the site. The site is largely contained by the existing infrastructure and buildings to the north, north-west and the small linear community of Glenlee extending along the U3s to the east and vegetation including mature broadleaf deciduous trees to the south-west and south-east. The site of the temporary construction compounds extends to the north-west and north-east of the existing Glenlee hydro power station, occupying semi-improved enclosed grazing (main construction compound to the north-west), and an area of hardstanding north of the U2s (pre-enabling works compound).
Sensitivity	The site lies within the locally designated Galloway Hills RSA. Views out from the site are largely framed by landform and vegetation and do not feature views across the wider area of the Galloway Hills RSA. The existing Glenlee substation and adjacent hydro power station, and the existing R and BG Routes are evident in close proximity to the site. The characteristics of the site are judged to combine to result in low susceptibility to the type and scale of development proposed. Considering the locally designated nature of the site, the present condition and the surrounding landscape, overall the landscape value is judged to be medium. Taking account of the judgements of susceptibility and value, overall sensitivity is judged to be **medium**.
Magnitude of Change and Significance of Landscape Effects	
Construction Phase	The localised landscape of the site will experienced direct landscape changes. These changes will include preparatory groundworks south of the site to facilitate the construction access behind the residential properties of Rannoch and Tummel, a temporary construction vehicle holding area, earthworks and drainage works to form the substation extension platform and associated vehicle movements. This will result in the loss of mature deciduous trees along the existing watercourse and the loss of semi-improved grassland within the footprint of the substation platform and associated earthworks. Direct landscape changes to the north-western part of the site will include the removal and loss of existing semi-improved grassland north of the penstock pipe and south-west of the U2s to facilitate the construction of the temporary construction site compound and access. The temporary site cabins will be introduced to the existing overflow carpark north of the U2s. The main components of the substation extension including the extension platform, retaining earth works, palisade fence, single phase transformers, switchgear and gantries will be introduced during this phase. Construction of the main components of the substation extension and associated activities will result in a large scale physical change experienced at a localised level. The duration of construction effects will be short-term, and most disturbance necessary to facilitate construction will be reversible, with existing vegetation reinstated following completion of all works in accordance with best practice guidance. However, the main infrastructure components introduced during this phase will remain into the operational phase. The magnitude of landscape change for the site during construction is judged to be high. Combined with the overall medium sensitivity of the site, the landscape effect during construction is judged to be **major** (adverse and short-term) and **significant**.
Operational Phase	The introduction of the substation extension will result in direct, large scale landscape change experienced at a localised level. The duration of these landscape effects will be long-term, throughout the operational phase of the project. The magnitude of landscape change during operation is judged to be medium. Combined with the overall medium sensitivity of the site, the landscape effect during operation is judged to be **moderate** (adverse and long-term) and **significant**. The introduction of landscape mitigation planting comprising broadleaf woodland to the western and south-eastern extents of the landscape bund will partially screen the substation extension in close proximity views from the immediate surrounding vicinity, and will assist in integrating the substation compound and infrastructure contained therein into the wider landscape fabric of broadleaf deciduous woodland. The implementation of this mitigation will result in no change in the residual effect.
Potential For Cumulative Effects	A number of the proposed KTR Project connections will be located within the planning application boundary (as shown in **Figure 6.1**). These include the E-G connection located in the north-eastern part of the temporary works north of the U2s minor road, the G-T connection steel lattice towers within the existing substation (replacing the tower in the eastern part of the site) and the BG Deviation steel lattice towers south-west of the substation extension. The existing R Route tower in the north-western part of the site will be removed, following construction of the final tower of the proposed P-G via K connection. The E-G trident wood pole connection will be located north of the existing car park south of the Water of Ken and east of the existing R Route, which will be removed following construction of the KTR Project. The proposed G-T connection will utilise the existing steel lattice tower within the south-eastern extents of Glenlee substation, whilst the proposed BG Deviation steel lattice tower will introduce a new and additional electricity infrastructure feature into the landscape of the southern part of the site. Given the similar location of the E-G and G-T connections to existing electricity infrastructure features that will either be removed or replaced during the introduction of the KTR Project, it is considered unlikely that the introduction of these connections will contribute to additional cumulative landscape effects. The introduction of the steel lattice tower of the BG Deviation will, in combination with the substation extension, increase the influence of electricity infrastructure in the southern part of the site. The scale of landscape change will be medium and experienced locally. As such the additional cumulative magnitude of change to the landscape of the site is considered to be medium. The cumulative landscape effect is judged to be **moderate** (adverse and long-term) and **significant**.

Landscape Effects on Landscape Character Types

6.117 Potential effects on landscape character types are considered in **Table 6.9**.

Table 6.9: Landscape Effects on the Upper Dale – Dumfries and Galloway LCT (165)

Upper Dale – Dumfries & Galloway LCT (165)	
Location and baseline description	The Upper Dale Dumfries and Galloway LCT is found in the upper stretches of two of the main river valleys in the region; the Ken/Deugh above Dalry. Elements of electricity infrastructure within the extents of the LCT in the Study Area include the existing Glenlee substation and hydro power station, the existing R Route and BG Route within 0.5km, and Earlstoun hydro power station to the north within 2.5km. **Key Characteristics**: • *"Wide 'V'-shaped valley, enclosed by high peaks and moorland;* • *Open with long views;* • *Improved valley pastures becoming rougher up the valley sides;* • *Medium to large scale enclosures with dry stone dykes;* • *Riparian woodlands along the main river and up tributary channels;* • *Medium to large scale forestry plantations on the valley sides and extending over horizons from higher ground;* • *Large scale wind farm development characteristic of some adjacent upland fringes and backdrop skylines; and* • *Mining settlements and remnants of industrial activity e.g. mine ruins and bings."* **Landscape Sensitivity findings (in relation to tall structures, wind farms etc.)**: The SNH National Landscape Character Assessment (2019) notes that: *"The legacy of coal mining is evident in the buildings of settlements and in the remains of mining activity, forming part of the cultural heritage of this landscape. Hydro schemes, power lines and communication routes are also a feature of this landscape. Large scale windfarms are characteristic features of the upland fringes and backdrop skylines of the upland dale. They are prominent in areas of*

Upper Dale – Dumfries & Galloway LCT (165)	
	Upper Nithdale where the influence of wind energy development has an imposing effect." **Relevant LLAs (2017), Descriptions and Key Characteristics**[38] The northern part of the site is located within the LLA 8: Dundeugh Valley, which notes: *"Power infrastructure including a series of reservoirs, dams, weirs, power lines and power stations"* as a relevant key characteristic. The southern part of the site is located within LLA 9: Kenmure Valley Floor which notes the following relevant key characteristics: *"Broad valley with flat floodplain with improved pasture on the valley floor"* and *"St John's Town of Dalry".* **LUC Appraisal – Landscape Capacity to Accommodate Substation Infrastructure (2015)**[39] The 2015 study stated: *"Simple broad V shaped valley, with some flat areas across the valley floor. Upland peaks and moorland form the horizons which backdrop this LCT. Improved pasture across the valley floor with rougher grazing and woodland found on the valley sides, and some remnants of industrial activity (e.g. mining). Remote settlements and scattered farmsteads, coupled with the presence of existing substation and transmission network infrastructure indicates that overall, the relative capacity of this LCT to accommodate substation infrastructure is judged to be medium."* The existing BG Route and R Route connections are partially located within this LCT, connecting into the existing Glenlee substation from the south-west and north, north-east respectively.
Sensitivity	The characteristics of this landscape are judged to combine to result in a medium susceptibility to energy development of this nature, given the medium to large scale of the landscape and the presence of existing infrastructure within the Study Area including Glenlee substation and hydro power station, the existing R and BG Routes, other power stations, reservoirs, dams and major road corridors. The majority of the LCT within the Study Area lies within the Galloway Hills RSA and includes a number of promoted recreational routes. Views out from the site are largely framed by landform and vegetation and do not feature views across the wider area of the Galloway Hills RSA. Overall the landscape value of the LCT is considered to be medium. Taking into account the judgements of susceptibility and value, overall sensitivity is judged to be **medium**.
Magnitude of Change and Significance of Visual Effects	
Construction Phase	Beyond the direct landscape changes arising from the construction of the main components of the substation extension including the preparatory groundworks within the site and areas of temporary construction activities (detailed in **Table 6.8** above), no further direct landscape effects on this LCT will occur. The construction of the main components of the substation extension will however be evident from localised areas of this LCT in close proximity. Visibility of construction activities and the introduction of the main components of the substation extension will be limited by the relatively low elevation of the site, and screening by intervening features including existing substation and hydro power station infrastructure to the north and west, woodland and vegetation to the north-east, south and east and the elevated landform of Glenlee Hill and Shiel Hill to the south. Landscape changes associated with the substation extension will not be evident in views from the wider extents of the Glenkens Valley, whilst although views of construction activities from longer distance elevated locations within the LCT will be possible, these will be contained and partially screened by intervening landform and vegetation, and will represent a temporary and small scale change. The very localised loss of improved valley pastures, and riparian woodland will not extend beyond the site to the wider extents of the LCT. The duration of construction effects will be short-term, and disturbance necessary to facilitate construction will be largely reversible, however the main components constructed during this phase will remain into the operational phase. The magnitude of landscape change during construction for the LCT will be low locally, and barely perceptible for the LCT as a whole. Taking account of the medium sensitivity, the landscape effects for this LCT are judged to be **minor** (adverse and short-term) and **not significant** locally within 0.5km and **none** and **not significant** for the LCT as a whole.
Operational	The introduction of the substation extension will be largely imperceptible from much of the LCT once construction disturbance is restored and the substation becomes operational. Beyond the direct landscape changes arising from the construction of the main components of the substation extension including the preparatory groundworks within the site and areas of temporary construction activities (detailed in **Table 6.8** above), landscape change experienced within the LCT will be limited to the site and its immediate setting. The duration of these landscape effects will be long-term, throughout the operational phase of the project. The magnitude of landscape change during operation for the LCT will be low locally, and barely perceptible for the LCT as a whole. Taking account of the medium sensitivity of the LCT, landscape effects are judged to be **minor** (adverse and long-term) and **not significant** locally within approximately 0.5km and **none** and **not significant** for the LCT as a whole. The introduction of landscape mitigation planting comprising broadleaf woodland to the western and south-eastern extents of the site will partially screen the substation extension further in close proximity views from the LCT to the south-west, whilst as broadleaf woodland matures it will help integrate the site into the wider landscape and pattern of broadleaf woodland found across the lower slopes of the valley. The implementation of this mitigation will result in no change in the residual effect.
Potential For Cumulative Effects	A number of the proposed KTR Project connections will be partially located within the Upper Dale LCT. These include the P-G via K and E-G which will connect from the north-east of the substation extension, and the BG Deviation and G-T connections which will connect into the substation extension from the south-west. The P-G via K and E-G connections will pass in close proximity to the existing R Route, which will be removed following their construction, and the presence of electricity transmission infrastructure within the LCT north of Glenlee substation will remain. It is therefore considered unlikely that the introduction of theses connections in the context of the proposed KTR Project will contribute to additional cumulative landscape effects. The introduction of the steel lattice towers of the BG Deviation connection and G-T connection to the south of the site will, in combination with the substation extension, increase the influence of electricity infrastructure in the southern part of the LCT, however the presence of existing transmission infrastructure and the adjacent Glenlee hydro power station will minimise the level of landscape change which will be small and experienced locally. As such the magnitude of cumulative landscape change to this LCT is considered to be low. Taking account of the sensitivity of the LCT, the cumulative landscape effect is judged to be **minor** (adverse and long-term) and **not significant** locally within 0.5km and **none** and **not significant** for the LCT as a whole.

Visual Assessment

6.118 The assessment of visual effects follows the methodology presented in **Appendix 6.1**, and is based upon the proposed development described in **Chapter 4: Development Description and Construction, Operation and Maintenance**. The LVIA reports on effects which will occur during the construction, and operation restoration phases (as defined in **Chapter 4**) separately, and the magnitude and significance of residual visual effects assessed assumes implementation of all the mitigation measures shown on **Figure 4.3** (See detailed Planning drawing Landscape Mitigation Plan ref: **LUC_6118_LP_PLN_001**).

Table 6.10: Viewpoint 1 – Rear of Residential Property: Rannoch

Viewpoint 1 – Rear of Residential Property: Rannoch			
Grid Ref	260671 580419	**Figure Number**	Figures 6.4.1-5
LCT	Upper Dale – Dumfries & Galloway LCT (165)	**Landscape Designations**	Galloway Hills RSA
Direction of View	North-west	**Approximate Distance from the Substation Extension**	<0.1km
Description of existing view and potential visual receptors	The viewpoint is located at the north-western rear boundary of the Rannoch residential property at Glenlee. The residential property is accessed via the U3s minor road and is located immediately adjacent to the existing Glenlee substation and proposed substation extension site boundary, affording close-distance views looking to the north, north-west of the existing substation infrastructure and Glenlee hydro power station and penstock beyond. The foreground of the view comprises undulating semi-improved grassland, rising to the south-west where mature deciduous trees are seen located adjacent to an existing watercourse that crosses the site on a south-west to north-east alignment.		

[38] Northlight Heritage for Galloway Glens Landscape Partnership (2017) Landscape Character Assessment & Historic Environment Audit for the Galloway Glens Landscape Partnership

[39] LUC on behalf of SP Energy Networks (May 2015) The Dumfries and Galloway Strategic Reinforcement Project: Routeing and Consultation Document

Viewpoint 1 – Rear of Residential Property: Rannoch	
	The existing Glenlee substation and hydro power station are seen in close proximity views to the north, north-west beyond the existing palisade fencing, and partially screened by deciduous vegetation. The existing BG Route terminal tower is located directly adjacent to the rear boundary of the property and forms a large unavoidable feature in views from the rear of the property and its curtilage. The penstock and additional palisade fencing associated with the hydro power station are seen in the middle-distance, extending south-westwards towards Black Bank Wood. Mixed woodland is seen beyond the fence line to the north-west in and forms the background to more distant views. Two of the existing steel lattice towers of the BG Route are seen against the skyline in the middle distance of successive views to the south-west, whilst the existing steel lattice towers of R Route are screened by vegetation to the north-east from this location.
Sensitivity	The viewpoint represents views experienced by residents of the property of Rannoch and the adjacent properties to the north (Tummel, Dunston and Carville). Residential receptors are judged to be of high susceptibility to changes in the view from their properties. This residential property is located within the Galloway Hills RSA, and whilst residential receptors may attach a higher value to views, the property does not afford views across the wider area of the Galloway Hills RSA. The existing Glenlee substation and hydro power station and associated infrastructure are features of close proximity views north from the viewpoint and adjacent properties. Overall the value of the view afforded from this location is considered to be low. Taking account of the judgements of susceptibility and value, overall sensitivity is judged to be **high**.
Magnitude of Change and Significance of Visual Effects	
Construction Phase	Construction activities will be evident in close proximity views looking north and north-west from this location. These activities will include preparatory groundworks, the felling of mature broadleaf trees to the south-west, and the loss of semi-improved grassland and wetland vegetation. The introduction of the construction access along the rear boundary of the properties of Rannoch and Tummel, the temporary vehicle holding area, earthworks to form the substation extension platform and associated vehicle movements will be evident from this location, however, the temporary construction site compound for the main works will be largely imperceptible beyond the hydro power station penstock and pipeline to the west. The main components of the substation extension include the palisade fence, single phase transformers, switchgear and terminal gantries, which will be introduced during this phase. These components will be seen in close proximity views backclothed by landform beyond, and will be largely screened at ground level by the acoustic/noise fence which will be installed to the rear of the properties during the construction phase (as shown on **Figure 10.1**). The introduction of the substation extension and associated construction activities will result in a large scale change in views west, north-west from the rear of the property, however views from the adjacent properties of Tummel, Dunston and Carville will be more substantially screened by the temporary noise fence and existing vegetation within the rear curtilages′ of these properties. The magnitude of visual change during construction will be high, and taking account of the high sensitivity will result in a **major** (adverse and short-term) and **significant** visual effect from this viewpoint.
Operational Phase	Operational effects will arise through the introduction of all components of the substation extension. During this phase the three proposed terminal gantries will be visible within the interior of the substation appearing against the skyline in views to the west, north-west. Other components of the substation extension will be backclothed by landform and vegetation, largely screened/filtered by the perimeter palisade fence around the substation compound. This will result in a large scale change in close proximity views looking north to north-west from this location. Views from the adjacent residential properties of Tummel, Dunston and Carville will be more substantially screened by existing vegetation within the property curtilages and the noise fence situated along the boundary of the properties which will be retained following completion of construction activities (as detailed in **Chapter 10**). The magnitude of visual change during the operational phase will be high, and taking account of the high sensitivity will result in a **major** (adverse and long-term) and **significant** visual effect from this viewpoint. Landscape mitigation planting will be evident to the south, south-west of the substation extension appearing largely beyond the palisade fence situated in the foreground of views from the viewpoint, and will offer no immediate screening of the substation extension from this location (as shown at c.5 year maturity in **Figure 6.4.4**). As a consequence there is no change in the residual visual effect predicted from this location during operation.
Potential For	A number of the proposed KTR Project connections will be visible in views from this location.

Viewpoint 1 – Rear of Residential Property: Rannoch	
Cumulative Effects	These include the existing BG Route terminal tower which will become the G-T connection following the construction of the BG Deviation connection towers (as shown in **Figure 6.4.5**). The terminal tower will remain the key focal feature in views from the rear of the property and curtilage. The final steel lattice tower of the BG Deviation will be seen against the skyline in views to the south-west, from where the conductors will connect into the two terminal gantry structures located within the substation extension. The P-G via K and E-G connections north of the proposed development will not be perceptible in views from this viewpoint due to intervening infrastructure and vegetation to the north, north-west; however the removal of the R Route terminal tower adjacent to the Glenlee hydro power station in the north-western extents of the existing substation will be evident in views across the existing substation. Given the similar location of the G-T connection to existing electricity infrastructure features that will either be removed or replaced (e.g. BG Route) during the introduction of the KTR Project it is considered unlikely that the introduction of this connection will contribute to additional cumulative visual effects. However, the introduction of the final steel lattice tower of the BG Deviation connection, to the south-west of the substation extension will increase the presence and influence of electricity transmission infrastructure in combination with the substation extension in successive views to the south-west. The scale of visual change will remain large, with the substation extension contributing to the greatest change in these close proximity views. The change will however be experienced locally, with similar but oblique views from the adjacent properties of Tummel, Dunston and Carville more substantially screened by intervening vegetation and the retained noise fence along the western boundary of their curtilages′. The magnitude of cumulative visual change to the views from this location is considered to be high. Taking account of the sensitivity of the receptors, the cumulative visual effect is judged to be **major** (adverse and long-term) and **significant**.

Table 6.11: Viewpoint 2 – Rear of Residential Property: Orrin

Viewpoint 2 – Rear of Residential Property: Orrin			
Grid Ref	260642 580334	**Figure Number**	Figures 6.5.1-5
LCT	Upper Dale – Dumfries & Galloway LCT (165)	**Landscape Designations**	Galloway Hills RSA
Direction of View	North-west	**Approximate Distance from the Substation Extension**	<0.2km
Description of existing view and potential visual receptors	Located approximately 200m south of the proposed substation extension, the viewpoint represents views from the rear of properties adjacent to the U3s road south of the small community of Glenlee. The viewpoint is situated adjacent to the property curtilage of Orrin, and represents close proximity views of the existing Glenlee substation to the north from this property and the neighbouring properties of Tarbert, Navaar, Maree and Garry. The foreground of the view comprises undulating semi-improved rough grassland with occasional dense clusters of rushes, sloping towards the south-western boundary of the existing Glenlee substation. Mature broadleaf deciduous trees are seen within the middle distance, partially screening views towards the hydro power station penstock. The viewpoint affords views of the existing Glenlee substation and hydro power station to the north, seen in the middle distance partially screened by coniferous trees and backclothed by landform and vegetation, beyond the enclosing palisade security fencing. The existing BG Route terminal tower is seen partially backclothed by landform and vegetation in the south-eastern corner of the substation, with the upper extents of the tower visible above the skyline. The existing R Route terminal tower is located adjacent to the hydro power station in the north-western corner of the substation, appearing backclothed against the coniferous woodland of Hag Wood and landform of Waterside Hill beyond. The existing towers of BG Route are evident in views to the west, south-west where the connection ascends steep landform on the eastern shoulder of Glenlee Hill, passing through the mixed woodland of Black Bank Wood, with smaller wood pole distribution lines located to the east of a belt of intervening deciduous woodland. The existing R Route connections north and north-east of Glenlee substation are not visible from this location, or the neighbouring properties.		
Sensitivity	The viewpoint represents views experienced by residents of the property of Orrin and the adjacent properties to the north (Tarbert, Navaar, Maree and Garry). Residential receptors are judged to be of high susceptibility to changes in the view from their properties.		

Viewpoint 2 – Rear of Residential Property: Orrin	
	This residential property is located within the Galloway Hills RSA, and whilst residential receptors may attach a higher value to views, the property does not afford views across the wider area of the Galloway Hills RSA. The existing Glenlee substation and hydro power station and associated infrastructure are features of close proximity views north from the viewpoint and adjacent properties. Overall the value of the view afforded from this location is considered to be low. Taking account of the judgements of susceptibility and value, overall sensitivity is judged to be **high**.
Magnitude of Change and Significance of Visual Effects	
Construction Phase	Construction activities will be evident in close proximity views west, north-west from this location. These activities will include preparatory groundworks including the felling of mature broadleaf trees, and the loss of semi-improved grassland vegetation in close proximity to the site and works to the south-west of the existing Glenlee substation. Works to facilitate development, including the introduction of the temporary construction vehicle access and holding area, along with the earthworks to form the substation extension platform and associated vehicle movements will be evident in the foreground of the view, however, the temporary construction site compound for the main works will be largely imperceptible beyond the hydro power station penstock and pipeline. The main components of the substation extension including the palisade security fence, single phase transformers, switchgear and terminal gantries will be introduced during this phase, appearing in the foreground of views towards the existing substation and power station building. These components will be seen in close proximity views backclothed by landform beyond, and will be largely screened at ground level by the temporary acoustic/noise fence which will be installed to the rear of the properties during the construction phase (as shown on **Figure 10.1**), and existing vegetation within property curtilages. The introduction of the substation extension and associated construction activities will result in a large scale change in views looking north to north-west from the viewpoint, with similar localised views experienced from the rear curtilage of neighbouring residential properties (Tarbert, Navaar, Maree and Garry). The magnitude of visual change during construction will be high, and taking account of the high sensitivity of the receptors will result in a **major** (adverse and short-term) and **significant** visual effect from this viewpoint.
Operational Phase	Operational effects will arise through the introduction of all components of the substation extension, and the removal of the temporary noise fence will facilitate more open views across the adjacent enclosed grazing to the rear of the property curtilages of Tarbert, Navaar Maree, Orrin and Garry. Owing to the position of the substation extension platform and intervening landform, views will be largely limited to the infrastructure contained within the interior of the substation extension including the three terminal gantry structures situated towards the north and south-western extents of the substation. The palisade security perimeter fence will be largely imperceptible from this viewpoint, screened by intervening landform and foreground vegetation. The magnitude of visual change during operation will be medium and, taking account of the high sensitivity of the receptors will result in a **moderate** (adverse and long-term) and **significant** visual effect from this viewpoint. Proposed landscape mitigation planting will screen and filter views into the interior of the substation extension, limiting visibility of the main components, including the terminal gantry structures. The implementation and establishment of this mitigation (as shown at c.5 year maturity in **Figure 6.5.4**) will result in a reduction in the scale of visual change to small in close proximity views north, north-west from this location, mainly associated with the change in view associated with the established broadleaf woodland. Following implementation and establishment of mitigation the magnitude of visual change during operation will reduce to low, resulting in a **minor** (adverse and long-term) and **not significant** residual visual effect from this location.
Potential For Cumulative Effects	A number of the proposed KTR Project connections will be visible from this location, including the proposed G-T and BG Deviation connections (as shown in **Figure 6.5.5**). Other connections including the P-G via K and E-G connection north of Glenlee substation will be largely screened by existing infrastructure and the proposed mitigation planting from this location, with the final tower of the P-G via K connection appearing directly beyond the existing BG Route terminal tower (which will become the G-T connection terminal tower) in the view. The removal of the R Route terminal tower adjacent to the Glenlee hydro power station in the north-western extents of the existing substation will be evident, albeit heavily screened by the proposed mitigation planting from this location. As the proposed G-T connection will utilise the existing BG Route towers between the existing terminal tower in Glenlee substation and Black Bank Wood, this connection will not contribute to additional cumulative visual effects. The two additional steel lattice towers of the BG Deviation to the south-west of the substation extension will be evident in views west and south-west from this location. Appearing beyond but in combination with the proposed G-T connection, their presence will increase the influence of electricity infrastructure in successive views from south-west to north-west from the viewpoint and neighbouring properties. Considering the implications of the implemented and established mitigation planting, the substation extension will be largely imperceptible in combined views with the proposed KTR Connections, and overall the scale of visual change will be low and experienced locally. The magnitude of cumulative change in views during operation from this location, following implementation and establishment of mitigation planting, is considered to be low. Considering the sensitivity of the receptors and the level of cumulative change predicted, the cumulative visual effect is judged to be **minor** (adverse and long-term) and **not significant**.

Table 6.12: Viewpoint 3 – Southern Upland Way at Waterside Hill

Viewpoint 3 – Southern Upland Way at Waterside Hill			
Grid Ref	260843 582064	**Figure Number**	Figures 6.6.1-2
LCT	Upper Dale – Dumfries & Galloway LCT (165)	**Landscape Designations**	Galloway Hills RSA
Direction of View	South	**Approximate Distance from the Substation Extension**	1.4km
Description of existing view and potential visual receptors	Located on the Southern Upland Way at the cairn near Waterside Hill, this viewpoint represents panoramic views experienced by recreational hill walkers at this elevated point on the long distance footpath. The foreground comprises areas of elevated farmland and rough grazing with a mix of low stone walls and post and wire fencing enclosing pastoral fields. Pockets of mixed woodland are seen scattered across the valley floor and lower slopes, including mixed woodland along Coom Burn and at Black Bank Wood. Coniferous forestry is seen at Hag Wood to the south, partially screening views of the hydro power station and existing Glenlee substation, and in longer distance views to the elevated foothills to the west. The hydro power station penstock and pipeline can be seen extending south-westwards up the lower slopes of the valley, and forming a distinguishable linear feature in views from this location. The existing steel lattice towers of BG Route are largely imperceptible at this distance, partially screened by adjacent dense deciduous woodland either side of the wayleave as it ascends the steep slopes through Black Bank Wood. The summit of Cairnsmore or Black Craig of Dee is seen in longer-distance views south-west and forms the distant skyline of views in this direction. Steel lattice towers of the existing R Route are seen in middle-distance views to the east from the viewpoint, seen across intervening pastoral farmland and rolling foothills with the settlement of St John's Town of Dalry beyond, whilst towers of the southern section of the route are evident in views to the south as the connection crosses the Holm of Dalry. Distant wind farm developments at Wether Hill to the north-east and Blackcraig Hill to the east can be seen in successive views from the viewpoint.		
Sensitivity	Recreational receptors whose attention is focussed on their surroundings are considered to be of high susceptibility to changes in the view. The viewpoint is located within the Galloway Hills RSA and affords longer-distance panoramic views north-west towards elevated parts of the Galloway Hills RSA. Therefore the value of the view available from this location is considered to be high. On balance, taking account of the judgements of susceptibility and value, overall sensitivity is judged to be **high.**		
Magnitude of Change and Significance of Visual Effects			
Construction Phase	All temporary construction activities will be largely imperceptible in views from this location, with the temporary construction compound and temporary construction vehicle holding area and access partially screened by intervening landform, the coniferous forestry of Hag Wood in the middle distance, and the existing infrastructure of Glenlee hydro power station and substation. As construction activities progress, elements of the proposed substation extension will become evident in the view, limited to the terminal gantry structures which will appear in the context of the existing substation infrastructure, but backclothed against the semi-improved pasture beyond.		

Viewpoint 3 – Southern Upland Way at Waterside Hill	
	The introduction of the substation extension during the construction phase will result in a small scale change in a small proportion of the available longer-distance views to the south from this location, with all changes affecting parts of the view currently affected by the presence of existing transmission and hydro power station infrastructure. Similar views will be experienced from a small geographical extent limited to elevated sections of the SUW to the west and south, south-west facing slopes towards the substation extension. The magnitude of visual change during construction will be low, and the visual effect is judged to be **minor** (adverse and short-term) and **not significant**.
Operational Phase	During the operational phase, the substation extension will be seen as a discrete extension to the existing Glenlee substation, the majority of which will be imperceptible from this location and limited to the terminal gantry structures which will appear in the context of the existing substation infrastructure, but backclothed against the semi-improved pasture beyond. The introduction of the substation extension will result in a small-scale change in longer-distance views looking south. Given the elevated nature of the viewpoint, the geographical extent of similar views is considered small. The magnitude of visual change during operation will be low, resulting in a **minor** (adverse and long-term) and **not significant** visual effect. The introduction of mitigation planting, including broadleaf woodland to the south-west and west of the substation extension will be largely imperceptible at this distance, but will assist in assimilating the substation extension into the surrounding wider network of woodland which occupies the lower slopes of the valley. As a consequence there is no change in the residual visual effect predicted from this location during operation.
Potential For Cumulative Effects	The substation extension will be seen in combined long distance views to the south with the proposed KTR Project connections of P-G via K, E-G, and G-T and BG Deviation. The P-G via K and E-G connections are located closest to the viewpoint, and will be seen partly backclothed and partially screened by landform and vegetation in successive clockwise views from north to south. Both the G-T connection and the BG Deviation will be seen in combined views to the south, south-west of the substation extension and seen within the same section of the view as the existing Glenlee hydro power station. The G-T connection will be seen in long distance views looking south backclothed by landform extending south behind Shiel Hill. The BG Deviation will be seen in long distance views looking south backclothed by landform and partially screened by conifer forest. The BG Deviation will be seen in parallel with the G-T connection as it passes over the south-eastern flank of Glenlee Hill. The introduction of the G-T connection and the BG Deviation will increase the influence of electricity infrastructure when seen in combination with the substation extension in the background of views looking south from this location. This will result in small scale change, and similar visual effects will be relatively localised and experienced from a short section of the Southern Upland Way and elevated slopes which offer views towards the substation extension. The geographical extent of similar views is therefore considered to be small. The removal of R route following construction of the KTR Project connections will remove visibility of towers within the low lying reaches of the valley the south, where the existing route crosses the Holm of Dalry. The magnitude of cumulative change in views from this location is considered to be low, and taking account of the sensitivity of receptors the cumulative visual effect is judged to be **minor** (adverse and long-term) and **not significant**.

Table 6.13: Viewpoint 4 – St. John's Town of Dalry Church

Viewpoint 4 – St. John's Town of Dalry Church			
Grid Ref	261886 581102	**Figure Number**	Figures 6.7.1-2
LCT	Upper Dale – Dumfries & Galloway LCT (165)	**Landscape Designations**	Galloway Hills RSA
Direction of View	South-west	**Approximate Distance from the Substation Extension**	1.25km
Description of existing view and potential visual receptors	Located within the public grounds of the 'B' Listed Dalry Parish Church and Churchyard, the viewpoint represents views across the Glenkens Valley from the settlement St. John's Town of Dalry situated in on the lower eastern valley sides of the Glenkens Valley east of the Water of Ken. The church and churchyard are located east of the low lying floodplain of Holm of Dalry, and at		

Viewpoint 4 – St. John's Town of Dalry Church	
	a lower elevation than the majority of the settlement. The foreground of the view comprises flat pastoral fields enclosed by post and wire fencing and hedgerows. Broadleaf woodland and vegetation along the Water of Ken and Coom Burn is seen in the middle-distance, substantially screening the existing Glenlee substation and hydro power station beyond, with visibility of the existing infrastructure limited to the upper portions of the R Route and BG Route terminal towers. The main power station building and, penstock and pipeline are seen above the intervening woodland, backclothed by the mixed woodland of Black Bank Wood to the south-west. Glenlee Hill is seen in longer distance views south-west and forms the skyline of views in this direction. The existing steel lattice towers of R route are seen in views west across the valley as the contour around the eastern flanks of Waterside Hill to the west of the A762, whilst towers of the southern section of the route are evident in views to the south as the connection crosses the Holm of Dalry. Coniferous forestry at Back Hill of Glenlee forms the skyline of views further west, whilst the existing steel lattice towers of BG route are seen, partly backed by landform but otherwise visible against the skyline beyond the substation to the south-west.
Sensitivity	The viewpoint represents views experienced by residential receptors and visitors within the settlement of St John's Town of Dalry. Residential receptors are judged to be of high susceptibility to changes in the view from their properties. This residential property is located within the Galloway Hills RSA, and whilst residential receptors may attach a higher value to views, the property does not afford views across the wider area of the Galloway Hills RSA. The existing Glenlee substation and hydro power station and associated infrastructure are features of close proximity views north from the viewpoint and adjacent properties. Overall the value of the view afforded from this location is considered to be low. Taking account of the judgements of susceptibility and value, overall sensitivity is judged to be **high**.
Magnitude of Change and Significance of Visual Effects	
Construction Phase	Ground-level disturbance associated with construction will be imperceptible from this location, due to the screening provided by intervening landform, existing infrastructure, and broadleaf woodland and vegetation. The introduction of the substation extension and associated construction activities will result in a very small scale change in longer-distance views south-west. The viewpoint represents similar views which will be experience from low lying locations which afford views within the settled valley, covering a relatively large geographical extent. The change resulting from the introduction of the substation extension will be barely perceptible in longer-distance views from this location. The overall level of effect during the construction phase will be **none** and **not significant**.
Operational Phase	During operation, the substation extension will be largely screened by intervening woodland and vegetation. The introduction of the three proposed gantries within the substation extension and existing substation will be largely screened by intervening woodland, and where partially visible will be seen backclothed and occupying a position within the same proportion of the view as the existing substation and hydro power station infrastructure. The magnitude of visual change resulting from the introduction of the substation extension will be barely perceptible in longer-distance views from this location. The overall level of effect during the operational phase will be **none** and **not significant**. The introduction of mitigation planting, including broadleaf woodland to the south-west and west of the substation extension will be largely imperceptible at this distance, and as a consequence there is no change in the residual visual effect predicted from this location during operation.
Potential For Cumulative Effects	The proposed KTR Project P-G via K, E-G, G-T and BG Deviation connections will be evident in views from this location. The P-G via K and E-G connections will be visible in views to the west, south-west where the connections cross the eastern flanks of Waterside Hill to the west of the A762, appearing partially screened by intervening landform woodland and vegetation as they approach the existing Glenlee substation to the south-west. Both the G-T and BG Deviation connections will be seen in views towards the distant skyline formed by Glenlee Hill to the south-west of the substation extension. The towers of the two connections will appear in parallel as they ascend through the existing woodland at Black Bank Wood occupying a similar portion of the view as the existing BG Route, appearing alongside the penstock and pipeline of Glenlee hydro power station where a small number of towers will be visible against the skyline as they pass over the south-eastern shoulder of Glenlee Hill. The removal of R route following construction of the KTR Project connections will remove visibility of towers within the low lying reaches of the valley to the south, where the existing

Viewpoint 4 – St. John's Town of Dalry Church	
	route crosses the Holm of Dalry. The introduction of the proposed KTR connections will increase the influence of electricity infrastructure in the view, although a similarly small proportion of the available views will be affected, and the substation extension will remain almost imperceptible in the available views from this location. The overall level of additional cumulative visual effect will be **none** and **not significant**.

Table 6.14: Viewpoint 5 – Mulloch Hill

Viewpoint 5 – Mulloch Hill			
Grid Ref	263169 580700	**Figure Number**	Figures 6.8.1-2
LCT	Flooded Valley LCT (164)	**Landscape Designations**	Galloway Hills RSA
Direction of View	West	**Approximate Distance from the Substation Extension**	2.4km
Description of existing view and potential visual receptors	Located at the summit of Mulloch Hill (170m AOD) to the south-east of St John's Town of Dalry, the viewpoint represents elevated panoramic views across the Glenkens Valley experienced by recreational receptors and users of Core Path 224 Mulloch Hill, Dalry. The foreground of views to the west comprises elevated and exposed landform with simple landcover of rough grassland, with the low lying floodplain of Holm of Dalry defined by flat pastoral fields enclosed by hedgerows forming the middle-distance of views. The Water of Ken and Coom Burn are lined by broadleaf woodland and dense vegetation, whilst the western slopes of the valley are occupied by mixed woodland extending to the mid-slopes. Scattered residential properties and farmsteads can be seen on the western side of the valley, with blocks of coniferous forestry of Back Hill of Glenlee forming the skyline beyond. The forested hills of Galloway Forest Park to the south-west are backed by Cairnsmore or Black Craig of Dee, forming the most dramatic and distinguishable part of the skyline to the south-west. Views to the north-west are characterised by the distinguishable rolling hills at the core of the Galloway Hills, including the Rhinns of Kells and the highest summit of the Merrick (843m AOD) beyond. The existing steel lattice towers of R Route are visible in successive long-distance views from the north-west to the south-west as the route passes through elevated farmland on the west side of the valley crossing the eastern flanks of Waterside Hill to the west of the A762. Whilst the southern section of the route is visible as it crosses the low lying floodplain of Holm of Dalry to the west of the viewpoint. The hydro power station and existing substation at Glenlee is seen in views west, backclothed against the landform beyond and largely screened by intervening woodland along Coom Burn to the north, whilst the existing towers of BG Route can be seen backclothed against the north-eastern slopes of Glenlee Hill beyond.		
Sensitivity	Recreational receptors whose attention is focussed on their surroundings are considered to be of high susceptibility to changes in the view. The viewpoint is located at the eastern boundary of the Galloway Hills RSA and the scenic nature of views towards the elevated summits of the Galloway Hills RSA which are seen in longer-distance panoramic views to the west and north-west is notable. Existing transmission and hydro power station infrastructure is a feature of existing views towards the substation extension, however, overall the value of the view available from this location is considered to be high. On balance, taking account of the judgements of susceptibility and value, overall sensitivity is judged to be **high**.		
Magnitude of Change and Significance of Visual Effects			
Construction Phase	During construction, preparatory groundworks including the felling of mature broadleaf trees, introduction of construction accesses, associated vehicle movements and earthworks to form the substation extension platform will be partially evident in long-distance views beyond the existing substation and hydro power station. The construction site compound and access road will be seen as small-scale features in the view, partially screened by intervening woodland to the north of the penstock and hydro power station building, with activities at ground level around the existing substation largely screened or heavily filtered by intervening woodland and vegetation. The introduction of the substation extension and associated construction activities will result in a small scale change in longer-distance views west, and whilst the viewpoint is representative of similar elevated and often panoramic views across the valley, the opportunity for similar		

Viewpoint 5 – Mulloch Hill	
	views is relatively limited to a small geographical extent. The magnitude of visual change during construction will be low, resulting in a **minor** (adverse and short-term) and **not significant** visual effect.
Operational Phase	Following the completion of construction works, removal of temporary facilities and restoration of disturbed areas, the proportion of the view affected by the substation extension once operational will reduce, resulting in a small to barely perceptible scale change in longer-distance views west across the Glenkens Valley. The substation extension will be seen as a discrete extension to the existing Glenlee substation, occupying the same horizontal extent of the view affected by the existing substation and hydro power station. The extended substation platform and compound will be partially evident west of the existing substation, with the proposed gantries seen partially screened by intervening vegetation and backclothed by landform beyond. Whilst the viewpoint is representative of similar elevated and often panoramic views across the valley, the opportunity for similar views is relatively limited to a small geographical extent. The magnitude of visual change during construction will be low, resulting in a **minor** (adverse and long-term) and **not significant** visual effect. The introduction of mitigation planting, including broadleaf woodland to the south-west and west of the substation extension will be largely imperceptible at this distance; however the implementation and establishment of this landscape mitigation planting, including broadleaf woodland, will help to assimilate the substation extension into the existing pattern of woodland which occupies the lower surrounding slopes of the valley. As a consequence there is no change in the residual visual effect predicted from this location during operation.
Potential For Cumulative Effects	The proposed KTR Project P-G via K, E-G, G-T and BG Deviation connections will be evident in views across the valley from this elevated location. The P-G via K and E-G connections will be visible in views to the west, north-west where the connections cross the eastern flanks of Waterside Hill to the west of the A762, appearing partially screened by intervening landform woodland and vegetation, and backclothed against the landform beyond as they approach the existing Glenlee substation to the south-west. Both the G-T and BG Deviation connections will be seen in views to the south-west of the substation extension. The towers of the two connections will appear in parallel as they ascend through the existing woodland at Black Bank Wood occupying a similar portion of the view as the existing BG, appearing alongside the penstock and pipeline of Glenlee hydro power station before passing over the south-eastern shoulder of Glenlee Hill backclothed against the landform beyond. The removal of R route following construction of the KTR Project connections will remove visibility of towers within the low lying reaches of the valley to the west, south-west, where the existing route crosses the Holm of Dalry. The introduction of the proposed KTR connections will increase the influence of electricity infrastructure in the view, although a similarly small proportion of the available views will be affected, and the substation extension will remain almost imperceptible during the operational phase in the available views from this location. The magnitude of cumulative change in views from this location is considered to be low, and taking account of the sensitivity of receptors the cumulative visual effect is judged to be **minor** (adverse and long-term) and **not significant**.

Effects on Views from Routes

6.119 The roads and recreational routes in the Study Area from which potential views of the substation extension may be experienced are assessed below.

Table 6.15: A762

A762	
Representative Viewpoints	n/a
Approximate Distance from the Substation Extension	0.3km
Description of existing view and potential	A section of the A762 between Knockensee and Coom Bridge is located within 0.5km to the north-east of the substation extension. The road runs roughly parallel to the Water of Ken along the valley floor passing through

A762	
visual receptors	pastoral fields with occasional pockets of mixed woodland and forestry seen at Hag Wood, Coom Burn and Gaistone Plantation. The road passes a number of scattered residential properties and farmsteads further south. The Southern Upland Way crosses the A762 to the south of the Earlstoun hydro power station, whilst a number of promoted routes, including the Loch Ken and River Dee Biosphere Route, Castle Route, Galloway Kite Trail, and the National Byway cycle route follow the road between Earlstoun and Glenlee. The existing steel lattice towers of R Route are seen in views west from the route as they cross farmland between Hagwood and Coom Burn, and east as they cross the low lying floodplain of Hold of Dalry. The existing Glenlee substation is largely imperceptible in views experienced from this route due to the presence of dense intervening vegetation and woodland to the south of Coom Burn, however the adjacent hydro power station building, penstock and pipeline are evident in views when travelling south towards Glenlee extending above the intervening treeline but backclothed against the wooded slopes of the valley beyond.
Sensitivity	Road users of the A762, some of whom may be tourists by virtue of its promotion as a tourist route, are considered to be of medium susceptibility to changes in the view. The A762 passes through the Galloway Hills RSA; however the route does not afford longer-distance views to the elevated summits and skylines of the RSA. Although the route forms part of the National Byway – South West Scotland cycle route, Galloway Kite Trail, Castle Route and Loch Ken River Dee Biosphere Route, views from the route are not considered to be of particular scenic value along sections of the route in close proximity to the substation extension. Overall views from the A762 are considered to be of medium value. Taking account of the judgements of susceptibility and value, overall sensitivity is judged to be **medium.**
Magnitude of Change and Significance of Visual Effects	
Construction Phase	Ground-level disturbance associated with construction of the substation extension, including the introduction of the temporary construction compound and construction vehicle holding area will be imperceptible from this location, due to the screening provided by intervening landform, existing infrastructure, and broadleaf woodland and vegetation. Eight passing places will be introduced or upgraded temporarily along the section of this road between Craiggubble Wood south of Earlstoun hydro power station and the junction with the U2s minor road south of Coom Bridge, to facilitate safe construction vehicle access to the Site. Construction activities to create these passing places and the subsequent construction traffic movements, will result in a small scale change in views experienced from a small geographical extent of this section of the A762. The magnitude of visual change resulting from the introduction of the substation extension will be low in views from this road, and the overall level of effect during the construction phase will be **minor** (adverse and short-term) and **not significant**.
Operational Phase	During operation, the upper extents of the three proposed gantries situated within the extended Glenlee substation will be seen above intervening vegetation and buildings in longer-distance glimpsed views from the A762 when travelling south between Waterside and Coom Bridge. The removal of temporary passing places, including the reinstatement of disturbed field boundaries and roadside verge vegetation following construction will reduce the overall perceptibility of the substation extension experienced by users of the this road. The introduction of the substation extension will result in a very small visual change. Views of the substation extension are largely screened by existing intervening vegetation in views south-west to north-west from the A762. The geographical extent of similar views will be very small. The magnitude of visual change resulting from the introduction of the substation extension will be barely perceptible in views from this road, and the overall level of effect during the operational phase will be **none** and **not significant**. The introduction of mitigation planting, including broadleaf woodland to the south-west and west of the substation extension will be imperceptible at this distance, but will assist in assimilating the substation extension into the surrounding wider network of woodland which occupies the lower slopes of the valley. As a consequence there is no change in the residual visual effect predicted from this route during operation.
Potential For Cumulative Effects	The proposed P-G via K, E-G, BG deviation and G-T connections will be visible in views from the A762, however views will be limited to a short section of the route between Coom Bridge and Earlstoun hydro power station when travelling north and south where the existing R Route and BG Route are evident and the proposed connections will occupy a similar proportion of views occupied by existing infrastructure. The removal of R route following construction of the KTR Project connections will remove the presence of transmission infrastructure within the low lying floodplain of Holm of Dalry, evident in views south-east from this route. Given the barely perceptible magnitude of visual change predicted during the operational phase and predicted none and not significant visual effect from the introduction of the substation extension, significant cumulative visual effects on views from this sequential route will not occur when considered in the presence of the proposed KTR Project connections. The magnitude of additional cumulative change to views from this route is considered to be barely perceptible. The cumulative visual effect is judged to be **none** and **not significant**.

Table 6.16: U2s

U2s	
Representative Viewpoints	n/a
Approximate Distance from the Substation Extension	<0.1km
Description of existing view and potential visual receptors	The U2s is a minor road running between Drumbuie and the A762 at Glenlee. The road travels through coniferous woodland near Drumbuie, running parallel to Garroch Burn before descending the upper dale slopes Glenlee, passing through areas of mixed woodland and rough grazing pasture within the foot of the valley. In its western extents the road forms part of the Southern Upland Way, between Drumbuie and Drumwhill before the long-distance walking path diverts east through farmland ascending the slopes of the valley towards Waterside Hill 1.2km north of the existing Glenlee substation. The road passes the existing hydro power station and substation at Glenlee, where the existing steel lattice towers of R Route cross the road into Glenlee substation, whilst a wood pole distribution line runs parallel with the road.
Sensitivity	Road users of the U2s, including recreational users of the promoted routes such as the Southern Upland Way, which follow the road are considered to be of medium susceptibility to changes in views, although residents accessing properties between Drumbuie and Glenlee may be judged to be of higher susceptibility. The U2s is located within the Galloway Hills RSA; however views to the elevated summits of the RSA are largely contained by intervening landform and vegetation. Although the route forms part of the National Byway – South West Scotland cycle route, views from the route are not considered to be of particular scenic value along sections of the route in close proximity to the substation extension. Overall views from this route are considered to be of low value. Taking account of the judgements of susceptibility and value, overall sensitivity is judged to be **medium**.
Magnitude of Change and Significance of Visual Effects	
Construction Phase	The provision of three passing places will be evident from a section of the road between the existing Glenlee substation and junction with the U3s minor road to the west and the intersection with the A762 to the east. There is likely to be an increase in construction vehicles and activities associated with the substation extension experienced from this section of the road. The construction access to the site compound will use the existing gated access to the north-west of the existing hydro power station. The site compound access road and movement of vehicles will be apparent in close proximity views looking south-west from the U2s; however views of the construction site compound will be foreshortened by intervening landform and partially screened in close proximity views to the south-west. Buildings and existing infrastructure within the existing substation compound will limit views of construction enabling works and earthworks associated with the substation extension platform. However the construction access to the south of the existing substation and movement of construction vehicles will be seen in close proximity views looking south-west. The temporary site cabins will be seen in largely oblique views filtered by vegetation to the north of the road. The introduction of the substation extension and associated construction activities will result in a small scale change in direct to oblique views to the north and south-west from a section of road between Court Hill to the west and junction with the U3s minor road to the east. Outward views from the road are largely screened by intervening vegetation and landform, and visual effects will be relatively localised as a result, limited to sections of the minor road that are within approximately 100m of the substation extension. Beyond this distance, views of the substation extension will be screened and filtered by intervening buildings and vegetation. The

U2s	
	geographical extent of similar views is therefore considered very small. The magnitude of visual change during construction will be low, and taking account of the medium sensitivity will result in a **minor** (adverse and short-term) and **not significant** visual effect from this viewpoint.
Operational Phase	During operation, the upper extents of the three proposed gantries situated within the extended Glenlee substation will be seen in views south from the road from a very short section of the road as it passes the existing substation and hydro power station, however, the extended substation compound and internal infrastructure will be largely imperceptible due to the immediate intervening existing infrastructure adjacent to the road. The removal of temporary passing places, including the reinstatement of disturbed field boundaries and roadside verge vegetation following construction will reduce the overall perceptibility of the substation extension experienced by users of this road. Overall, the introduction of the substation extension will result in a small scale visual change in views from this minor road. The geographical extent of similar views will be very small. The magnitude of visual change during operation will be low, resulting in a **minor** (adverse and long-term) and **not significant** visual effect from this viewpoint. The introduction of mitigation planting, including broadleaf woodland to the south-west and west of the substation extension will be imperceptible at this distance, but will assist in assimilating the substation extension into the surrounding wider network of woodland which occupies the lower slopes of the valley. As a consequence there is no change in the residual visual effect predicted from this route during operation.
Potential For Cumulative Effects	The substation extension will be seen in combined close proximity views with the proposed KTR Project P-G via K and E-G connections. The southern parts of the P-G via K and E-G connections will be evident in close proximity views north of the U2s, with the final tower of the P-G via K connection located adjacent to the existing car park and tail-race for Glenlee hydro power station. The terminal structure of the E-G connection will be largely imperceptible to the north-east of the existing substation, screened by intervening woodland and vegetation to the north of the U2s. R Route will be removed following construction of the KTR Project connections, and the presence of transmission infrastructure in views from this road will remain largely similar to the existing situation. Visibility of both the G-T and BG Deviation connections will be limited by existing buildings and infrastructure located south of the road. As such it is considered unlikely that the introduction of these connections in the context of the proposed KTR Project will contribute to additional cumulative visual effects. The magnitude of additional cumulative change to views from this route is considered to be low, and taking account of the judgement of sensitivity, the cumulative visual effect is judged to be **minor** (adverse and long-term) and **not significant**.

Table 6.17: U3s

U3s	
Representative Viewpoints	n/a
Approximate Distance from the Substation Extension	<0.1km
Description of existing view and potential visual receptors	The U3s is a minor road leading from the A712 near Craigshinnie to the U2s south-east of the Glenlee substation and hydro power station. Views from the western part of the road are relatively enclosed by coniferous forestry; however blocks of recently felled forestry provide more open views from the eastern part of the road, with the foreground comprising rough grazing pasture with the distant hills of the eastern side of the Glenkens Valley. Middle distance views to the north comprise the partly forested landform of Glenlee Hill. The steel lattice towers of the existing BG route are seen within close-proximity views from the route, occasionally skylined but otherwise backclothed by rolling landform and adjacent woodland. The existing Glenlee substation and hydro power station are largely imperceptible from this road, screened by intervening landform, dense woodland and the residential properties located at the northern extent of the route directly south of the junction with the U2s, and limited to glimpsed views north-west from the road through along the short access track adjacent to the

U3s	
	residential property of Rannoch.
Sensitivity	Road users of the U3s, including recreational users of the promoted routes which follow the road are considered to be of medium susceptibility to changes in views, although residents accessing properties situated to the west of this road may be judged to be of higher susceptibility. The U3s is located within the Galloway Hills RSA; however views to the elevated summits of the RSA are largely obscured by intervening landform and vegetation. Although the route forms part of the National Byway – South West Scotland cycle route, views from the route are not considered to be of particular scenic value along sections of the route in close proximity to the substation extension, although more open panoramic views are available from sections of the in the south-western extents of the Study Area. Overall views from this route are considered to be of medium value. Taking account of the judgements of susceptibility and value, overall sensitivity is judged to be **medium**.
Magnitude of Change and Significance of Visual Effects	
Construction Phase	Ground-level disturbance associated with construction of the proposed substation extension, including the introduction of the temporary construction compound and construction vehicle holding area will be imperceptible from this location, due to the screening provided by intervening landform, existing infrastructure, and broadleaf woodland and vegetation. The magnitude of visual change resulting from the introduction of the substation extension will be low in views from this road, and the overall level of effect during the construction phase will be **minor** (adverse and short-term) and **not significant**. Some very limited views of construction activities will be possible in glimpsed views north-west into the site from a very short section of the road near the residential property of Rannoch and between the residential properties of Orrin and Maree. However, some limited views will be possible between intervening vegetation and buildings situated west of the minor road and will be largely screened at ground level by the temporary noise fence, resulting in a very small scale change in oblique views from this road. Although there will be an increase in the movement of construction vehicles and activities associated with the substation extension which will be evident close to the intersection with the U2s, the geographical extent of similar views will be very small. The magnitude of visual change during construction will be low, resulting in a visual effect of **minor** (adverse and short-term) and **not significant**.
Operational Phase	During operation, the palisade fence and internal infrastructure within the substation extension will be seen in glimpsed views north-west from a small section of the road along the short field access track adjacent to the residential property of Rannoch following removal of the temporary noise fence. The introduction of the substation extension will result in a very small scale change in views north from the road. Outward views north from the road are largely screened by intervening buildings and vegetation, and similar views will be experienced from a very small geographical area. The magnitude of visual change during construction will be low, resulting in a visual effect of **minor** (adverse and short-term) and **not significant**. The introduction of mitigation planting, including broadleaf woodland to the south-west and west of the substation extension will be imperceptible at this distance, but will assist in assimilating the substation extension into the surrounding wider network of woodland which occupies the lower slopes of the valley. As a consequence there is no change in the residual visual effect predicted from this route during operation.
Potential For Cumulative Effects	The substation extension will not be seen in combined views with the proposed KTR Connections from this route, with the proposed BG Deviation and G-T connections screened in views west, north-west by intervening buildings, woodland and vegetation. Given the low magnitude of change during the operational phase and predicted none and not significant visual effect from the introduction of the substation extension, significant cumulative visual effects on this sequential route are considered unlikely to occur from the addition of the proposed KTR Project connections. The magnitude of additional cumulative change to views from this sequential route is considered to be low, and taking account of the judgement of sensitivity the cumulative visual effect is judged to be **none** and **not significant**.

Table 6.18: Core Path No. 30 Glenlee

Core Path No. 30 Glenlee

Core Path No. 30 Glenlee	
Representative Viewpoints	n/a
Approximate Distance from the Substation Extension	<0.1km
Description of existing view and potential visual receptors	Core Path No. 30 is a relatively short path connecting the route of the Southern Upland Way (Core Path 504) near St John's Town of Dalry with Glenlee. The footpath runs along the western side of the Water of Ken, following the A762 to cross Coom Burn before passing through woodland along the southern side of the burn. The route then terminates at the U2s unclassified road north-west of Glenlee, adjacent to the hydro power station. The route provides views along and across the Water of Ken with opportunity for outward views towards the enclosing slopes and ridges of the valley. This includes the lower eastern and southern slopes of Waterside Hill to the north, Mulloch Hill to the east and Glenlee Hill to the south, south-west. Views of the existing Glenlee substation are largely limited by intervening vegetation along Coom Burn and north of the U2s, whilst the Glenlee hydro power station building, penstock and pipeline form key features in views to the south-west from the footpath. The existing R Route is visible in relatively close proximity views to the west and south as it contours around the south-eastern flanks of Waterside Hill, and crosses the foot of the valley south of St John's Town of Dalry. The core path passes under R Route as it connects into Glenlee substation north of Coom Burn.
Sensitivity	Recreational receptors whose attention is focused on their surroundings are considered to be of high susceptibility to changes in the view. This route is located within the Galloway Hills RSA, however outward views towards the elevated summits of the core Galloway Hills are largely limited by intervening landform and intervening woodland and vegetation. Overall views from this route are considered to be of medium value. Taking account of the judgements of susceptibility and value, overall sensitivity is judged to be **medium**.
Magnitude of Change and Significance of Visual Effects	
Construction Phase	Visibility of the substation extension during the construction phase will be largely limited to views looking south from a small section of the Core Path alongside Coom Burn and as it approaches the U2s near the tail-race for Glenlee hydro power station. The construction access to the site compound will use the existing gated access to the north-west of the existing hydro power station, and from a short section of the route construction activities to facilitate the development of the temporary construction compound and associated vehicle movements will be seen below the skyline foreshortened by landform and partially screened by mature deciduous woodland. Other preparatory groundworks and the introduction of the main components of the substation extension will be largely imperceptible, screened by intervening vegetation and existing infrastructure. The scale of change to the view will be small and experienced from a small geographical area. Taking account of the medium sensitivity of receptors at this location, the overall level of visual effect is considered to be **minor** (adverse and short-term) and **not significant**.
Operational Phase	The introduction of the main components of the substation extension will be largely screened by vegetation and existing Glenlee buildings south of the U2s, limited to views of the three proposed terminal gantry structures located within the extended substation compound which will be seen in views south from a short section of the Core Path alongside Coom Burn to the north of the existing substation and hydro power station, however, the extended substation compound and internal infrastructure will be largely imperceptible due to the immediate intervening existing infrastructure adjacent to the U2s. The scale of change to the view will be small and experienced from a small geographical area. The magnitude of visual change during construction will be low, and taking account of the high sensitivity will result in **minor** (adverse and long-term) and **not significant** visual effects from this viewpoint. The introduction of mitigation planting, including broadleaf woodland to the south-west and west of the substation extension will be imperceptible at this distance, but will assist in assimilating the substation extension into the surrounding wider network of woodland which occupies the lower slopes of the valley. As a consequence there is no change in the residual visual effect predicted from this route during operation.
Potential For Cumulative Effects	The substation extension will be seen in combined close proximity views with the proposed KTR Project P-G via K and E-G connections. The southern parts of the P-G via K and E-G connections will be evident in close proximity views where the connections pass over the Core Path north of Coom Burn. Longer distance views of these connections are largely limited by landform and intervening screening vegetation. The P-G via K connection will effectively replace the existing R Route, and will be seen to the west of the existing alignment, whilst the E-G connection will introduce the presence of transmission infrastructure in views from this Core Path. Visibility of both the G-T and BG Deviation connections will be largely screened by intervening buildings, infrastructure and woodland south of Coom Burn, limited to views of the parallel connections as they ascend the steep slopes south-west of the substation extension passing through the woodland of Black Bank Wood adjacent to the hydro power station penstock and pipeline. The opportunity for the substation extension to be seen in combined, successive or sequential views from this route is very limited, as such it is considered unlikely that the introduction of these connections in the context of the proposed KTR Project will contribute to additional cumulative visual effects. The removal of the southern section of R route following construction of the KTR Project connections will remove the presence of transmission infrastructure within the low lying floodplain of Holm of Dalry, evident in views from the northern extents of the Core Path. Given the low magnitude of change predicted during the operational phase, and the minor and not significant visual effect from the introduction of the substation extension, significant cumulative visual effects on this sequential route are considered unlikely to occur from the addition of the proposed KTR Project connections. The magnitude of additional cumulative change to views from this route is considered to be low, and taking account of the judgement of sensitivity the cumulative visual effect is judged to be **minor** (adverse and long-term) and **not significant**.

Summary of Landscape and Visual Effects

6.120 This section summarises the residual landscape and visual effects predicted, taking account of proposed mitigation measures highlighted above. A summary of significant effects is provided in **Table 6.19** below.

Potential Effects during the Construction Phase

6.121 In terms of effects arising during the construction phase of the proposed development, the assessment identifies significant adverse landscape effects on the site of the proposed development, limited to areas of direct disturbance from construction activities and the introduction of temporary construction facilities, with very localised significant adverse effects expected to arising within an approximate 0.5km radius from the substation extension located within the Upper Dale – Dumfries & Galloway LCT (165).

6.122 Significant adverse visual effects are predicted from locations in close proximity to the substation extension during the construction phase. Significant effects on views from representative assessment Viewpoint 1 – Rear of Residential Property: Rannoch, and Viewpoint 2 – Rear of Residential Property: Orrin, where close proximity views of construction activities associated with the formation of the substation extension platform will be evident. These viewpoints are representative of views gained from a number of adjacent residential properties within the small community of Glenlee; however the introduction of the proposed 2.5m high noise fence along the rear boundaries of these properties will substantially reduce the available views of activities during the construction phase.

6.123 No significant visual effects on views experienced by transient receptors are predicted, however the perceptibility of the proposed development from road (A762, U2s and U3s) and recreational routes (Core Path 30) will be greatest during the construction phase where close proximity views of temporary public road improvements, associated mainly with the introduction of passing places, the temporary site cabins, temporary construction site compound, and widening of the construction access will be experienced from some short sections of these routes.

Potential Effects during the Operational Phase

6.124 Effects arising during the operational phase of the proposed development will be solely related to the extended substation compound and infrastructure located therein. The magnitude of change will generally decrease when temporary construction elements are removed, restoration activities are

completed and as landscape mitigation planting to the west and south-east of the substation extension compound matures.

6.125 The assessment identifies significant adverse landscape effects for the site of the proposed development, situated within the Upper Dale – Dumfries and Galloway LCT (165). Effects on the landscape will be very localised, owing to the nature of the proposed site which is contained by landform to the south-west, existing electricity substation and hydro power station infrastructure to the north and west, and residential development and dense broadleaf deciduous woodland to the east, south-east which will largely limit views of the substation extension from the wider extents of the LCT. Beyond the Site and its immediate setting no significant landscape effects are predicted.

6.126 During the operational phase, significant visual effects are predicted from close proximity representative assessment Viewpoint 1: Rear of Residential Property: Rannoch, and Viewpoint 2: Rear of Residential Property: Orrin, however following implementation and establishment of landscape mitigation planting residual visual effects on views from Viewpoint 2 are expected to reduce to minor, and not significant (at and beyond c.5 years maturity). Given screening by proposed mitigation planting, existing vegetation close to the substation extension and foreshortening of views into the site by surrounding landform, significant visual effects beyond these immediate views are not predicted to occur.

6.127 There are no significant visual effects predicted from sequential routes within the Study Area during the operational phase of the proposed development.

Potential for Cumulative Effects

6.128 In terms of cumulative effects arising from the introduction of the substation extension in the context of the proposed KTR Project connections, the assessment identifies significant adverse cumulative landscape effects on the site of substation extension and its immediate setting. Significant adverse cumulative landscape effects beyond the site of the substation extension are considered unlikely given the relatively contained nature of the site, and the limited opportunity for combined views of the substation extension in conjunction with the proposed KTR Project connections from the wider landscape.

6.129 Significant adverse cumulative visual effects are predicted from locations in close proximity to the substation extension, including Viewpoint 1: Rear of Residential Property: Rannoch. The introduction of the BG Deviation which when seen in combination with the substation extension will increase the influence of electricity transmission infrastructure in combined close proximity views from this viewpoint. Following implementation and establishment of the proposed landscape mitigation planting, the presence of existing woodland close to the substation extension and foreshortening of views into the Site by surrounding landform and woodland, significant cumulative visual effects from other locations are not predicted to occur.

6.130 Taking account of the limited intervisibility between the substation extension and the proposed connections and the location of these connections in views currently occupied by the existing R Route and BG Route connections, it is considered unlikely that the introduction of the substation extension in the context of the proposed KTR Project connections will contribute to additional cumulative visual effects.

Conclusion

6.131 Overall, the introduction of the substation extension will result in very localised significant adverse effects on the site and localised significant adverse visual effects where open views towards the site are available from locations within very close proximity to the site, largely limited to views experienced by receptors within the neighbouring community of Glenlee.

6.132 Whilst significant visual effects are predicted to occur for residential receptors located within close proximity to the proposed substation extension, it is not considered that these effects are of a nature which requires more detailed consideration of potential effects on residential visual amenity, or 'living conditions' through a separate Residential Visual Amenity Assessment (RVAA). Although significant effects are predicted during both the construction and operational phase of the proposed development from the closest property of Rannoch (represented by Viewpoint 1: Rear of residential property – Rannoch), the changes in views and visual amenity from the property and its curtilage will be experienced in the context of the existing electricity transmission infrastructure associated with Glenlee substation, and the Glenlee hydro power station which forms a key feature in the existing available views. In this context it is not considered that the RVAA Threshold[40] will be reached during either the construction or operational phases of the proposed substation extension, and therefore no detailed assessment of residential visual amenity has been undertaken.

6.133 Construction effects unless otherwise stated will be short-term adverse and largely reversible, whilst all landscape and visual effects identified during the operational phase are judged to be long-term and adverse. Landscape mitigation planting will be implemented during the operational phase to gradually screen and filter views of the substation extension experienced from residential properties to the south-east of the substation extension, as this matures it will assist in assimilating the substation extension into the existing pattern of woodland which occupies the lower slopes of the valley as is evident in longer distance elevated views.

6.134 The introduction of the proposed KTR Project connections will lead to additional landscape and visual effects in combination with the substation extension. However, given the very limited localised extent of significant effects associated with the substation extension, the significant cumulative landscape and visual effects which are predicted likely to occur in the context of these additional proposed developments are not considered to exceed those associated with the substation extension in isolation.

Interrelated Effects

6.135 In specific regard to potential effects of the Glenlee substation extension on landscape and visual receptors, some potential interactions may arise between effects assessed in relation to other disciplines within the EIA Report.

6.136 There is a correlation between the sensitivity of visual receptors (people) involved in recreation and tourism activities and represented by viewpoints used for the visual assessment of the proposed development. Whilst a detailed assessment of effects on recreation and tourism has not been undertaken as detailed in **Chapter 2: Approach to the EIA**, the assessment of effects presented in the assessment of landscape and visual effects takes this into account.

6.137 There is also some correlation between visual and cultural heritage effects in relation to the change in views resulting from the proposed development where these are evident from cultural heritage receptors, as described and assessed in **Chapter 9: Cultural Heritage**.

6.138 The properties located adjacent to the proposed development, and representing the small community of Glenlee, are considered likely to experience combined effects relating to a number of topics during construction. In particular it is considered that there will be a correlation between potential effects on local residential amenity resulting from temporary effects from construction noise and traffic, and the visual effect associated with construction.

6.139 These effects are detailed further in **Chapter 12: Summary**.

Further Survey Requirements and Monitoring

6.140 Survey and monitoring of the proposed landscape mitigation planting will be required in relation to the residual landscape and visual effects identified. The mitigation will be closely monitored by a landscape architect periodically over a five year period to ensure the implemented planting successfully establishes and the predicted mitigation of landscape and visual effects is delivered.

Summary of Significant Effects

Table 6.19: Summary of Significant Effects

Summary of Significant Effects			
Receptor	**Construction Phase**	**Operational Phase**	**Potential Cumulative Effects**

[40] The approach to determining the RVAA threshold is detailed in Paras A6.1.21-A6.1.23 in Appendix 6.1: LVIA Assessment Methodology

Summary of Significant Effects			
Landscape Character			
The site of substation extension and immediate locality	**Major** (adverse) and **significant**. *Residual Effect:* No change.	**Moderate** (adverse) and **significant**. *Residual Effect:* No change.	**Moderate** (adverse) and **significant**.
Views and Visual Amenity			
Viewpoint 1: Rear of Residential Property: Rannoch	**Major** (adverse) and **significant**. *Residual Effect:* No change.	**Major** (adverse) and **significant**. *Residual Effect:* No change.	**Major** (adverse) and **significant**.
Viewpoint 2: Rear of Residential Property: Orrin	**Major** (adverse) and **significant**. *Residual Effect:* No change.	**Moderate** (adverse) and **significant**. *Residual Effect:* **Minor** (adverse) and **not significant** following implementation and establishment of landscape mitigation planting as detailed on **Figure 4.3** (See detailed Planning drawing Landscape Mitigation Plan ref: **LUC_6118_LP_PLN_001**)	**Minor** (adverse) and **not significant**.