## NORTH ARGYLL SUBSTATION OPTIONS APPRAISAL

August 2015



ash



NORTH ARGYLL SUBSTATION OPTIONS APPRAISAL

AUGUST 2015

# ash

ASH design + assessment 21 Gordon Street Glasgow G1 3PL

Tel: 0141227 3388 Fax: 0141 227 3399

email: info@ashglasgow.com

www.ashdesignassessment.com

Document Title:					Document No:					
North Argyll Substation Options Appraisal					11400	6/01				
Prepared: Date:			Checked:	Date:		Approved:		Da	Date:	
E Mackenzie 28/0		28/08/2	2015	A Curds	28/08/2015 J Skry		nka	28/08/2015		
<b>Status:</b> FINAL	Status: FINAL									
Rev.	Date		Revisio	n		Prep	pared	Checked	l	Approved

## Contents

1.	Intr	oduction3
1	.1	Background to the Project3
1	.2	Key Design Parameters3
1	.3	Statutory Consents Procedure4
1	.4	Planning Policy Context4
2.	Me	thodology6
2	.1	Existing Guidance – The Holford Rules6
2	.2	Stages of the Methodology7
2	.3	Baseline Study7
2	.4	Identification of Targeted Search Areas8
2	.5	Analysis of Targeted Search Areas9
2	.6	Presentation of Potential Substation Sites9
3.	Bas	eline10
3	.1	Constraints10
3	.2	Landscape and Visual11
3	.3	Recreation16
3	.4	Ecology18
3	.5	Geology, Hydrology and Soils19
3	.6	Cultural Heritage20
3	.7	Planning Constraints21
3	.8	Other Constraints
4.	Env	ironmental Appraisal of Substation Options23
4	.1	Identification of Targeted Search Areas (TSAs)23
4	.2	Analysis of Targeted Search Areas24
4	.3	Summary and Conclusions
5.	Pre	ferred Substation Search Area: Summary of Conclusions by SHE Transmission 69
6.	Ref	erences

### Figures

Figure 1: Study Area and Existing Infrastructure

Figure 2: Landscape and Visual Constraints

Figure 3: Landscape Character

Figure 4: Recreation Constraints

Figure 5: Ecological Constraints

Figure 6: Geology, Hydrology and Peat

Figure 7: Cultural Heritage Constraints

Figure 8: Slope

Figure 9: Combined Level 1 and 2 Constraints

Figure 10: Combined Level 1 and 2 Constraints with Targeted Search Areas

Figure 11: Targeted Search Areas

Figure 12: Landscape and Visual Constraints with Targeted Search Areas

Figure 13: Landscape Character with Targeted Search Areas

- Figure 14: Recreation Constraints with Targeted Search Areas
- Figure 15: Ecological Constraints with Targeted Search Areas
- Figure 16: Geology, Hydrology and Peat with Targeted Search Areas
- Figure 17: Cultural Heritage Constraints with Targeted Search Areas
- Figure 18: Slope with Targeted Search Areas
- Figure 19: Proximity to Roads with Targeted Search Areas
- Figure 20: Targeted Search Areas Presented for Further Analysis

## Appendices

Appendix 1: The Holford Rules Supplementary Notes on the Siting of Substations Appendix 2: Identified Constraints and Degree of Restriction

## 1. Introduction

#### **1.1** Background to the Project

- 1.1.1 Scottish Hydro Electric Transmission plc (SHE Transmission) is a wholly owned subsidiary of the SSE plc group of companies. SHE Transmission owns and maintains the electricity transmission network across the north of Scotland, and holds a license under the Electricity Act 1989 to develop and maintain an efficient, co-ordinated and economical system of electricity transmission.
- 1.1.2 The existing transmission network serving eastern Argyll was originally designed to serve a rural area with low demand for electricity. The Scottish Government's renewable energy targets (The Scottish Government, 2011) have led to many renewable generation developers requesting connections to the electricity network throughout Scotland. This is placing a new and significant requirement on the transmission system. Specifically, connections have been requested for further renewable generation throughout Argyll which exceeds the capacity of the existing transmission system in the area.
- 1.1.3 As part of a wider scope of works to upgrade the transmission network in eastern Argyll to accommodate this increase in renewable generation, it is proposed to develop a new 275 / 132 kV substation in North Argyll.
- 1.1.4 The new 275 / 132 kV substation in the North Argyll area will provide a connection for a new 275 kV double circuit overhead line from Dalmally Substation, there is also potential for a 275 kV double circuit connection from Port Ann.
- 1.1.5 A 132 kV connection will be provided at the new substation to connect the existing 132 kV overhead line circuit from Inveraray. The overhead line section from Taynuilt will connect into the new substation at 132 kV. A rebuild of the section of the overhead line between Taynuilt and the new substation will be undertaken utilising a new tower suite and higher capacity conductor.
- 1.1.6 ASH has been commissioned by SHE Transmission to carry out a substation site selection exercise, to identify potential locations for the new substation. The identification of the potential locations will enable route option studies to be carried out for the new overhead lines to inform selection of a preferred site.
- 1.1.7 This report describes the substation options appraisal exercise undertaken, the alternatives considered during the identification of search areas, and the identification of a number of potential sites.

#### **1.2** Key Design Parameters

1.2.1 The new substation could either comprise an Air Insulated Switchgear (AIS) solution, requiring an operational area of approximately 300 m by 300 m, or a Gas Insulated Switchgear (GIS) solution requiring an area of approximately 160 m by 160 m. Within an AIS, the live electrical equipment uses air as the insulating medium: this results in a larger footprint due to the clearance distances required between electrical equipment. Within a GIS, live electrical equipment uses a special gas as the insulating medium, usually sulphur hexafluoride (SF<sub>6</sub>) gas. Live electrical equipment is usually enclosed in a building, rather than exposed, and the use of the gas reduces the clearance distances required between

electrical equipment: this results in a smaller footprint for a GIS solution compared to an AIS solution.

- 1.2.2 Other key design parameters included:
  - Identifying a relatively flat site with good ground conditions (avoiding areas of deep peat) in order to minimise cut and fill requirements associated with the construction of a new substation;
  - Identify areas where opportunities exist to help screen the new substation to minimise potential landscape and visual impacts; and
  - Minimise other environmental impacts where possible, through identification and avoidance of known environmental constraints.

#### **Infrastructural Limitations**

1.2.3 As outlined in Paragraph 1.1.6, the new 275 / 132kV substation is required to accommodate a 132 kV connection to the existing overhead line between Inveraray and Taynuilt, and the potential new 275 kV overhead line between Inveraray and Dalmally. However, at this stage of the site selection process, substation sites have been considered without the limitations of the effects of potential grid connection routes.

#### 1.3 Statutory Consents Procedure

- 1.3.1 Consent for construction of a new substation would be sought by way of an application to Argyll and Bute Council under the Town and Country Planning (Scotland) Act 1997. The size of the substation is likely to be in excess of 2 hectares, therefore the development would fall within the category of 'Major Development' under the Town and Country Planning (Hierarchy of Development) (Scotland) Regulations 2009 (The Hierarchy Regulations).
- 1.3.2 During this process, Argyll and Bute Council would take into account the views of statutory bodies (e.g. SNH and SEPA) and the local community.

#### 1.4 Planning Policy Context

- 1.4.1 The modernisation of the Scottish planning system under the Planning Etc. (Scotland) Act 2006 has introduced changes to the Development Plan system. Strategic Development Plans (SDPs) are required to be prepared in place of Structure Plans in the four largest city regions and provide strategic policy direction on the management of land use and new development. Local Development Plans (LDPs) are required to be prepared in place of Local Plans within all local authority areas. LDPs provide detailed and site specific planning policy for an area, in accordance with the SDP where applicable. The preparation of SDPs and LDPs is currently ongoing and until they come into force existing Structure Plans and Local Plans remain applicable.
- 1.4.2 Argyll and Bute is located outwith the four designated City Regions and therefore the LDP documents address strategic as well as local policy issues. Argyll and Bute Council formally adopted the Argyll and Bute LDP in March 2015. It provides the local planning framework in the Council area.
- 1.4.3 Chapter 7 of the LDP concerns the development of infrastructure and states that, "good infrastructure is critical to improving the quality of life and enabling future business and

household growth that will in turn supply wider economic growth." In terms of electricity infrastructure, the plan notes that grid capacity that will need further investment during the period of the LDP. It further advises that, "the challenge is to plan for and implement new infrastructure in a cost effective manner, whilst maintaining the high quality of built and natural environment that supports both the economy and our quality of life" (Argyll and Bute Council 2015, pg 62). The relevant policy framework associated with this is included in Policy LDP 11 – Improving our Connectivity and Infrastructure.

1.4.4 The Council also propose to develop Supplementary Planning Guidance on how to minimise servicing impacts on the environment.

## 2. Methodology

#### 2.1 Existing Guidance – The Holford Rules

- 2.1.1 The basic principles for routeing and site selection are found within the 'Holford Rules', set out by Lord Holford in 1959, with supplementary guidelines, including that of substation site selection, added by the National Grid Company in 1992. These are accepted as established best practice for substation site selection. The series of principles are mainly focused on environmental and landscape amenity issues, however, greater importance has been given to people/residential areas. These principles have been taken into account during the consideration of site selection options.
- 2.1.2 SHE Transmission reviewed the Holford Rules in 2003 and concluded that they continued to stand the test of time and remained widely used by the electricity industry. They have also been supported by Inquiry Reporters and are recognised by the design professions. The review concluded that to apply The Holford Rules as originally formulated and supplemented by the National Grid Notes of Clarification to the current Scottish context, it was only necessary to make minor modifications to these Notes to reflect these circumstances.
- 2.1.3 On this basis, SHE Transmission concluded that it would continue to employ The Rules and supplementary notes by National Grid, with minor modifications, as the basis of the Company's approach to substation site selection.
- 2.1.4 These guidelines help SHE Transmission to meet its obligations under Schedule 9 of the Electricity Act 1989, which requires transmission license holders:
  - to have a regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interests; and
  - to do what they reasonably can to mitigate any effect that the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects.

#### **Application of the Holford Rules**

- 2.1.5 The Supplementary Notes on the Siting of Substations (see Appendix 1) were used to help identify targeted search areas for the substation. These comprise the following guidelines:
  - Respect areas of high amenity value and take advantage of the containment of natural features such as woodland, fitting in with the landscape character of the area;
  - Take advantage of ground form with the appropriate use of site layout and levels to avoid intrusion into surrounding areas;
  - Use space effectively to limit the area required for development, minimising the effects on existing land use and right of ways;
  - Alternative designs of substations may also be considered, for example 'enclosed' rather than 'open', where additional cost can be justified;

- Consider the relationship of towers and substation structures with background and foreground features, to reduce the prominence of structures from main viewpoints; and
- When siting substations take account of the effects of line construction that will need to be made.
- 2.1.6 This site selection appraisal follows the principles for substation site selection set out in the Holford Rules Supplementary Guidance.

#### 2.2 Stages of the Methodology

- 2.2.1 The method of site selection has involved 4 key stages as follows:
  - Identification of the baseline situation;
  - Identification of Targeted Search Areas;
  - Individual environmental analysis of Targeted Search Areas; and
  - Presentation of potential substation site options to SHE Transmission for further analysis on technical feasibility.

#### 2.3 Baseline Study

#### Study Area

2.3.1 An initial study area has been defined for the undertaking of baseline studies provided by SHE Transmission using a point approximately at the centre of the three existing substations of Taynuilt, Dalmally and Inveraray and with a 10 km radius. Figure 1 shows the Study Area for the baseline search.

#### Key Activities

- 2.3.2 A baseline study has been carried out to identify a broad range of potential constraints and opportunities within the Study Area. This has involved the following activities:
  - Identification of environmental designated sites and other constraints, utilising GIS datasets available via SNHi Site Link;
  - Identification of archaeological designations and other recorded sites, utilising GIS datasets available via Historic Scotland Data Services and the West of Scotland Archaeology Service (WoSAS);
  - Review of policy in the Argyll and Bute Local Development Plan 2015 to identify further environmental constraints and opportunities, such as regional level designations or other locations important to the public;
  - Review of the 'Landscape Assessment of Argyll and the Firth of Clyde' (SNH Natural Heritage Review No. 78) from the SNH suite of Landscape Character Assessment documents (ERM 2014);

- Review of Ordnance Survey (OS) mapping (1:50,000 and 1:25,000 and online gis data sources from OS OpenData) and aerial photography (where available) to identify other potential constraints such as settlement, properties, walking routes, cycling routes etc;
- Extrapolation of OS Vectormap GIS data to identify further environmental constraint including degree of slope, locations of watercourses and waterbodies and roads classifications;
- Review of other local information through online and published media such as tourism sites and walking routes;
- Review of other developments within the planning system (consented or awaiting determination) which may impact upon siting selections (e.g. wind farm developments and new housing developments); and
- Input from a local ecologist from Quadrat Scotland, based in Argyll.

#### <u>Site Visit</u>

2.3.3 Two site visits were carried out to enable an informed opinion on potential constraints and to fully understand and appreciate how the environmental constraints noted above could influence potential siting options. The first site visit was carried out on 8th and 9th April 2015 by ASH staff, and a further site visit was carried out on 20<sup>th</sup> and 21<sup>st</sup> April 2015 in combination with SHE Transmission, allowing for collaborative consideration of both environmental and technical constraints and opportunities.

#### 2.4 Identification of Targeted Search Areas

#### **Review of Baseline Information**

- 2.4.1 All constraints identified through baseline studies have been reviewed and considered in terms of their likely level of constraint. These constraints have then been classified to determine their potential suitability to the type of development proposed, as follows:
  - Level 1: Area of environmental sensitivity considered broadly unsuitable for substation development due to likely significant effects. Area excluded from search where alternative options are present.
  - Level 2: Area of environmental sensitivity where it is considered some suitability for substation development may be possible without significant effects occurring or with mitigation, depending on site specific conditions. Area retained in search for further site specific analysis.
- 2.4.2 Detailed review of each constraint against these classifications is included in Appendix 2.
- 2.4.3 All the constraints identified have then been combined to create an image showing areas of likely and potential constraint, as shown on Figure 9. This figure shows areas of level 1 constraint as red, areas of level 2 constraint as orange and areas where there are no obvious constraints uncoloured. It should be noted that no obvious constraint at this stage, does not mean that no constraints would exist, as this would be determined by further site specific survey. Figure 9 has then been used for the identification of Targeted Search Areas (TSAs), comprised of locations within the study area where constraints would enable a

substation of the size required to be accommodated. This includes areas where there is either no obvious constraint or level 2 constraint only, which could allow a substation to be sited by avoiding or mitigating potential effects. TheTSAs do not comprise actual substation sites but areas of potential accommodation. These are broad areas encompassing a number of potential substation sites, and have been defined using professional judgement, with boundaries between TSAs being derived through a number of considerations, including:

- Separation by notable areas of level one constraint;
- Inclusion of areas of sufficient scale to accommodate a potential substation;
- Similarity of landscape character and / or land use;
- Key topographical thresholds such as ridgelines or notable changes in gradient; and
- Proximity or relationship to key visual receptors such as settlements and roads.
- 2.4.4 In general, TSAs have been targeted towards areas where a cluster of potential substation options exist. Not all areas of level 2 or no obvious constraint have been included. However, those excluded comprise areas not large enough to accommodate a potential substation or very isolated, single sites.

#### 2.5 Analysis of Targeted Search Areas

- 2.5.1 Detailed analysis of each Targeted Search Area has involved systematic consideration against each of the identified constraints and an interaction rating has been applied to each subject area indicating potential constraint. This rating is based on a three point scale as follows:
  - High (Potentially significant constraints);
  - Medium (Constraints of lesser extent or those with the potential for mitigation); and
  - Low (No obvious constraints or those unlikely to require additional mitigation).

#### 2.6 Presentation of Potential Substation Sites

2.6.1 Having analysed all of the Targeted Search Areas, those identified as likely to have potential significant effects to the extent that they are considered unsuitable as sites from an environmental perspective have been ruled out and those where potential environmental issues are considered possible to work around have been presented to SHE Transmission for consideration of technical constraints and potential grid connection route options.

## 3. Baseline

#### 3.1 Constraints

3.1.1 As described in Section 2.3, a desk-based exercise was undertaken to establish potential environmental constraints within the study area. Based on the information available, the following table lists a number of key constraints that were considered.

Classification	Constraint
Environmental Designations	National Parks (NP)
	National Scenic Area (NSA)
	Special Protection Area (SPA)
	Special Area of Conservation (SAC)
	Site of Special Scientific Interest (SSSI)
	Special Landscape Area (SLA)
	RAMSAR
	Gardens and Designed Landscape (GDL)
	Area of Panoramic Quality (APQ)
Landscape and Visual	National Park (NP)
	National Scenic Area (NSA)
	Gardens and Designed Landscapes (GDL)
	Wild Land and Wildness
	Regional Scenic Area ( Area of Panoramic Quality (APQ))
	Settlement (views and setting)
	Sensitive Landscape Character Types
	Other important views
Ecology and Nature	Special Protection Area (SPA)
Conservation	Special Area of Conservation (SAC)
	Site of Special Scientific Interest (SSSI)
	RAMSAR Wetlands of International Importance
	Native and other woodlands
	Watercourses and waterbodies
	Other important habitats and species
Geology, Hydrology and Soils	Geological Conservation Review sites (GCRs)
	Watercourses and waterbodies
	Areas of priority peatland
Cultural Heritage	Scheduled Monument (SM) (including setting)
	Listed Building (LB) (including setting)
	Conservation Areas
	Other identified archaeological sites
Land Use and Recreation	Sensitive land use types
	Popular recreational routes
	Local attractions
	Other site specific activities
Other constraints	Areas of steep slope
	Proximity to existing roads

3.1.2 These constraints are illustrated on Figures 1 to 8 and discussed further below.

#### 3.2 Landscape and Visual

#### **Designated Sites and Planning Constraints**

3.2.1 Figure 2 illustrates the landscape designations and constraints within the study area, which are described in detail below.

#### National Parks

3.2.2 There are no National Parks (NPs) within the study area.

#### National Scenic Areas

3.2.3 There are no National Scenic Areas (NSA) within the study area.

#### Gardens and Designed Landscapes

3.2.4 There are two Garden and Designed Landscapes included on the Inventory of Gardens and Designed Landscapes maintained by Historic Scotland (GDLs) and available on their Data Services Website. GDLs located within the study area include Inveraray Castle and Ardanaiseig House. Although not a statutory designation, sites included on the Inventory comprise a material consideration to any planning application.

#### Inveraray Castle GDL

- 3.2.5 Inveraray Castle GDL, dating from the mid-1600s, is located on the western shores of Loch Fyne, approximately 1 km to the north of Inveraray. It is recognised as one of Scotland's finest designed landscapes by Historic Scotland and is assessed to be 'outstanding' in almost all categories. The boundary of the GDL covers a number of architectural features, parkland, woodland, a formal garden and a walled garden.
- 3.2.6 The parkland, first laid out in the mid-17th Century, has changed several times over the years, re-designed in the style of the picturesque by the mid-19th Century, at which point extensive woodland was planted and formal parterre gardens were laid out around the Castle. Today, the majority of parkland trees no longer remain and a programme of replanting is underway. A famous avenue of Lime trees within the parkland is noted as a key feature.
- 3.2.7 Views are contained to the north, east and west sides by hills and woodland. Attractive views extend down the loch across to Strachur and Cruach-nan-Capull.
- 3.2.8 Inveraray Switching Station and sections of the existing Inveraray to Crossaig 132 kV overhead line pass through the parkland and woodland components of this GDL.

#### Ardanaiseig House GDL

3.2.9 Ardanaiseig House lies on the shore of Loch Awe, occupying a promontory at its northern end. The designed landscape was laid out in the early 19<sup>th</sup> century and comprises mainly woodland, gardens, parkland and a grade B listed building; Ardnaiseig House, which faces east towards Loch Awe. The gardens were extended in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries and between 1979-80 the house was converted into a hotel. The woodland canopy,

consisting mainly of hardwoods including oak, contributes to the shoreline scenery from the A85 road along the north shore and the A819 on the east side of Loch Awe giving it a high scenic value.

#### Areas of Panoramic Quality

- 3.2.10 Area of Panoramic Quality (APQ) is a regional level designation applied through the Local Development Plan by Argyll and Bute Council. They are afforded protection from development in the Local Development Plan under Policy LDP 3: Supporting the Protection, Conservation and Enhancement of our Environment. Policy SG LDP ENV 13 (Development Impacts on Areas of Panoramic Quality) of Proposed Supplementary Guidance 'Protecting, Conserving and Enhancing our Outstanding Environment' (Argyll and But Council 2013) provides further guidance although this Supplementary Guidance has not yet been formally adopted.
- 3.2.11 Over half of the Study Area is situated within the North Argyll APQ which covers the northeastern portion of Loch Awe and extends to the north and east covering an extensive area of glen, upland and forest.
- 3.2.12 A very small portion of the West Loch Fyne (Coast) APQ also falls within the south of the study area.
- 3.2.13 There are no published designation descriptions or defined special qualities for the APQs. However, the Argyll & Bute Landscape Capacity Study (Gillespies, 2010) produced for Argyll and Bute Council, assesses the potential of several of the APQs to accommodate development and, as part of this, identifies key views from them. These will form part of the consideration of potential landscape and visual impacts when carrying out further assessment.

#### Wild Land

- 3.2.14 Wild Land Areas (WLAs) have been defined by SNH as those areas comprising the greatest and most extensive areas of wild characteristics within Scotland. Although not a designation, these are given protection within the Planning System through Scottish Planning Policy (SPP).
- 3.2.15 There are two WLAs falling partially within the Study Area: Ben Lui WLA and Loch Etive Mountains WLA.

#### <u>Ben Lui WLA</u>

3.2.16 Ben Lui WLA comprises an extensive tract of mountainous and undulating moorland to the west of Glen Falloch and south of Glen Orchy. A small portion of this WLA extends into the study area from the east, covering a stretch of undulating moorland outwith the forestry plantation areas to the south of Dalmally and north of Glen Shira. The main core of the WLA lies outwith the study area with the summit of Ben Lui located around 8 km to the east.

#### Loch Etive Mountains WLA

3.2.17 In the northern part of the study area, north of Loch Awe, the Loch Etive Mountains WLA covers a very large area of mountains and glens to either side of Loch Etive and stretches

north to Glen Coe. Within the study area, this includes the steeply rising mountainside to the north and east of the Cruachan reservoir.

#### Landscape Character

- 3.2.18 The area of Argyll and Bute within the wider area comprises a varying landscape of craggy upland and mountains cut through by deep glens, lochs and sea lochs. It is a deeply contrasting landscape with wide exposure on the high tops and rocky upland moorland and intimate rural, farming and settled landscapes in the glens and around the lochs. Forest and woodland are a prominent character defining feature of the lower valleys, ranging from the large scale patterns of commercial forest plantation on lower slopes and glen sides to attractive and intimate native woodlands along the settled shores of Loch Awe and the low lying Glen Orchy. Settlement follows the landscape patterns of the glens and loch shores, accessed by winding roads ranging from fast A roads to secluded single track routes. Historic buildings and features and grand Victorian hotel buildings create prominent land marks along the loch. Wind farms are evident on the more distant hill tops and overhead transmission lines are already an intermittent feature of the landscape, traversing glen slopes and crossing forests through open wayleaves.
- 3.2.19 In terms of regional context, the study area comprises 6 landscape character types (LCTs) as defined by the 'Landscape Assessment of Argyll and Firth of Clyde' (ERM 1996), published by Scottish Natural Heritage. These are described below and shown on Figure 3. This document provides guidance on future development, and based on this guidance a sensitivity rating has been applied to each LCT in relation to substation development, based on the following criteria:
  - High A highly valued landscape of particularly distinctive character susceptible to relatively small changes of the type proposed;
  - Medium A reasonably valued landscape with a composition and characteristics tolerant of some degree of change of the type proposed; and
  - Low A relatively unimportant landscape which is potentially tolerant of a large degree of change of the type proposed.

#### Craggy Upland

- 3.2.20 The majority of the landscape within the study area is typified by this character type. This is an upland moor landscape with rounded knolls, rock outcrops and lochs in low-lying hollows. Landform is described as irregular and amorphous and there is a mix of open moorland (which dominates), extensive conifer plantations and a patchwork of pastures within glens. Isolated farmsteads and small villages are located in sheltered sites within glens.
- 3.2.21 Guidance for this landscape suggests that upland valleys and coastlines are the most scenic and sensitive part of this landscape and new development in these areas should be strictly controlled. The setting of archaeological features should be preserved from new development as these are often prominent landscape features. The document suggests that irregular landform and scattered woodland along loch edges could provide some scope for screening small built developments, but the remote, natural character should be conserved wherever possible.
- 3.2.22 This LCT has therefore been allocated a Medium sensitivity rating.

#### Upland Forest-Moor Mosaic

- 3.2.23 This character type is found in the southern extent of the Study Area. It includes upland plateau, winding narrow glens and wider river valleys, and an extensive, large scale mosaic of forestry plantations. This is a large-scale landscape, with relatively few distinctive features, so it is particularly important to conserve distinctive, small-scale landscape features.
- 3.2.24 Guidance for this landscape suggests that the narrow shoreline strip is the most sensitive part of the landscape for new development, although upland plateau may be targeted in the search for development such as suitable wind farm sites. The document suggests that there would be scope for areas of plantation to screen development, although care would be needed to ensure structures are not exposed as blocks of trees are felled.
- 3.2.25 This LCT has therefore been allocated a Medium sensitivity rating.

#### Rocky Mosaic

- 3.2.26 This character type is found mostly in coastal and riparian locations and within the Study Area is found to the south along Glen Array. This is a relatively small-scale landscape with a diverse mix of colours and textures and an uneven, hummocky landform with rocky outcrops and narrow glens. A number of distinctive features are present including raised beaches, cliffs, rounded knolls, steep wooded cliffs and hummocky, gorse-covered slopes. Isolated farm buildings and small villages are scattered in sheltered sites through the landscape. There is a need to conserve this small-scale landscape pattern and as such, development should generally be small in scale to allow integration with the surrounding landscape.
- 3.2.27 Guidance for this landscape suggests that new built development should generally be small in scale so that it can be integrated within the surrounding, diverse landscape and should always be associated with planting and / or landform to shelter and screen development. The document suggests that small scale landscape pattern should be conserved, along with the landscape setting of important archaeological sites.
- 3.2.28 This LCT has therefore been allocated a High sensitivity rating.

#### **Steep Ridgeland and Mountains**

- 3.2.29 Occupying a small portion of the Study Area to the north of Lochan Shira covering the hilltops of Beinn Bhaigirean and Beinn Bhidheach, this landscape is typified by dramatic mountain ridges with steep slopes, rocky outcrops, ribbon lochs and meandering rivers on narrow floodplains. Extensive conifer plantations are found on lower slopes and open moorland on upper slopes. Settlement is confined to a narrow strip along the loch edge, concentrated in small bays.
- 3.2.30 Guidance for this landscape suggests that the narrow glens and loch edges are particularly sensitive to change for all forms of built development. This landscape provides the setting for the mountain ridges and views are tightly enclosed and directed across the valley and therefore development may appear prominent in views from the opposite side of the glen. Development should be confined to where there is vehicular access to avoid the construction of further new infrastructure. The document suggests that existing power

stations, reservoirs and dams, transmission lines and masts appear to be intrusive elements in the landscape.

3.2.31 This LCT has therefore been allocated a High sensitivity rating.

#### Mountain Glens

- 3.2.32 A flat valley floor of narrow, linear mountain glens. Meandering rivers are again a focus point and the special scenic qualities of the river corridors should be carefully conserved (especially at the mouth of the river). Development which might disrupt important and well-known views along the valley should be prevented. Across the Study Area, this LCT is only found at Strath of Orchy.
- 3.2.33 Guidance for this landscape suggests that development which would disrupt important well-known views along the valley should be avoided and the presence of mature woodland trees to screen and integrate infrastructure should be utilised. It's suggested that the landscape setting of historic landmarks i.e. castles and parkland landscapes should be conserved where possible.
- 3.2.34 This LCT has therefore been allocated a Medium sensitivity rating.

#### High Tops

- 3.2.35 The landscape is characterised by rugged, steep sided mountain ranges with a massive scale. There is a diverse landform with striking exposed rock faces and relatively wide glens between mountain ranges. It is largely inaccessible and therefore relatively uninhabited. This landscape type is found in one small area of the Study Area, to the north of the A85 road.
- 3.2.36 Guidance for this landscape suggests that the special wild character of this nationally important mountain landscape should be conserved and new development should be strictly controlled. The document suggests that there is generally no scope for development in upland areas and due to the limited opportunity for the public to experience the landscape, key views should not be marred by development.
- 3.2.37 This LCT has therefore been allocated a High sensitivity rating.

#### **Potential Visual Receptors**

3.2.38 The study area for this project covers a number of settlements, properties, and routes as shown on Figure 2. Residents, visitors, travellers and workers associated with these locations have the potential to obtain views of a proposed substation and have been considered as potential visual receptors.

#### <u>Settlements</u>

3.2.39 Settlement within the study area is largely limited to the loch shores and main glens with Dalmally, at the north-east end of Loch Awe, and Kilchrennan on its northern shore, comprising the greatest concentrations of residential development. From these settlements, views range from open valley views to relatively contained woodland views. Elsewhere there is an extensive degree of rural residential and holiday development along the shores of Loch Awe and rural roads, set amongst woodland with predominant views

across the loch. To the south of the study area, scattered farm properties and cottages are located within Glen Aray and Glen Shira.

#### <u>Roads</u>

- 3.2.40 Within the study area, roads generally follow the main valleys and the shoreline of Loch Awe and connect settlements and individual dwellings. The main roads in the study area, as identified on Figure 2, are as follows:
  - **A-roads:** A819 (from Dalmally, through Glen Aray to Inveraray) and A85 (from the Pass of Brander to Dalmally).
  - **B-roads:** B845 (from A85 at Taynuilt to Kilchrenan); B840 (along the southern shore of Loch Awe from Cladich to Portinnisherrich), both of which are single track routes with passing places; and
  - A few further minor single track roads and tracks branching from the main routes provide access to individual and small groups of properties.

#### **Other Key Viewpoints**

3.2.41 Views across open water are valued within the study area from many vantage points along the shore of Loch Awe including Kilchurn Castle at the head of the loch. There are also a number of notable publically accessed locations where important views are obtained including elevated monuments on hill tops, the Duncan Ban MacIntyre Memorial south of Dalmally and the Neil Munro monument near to the A819 (as shown on Figure 2).

#### 3.3 Recreation

3.3.1 This section considers the recreational amenity within the study area, which is described below and illustrated on Figure 4.

#### Routes

3.3.2 There are a number of recreational routes within the study area as follows:

#### Walking Routes

- 3.3.3 Two Munro peaks fall just on the northern boundary of the study area: Ben Cruachan and Stob Daimh (948m or 3110 feet), which is located at the head of Loch Fyne and is most readily accessible via Glen Fyne. Another possible ascent route is up Glen Shira, although most are deterred from using this route by the presence of forestry plantation.
- 3.3.4 The book 'Scottish Hill Tracks' published by Scotways describes one route that falls partially within the study area; Track 102 (Loch Fyne to Inverarnan (Glen Shira option)), which starts from the A83 road at the foot of Glen Shira and follows a private road to Lochan Shira, crossing the dam and following the north side of the reservoir to the head of Glen Fyne and thereafter to Inverarnan.
- 3.3.5 There are a number of 'Proposed Core Paths' within the study area proposed by Argyll and Bute Council and presented (prior to objections) on their planning website. It should be noted that the Core Paths Plan is not yet adopted, but has been submitted to the Scottish Government's Directorate for Planning and Environmental Appeals (DPEA). Core Paths

within the Study Area are located on the western shore of Loch Awe, and around the settlement of Dalmally.

3.3.6 There are a number of interpretive trails located in the Glen Nant National Nature Reserve (see paragraph 3.4.4).

#### Cycle Routes

3.3.7 There is one National Cycle Route (NCR) within the study area; NCR 78 which runs from Campbeltown to Fort William, also known as The Caledonian Way, which by summer 2015 will extend to Inverness. Within the study area the route follows the B845 road and a minor road along the shore of Loch Awe.

#### Roads / Railway Routes

- 3.3.8 The main transport links in the area are the A819 (from Dalmally, through Glen Aray to Inveraray) and A85 (from the Pass of Brander to Dalmally).
- 3.3.9 A section of the West Highland Railway Line (Oban branch) passes through the northern part of the study area. Dalmally, Loch Awe and Falls of Cruachan railway stations are also located within the study area.

#### Water-based Activities

- 3.3.10 The main waterbody within the study area is Loch Awe, which is the third largest freshwater loch in Scotland and runs approximately south-west to north-east roughly parallel to the two sea lochs of Loch Etive and Loch Fyne. Via the River Awe and Loch Etive, it drains westwards from its northern end into the Atlantic Ocean.
- 3.3.11 Loch Awe is renowned for a wide range of fish species including Wild Brown Trout, Rainbow Trout, Salmon, Char, Roach, Perch and Monster Pike and as a result fishing is a popular activity for both novice and experienced angler. There are a number of Launch Points noted in the local plan, located along the shore for boats (refer to Figure 4).

#### **Notable Features of Interest**

- 3.3.12 There are two hydroelectric projects sited at Loch Awe; a conventional turbine power station created by damming the River Awe in the Pass of Brander, feeding water through underwater pipes and generating electricity as it flows into Loch Etive, and the second a pumped storage project known as Cruachan, which has a visitor centre and includes tours.
- 3.3.13 Kilchurn Castle is a ruined 15th and 17th century structure on a rocky peninsula at the north-eastern end of Loch Awe. Access to the castle is by foot from the A85 near Dalmally, but this can sometimes be restricted due to high levels of water in the loch, at which times the site becomes a temporary island.
- 3.3.14 There are a number of monuments commemorating local people including the Duncan Ban MacIntyre Memorial (poet) south of Dalmally, and the Neil Munro monument (writer and journalist) at the head of Glen Aray near to the A819.
- 3.3.15 The above features of interest are shown on Figure 4.

#### 3.4 Ecology

#### **Designated Sites**

- 3.4.1 The following nature conservation designations are identified within the Study Area:
  - Glen Shira SAC; Area designated as of international importance for priority oak woodland. The site comprises two distinct blocks of oak wood, separated by the River Shira and associated areas of open and grazed ground which are excluded from the site. Glen Shira as a whole is considered to be one of the richest woodland bryophyte sites in Scotland, with 128 species recorded within the western block alone, of which 27 are Atlantic species;
  - Loch Etive Woods SAC; Area designated as of international importance for priority woodland. Some good examples of *Tilio-Acerion* forest occur in the deeply-incised rocky gorges associated with Glen Nant and in the nearby Coille Leitire. These sites are representative of the habitat type in western Scotland, and comprise stands of ash *Fraxinus excelsior* woodland with a hazel *Corylus avellana* understorey and a rich field layer of tall herbs and woodland grasses on base-rich soils characteristic of the habitat. Loch Etive Woods in western Scotland is one of three sites representing old sessile oak woods in the most bryophyte-rich zone in the UK, the south-west Highlands zone. The diversity of soils and physical conditions leads to transitions between oakwood and both wet alder *Alnus glutinosa* and base-rich ash-elm-hazel *Fraxinus excelsior-Ulmus-Corylus avellana* stands, giving additional patterns of structural variation and transitions. The woods support important populations of the rare chequered skipper butterfly *Carterocephalus palaemon*.
  - Glen Etive and Glen Fyne Special Protection Area (SPA) (feature of interest: Golden Eagle). The site rises from sea level to over 1100 m and encompasses a diverse range of habitats including heather moorland, rough grassland, blanket bog, native woodland, montane heaths and exposed rock and scree. There are also numerous freshwater lochs and river systems. Qualifying features include regularly supporting a population of European importance of the Annex 1 species golden eagle Aquila chrysaetos (19 active territories in 2003, more than 4.2% of the GB population); and
  - Coille Leitire SSSI (feature of interest: upland oak woodland). A large area of mixed broadleaved woodland. Coille Leitire SSSI is a component in the larger Loch Etive Woods SAC (see above).
- 3.4.2 These designated sites are shown on Figure 5 and referred to where relevant in the appraisal of site options.

#### National Nature Reserves (NNRs)

- 3.4.3 NNRs are designated areas set aside for the management of wildlife and habitats with a further emphasis on education and public engagement. Most NNRs also comprise SSSIs and may include other European level designations.
- 3.4.4 As shown on Figure 5, one NNR falls partly within the study area: Glen Nant NNR. This is an area of native woodland managed by Forestry Commission Scotland (FCS) and containing a number of interpretive trails.

#### **Other Ecological Constraints**

3.4.5 The following section provides a description of other potential ecological constraints through the study area, informed through baseline research.

#### <u>Woodlands</u>

- 3.4.6 The Study Area includes several areas of woodland identified as Native Woodland or Nearly Native Woodland, based on a field based survey (the Native Woodland Survey of Scotland (NWSS)) carried out by Forestry Commission Scotland between 2006 2013 (refer to Figure 5). Native woodlands have played an important part in Scottish culture, having been used for wood, shelter, hunting and forage throughout our history. They are also important for biodiversity and nature conservation, often providing habitat for species such as badger, red squirrel, pine martin and bat, and are also often important sites for lower plants within Argyll.
- 3.4.7 Areas noted on the Inventory of Ancient and Long Established Woodland (AWI) and areas of Plantation on Ancient Woodland Sites (PAWS) are located throughout the study area on the lower glen sides and loch shores. An area on the north-western shore of Loch Awe is also noted on Ordnance Survey Mapping as 'Caledonian Forest Reserve' and is covered by a combination of AWI, PAWS and Native / Nearly Native Woodland.

#### <u>Upland</u>

- 3.4.8 Open upland areas are a declining feature of Argyll and can support a number of upland Annex 1 and Biodiversity Action Plan (BAP) habitats such as wet heath, blanket bog, EU dry heath, alkaline fens and upland grasslands.
- 3.4.9 Moorland birds can include a number of Annex 1 species such as golden plover, black grouse, divers and waders, as well as raptors such as golden eagle, hen harrier, osprey, peregrine and merlin.
- 3.4.10 Other protected species such as otter, water vole, adder, badger, wildcat and bats may also be present.

#### **Watercourses**

- 3.4.11 All watercourses or waterbodies within the vicinity of the proposed works present the potential for otter and water vole to be present, as well as fish species.
- 3.4.12 Where water-courses are slow moving and / or within peatland areas, a higher potential for water vole presence exists.

#### 3.5 Geology, Hydrology and Soils

#### **Geology Conservation Review**

3.5.1 There are two Geological Conservation Review (GCR) sites within the study area: Cruachan Reservoir GCR and Kilchrenan Burn and Shore GCR as illustrated on Figure 6. GCRs are sites of national and international geological heritage importance that make a special contribution to our understanding and appreciation of Earth science and the geological history of Britain.

#### Peat

- 3.5.2 Scottish Natural Heritage (SNH) has prepared a consolidated dataset of carbon-rich, deep peat and priority habitats in Scotland derived from existing soil and vegetation data which is intended to provide transparency and awareness of where Scotland's peatlands are found. The Carbon and Peatland Map (SNH, 2014) updates earlier work undertaken by SNH to identify natural heritage features of national importance and is currently at consultation stage.
- 3.5.3 The map defines five classes (Class 1 4 and Class X) which reflect a gradient in the likely presence of peatland habitats and carbon-rich soil at any specific location. Areas with a higher rank (Class 1 at the top to X lower down) warrant the most careful consideration because their combined soil and habitat characteristics indicate a strong likelihood of deep peat and priority peatland habitats.
- 3.5.4 Within the study area there are a few isolated locations where the highest ranking class (Class 1) is expected to be located; to the north of Kilchrenan, to the north of Lochan Shira (Reservoir), Caledonian Forest Reserve on the north shore of Loch Awe, and a small area between Glen Aray and Glen Shira in the southern extent of the study area. In these locations it is anticipated that all soils are carbon rich and deep peat with all vegetation cover indicating priority peatland habitats.
- 3.5.5 The majority of the study area is made up of a combination of Class 2, Class 3 and Class 4. Forestry plantations and waterbodies are generally ranked as Class 4, which are unlikely to include carbon rich soils, with open moorland areas and mountain landscapes ranked as being either Class 2 or Class 3, indicating areas where all soils are carbon-rich and deep peat (Class 2), or most soils are carbon-rich with some areas of deep peat (Class 3).
- 3.5.6 There is one small area within the study area ranked as Class X; to the western extent of the Caledonian Forest Reserve, bordering an area ranked as Class 1. Class X indicates that the area has peat deposits, but no peat forming vegetation.
- 3.5.7 Figure 6 illustrates the carbon and peatland classification within the study area.
- 3.5.8 Although the Carbon and Peatland map classifies the likelihood of presence of features of national importance, it does not infer any significance of effects on the qualities of areas identified as being carbon rich soil, deep peat and priority habitats. As such, further work would be required to determine the presence of peat once a preferred location has been determined.

#### 3.6 Cultural Heritage

3.6.1 A desk-based search for scheduled monuments, conservation areas, listed buildings and other sites of cultural heritage interest has identified a number of sites of interest within the study area. These are shown on Figure 7.

#### Scheduled Monuments

3.6.2 Within the study area there are 30 Scheduled Monuments (SMs), consisting of crannogs, cairns, burial grounds, castles and deserted crofts and townships.

#### **Listed Buildings**

3.6.3 There are 22 Listed Buildings within the study area. There are five category A listed buildings, eleven category B listed buildings and six category C listed buildings. The locations of these buildings are shown on Figure 7.

#### **Conservation Areas**

3.6.4 There are no conservation areas within the study area.

#### 3.7 Planning Constraints

3.7.1 Other developments which may influence the location of the substation (such as wind farm developments) are referred to below.

#### Wind Farm Developments

- 3.7.2 There are currently two operational wind farms just outside the study area which have access from the study area: Carraig Gheal to the west and Clachan Flats to the east. Within the study area, there are three proposals for wind farms: Creag Dhubh, Balliemeanoch and Upper Sonachan all of which are at Scoping Stage. Layout information for scoping stage developments are generally limited until an application is submitted and therefore this aspect of the substation site location options appraisal will need to be continually reassessed as a preferred site is developed.
- 3.7.3 Standard methods for Environmental Impact Assessment do not give full weighting to scoping applications due to the uncertainty over whether these proposals will develop into full scale applications and the potential scale or nature of the development should this be the case. However, this would be a consideration for any future proposal, should a potential substation site be preferred in any of these locations.

#### **Other Planning Applications**

3.7.4 No other applications for planning consent have been noted at the time of writing that would have the potential to form a notable constraint. However, the potential for further such applications to be made exists and would need to continue to be considered for any further substation site.

#### LDP Development Management Zones

- 3.7.5 The LDP identifies development management zones with the aim to guide acceptable scales of new development in appropriate areas. These comprise three settlement zones and four countryside zones as follows:
  - Main Towns and Key Settlements;
  - Key Rural Settlements;
  - Villages and Minor Settlements;
  - Countryside Zone;
  - Rural Opportunity Areas;

- Very Sensitive Countryside; and
- Greenbelt.
- 3.7.6 Very Sensitive Countryside comprises the majority area within the study area throughout upland areas, forest and woodland. The small communities (Dalmally, Cladich, Ardbrecknish, Kilchrenan / Annat, Portsonachan and Inverinan) are classed as Settlement Zone. More managed agricultural landscapes comprise the Countryside Zone with smaller areas within this where existing development is focussed classed as Rural Opportunity Areas.
- 3.7.7 Policy LDP DM 1 within the LDP seeks to target the majority of development towards the Settlement Zones with smaller development identified as preferred in Rural Opportunity Areas where most existing development exists. However, the nature of the proposed substation, in terms of scale and potential environmental effects (such as landscape, visual and noise effects), is generally considered inconsistent with this framework and a site with little interaction with existing residential development is usually more appropriate for this type of development. As such, the LDP development management framework has not been given weighting within this appraisal in relation to site selection, as the appropriateness of any substation site would depend more significantly on the site specific sensitivities.
- 3.7.8 There are no notable areas identified for future housing or other development in the LDP which would be likely to comprise an additional constraint to a potential substation within the study area.

#### **3.8** Other Constraints

3.8.1 In addition to the environmental constraints described above, a number of other constraints in relation to buildability and technical preferences have been considered in order to focus the search on reasonable options for substation sites. These include the following:

#### Steep slopes

3.8.2 The constraints exercise has eliminated those areas where slope is greater than 10 ° due to the difficulty of locating a flat substation platform without a requirement for significant earthworks which would themselves lead to greater environmental effects. A preference has been made for sites with a gradient of less than 5 ° to further reduce potential effects. The degree of slope across the study area is shown on Figure 8.

#### Proximity to the existing road network

3.8.3 A preference has been made for sites closer to the existing classified road network (within 2 km) which would be likely to limit requirements for the construction of additional access tracks, leading to further potential environmental effects. The distance from roads is shown in relation to proposed TSAs on Figure 19.

## 4. Environmental Appraisal of Substation Options

#### 4.1 Identification of Targeted Search Areas (TSAs)

- 4.1.1 Following the review of the designations and constraints identified during the baseline studies to the study area, these have been combined. Figure 9, indicates the degree of constraint across the study area with areas of level one constraint and therefore no ability to accommodate a substation, being shown in red, and areas of level two constraint requiring further site specific analysis being indicated in orange. Areas where no obvious constraints were identified in the desk study are shown uncoloured, although it should be noted that further site survey work would be required to ensure that no constraints exist in these areas. This plan has been used to identify seventeen areas with the potential to accommodate either an AIS or GIS substation, titled Targeted Search Areas (TSAs). These are broad areas encompassing a number of potential sites, and have been defined based on similarity of landscape character, separation notable areas of level one constraint and key topographical thresholds as described in paragraph 2.4.3. The seventeen TSAs identified are shown on Figures 10 and 11 and comprise the following:
  - 1. Bealach Mor;
  - 2. Inverinan;
  - 3. Annat Rubh 'an Eoin;
  - 4. Creag Thulach Forest;
  - 5. Balliemeanoch Forest;
  - 6. South of Portsonachan;
  - 7. West of Craig nan Sassanach;
  - 8. Cladich;
  - 9. East of Craig nan Sassanach;
  - 10. Craig Bracha;
  - 11. Blarchaorain;
  - 12. Ardteatle;
  - 13. Kinachreachan Forest;
  - 14. Dalmally and Kilchurn;
  - 15. Sallachry Forest;
  - 16. Glen Aray; and
  - 17. Tom a' Bhuachaille.

#### 4.2 Analysis of Targeted Search Areas

4.2.1 Each TSA has been the subject of systematic review of likely constraints using a tabular format with the results being presented below. As described in Section 2.5, an interaction level based on a three point scale has been applied to each subject area. For easy reference this is associated with a colour coded scheme as outlined in Table 4.1:

Interaction Rating	Description	Colour Code			
Low	No.obvious constraints or those unlikely to require additional mitigation.	L			
Medium	Constraints of lesser extent or those with the potential for mitigation.	м			
High	Potentially significant constraints	н			

#### Table 4.1: Interaction Ratings and Colour Coding

The seventeen TSAs identified are analysed in detail in Table 4.2 to Table 4.18 below.

#### Table 4.2: TSA 1 - Bealach Mor

#### Description

This TSA comprises an area of forest and woodland to the south and east of Loch Nant, on the northern side of Loch Awe. This area has been selected individually due to its consistent forest character and clear boundaries of land use type and Level 1 constraint. Review of Figure 10 indicates that there would be several potential options for both AIS and GIS substation sites within this area, with some of these sites falling largely in areas without any constraint and some in areas of level 2 constraint. The largest areas of potential accommodation are located around the periphery of the site in areas of existing and felled forest. The centre of this area contains the highest level of constraint due to the presence of water courses and steep slopes.

Review of Environmental Constraints				
Subjects	Potential Constraints	Interaction level		
Landscape	This area is not included within any designated landscape. It falls within the Craggy Upland LCT which is considered to be of Medium sensitivity for potential substation development. The majority of the area is comprised of commercial forestry with large areas of clearfell and recent re-planting. There are also a few very small pockets of native woodland. Loch Nant, to the north, comprises an attractive small scale landscape and there is the potential for indirect effect to this area if the substation were sited close to it, particularly in the northernmost finger of the TSA. However, there is likely to be extensive scope for the siting of a substation within this TSA without affecting this area. This area is considered to have good potential for a substation to be sited within it without leading to significant landscape effects. Depending on the situation of a proposed substation, there may be a requirement for the removal of some woodland, but given the actively managed programme of felling already taking place, this would be considered unlikely to lead to long term significant landscape effect.	м		
Visual	One building has been noted in searches within this TSA with two further buildings just beyond its boundary. However, none of these buildings appears to comprise a residential property. Whilst they may be used at times as places of work, these would be considered to have a low visual sensitivity. The forest contains a number of forest tracks, one of which is a proposed core path. These have the potential to be used recreationally and there would be the potential for visual effects to those users. However, the forest is not promoted for its recreation by Forestry Commission Scotland and therefore there are considered likely to be relatively few users within the majority of the area.	L		
Ecology	There are no ecological designations covering this TSA. A few isolated pockets of native woodland are present but likely to be easily avoided. There are also some small areas of PAWS woodland but this is located entirely within areas of other level 1 constraint. Woodland, streams within the TSA, and waterbodies on its edges would have the potential to support some species and further studies would be required to ensure that these would not be affected.	м		

Geology, Hydrology and Soils	There are no Geological designations in this TSA. There are no waterbodies within the TSA although Loch Nant lies to its north and Loch an Leòid and Loch an Droighinn lie to its east. Watercourses are present draining south to Loch Awe and north and east towards the lochs. However, these are widely spaced with areas of sufficient size to accommodate an AIS substation with the required buffers. Priority peatland mapping shows this area to be entirely within Class 4 and therefore unlikely to be deep peat although further investigation would be required to ensure that this was the case.	L		
Cultural Heritage	There are no designated archaeological sites within this TSA. The WoSAS Historic Environment Record shows other recorded sites through the centre of the TSA, largely focussed within areas of other constraint. These comprise a range of cairns, enclosures and two limekilns. The potential for these to be significantly affected is considered unlikely, due to their location within areas of other constraint although the potential for other sites to be present would require consideration.	м		
Land Use and Recreation	The majority land use in this area is for commercial forestry, and the West Loch Awe Timber Haul Route, passes through it which could be beneficial to a potential substation. There would be likely to be a net loss of forestry area as a result of a substation in this area and this may require compensatory planting to be considered and accommodation within the Forestry Management Plan. This is considered unlikely to be a major environmental constraint. The forest is not promoted by Forestry Commission Scotland for recreational use, but contains tracks within it which may be used occasionally by cyclists, walkers or other users. One of these routes is noted as a proposed core path by Argyll and Bute Council. However, it is considered unlikely that any obvious constraints would arise from this.	L		
Other Constraints and opportunities	The site is predominantly free of steeply sloping ground with large areas of less than 5 ° and only relatively small areas appearing to be greater than 10 °. The TSA lies partly within the preferred 2 km from a classified road (the B845) but up to 5 km away. However, the West Loch Awe Timber Haul Route, also used for the nearby Carraig Gheal wind farm passes through the site which provides a potential opportunity for access.	м		
Overall consideration of suitability				
As detailed above, this area shows good potential for a possible substation to be accommodated without significant environmental effects occurring. For the majority of environmental subject areas, it is considered that there would be no notable significant constraints. Where possible constraints exist, it is considered that these could be mitigated. This TSA has therefore been <b>retained</b> for further analysis of grid connection and access route options.				

#### Table 4.3: TSA2 - Inverinan

#### Description

This TSA comprises an area of forest and woodland to the north of Inverinan, on the northern side of Loch Awe, at the extreme west of the study area. This area has been selected individually due to its consistent forest character and clear boundaries of land use type and Level 1 constraint. Review of Figure 10 indicates that there would be several potential options for the location of a GIS substation site within this area. However, the potential siting of an AIS substation would be limited to an area towards the south-west of the TSA. This is a large area showing no constraint with the other smaller areas around the site showing a combination of no constraint or level 2 constraint. The highest levels of constraint are indicated through the centre of the TSA and towards the north and north-west, largely relating to proximity to water courses and the presence of steep slopes.

Review of Environmental Constraints				
Subjects	Potential Constraints	Interaction level		
Landscape	This area is not included within any designated landscape. It falls within the Craggy Upland LCT which is considered to be of Medium sensitivity for potential substation development. The majority of the area is comprised of commercial forestry with some areas of clearfell and recent planting indicated on aerial photography. This area lies elevated from the wooded shores of Loch Awe to its south and a substation in this area would be likely to have a relatively localised landscape effect due to the forested character, particularly with the implementation of screen planting. This area is considered to have good potential for a substation to be sited within it without leading to significant landscape effects. There may be a requirement for the removal of some forest, but given the actively managed programme of felling already taking place, this would be considered unlikely to lead to long term significant landscape effect.	L		
Visual	A minor road runs close to the southern edge of this TSA which also forms part of the National Cycle Route 78 (see paragraph 3.3.7. The closest properties at Inverinan to the south and Upper Fernoch to the north-east, are around 250 m from the edge of the TSA. These properties are mostly located in relatively wooded situations and appear to have views orientated towards Loch Awe. The forest contains a number of forest tracks which may be used recreationally and there would be the potential for visual effects to those users. However, it is not promoted for its recreation by Forestry Commission Scotland and therefore there are considered likely to be relatively few users. The forested character of the TSA gives good opportunities to screen a potential substation in this area from any visual receptors and no significant constraints are anticipated.	L		

Ecology	There are no ecological designations covering this TSA	
	A relatively large area extending through the centre from south-west to the north-east corner is identified as PAWS and any removal of this would need consideration in terms of potential for compensatory planting. There are a very limited number of areas identified as native woodland which it is considered could be easily avoided without impact. Woodland and streams within the TSA would have the potential to support some species and further studies would be required to ensure that these would not be affected.	м
Geology, Hydrology and Soils	There are no Geological designations in this TSA. There are no waterbodies within the TSA. Two small streams flow south-east into Loch Awe and not further stream close south beyond the study area. These are well spaced with large areas likely to be sufficient to accommodate a potential substation with protection buffers between them. Priority peatland mapping shows this area to be entirely within Class 4 and therefore unlikely to be deep peat. This suggests that peat would not be an obvious constraint. However, presence of Class 1 and Class X areas immediately adjacent to the north-east suggest that further investigation would be required to ensure that this was the case.	L
Cultural Heritage	There are no designated archaeological sites within this TSA. The WoSAS Historic Environment Record shows no further recorded sites suggesting that the potential for such constraints is unlikely. However, given the wider rich archaeological resource the presence of unrecorded site could not be ruled out and this would require further investigation should this area be selected for a proposed substation site.	L
Land Use and Recreation	The majority land use in this area is for commercial forestry, and the West Loch Awe Timber Haul Route, passes through it which could be beneficial to a potential substation. There would likely be a net loss of forestry area as a result of a substation in this TSA and this may require compensatory planting to be considered and accommodation within the Forestry Management Plan. This is considered unlikely to be a major environmental constraint. The forest is not promoted by Forestry Commission Scotland for recreational use, but contains tracks within it which may be used occasionally by cyclists, walkers or other users. However, it is considered unlikely that this would lead to any obvious constraints. National Cycle Route 78 passes to the south-east of the TSA, and this is also a proposed core path but as described above, visual effects and any other recreational restrictions to this route would be unlikely.	L

Other Constraints and opportunities	Slope analysis mapping shows this TSA to have a notable area of steep slope which would constraint development within the north-western half of the site, with only small area of slope less than 10 °. However, the south-eastern half of the TSA is shown to have a contrastingly shallow slope, predominantly less than 5 °. Mapping shows the TSA lying within the preferred 2 km from a classified road, although this route (the B840) is on the opposite shore of Loch Awe. However, the West Loch Awe Timber Haul Route is also routed within approximately 2 km from the site, which could provide a potential opportunity for access.	М	
Overall consideration of suitability			
As detailed above, this area shows good potential for a possible substation, particularly within the			

As detailed above, this area shows good potential for a possible substation, particularly within the lower south-western part which is flatter and has few other constraints. Within this area, where possible constraints exist, it is considered that these could be mitigated.

This TSA has therefore been **retained** for further analysis of grid connection and access route options.

#### Table 4.4: TSA3 - Annat - Rubh 'an Eoin

#### Description

This TSA comprises an area of fields and woodland, along the northern shore of Loch Awe between Rubh 'an Eoin and Annat. It has been identified as a distinct TSA due to a consistency of landscape character, comprised of rural, settled loch shore, and is contained by Level 1 constraint to the north. Review of Figure 10 indicates that there would be several potential areas of sufficient size to accommodate an AIS or GIS substation. The majority of these areas are shown to be covered by level 2 constraints. However, areas of no likely constraint are also shown near Lower Achachenna and Lower Fernoch (although the latter would be of sufficient scale only to accommodate a GIS site due to the public road passing through it). There are only a small number of areas of level 1 constraint through this area, largely associated with streams which run down into Loch Awe.

Review of Environmental Constraints			
Subjects	Potential Constraints	Interaction level	
Landscape	This area is not included within any designated landscape. It falls within the Craggy Upland LCT which is considered to be of Medium sensitivity for potential substation development. However, the local landscape character is composed of a variety of small spaces enclosed by small areas of woodland, often with houses nestled within them. This is considered to be locally of higher sensitivity, particularly to an AIS substation which could dominate the scale and patterns of the landscape. Although a substation already exists in this landscape, this is of a very much smaller scale than that proposed. The potential for significant effects to occur is therefore considered to be high.	Н	
Visual	This is a relatively settled area with scattered houses and farms, served by small, rural roads. There are also valued views across and along Loch Awe and to surrounding hills. Whilst existing woodland would be likely to result in some screening of the development, there are very few areas beyond 250 m from properties. It would be likely to be difficult to mitigate potential visual effects of an AIS substation from all visual receptors, although this may be possible for a GIS substation.	AIS H GIS M	
Ecology	There are no ecological designations covering this TSA. However, there is an extensive network of native woodland and AWI woodland throughout this area. There would be little opportunity to site an AIS substation without affecting any woodland although it may be possible to compensate for woodland loss through mitigation planting. The woodland in this area also has the potential to support other animal, bird and invertebrate species and this would need further investigation if a substation were proposed to be sited here.	м	

Geology, Hydrology and Soils	The two small parts of the Kilchrennan Burn and Coast GCR lie immediately to the north and south of this TSA but both are just outside it's boundary.				
	There are no waterbodies within the TSA but the whole area lies just to the north of Loch Awe and a small number of streams cross the TSA, flowing into the loch. These are widely spaced with large areas likely to be sufficient to accommodate a potential substation and protection buffer. Priority peatland mapping shows this area to be predominantly of Class 4 and therefore unlikely to be deep peat although there are some isolated pockets of Class 3 which may have deeper peat. However, presence of Class 1 and Class X areas immediately adjacent to the west suggest that further investigation would be required to ensure that any deep peat was avoided.	L			
Cultural Heritage	This TSA contains one Scheduled Monument, Upper Achachenna Long Cairn.				
	The WoSAS Historic Environment Record shows a wide variety of further recorded sites including townships, cairns and structures associated with 20 <sup>th</sup> century hydroelectric development. In most cases, it is unlikely that a proposed substation would be able to avoid these completely and mitigation measures would be likely to need to be implemented.	М			
Land Use and Recreation	There is a mixed pattern of land use in this TSA with farming, settlement, forest and woodland and features of hydroelectric development all present. Recreational and tourism activity is also considered likely. The National Cycle Route 78 passes through the TSA following the minor road and this is also a proposed core path. The development of a substation would be likely to affect some of these activities depending on its siting, but mitigation would be likely to be possible.	м			
Other Constraints and opportunities	Slope analysis mapping shows this TSA to be mostly gently sloping with the majority of the area below 5 ° but a greater prevalence of slopes up to 10 ° towards the east.				
	Mapping shows the TSA lying within the preferred 2 km from a classified road (the B845). Part of the TSA is beyond this distance, up to 3 km from the road, although this route (the B840) is on the opposite shore of Loch Awe. However, this part lies close to the West Loch Awe Timber Haul Route which could present an alternative access opportunity.	L			
Overall consideration of suitability					
As detailed above, this area is likely to be sensitive to the development of a substation due to the number of likely constraints. There would be the potential to mitigate these effects for some subject areas, particularly for a GIS substation option. However, the added effect of these potential constraints and mitigation requirements together, and particularly the degree of potential landscape and visual constraint make this area unfavourable for a substation of the size proposed. This TSA has therefore been <b>excluded</b> from further analysis.					

#### Table 4.5: TSA4 - Creag Thulach Forest

#### Description

This TSA comprises a large area of forest, fields and loch-side on the northern side of Loch Awe and west of the Pass of Brander. It has been identified as a distinct TSA as it has a clear boundary of level 1 constraint and due to its character of forest and more isolated settlement (than TSA 3) and distance from the classified road network. Review of Figure 10 indicates that there are no areas which do not have any constraint in this area. However, there are large areas of level 2 constraint within which there would be a number of options to site a potential AIS or GIS substation. Within the TSA, areas of level 1 constraint are limited to a few areas close to watercourses and a very small number of areas of steeper slope.

Review of Environmental Constraints		
Subjects	Potential Constraints	Interaction level
Landscape	This area falls within the North Argyll APQ. However, this is a very extensive area of varying character. Within the TSA, areas along the shore of Loch Awe are considered likely to be important features of the APQ. However, larger areas managed for commercial forestry contribute less strongly to the scenic quality and value of the APQ and are therefore more likely to be accepting of a substation development, if influence on adjacent areas was minimised. Ardanaiseig House GDL lies to the east of this TSA, However due to the wooded qualities of the area it is considered unlikely that a substation would result in any notable effect on this. The TSA falls within the Craggy Upland LCT which is considered to be of Medium sensitivity for potential substation development.	M
Visual	Mapping indicates a small number of properties within and adjacent to this TSA, mostly close to the Loch Awe shore. Views from properties in this area are predominantly orientated towards the loch, although there may be some views in other directions. The presence of these properties and other likely recreational users on and across the loch gives these parts of the TSA a greater sensitivity to development. However, areas further from the loch are likely to be less sensitive as the potential number of visual receptors would be limited.	Δ
Ecology	There are no ecological designations covering this TSA and few other obvious ecological constraints. Along the loch shore there are some areas of native and AWI woodland and some pockets along other water courses but the majority of the area is commercial forest or open field. Woodland, forest and streams have the potential to support other mammal, bird and invertebrate species and this would need further investigation if a substation were proposed to be sited here.	L
Geology, Hydrology and Soils	There are no geological designations within this TSA. There are no waterbodies within the TSA although Loch Awe lies along its southern boundary and there is a small loch, Lochan na Gealaich just to the west. Watercourses pass through, mostly draining to the south to Loch Awe, but these are well spaced with many options between them to accommodate a possible AIS substation with protection buffers in place. Priority peatland mapping shows this area to be almost entirely covered by Class 4 with a very small area comprised of Class 2 and 3 towards the south-west of the TSA. This suggests that peat would not be an obvious constraint but the presence of these higher class areas suggests that further investigation would be required to confirm this.	L
---	--	---
Cultural Heritage	This TSA contains four Scheduled Monument comprised of three cairns and a cup-marked rock. These are evenly scattered and within forest and therefore it is considered that a substation could be sited without affecting these sites. Ardanaiseig House GDL lies to the east of this TSA, However due to the wooded qualities of the area it is considered unlikely that a substation would result in any notable effect on this. The WoSAS Historic Environment Record shows a variety of further recorded sites, mostly located in open areas outwith the forest, in the west of the TSA and along the shore of Loch Awe. These sites are considered to be generally easy to avoid without any specialist mitigation, especially if the proposed substation were located in the forest area, although the potential for further unrecorded sites would require further investigation.	L
Land Use and Recreation	Land use in this TSA is comprised of an extensive area of forest and open areas of agricultural land with scattered properties close to the loch. There could be a net loss of forestry as a result of a substation in this TSA and this may require compensatory planting to be considered and accommodation within the Forestry Management Plan. This is considered unlikely to be a major environmental constraint. A minor road passes through the TSA enroute to Ardanaiseig House and this may be used recreationally but there does not appear to be any promoted recreational use.	L
Other Constraints and opportunities	Slope analysis mapping shows this TSA to be mostly gently sloping with the majority of the area below 5 ° and very few areas of beyond 10 °. The TSA lies partly within the preferred 2 km from a classified road (B845 and A85) with parts over 3 km away although this is mostly a narrow single track route.	м
Overall consideration of suitability		
As detailed above, this area shows good potential for a possible substation within forested areas, with greater sensitivity towards Loch Awe. Within this area, where possible constraints exist, it is considered that these could be mitigated. This TSA has therefore been <b>retained</b> for further analysis of grid connection and access route options.		

# Table 4.6: TSA5 - Balliemeanoch Forest

# Description

This TSA comprises a small area of coniferous forestry towards the south-west of the study area on a plateau area above the eastern shore of Loch Awe, above Balliemeanoch. It has been identified as a distinct TSA as it is the only area of lesser constraint within a wide area of Level 1 constraint and has a consistent forest character. Review of Figure 10 indicates that there are areas within this TSA capable of accommodating both AIS and GIS substation options. This includes a mix of areas showing no identified constraint and level 2 constraints. Areas of Level 1 constraint are present within the TSA, relating to a combination of watercourses and short, steep slopes.

Review of Environmental Constraints			
Subjects	Potential Constraints	Interaction level	
Landscape	This area does not fall within any landscape designations. It is located within the Craggy Upland LCT which is considered to be of Medium sensitivity for potential substation development. The area is entirely comprised of commercial forestry with open areas and rides within it. Siting of a substation would result in the removal of some forest which may be evident within nearby landscape areas some of which have wild characteristics, although it would be unlikely to be noticeable from the more valued landscapes around Loch Awe due to the topography. However, this is a commercial managed area of forest and such removal would not be considered unusual in this context. The forest also gives good opportunity to accommodate mitigation planting.	L	
Visual	There are no obvious visual receptors within this TSA as the nearest properties are 1 km away and unlikely to have views of this area. Ordnance survey mapping does not identify any paths or tracks within the TSA. Some views may be available from nearby hills but these are not considered to be notable or highly frequented viewpoints.	L	
Ecology	There are no ecological designations covering this TSA and no other notable constraints identified. The forest and watercourses have the potential to support mammal, bird and invertebrate species and this would need further investigation if a substation were proposed to be sited here.	L	
Geology, Hydrology and Soils	There are no geological designations within this TSA. There are no waterbodies within the TSA. A watercourse, Allt Beochlich, forms its northern boundary and this is dammed to form a very small reservoir. There are a few other minor watercourses within the TSA. However, these appear sufficiently well spaced to accommodate a substation in some locations within suitable protection buffers. Priority peatland mapping shows this area to be entirely covered by Class 4. However, all of the area surrounding the TSA is comprised of Class 2 and therefore the possible presence of deeper peat could not be ruled out and would require further investigation.	L	

Cultural Heritage	This TSA does not contain any designated cultural heritage sites and there are none within the immediate vicinity. The WoSAS Historic Environment Record shows three recorded sites – two shielings and a sheepfold, towards its south-east corner. However, it would be possible to site a substation without affecting these sites. The potential for further unrecorded sites would require further investigation although is considered unlikely as the existing recorded sites suggest this area has been already surveyed.	L
Land Use and Recreation	Land use in this TSA comprises commercial forestry. There is a small reservoir just outside the TSA to the north and a track leading to this. There would be likely to be a net loss of forestry area as a result of a substation in this area and this may require compensatory planting to be considered and accommodation within the Forestry Management Plan. This is considered unlikely to be a major environmental constraint. There are no obvious recreational uses within the TSA and ordnance survey mapping does not identify any tracks or paths in the forest.	L
Other Constraints and opportunities	Slope analysis mapping shows the majority of this TSA to be at a gradient of less than 10 ° with large areas of less than 5 °. There are very few areas of short slopes of up to 20 ° The TSA lies partly within the preferred 2 km range from a classified road (the B840) and no greater than 3 km.	L
Overall consideration of suitability		
A detailed above, this area shows good potential for a possible AIS or GIS substation without resulting in any notable environmental effects. For all environmental subject areas, it is considered that there would be no notable significant constraints. This TSA has therefore been <b>retained</b> for further analysis of grid connection and access route options.		

# Table 4.7: TSA6 - South of Portsonachan

#### Description

This TSA is comprised of an area of coniferous forestry on a transitional plateau area and hillside above Loch Awe, to the south of Portsonachan and Ardbrecknish. A wind farm proposal in this area is currently at Scoping stage. This area has a clear boundary of level 1 constraint to south and west. It has been identified as a separate TSA due to its greater distance from the A819 when compared to TSA 7, which renders it more isolated and its more open, sloping and undulating character. Review of Figure 10 indicates that this TSA contains several areas within which an AIS or GIS substation could be accommodated. However, these areas are all shown to comprise level 2 constraint due to the situation within an APQ and some 5 ° to 10 ° slopes and there are therefore no areas of no constraint. Within the TSA, there is a network of areas of level 1 constraint, mostly due to the presence of watercourses with the addition of some small areas of steeper slope which reduce the scope in some areas for the siting of an AIS substation.

Review of Environmental Constraints		
Subjects	Potential Constraints	Interaction level
Landscape	This area falls within the North Argyll APQ. However, this is a very extensive area of varying character. Within the TSA, the area is predominantly managed for commercial forestry and, although parts of the area may have a role as a setting for Loch Awe, it is generally not considered to be a strongly contributing feature towards the scenic quality and value of the APQ. Therefore this area is considered more likely to be accepting of a substation development if influence on adjacent areas was minimised and this is not considered to be an obvious constraint. Siting of a substation in this TSA would result in the removal of some forest. However, this area is already actively managed for commercial forestry and it is considered that this would not result in a notable landscape effect due to the larger body of forest surrounding any site. The forested character also gives good opportunities for landscape mitigation measures to be implemented.	L
Visual	There are no obvious visual receptors within this TSA. Properties to the north along the shore of Loch Awe at Ardbrecknish and Portsonachan would be unlikely to receive views of a potential substation due to the topography and woodland surrounding them. Views from the northern shore of the loch would need consideration, but at greater distance these would be unlikely to be significant.	L
Ecology	There are no ecological designations covering this TSA and no other notable constraints identified. The forest and numerous watercourses have the potential so support mammal, bird and invertebrate species and this would need further investigation if a substation were proposed to be sited here.	L

Geology, Hydrology and Soils	There are no geological designations within this TSA. There are no waterbodies within the TSA. However, there is a dense network of watercourses which would need consideration as to appropriate buffers to prevent pollution. However, these appear to allow sufficient space in some areas to accommodate a potential AIS substation although slightly steeper slopes than some other areas may lead to a requirement for additional mitigation. Priority peatland mapping shows this area to be entirely covered by Class 4. However, given the wider location, the	м
	possible presence of pockets of peat could not be ruled out and would be likely to require further investigation.	
Cultural Heritage	This TSA does not contain any designated cultural heritage sites and there are none within the immediate vicinity. The WoSAS Historic Environment Record identifies only one site within this area, a possible shieling hut. Although there is the potential for other unrecorded sites to exist, with the forest land use, this is considered unlikely and cultural heritage is considered unlikely to be a constraint.	L
Land Use and Recreation	Land use in this TSA comprises commercial forestry. There would be likely to be a net loss of forestry area as a result of a substation in this area and this may require compensatory planting to be considered and accommodation within the Forestry Management Plan. This is considered unlikely to be a major environmental constraint. There are no obvious recreational uses within the TSA although tracks within the forest may be used recreationally. However,	L
Other	this is considered unlikely to comprise a major constraint.	
Constraints and opportunities	a gradient of less than 10 ° with notable areas within this of less than 5 °. Some small areas show slopes of greater than 10 °. The TSA lies partly within the preferred 2 km range from a classified road (the B840)and no greater than 3 km.	м
Overall consideration of suitability		
A detailed above, this area shows good potential for a possible AIS or GIS substation without resulting in any notable environmental effects. Although it shows slightly steeper slopes than some other TSAs it is considered that associated potential for environmental effects relating to this would be possible to mitigate where relevant. This TSA has therefore been <b>retained</b> for further analysis of grid connection and access route		

options.

# Table 4.8: TSA7 - West of Craig nan Sassanach

#### Description

This TSA is comprised of an area of coniferous forestry to the south of Loch Awe within an undulating small valley area draining to the south-east extending into a shallow watershed plateau to the north. This area has been identified as a separate TSA due to its closer distance to the A819 when compared to TSA 6, and its more contained character. The ridgeline of Craig nan Sassanach divides it on its eastern side from TSA 9 as this is the visual limit from the A819. It is defined by clear areas of level 1 constraint to north and south.

Review of Figure 10 indicates that there are a number of locations within this area of sufficient size to accommodate an AIS substation and many more locations with the potential to accommodate a GIS substation. However, these areas are all shown to comprise level 2 constraint due to the situation within an APQ and some 5 ° to 10 ° slopes and there are therefore no areas of no constraint. Within the TSA, there is a network of areas of level 1 constraint, mostly located through the floor of the small valley in relation to the main watercourse and smaller tributaries and a small area on its south-western side in relation to steeper slopes.

Review of Environmental Constraints		
Subjects	Potential Constraints	Interaction level
Landscape	This area falls within the North Argyll APQ. However, this is a very extensive area of varying character. Within the TSA, the area is predominantly managed for commercial forestry and is relatively self-contained and therefore not considered not to be a strongly contributing feature towards the scenic quality and value of the APQ. Therefore this area is considered more likely to be accepting of a substation development and the APQ is not considered to be a constraint. Siting of a substation in this TSA would result in the removal of some forest. However, this area is already actively managed for commercial forestry and it is considered that this would not result in a notable landscape effect due to the larger body of forest surrounding any site. The forested character also gives good opportunities for landscape mitigation measures to be implemented.	L
Visual	There are no obvious visual receptors within this TSA. The A819 runs through the east of the TSA, enclosed within a valley. Most of the area to the west would be unlikely to be visible from this area due to the intervening hill of Creag nan Sassanach. The nearest properties are those along the shore of Loch Awe at Ardbrecknish and Portsonachan to the north but would be unlikely to receive views of a potential substation due to the topography and woodland surrounding them. There could be views of the northern part of this TSA from the northern shore of the loch and these would need consideration, but at greater distance these would be unlikely to be significant. The Neil Munro memorial adjacent to the A819 provides a prominent viewpoint but much of the TSA would not be visible from this location due to the intervening hill of Creag an Sassanach.	L

Ecology	There are no ecological designations covering this TSA and no other notable constraints identified. The Glen Etive and Glen Fyne SPA lies around 0.5 km to its south-east but does not share visibility within this SPA due to the ridge of Craig an Sassanach. Therefore it is considered unlikely to comprise a notable constraint. No native woodland is identified. The forest and numerous watercourses have the potential to support mammal, bird and invertebrate species and this would need further investigation if a substation were proposed to be sited here.	L
Geology, Hydrology and Soils	There are no geological designations within this TSA. There are no waterbodies within the TSA. However, there is a dense network of watercourses mainly draining into the small valley which drains to the south-west towards Glen Aray and or from the northern part of the TSA, draining northwards towards Loch Awe (Archan River). However, these appear to allow sufficient space in some areas to accommodate a potential AIS substation with a suitable protection buffer and in many areas allow sufficient space for a GIS substation. Priority peatland mapping shows this area to be entirely covered by Class 4. However, given the wider location, the possible presence of pockets of peat could not be ruled out and would be likely to require further investigation.	М
Cultural Heritage	This TSA does not contain any designated cultural heritage sites with the closest being a scheduled monument, Keppochan Cup- Marked Stone around 800 m to the north. It is unlikely that a substation within this TSA would affect the setting of this monument. The WoSAS Historic Environment Record identifies one further site at the extreme southern edge of the TSA, possible shieling huts. Although there is the potential for other unrecorded sites to exist, cultural heritage is considered unlikely to be a notable constraint.	L
Land Use and Recreation	Land use in this TSA comprises commercial forestry. There would be likely to be a net loss of forestry area as a result of a substation in this area and this may require compensatory planting to be considered and accommodation within the Forestry Management Plan. This is considered unlikely to be a major environmental constraint. There are no obvious recreational uses within the TSA although tracks within the forest may be used recreationally. However, this is considered unlikely to comprise a major constraint.	L
Other Constraints and opportunities	Slope analysis mapping shows the majority of this TSA to be at a gradient of less than 10 ° with large areas within this of less than 5 °. Some small areas at the south-west and far north of the TSA show slopes of greater than 10 °. The TSA lies entirely within the preferred 2 km range from a classified road (the A819 and B840).	L

A detailed above, this area shows good potential for a possible AIS or GIS substation with a general lack of obvious potential constraints. Potential constraints relate to hydrology as there are a large number of watercourses present. However, it is considered possible to mitigate these issues. This TSA has therefore been **retained** for further analysis of grid connection and access route options.

## Table 4.9: TSA8 - Cladich

#### Description

This TSA is comprised of an area along the southern shore of Loch Awe comprised of a mix of forest, woodland and fields and rough grazing land. It is identified as an individual TSA due to its consistency of character or loch shore, woodland and settlement which differentiates it from the forested TSAs to south and east, and is contained along other boundaries by areas of level 1 constraint including Loch Awe to the north. Review of Figure 10 indicates that there are a number of locations within this area of sufficient size to accommodate a potential AIS substation and numerous sites where a potential GIS substation could be accommodated. The majority of this area is comprised of level 2 constraint and there are no areas of no constraint due to the location of the TSA within an APQ. Areas of level 1 constraint are present, through the centre of the TSA where the valley side is steeper and crossing these slopes from north to south in the form of a variety of watercourses.

Detential Constraints	Interaction
Potential Constraints	level
This area falls within the North Argyll APQ. The shoreline and woodland landscape which frames Loch Awe is considered likely to be one of the more important elements to this designation as it provides an important setting to the loch and is likely to be valued by members of the public who are able to access this area along the A819 and minor roads. The western area part of the site lies within the Craggy Upland LCT which is considered to be of Medium sensitivity to substation development, but part of the eastern shoreline lies within the Rocky Mosaic LCT which is considered to be of high sensitivity. Locally, the landscape is composed of a variety of small spaces enclosed by shoreline woodland and the forested and open slopes to the south. This small scale landscape is considered likely to be sensitive to a substation development of the size proposed and particularly an AIS substation, although there may be areas where potential effects of a GIS substation could be mitigated, this is still considered to lead to potential significant effects locally.	Н
There is intermittent settlement through this TSA with a focus of properties around Cladich and along the Loch Awe shore. These are often set in woodland and views may be limited and are generally focussed over the loch. However, the sensitivities of these dwellings is considered to make any sites within the western part of the TSA unsuitable. Views across the open water from the opposite side of the loch would also be an important consideration. The main A819 passes through this TSA and users of this route are considered important visual receptors. The minor road which continues along the shore of the loch from Cladich is also considered to be very sensitive. Any site on the northern side of this road would intrude into valued views across Loch Awe. It is considered that it would be unlikely to be possible to mitigate the visual effects of an AIS substation on either of these routes although the semi-wooded landscape may enable	Н
	Potential Constraints         This area falls within the North Argyll APQ. The shoreline and woodland landscape which frames Loch Awe is considered likely to be one of the more important elements to this designation as it provides an important setting to the loch and is likely to be valued by members of the public who are able to access this area along the A819 and minor roads.         The western area part of the site lies within the Craggy Upland LCT which is considered to be of Medium sensitivity to substation development, but part of the eastern shoreline lies within the Rocky Mosaic LCT which is considered to be of high sensitivity.         Locally, the landscape is composed of a variety of small spaces enclosed by shoreline woodland and the forested and open slopes to the south. This small scale landscape is considered likely to be sensitive to a substation development of the size proposed and particularly an AIS substation, although there may be areas where potential effects of a GIS substation could be mitigated, this is still considered to lead to potential significant effects locally.         There is intermittent settlement through this TSA with a focus of properties around Cladich and along the Loch Awe shore. These are often set in woodland and views may be limited and are generally focussed over the loch. However, the sensitivities of these dwellings is considered to make any sites within the western part of the TSA unsuitable. Views across the open water from the opposite side of the loch mould also be an important consideration.         The main A819 passes through this TSA and users of this route are considered important visual receptors. The minor road which continues along the shore of the loch from Cladich is also considered to be very sensitive. Any site on the northern side of this road would intrude into valued views across Loch A

Ecology	There are no ecological designations covering this TSA. However, there are large areas of native and ancient woodland present. Nevertheless, it is likely that there would be a limited number of sites with the opportunity to locate a substation without affecting these areas and there would be the potential to compensate for woodland lost if this were shown to be unavoidable. The woodland watercourses in the area, as well as proximity to Loch Awe, leads to the potential for other mammal, bird and invertebrate species to be present and the rough grazing / moorland areas also have the potential to support important habitats. These would need further investigation if a substation were proposed to be sited here.	м
Geology, Hydrology and Soils	There are no geological designations within this TSA. One small lochan or pond is located in the eastern part of the TSA and there are a large number of streams which cross the TSA, flowing towards Loch Awe. These appear to allow space for the development of a substation in a few areas with suitable protection buffers. Priority peatland mapping shows this area to be mainly covered by Class 4 and therefore unlikely to be peat. However, there are some locations indicated as Class 3 with the potential for some deep peat. These are focussed on the areas indicated on Figure 9, as potentially large enough to accommodate a substation in this part of the TSA (those without level 1 constraint). Should deep peat be present, this would need to be productively reused within the development and therefore this has the potential to be a significant constraint for this western part of the TSA.	H
Cultural Heritage	There is one B listed building within this TSA. There are a number of scheduled monuments close to its boundary along the shore of Loch Awe and, given its location, this TSA has the potential to be important as a setting to these. The WoSAS Historic Environment Record identifies a number of further sites including former townships and buildings. Cultural heritage is therefore considered as a potential limitation to this TSA.	м
Land Use and Recreation	Land use in this TSA comprises a mix of farming and residential and tourist use. The area also contains important routes used by tourists who value its views. Therefore, although there would be unlikely to be any restriction to use by tourists and travellers, the potential issues relating to visual constraints are also considered relevant.	м
Other Constraints and opportunities	Slope analysis mapping identifies large parts of this TSA as less than 5 ° and other areas of less than 10 °. There are some areas where steeper slopes are present, particularly in the containment of the loch. The TSA lies within the preferred 2 km range from a classified road (the A819).	L
Overall considera	ation of suitability	

As detailed above, this area is likely to have significant constraints to a potential substation development in relation to landscape and visual effects which would be potentially difficult to mitigate. The presence of sensitive visual receptors in the west of the TSA and possible deeper peat deposits in the western part leads to likely constraints throughout the area and where other, better areas are available for the siting of a substation it is recommended that this area should not be considered.

This TSA has therefore been **excluded** from further analysis.

# Table 4.10: TSA9 – East of Craig nan Sassanach

#### Description

This TSA is comprised of an area predominantly of commercial forest plantation to the east and west of the A819, contained and distinguished from TSA 7 on its western side by Craig nan Sassanach and at its northern end from TSA 10 by Cladich River. It is defined as a distinct TSA, due to its visual relationship with the A819 road corridor and is contained on its west by a clear boundary of level 1 constraint.

Review of Figure 10, indicates that there would be only one location of the required scale to accommodate an AIS substation in this TSA, towards the north-west of the area, but that there would be greater scope to accommodate a GIS substation. The majority of this area is comprised of level 2 constraint and there are no areas of no constraint due to the location of the TSA within an APQ. Areas of level 1 constraint are present, associated with tributary streams of the River Cladich and some small areas of steep slope.

Review of Environmental Constraints		
Subjects	Potential Constraints	Interaction level
Landscape	<ul> <li>This area falls within the North Argyll APQ. However, this is a very extensive area of varying character. Within the TSA, the area is predominantly managed for commercial forestry which is therefore considered not to be a strongly contributing feature towards the scenic quality and value of the APQ, but being more accessible and more frequently experienced, the APQ is considered of greater constraint than for other forest areas. However, within the APQ this area is considered more likely to be accepting of a substation development than nonforest landscapes.</li> <li>Siting of a substation in this TSA would result in the removal of some forest which would be potentially noticeable due to the relatively small scale of the area. However, as this area is already actively managed for commercial forestry it is considered that this would not result in a significant landscape effect. The forested character also gives good opportunities for landscape mitigation measures to be implemented.</li> </ul>	М
Visual	There is no settlement within this area. However the A819 forms an important route and mitigation would be likely to be required to limit the effect on views from this route. On the western side of the road the Neil Munro Memorial provides a significant elevated viewpoint over most of the TSA. Due to its elevation it would be difficult to mitigate the visual effect from this viewpoint although it would be less affected by a site towards the north of the TSA where the only opportunity for an AIS substation exists.	м
Ecology	<ul> <li>There are no ecological designations covering this TSA. There are small pockets of native woodland present but these are likely to be easily avoidable.</li> <li>The Glen Etive and Glen Fyne SPA lies immediately adjacent to this area to east and may comprise a potential constraint if Golden Eagle are considered likely to use this area. This would require further consideration.</li> <li>The forest, woodland and watercourses in the area, gives the potential for mammal, bird and invertebrate species to be present. These would need further investigation if a substation were proposed to be sited here.</li> </ul>	М

Geology, Hydrology and Soils	There are no geological designations within this TSA. There are no waterbodies within the TSA but there are a number of streams which running through the TSA, flowing north towards River Cladich. These reduce the potential space for an AIS substation to only location at the north-west of the TSA with sufficient space only for a GIS substation in other areas whilst allowing suitable areas for protection buffers. This area has predominantly slightly steeper slopes than the ideal 5 ° and this could lead to a larger area being required for mitigation or protection measures. Priority peatland mapping shows this area to be entirely covered by Class 4, and therefore unlikely to be peat, other than a small area towards the north of the TSA which is shown as Class 3. This suggests that there may be the potential for peat to be present and this would need further site specific investigation	М
Cultural Heritage	There are no listed buildings or Scheduled Monuments within this TSA. However, the WoSAS Historic Environment Record identifies a Drove or Military road along its length from north to south. This route may need to be crossed by any development on its eastern side but this is not considered to be a major constraint.	м
Land Use and Recreation	Land use in this TSA comprises predominantly commercial forestry. There would be likely to be a net loss of forestry area as a result of a substation in this area and this may require compensatory planting to be considered and accommodation within the Forestry Management Plan. This is considered unlikely to be a major environmental constraint. There are no recognised tourist routes through the TSA although the A819 from Loch Awe to Inveraray is likely to be used by a variety of road users. The Neil Munro memorial provides a notable feature on this route. Although there would be unlikely to be any restrictions to these activities, and the visual issues outlined above should also be considered relevant from a recreational perspective.	М
Other Constraints and opportunities	Slope analysis mapping identifies this TSA to be largely of a gradient less than 10 ° but with relatively limited areas where the slope is less than 5 °. A few small areas throughout are indicated as up to 20 ° in slope. These slightly steeper slopes could lead to an increased footprint being required and knock-on increased environmental effects depending on the location of a substation. The TSA lies within the preferred 2 km range from a classified road (the A819).	м
Overall consideration of suitability		
As detailed above, there is the potential for constraints to occur in the majority of subject areas for this TSA although all have the potential for mitigation to be employed. However, when considering the potential combined effects of multiple mitigation measures that would be likely to be required, this TSA is not preferred where other, better locations are present. This TSA has therefore been <b>excluded</b> from further analysis.		

## Table 4.11: TSA10 – Craig Bracha

#### Description

This TSA is comprised of an area of elevated, hummocky commercial forest plantation with open moorland hill tops east of the Cladich River and A819, and south of Loch Awe. It is defined as a distinct TSA because of its clear boundaries of level 1 constraint to east and south its individual location east of the A819 and north of the Cladich River, and its forested character which differentiates it from TSA8.

Review of Figure 10, indicates that there are several areas of sufficient size in which both an AIS and GIS substation could be accommodated within this TSA. This area is comprised of areas of both level 1 and level 2 constraint. There are no areas of no constraint due to the location of the TSA within an APQ and therefore all potential opportunity areas are within level 2 areas. There are a variety of areas of level 1 constraint across the site, mostly close to the small open summits due to the steeper slopes in these areas, but also along occasional streams due to watercourse buffers and also some small gorge features.

Review of Environmental Constraints		
Subjects	Potential Constraints	Interaction level
Landscape	This area falls within the North Argyll APQ. However, this is a very extensive area of varying character. Within the TSA, the area is predominantly managed for commercial forestry which is usually not considered to be a strongly contributing feature although this TSA is more notable in providing some setting to Loch Awe and for the small summits which push out of the forest. Siting of a substation would result in the removal of some forest which may be evident within nearby landscape areas some of which may have wild characteristics such as to the south-east. However, this would be unlikely to be noticeable from the more valued landscapes around Loch Awe due to the topography. This is a commercially managed area of forest and such removal would not be considered unusual in this context. The forest also gives good opportunity to accommodate mitigation planting.	М
Visual	There is no settlement within this area although the farm of Accurach lies under 500 m to the south and may obtain views of some parts. However, it would likely be easy to locate a substation to ensure that this property was not affected. The TSA is by and large not visible from the nearby A819 due to the topography and woodland / forest along this route. Although the tracks within the forest have the potential to be used for recreational purposes and therefore accommodate visual receptors, this forest is not promoted for its recreation and given the distance from the public road is considered relatively unlikely that there would be many people in this area to obtain any visual effects.	L

Ecology	There are no ecological designations covering this TSA. Within	
	the National Woodland Survey of Scotland, the area around the one of the summits is identified as 'Open Land Habitat' but this is largely located within an areas already of level 1 constraint and is not considered in itself to be a notable constraint. The Glen Etive and Glen Fyne SPA lies immediately adjacent to this area to the south and wraps around its eastern end and this would comprise a potential constraint if Golden Eagle were found to use this area. This would require further consideration. The forest, woodland and watercourses in the area, gives the	М
	potential for mammal, bird and invertebrate species to be present. These would need further investigation if a substation were proposed to be sited here.	
Geology, Hydrology and Soils	There are no geological designations within this TSA. There are no waterbodies within the TSA but there are a few stream systems flowing outwards from the summit of the small hill to east, north and west. However, there are sufficient spaces between these watercourses to accommodate various potential substation sites with room for protection buffers. Priority peatland mapping shows this area to be entirely covered by Class 4, which suggests that deep peat is unlikely to be a constraint. However the presence of Classes 2 and 3 in adjacent areas suggests that further site specific investigation should be carried out to ensure that this is the case.	L
Cultural Heritage	There are no listed buildings or Scheduled Monuments within this TSA and the WoSAS Historic Environment Record does not identify any other recorded sites. There is the potential for other unrecorded sites to be present but this is not anticipated to be a notable constraint.	L
Land Use and Recreation	This TSA is managed as commercial forestry with some areas of open ground. Should a substation be located in this area, there would be a likely net loss of forestry area and this may require compensatory planting to be considered and accommodation within the Forestry Management Plan. This is considered unlikely to be a major environmental constraint. There are no recognised recreational routes through the TSA and it is not promoted for its recreation. There is the potential for tracks within the forest to be used recreationally but given the distance from the public road this is considered unlikely.	L
Other Constraints and opportunities	Slope analysis mapping identifies this TSA to have extensive areas of shallow slopes less than 5 ° with other areas largely less than 10 °. There are small areas of greater slope rising up to the summit areas of the hills and around some of the streams but these do not preclude a number of potential site options. The TSA lies within the preferred 2 km range from a classified road (the A819)	L
Overall considera	ation of suitability	

A detailed above, this area shows good potential for a possible AIS or GIS substation without resulting in any notable environmental effects that could not be mitigated. For the majority of environmental subject areas, it is considered that there would be no notable significant constraints. This TSA has therefore been **retained** for further analysis of grid connection and access route options.

## Table 4.12: TSA11 – Blarchaorain

### Description

This TSA is comprised of an area of elevated hill slope, managed for commercial forest plantation with areas of felling and replanting on the southern side of Loch Awe. It is distinguished on its eastern, western and southern sides by a clear boundary of level 1 constraint and a change in threshold of slope with TSA12 on its northern side. It is defined as a distinct TSA due to its forested character and sloping hillside which differs from TSA12, and also its greater distance from the classified road which makes it more isolated.

Review of Figure 10, indicates that potential opportunities for an AIS substation in this area would be very limited with only one area possibly of sufficient scale to accommodate this within the centre of the TSA. However, a larger number of locations would be of sufficient scale to accommodate a potential GIS substation. This is due to the presence of a large degree of level 1 constraint within this area, mostly due to the steepness of slope, but also with watercourses reducing potential areas in size. There are no areas of no constraint, due to the location of the area within an APQ and the 5 $^{\circ}$  - 10 $^{\circ}$  slopes found across most of the remaining area.

Review of Environmental Constraints		
Subjects	Potential Constraints	Interaction level
Landscape	This area falls within the North Argyll APQ. However, this is a very extensive area of varying character. Within the TSA, the area is predominantly managed for commercial forestry with a small area of rough agricultural land in its north-east corner. It is considered that this area is generally unlikely to be a strongly contributing feature to the importance of the APQ. The TSA falls within the Craggy Upland LCT which is considered of Medium sensitivity to this type of development. The Ben Lui WLA lies immediately to the south of the TSA, but has little intervisibility as this near boundary follows a ridgeline. Siting of a substation would result in the removal of some forest which may be evident within nearby landscape areas. However, it would be unlikely to be visible from the WLA due to the topography.	м
Visual	There are no properties within this area but one house and farm is located within relatively close proximity (around 250 m) to its north-eastern part. Searches also identified another building near to the south-eastern corner but this is not a residential development and therefore considered of low sensitivity. Approximately 1 km to the north of this TSA the Duncan Ban MacIntyre memorial provides a very prominent view point. Although relatively distant from the TSA, this area is very visible within the wide views which are obtained from the memorial, which currently feature little development, and this would need considered in any mitigation scheme. However, the forestry gives good opportunities to accommodate mitigation in this TSA.	м

Ecology	There are no ecological designations which cover this TSA. However, the Glen Etive and Glen Fyne SPA for Golden Eagle surrounds it, lying immediately to the south, east and west and this would comprise a potential constraint if Golden Eagle were found to use this area. This would require further consideration. Native and AWI woodland are indicated in a couple of very small areas along the course of burns but this is not considered to be an additional constraint as it is likely to be within the level 1 watercourse buffer area. The forest, woodland and watercourses in this area have the potential for further mammal, bird and invertebrate species to be present and this would need further investigation if a substation were proposed to be sited here.	М
Geology, Hydrology and Soils	There are no geological designations within this TSA. There are no waterbodies within the TSA but there are a large number of watercourses and these notably reduce the potential areas of availability. With steeper slopes than other TSAs, there is the potential for a larger buffer area and additional mitigation to be required and this is considered likely to be a notable constraint within this TSA, particularly to an AIS substation, although potentially less so to the smaller GIS substation. Priority peatland mapping shows this area to be almost entirely covered by Class 4, with a small area of Class 3 on open ground in the north-east corner. This suggests that deep peat is unlikely but further site specific investigation should be carried out to ensure that this is the case.	AIS H GIS M
Cultural Heritage	There is one Scheduled Monument within this TSA: Dychlie Deserted Crofts. This is located close to the only potential location for an AIS substation and setting would therefore need to be considered. However, this would be likely to be possible to mitigate. The WoSAS Historic Environment Record does not identify any further recorded sites although there are others within the wider vicinity. There is the potential for other unrecorded sites to be present but this is not anticipated to be a notable constraint.	AIS M GIS L
Land Use and Recreation	This TSA is managed as commercial forestry with a small area of open ground and areas of recent felling and replanting. Should a substation be located in this area, there would be a likely net loss of forestry area and this may require compensatory planting to be considered and accommodation within the Forestry Management Plan. However, this is considered unlikely to be a major environmental constraint. There are no recognised recreational routes through the TSA and it is not promoted for its recreation. There is the potential for tracks within the forest to be used recreationally but this is unlikely to comprise a notable constraint.	L

Other Constraints and opportunities	Slope analysis mapping identifies this TSA to be relatively steeply sloping in comparison with other TSAs with extensive areas of 5 ° to 10 ° slopes and only a few areas noted to have slopes of less than 5 °. This has the potential to lead to a larger footprint and other associated environmental constraints becoming greater. The TSA lies mostly outwith the preferred 2 km range from a classified road (the A819) and extends to around 4 km.	м
Overall consideration of suitability		
As detailed above, this area shows a notable level of constraint in some areas with the steeper slopes and numerous watercourses likely to make the area unfavourable for a potential AIS substation. However, there is the opportunity to site a GIS substation with appropriate mitigation to offset environmental effects and therefore this is suggested as appropriate for further consideration.		

This TSA has therefore been **retained** for further analysis of grid connection and access route options.

# Table 4.13: TSA12 – Ardteatle

#### Description

This TSA is comprised of an area of elevated undulating ground and knolly hills managed as forest with felled areas, replanting and small areas of open ground. It is located on the hill to the south of Dalmally and is identified as a distinct TSA due to its forested character and elevated undulating situation. A distinction is made between TSA13 to its north which borders Loch Awe and Strath Orchy and acts as a setting to these areas. The boundary between these TSAs follows the crest of the hill. This TSA is also considered separate to TSA 11 which is steeper and more isolated, with the boundary falling on the threshold of the change in slope.

Review of Figure 10 indicates that there would be potential wide opportunity to locate either an AIS or GIS substation in this area. All potential site options are located within areas of level 2 constraint due to the presence of the APQ and some 5 ° to 10 ° slopes. Areas of level 1 constraint exist intermittently, mostly in the western part of the TSA where there are watercourses and some isolated areas of steeper slopes.

Review of Environmental Constraints		
Subjects	Potential Constraints	Interaction level
Landscape	This area falls within the North Argyll APQ. This is an extensive area of varying character and the site is relatively contained and predominantly composed of commercial forestry plantation which is considered less likely to contribute to the high values of the designation. However, this area does have some role in providing a setting to Loch Awe and the area around Dalmally. The TSA falls within the Craggy Upland LCT which is considered of Medium sensitivity to this type of development. Siting of a substation would result in the removal of some forest which could be evident from surrounding more valued landscapes. This would need consideration but is considered unlikely to be a notable constraint.	L
Visual	Searches indicate two buildings on the north-westerly edge of this TSA at Ardteatle. These are generally enclosed within woodland with limited scope for views back into the TSA. There is also another property at Blarchaorain to the south of the TSA with potential views back towards its southern side. A public road leads through the TSA and a network of tracks lead off this. These are considered likely to be used recreationally. Currently views are dominated by the forest which is a clearly managed landscape. This gives good opportunities for visual mitigation. The Duncan Ban MacIntyre memorial is a very prominent viewpoint and focal point within this TSA with extensive wide ranging views and would need considered both in terms of views from it and views towards it from areas outwith the TSA. It may be difficult to mitigate the effect on views from this monument due to its elevated situation and this is considered a notable constraint which would need careful consideration in terms of detailed siting.	Σ

Ecology	There are no ecological designations which cover this TSA. Within its western part there is an extensive area of woodland identified on the Ancient Woodland Inventory with some of this shown as native. Any removal of woodland in these areas would need to be justified and appropriate mitigation would be required if this area were affected. However, the greater part of the TSA shows no obvious ecological constraints. The forest, woodland and watercourses in this area have the potential to support mammal, bird and invertebrate species and this would need further investigation if a substation were proposed to be sited here.	L
Geology, Hydrology and Soils	There are no geological designations within this TSA. There are no waterbodies within the TSA. There are a number of watercourses focussed towards its western side but large areas towards the east which do not show any hydrological features. Priority peatland mapping shows this area to be entirely covered by Class 4. This suggests that deep peat is unlikely to comprise a constraint but further site specific investigation should be carried out to ensure that this is the case.	L
Cultural Heritage	There is one Scheduled Monument within this TSA: Tom a' Chaisteal Dun and one B Listed Building: the Duncan Ban MacIntyre Memorial. The setting of these features would need considered in the siting of any substation. As discussed above under Visual, this is likely to comprise a notable constraint in the terms of the Duncan Ban MacIntyre Memorial as this is a very prominent focal point within the wider area and the views are elevated and far ranging. The WoSAS Historic Environment Record identifies a further wide range of archaeological sites including marked stones, structures and the route of an old drove or military road. These features would need consideration in the detailed siting of any substation. Given the extensive number of sites, there is the potential for the presence of other unrecorded sites.	Σ
Land Use and Recreation	This TSA is managed as commercial forestry with areas of recent felling and replanting. Should a substation be located in this area, there would be a likely net loss of forestry area and this may require compensatory planting to be considered and accommodation within the Forestry Management Plan. However, this is considered unlikely to be a major environmental constraint. The area is considered likely to be used recreationally due to its proximity to Dalmally, and the presence of features such as the Duncan Ban MacIntyre memorial. The small stretch of public road to this memorial is also a proposed Core Path and there is a further wide network of tracks which could be used by walkers, cyclists and horse riders. Any visual effect on the Duncan MacIntyre memorial would also be considered relevant from a recreational point of view although any restrictions on recreational pursuits could be mitigated.	М

opportunities r t 1 f	part being slightly steeper, up to 10 ° and steeper sections on the small knolls. The TSA lies almost entirely within the preferred 2 km range from a classified road (the A819 and A85).	L
Overall consideration of suitability		
As detailed above, this area shows some good availability for the location of a potential substation. However careful consideration would be required on the potential effects on the Duncan Ban MacIntyre Memorial which would have knock-on effects on cultural heritage and recreation. In general the western half of this TSA is considered unsuitable for this reason and due to other constraints relating to watercourses and woodland. This TSA has therefore been <b>retained</b> for further analysis of grid connection and access route		

# Table 4.14: TSA13 – Kinachreachan Forest

#### Description

This TSA comprises an area of managed as commercial forestry with areas of open ground, felling and recent planting on hill slopes to the south of Dalmally and containing the south side of the northern end of Loch Awe, sloping up from the A819. It is identified as distinct from TSA12 due to its role as a setting for the low lying landscapes at the north end of Loch Awe and Strath Orchy and the boundary between these areas lies on the visual extent of this enclosing hill. It is also distinguished from the valley floor landscape of TSA14 to the north-east. Review of Figure 10 indicates a wide range of options for the location of a potential AIS or GIS substation within this TSA. All potential areas are indicated as level 2 constraints. Areas of level 1 constraint are limited to a very small number of steep slopes and watercourses.

Review of Environmental Constraints		
Subjects	Potential Constraints	Interaction level
Landscape	This area falls within the North Argyll APQ. This is an extensive area of varying character and the site is predominantly composed of commercial forestry plantation which is usually considered less likely to contribute to the high values of the designation. However, the location of this area gives it significance as a setting for Loch Awe and Dalmally including Kilchurn Castle which has a prominent loch-side position at this end of the loch. The TSA falls within the Craggy Upland LCT which is considered of Medium sensitivity to this type of development. Again, although the area is predominantly commercial forest, and usually less sensitive, its role as a setting for this part of Loch Awe is considered to increase this sensitivity although the forested character gives opportunity for mitigation.	м
Visual	There are no properties within this TSA. Searches indicate a potential property at Ardteatle near its southern side but due to topography and forest, any significant views would be unlikely. However, there are a number of properties on the opposite side of Loch Awe which could have views of a substation in this area. Users of the A819 would also have potential views although the predominant view from this route is across the loch, away from the TSA. Kilchurn Castle at the northern end of Loch Awe comprises an important and valued viewpoint within the local area. Elevated views from the towers across the open water of the loch would have the potential to feature any new substation in this area and would have the potential to appear in views between the castle and the Duncan Ban MacIntyre memorial on the hill to the south. The forested character of the TSA gives good opportunity for mitigation but a large AIS substation would be potentially difficult to mitigate in the elevated castle views.	Н

Ecology	There are no ecological designations which cover this TSA. A significant area towards its south-west end is noted as PAWS woodland. There would need to be good justification for any removal of this woodland and compensation planting would be required. However, the majority of the area shows no areas of ecological value. The forest, woodland and watercourses have the potential to support mammal, bird and invertebrate species and this would need further investigation if a substation were proposed to be sited here.	L
Geology, Hydrology and Soils	There are no geological designations within this TSA. There are no waterbodies within the TSA although it lies close to Loch Awe to its north. There are only two watercourses within this TSA located in its eastern part, draining towards Loch Awe Priority peatland mapping shows this area to be entirely covered by Class 4 although areas of Class 3 adjacent suggest that there may be the potential for deeper peat. However, generally, this suggests that deep peat is unlikely to comprise a constraint. Further site specific investigation should be carried out to ensure that this is the case.	L
Cultural Heritage	There are no sites designated for their cultural heritage within this TSA. However, there are three scheduled monuments lying close to its east on the shore of Loch Awe comprising a Crannog, a deserted settlement and Kilchurn Castle which is also an A Listed Building. The setting of these monuments would need careful consideration in the siting of any substation. As described above, there are extensive views obtained from Kilchurn Castle and it may be difficult to mitigate a substation in this area which would have the potential to appear in views between the castle and the Duncan Ban MacIntyre memorial on the hill to the south. The WoSAS Historic Environment Record identifies one further site, a cup-marked rock which would be unlikely to comprise a notable constraint. However, there is the potential for the presence of other unrecorded sites.	I
Land Use and Recreation	This TSA is managed as commercial forestry with areas of recent felling and replanting. Should a substation be located in this area, there would be a likely net loss of forestry area and this may require compensatory planting to be considered and accommodation within the Forestry Management Plan. However, this is considered unlikely to be a major environmental constraint. The A819 passes to the north of this area but there would be unlikely to be any effect on the use of this route. There are also a few tracks within the TSA which may be used for recreation but it is likely that any restrictions on recreational pursuits could be mitigated. The potential effects on views from the north loch shore and Kilchurn Castle as described above should also be considered important from a recreational point of view as these views are valued from recreational and tourism aspect. This adds to potential constraints.	М

Other Constraints and opportunities	Slope analysis mapping identifies this TSA to have generally gentle slopes of below 5 ° towards the east with the western part being slightly steeper, up to 10 ° and small individual steeper sections in some areas. The TSA lies within the preferred 2 km range from a classified road (the A819).	L
Overall consideration of suitability		
As detailed above, this area shows some good availability for the location of a potential substation in terms of some environmental issues. However careful consideration would be required on the potential effects on Kilchurn Castle scheduled monument and A Listed Building in terms of the elevated views which are obtained from its towers with the potential to affect its setting and associated knock on views on recreational amenity. As such, although it is considered a potential substation could be accommodated in this area, it is considered unfavourable where other, better opportunities exist		

This TSA has therefore been **excluded** from further analysis.

# Table 4.15: TSA14 – Dalmally and Kilchurn

Description		
This TSA includes comprised of area identified as an in the valley, with th level 1 constraint Review of Figure AIS substation in substation may e within an APQ an within the TSA, la	the developed valley around Dalmally at the north-east end of Loc as of fields and grazing lands interspersed with scattered settlemen ndividual TSA due to its contained and distinct landscape character ne surrounding forest areas to the south being considered separate containing it to the north and west. 10 indicates that there would be limited opportunity to accommod forested areas along its southern edge but further opportunity to l xist. All potential areas are indicated as level 2 constraint as this TS d close to some areas of settlement. There is a large degree of leve irgely relating to watercourses which run into the River Orchy.	h Awe which is nt. It is on the floor of ely and areas of late a potential ocate a GIS A is located el 1 constraint
Review of Enviro	nmental Constraints	
Subjects	Potential Constraints	Interaction level
Landscape	This area falls within the North Argyll APQ and the open areas around the River Orchy and the northern part of Loch Awe are considered to comprise a notable part of this designation. The area falls partly within the Craggy Upland LCT and partly within the Mountain Glen LCT both of which are considered to be of medium sensitivity to this type of development. However, locally the landscape is small scale with a variety of small spaces formed by woodland, settlement and river which are considered to be more sensitive. Although the semi- wooded character with forest on the edges gives some opportunity for mitigation, a development of the scale proposed is considered likely to lead to significant effects	Н
Visual	There are a large number of properties scattered within this TSA focussed around Dalmally and along the associated roads. These have the potential to gain views of a proposed substation, although the semi-wooded qualities of the TSA could allow mitigation. However, there would also be the potential for views from other locations including a number of routes and recreational areas and it may be difficult to obtain a space of sufficient size in this area to mitigate all of these views. Kilchurn Castle located to the west of the TSA forms a notable focal point and viewpoint with elevated and extensive views from its towers. It would be difficult to mitigate the effects of potential substation on this view due to the elevation and the effect of such a development would be likely to be significant due to its scale.	Н
Ecology	There are no ecological designations within this TSA. However, there is a significant part of the area which is covered by native woodland and ancient woodland. The removal of any woodland would have to have good justification and compensation would be likely to be required. There are also extensive river and marginal areas within this TSA and wet areas which are likely to comprises sensitive ecological habitats and support important species. This would need further investigation but is considered likely to comprise a notable constraint.	Н

Geology, Hydrology and Soils	There are no geological designations within this TSA. The River Orchy runs east to west through this TSA and is braided in places creating large areas of sensitivity. SEPA Flood Risk mapping shows much of this area to be prone to flooding presenting a notable environmental constraint. Priority peatland mapping shows this area to be almost entirely covered by Class 4 with a small area of Class 3 on the southern edge near Croftintuimie. This suggests that deep peat is unlikely to be a constraint in this area.	Н
Cultural Heritage	There is one Scheduled Monument in this TSA: Barr a' Chaistealain Dun, and one C Listed Building: Dalmally Station, both located at the extreme eastern end. The setting of these features would need to be considered in the siting of any substation. Outside the TSA to the west, Kllchurn Castle Scheduled Monument and A Listed Building and Portbeg Deserted Settlement are also important features in terms of settlement. The views to and from Kilchurn Castle are significant in terms of its importance and as described under Visual above, are very sensitive to any development. The WoSAS Historic Environment Record identifies several further sites and finds which would need considered in terms of the location of a potential substation and there is the potential for the presence of other unrecorded sites.	H
Land Use and Recreation	This TSA has a variety of lands uses including agriculture, settlement and recreation. The addition of a substation would have to fit into this pattern of land uses and would potentially result in the loss of other valued land uses in the area which may require compensatory measures. The largest possible sites comprises areas of forest and this would lead to a net loss of forestry area which may require compensatory planting to be considered and accommodation within the Forestry Management Plan. However, this is considered unlikely to be a major environmental constraint. This area is also used recreationally and valued by tourists, particularly visiting Kilchurn Castle. There would be the potential for a substation to affect some of these activities and the potential visual effects on the castle would be relevant to potential effects on the recreational value of the area.	М
Other Constraints and opportunities	This is a relatively flat area as acknowledged by slope analysis mapping although this leads to potential for flooding risk in some areas. The TSA lies within the preferred 2 km range from a classified road (the A85).	L
Overall consideration of suitability		
As detailed above considered unlike accommodated w This TSA has ther	e, this area a high degree of potential environmental constraint and ely that a substation of the scale proposed – either AIS or GIS, could vithin this area without significant effects occurring which could no efore been <b>excluded</b> from further analysis.	d it is d be t be mitigated.

# Table 4.16: TSA15 – Sallachry Forest

# Description

This TSA is located in the south of the Study Area to the west of Glen Aray and Sallachy. It is comprised of an area of undulating commercial forestry on the northern valley side of the Erallich Water. This TSA is identified as a distinct TSA due to surrounding by level 1 constraint. It is identified separately to TSA16 due to its differing commercial forestry character and its greater distance from the A819 which makes it more isolated.

Review of Figure 10 indicates that there is one area towards the east of this TSA of potential scale to accommodate an AIS substation but a larger number of potential sites to accommodate a GIS substation. The area is predominantly shown to be of level 2 constraint but there are also some small areas showing no obvious constraint. Sections of level 1 constraint cross the TSA, associated with the tributary streams which flow into the Eralllich Water.

Review of Environmental Constraints				
Subjects	Potential Constraints	Interaction level		
Landscape	This area is not covered by any landscape designations. It is located within the Upland Forest Moor Mosaic LCT which is considered to have a medium sensitivity to potential substation development. The site falls within an area of commercial forestry which is generally considered to of lesser value than the open moorland areas. It is not notable as a setting to any other landscapes. Siting of a substation in this TSA would result in the removal of some forest which may be evident within nearby landscape areas some of which have wild characteristics. However, this is a commercially managed area of forest and such removal would not be considered unusual in this context. The forest also gives good opportunity to accommodate mitigation planting.	L		
Visual	There are no properties within this TSA but some residences lie approximately 25 m from its eastern end at Sallachry. Consideration would need to be given to views from these properties if a substation were located in this part of the TSA but views from these properties are not considered likely to comprise a constraint. This forest is not promoted by Forestry Commission Scotland for recreational use and there are no paths or tracks indicated on any Ordnance Survey maps.	L		
Ecology	There are no ecological designations within this TSA and no identified areas of native or ancient woodland. However, there is a significant part of the area which is covered by native woodland and ancient woodland. The forest and watercourses have the potential to support mammal, bird and invertebrate species and this would need further investigation if a substation were proposed to be sited here.	L		

Geology, Hydrology and Soils	There are no geological designations within this TSA. There are no waterbodies within the TSA or close to it. The Eralllich Water flows west to east through the southern part of the TSA towards the River Aray smaller tributaries of this cut through the TSA. This notably minimises the potential area available in the western part of the TSA to the extent that there would be only a few areas of sufficient size to accommodate GIS substation and the only area which sufficient space for an AIS substation as at the eastern side. With the majority of slopes being greater than 5 ° in this TSA this could lead to increased space for mitigation requirements being required. Priority peatland mapping shows this area to be entirely covered by Class 4. This suggests that peat would not comprises a notable constraint.	М		
Cultural Heritage	There are no designated cultural heritage sites within this TSA. However, the WoSAS Historic Environment Record identifies a number of other recorded sites mostly comprised of shielings which would need consideration in the siting of any substation. Mitigation may be required if any of these sites were affected.	м		
Land Use and Recreation	Land use in this TSA comprises commercial forestry. There would be likely to be a net loss of forestry area as a result of a substation in this area and this may require compensatory planting to be considered and accommodation within the Forestry Management Plan. However, this is considered unlikely to be a major environmental constraint. There are no obvious recreational uses within the TSA and ordnance survey mapping does not identify any tracks or paths in the forest.	L		
Other Constraints and opportunities	Slope analysis mapping shows the majority of this area to be at a gradient of between 5 ° and 10 °. This would potentially lead to a larger footprint being required for a substation which may lead to increased environmental effect. This would be most notable in this TSA in terms of available space for appropriate protection measures to watercourses. The TSA lies mostly beyond the preferred 2 km range from a classified road (the A819), being between 1.5 km and 3.5 km from the nearest road.	м		
Overall consideration of suitability				
As detailed above, there would be unlikely to be constraints for the majority of environmental subjects for this TSA. However, there would be limited space availability for a potential substation within this area due largely to hydrological and slope constraints. However, the potential for both				

an AIS and GIS substation is likely to remain, particularly in the eastern part and therefore this TSA is considered relevant for further consideration. This TSA has therefore been **retained** for further analysis of grid connection and access route.

This TSA has therefore been **retained** for further analysis of grid connection and access route options.

## Table 4.17: TSA16 – Glen Aray

#### Description

This TSA is located in the south of the Study Area comprising an area of forest, woodland and open ground in Glen Aray. It is identified as a distinct TSA as it comprises a limited area of availability within the wider level 1 constraint and its valley location close to the A819, and predominant character of woodland, scattered settlement and fields, identifies it as different to TSA15. Review of Figure 10 indicates that only one potential area of sufficient scale to accommodate an AIS substation is present within this TSA, in an area of forest at its southern end. However, other areas are sufficiently sized to accommodate a potential GIS substation. These areas are indicated as predominantly of level 2 constraint although the possible AIS area at the southern end is partly indicated to have no constraint. Areas of level 1 constraint across this TSA are mostly associated with watercourses and areas of the steeper valley side.

Review of Environmental Constraints					
Subjects	Potential Constraints	Interaction level			
Landscape	This area is not covered by any landscape designations although the Inveraray Designed Landscape lies to its south. Its higher valley sides are located within the Upland Forest-Moor Mosaic LCT which is considered of medium sensitivity to this type of development. The lower areas within the valley are located within the Rocky Mosaic LCT which is considered to be of high sensitivity to this type of development. Locally the landscape is variable with woodland and forest and roughly undulating valley-sides creating small and intimate landscapes with clearings, small fields and occasional properties. This is generally considered to be sensitive to the scale of development which is proposed, which would involve a notable loss of woodland which would be difficult to mitigate in the constrained space.	Н			
Visual	Searches indicate scattered buildings throughout this area, most of which comprise residential dwellings. The A819 runs through the TSA and along its eastern edge. This is very contained by woodland. However, given the scale of the development proposed, there is considered likely to be views from some of these receptors although it may be possible to mitigate effects.	м			
Ecology	There are no ecological designations within this TSA. However, the majority of the area is included within the Ancient Woodland Inventory and there are extensive areas indicated to be native woodland. Loss of these areas of woodland would need good justification and compensatory planting would be likely to be required. In this TSA, due to the extensive area involved this is considered to be a notable constraint. These extensive areas of woodland along with watercourses are considered likely to support other species of mammal, bird and invertebrate and this would need further investigation.	м			

Geology, Hydrology and Soils	There are no geological designations within this TSA. There are no waterbodies within the TSA or close to it but several water courses cross through the TSA running west to east towards the River Aray reducing the areas of potential availability to the extent that only one site would comprises suitable space for an AIS substation. Priority peatland mapping shows this area to be entirely covered by Class 4. This suggests that peat would not comprise a notable constraint.	L		
Cultural Heritage	There is one B Listed Building within this TSA: Glen Aray School and Outhouse and the setting of this would need to be considered in the selection of the site of any substation. The Inveraray Castle GDL is located immediately to the south but any effect on this area would be considered unlikely. The WoSAS Historic Environment Record identifies a great number of further sites, mostly associated with historic production of charcoal. Mitigation may be required if any of these sites were affected and given the large numbers of these sites this is considered a notable constraint.	м		
Land Use and Recreation	Land use in this TSA comprises a mix of commercial forestry, non-commercial woodland, settlement and agriculture The development of a substation would be likely to affect some of these activities depending on its siting, and mitigation could be required. The main A819 road passes the eastern side of this TSA but there are no other obvious recreational routes. A track leading to the west towards properties would have the potential to be affected should an AIS substation be proposed here and mitigation may be required to ensure access. There is the potential for this route to be used recreationally but this is considered unlikely as it does not lead to any other destinations.	L		
Other Constraints and opportunities	Slope analysis mapping shows this TSA to have a range of slopes with large areas close to the route of greater than 5 ° and a few areas greater than 10 °. Most possible substation options are shown to be less than 5 °. The TSA lies within the preferred 2 km from a classified road (the A819).	L		
Overall consideration of suitability				
As detailed above, notable constraints are considered likely to be present for the proposed development of a substation within this area. Although some of these would have the potential to mitigate, the potential degree of effect to the sensitive, small scale landscape and woodland is considered to lead to this area being unsuitable for a substation development of the scale proposed.				

This TSA has therefore been **excluded** from further analysis.

# Table 4.18: TSA17 – Tom a' Bhuachaille

#### Description

This TSA is located in the south-west of the Study Area and comprises an area of elevated forest and open ground to the east of Clachan Flats Wind Farm. It is identified as a TSA as it comprises an extensive area not affected by level 1 constraint and is isolated from all other TSAs and therefore distinct. Review of Figure 10 indicates an extensive area of sufficient scale to accommodate either a GIS or AIS substation type. All potential areas are of level 2 constraint due to the presence of the TSA within an APQ and a majority of slopes which are between 5 ° and 10 °. This TSA mostly avoids areas of level 1 constraint but a few areas are present due to watercourses.

Review of Environmental Constraints				
Subjects	Potential Constraints	Interaction level		
Landscape	This area falls within the North Argyll APQ. However, this is a very extensive area of varying character. Within the TSA, the area is managed for commercial forestry and is considered more likely to be accepting of a substation development. However, located at elevation, activities such as tree removal are vulnerable to wider intervisibility with the lower glens and, depending on siting may be visible from the Inveraray Castle GDL. Nevertheless, given the land use within this area this would not be out of character and the forest character is considered likely to enable mitigation to be established. The TSA falls within the Steep Ridgeland and Mountains LCT which is considered to be of high sensitivity to this type of development. However, as discussed above, within commercial forestry areas, this is less likely to lead to significant effect.	м		
Visual	There are no properties within this TSA with the closest being within Glen Shira from 0.5 km away. These properties are mostly located on the edge of woodland and views towards the TSA from most of these are unlikely. As the TSA is located in an elevated position there would be the potential for views from some of these wider areas depending on the location of a proposed substation but with the adjacent steep topography and forest it is considered that these would be unlikely and possible to mitigate if necessary. Within the forest there are tracks, largely of a functional character serving forest operations and the nearby Clachan Flats wind farm. These may be used recreationally but are considered unlikely to be visually sensitive	L		
Ecology	There are no ecological designations within this TSA. Searches indicate very few other constraints. With only a small area of potential ancient woodland following the line of a watercourse near the south of the TSA which is within the level 1 protection buffer. The sites lies around 2 km from the Glen Etive and Glen Fyne SPA to north, east and west. As it comprises an elevated (and therefore more prominent) area surrounded by the SPA, this may need consideration if Golden Eagle are found to be using the area. However, this is considered unlikely to comprise a notable constraint. Forested areas and watercourse have the potential to support other mammal, bird and invertebrate species and this would need further investigation.	L		

Geology, Hydrology and Soils	There are no geological designations within this TSA. There are no waterbodies within the TSA or close to it. A number of watercourses radiate away from it and are not included within the TSA, although some cross in its southern part. There is generally a wide space between these watercourses to accommodate a potential AIS or GIS substation with protection buffers, even where slopes are steeper.	L		
Cultural Heritage	There are no designated sites for cultural heritage within this TSA and none close to it. The WoSAS Historic Environment Record identifies few sites around its edge but none within it. Although there is the potential for further unrecorded sites, cultural heritage is not considered likely to be a constraint to this TSA	L		
Land Use and Recreation	Land use in this TSA is comprised of commercial forestry with small areas of open ground. The access to the Clachan Flats wind farm goes through this TSA and there are associated features such as a borrow pit. Tracks within the forest and to the wind farm there are largely of a functional character but may be may be used recreationally. However, this is not considered likely to be a constraint.	L		
Other Constraints and opportunities	Slope analysis mapping shows this TSA to be relatively steep sloping with much of the area shown to have slopes between 5° and 10°. Smaller areas on the ridges and summits show less steep slopes of below 5° but this accounts for a relatively small area. Steeper slopes have the potential to increase the footprint of a substation and this may lead to greater environmental effects although the potential effects in this location are generally considered likely to be small. The TSA varies in its distance from the nearest classified road (the A83) between 2 km and 4 km and is therefore less favourable than other locations in this respect.	Z		
Overall consideration of suitability				
As detailed above, this TSA shows relatively low levels of potential environmental constraint although it is less favourable in terms of degree of slope and proximity to the classified road. Nevertheless, given the limited likely degree of environmental constraint it is recommended that this area is considered for further study. This TSA has therefore been <b>retained</b> for further analysis of grid connection and access route options.				

# 4.3 Summary and Conclusions

4.3.1 The outcome of the analysis of each TSA is summarised in Table 4.19 below.

Table 4.19: Summary of Analysis of TSAs

TSA	Environmental Interaction Levels						Overall	
	Landscape	Visual	Ecology	Geology, Hydrology and Soils	Cultural Heritage	Land Use and Recreation	Other	Consideration of Suitability
TSA1: Bealach Mor								Retain
TSA2: Inverinan								Retain
TSA3: Annat – Rubh 'an Eoin								Exclude
TSA4: Creag Thulach Forest								Retain
TSA5: Balliemeanoch Forest								Retain
TSA6: South of Portsonachan								Retain
TSA7: West of Craig nan Sassanach								Retain
TSA8: Cladich								Exclude
TSA9: East of Craig nan Sassanach								Exclude
TSA10: Craig Bracha								Retain
TSA11: Blarchaorain								Retain (GIS only)
TSA12: Ardteatle								Retain
TSA13: Kinachreachan Forest								Exclude
TSA14: Dalmally and Kilchurn								Exclude
TSA15: Sallachry Forest								Retain
TSA16: Glen Aray								Exclude
TSA17: Tom a' Bhuachaille								Retain



- 4.3.2 The options appraisal identified seventeen TSAs within which a substation of the scale proposed could potentially be accommodated without affecting areas with the highest level of environmental constraint. Following a detailed environmental analysis of each of these TSAs, six were ruled out due to other environmental constraints which would be likely to result in significant effects considered likely to be very difficult or impossible to mitigate. One further site (TSA11: Blarchaorain) was ruled as unsuitable for an AIS substation due to the likely unavailability of a suitable size of area without significant effect. However, this TSA was not excluded from the analysis as it is considered likely to be able to accommodate the smaller GIS substation if necessary.
- 4.3.3 Based on the environmental interaction levels identified in the appraisal of TSAs, as summarised in Table 4.19, the following lists the TSAs put forward for review of technical constraints, categorised in terms of the number of potential environmental interactions identified (lowest to highest):

#### No obvious environmental constraints

• TSA5 – Balliemeanoch Forest

#### Potential interaction with 1 environmental constraint

• TSA7 – West of Craig nan Sassanach

#### Potential interaction with 2 environmental constraints

- TSA2 Inverinan
- TSA6 South of Portsonachan
- TSA10 Craig Bracha
- TSA17 Tom a' Bhuachaille

#### Potential interaction with 3 or more environmental constraints

- TSA4 Creag Thulach Forest
- TSA12 Ardteatle
- TSA15 Sallachry Forest
- TSA1 Bealach Mor

• TSA11 – Blarchaorain (GIS only)
## 5. Preferred Substation Search Area: Summary of Conclusions by SHE Transmission

- 5.1.1 Following the Phase 1 substation site selection process 11 individual TSAs had been identified as potential areas for the proposed North Argyll substation based on environmental factors only. SHET have considered the constructability and cost implications of each of the TSAs; in combination with the environmental assessment provided as a result of the Phase 1 assessment.
- 5.1.2 The cost of developing a new substation at each of the TSAs is related to the proximity of the TSA to the existing 132kV line between Taynuilt and Inveraray. This is because the new overhead line connects North Argyll substation to Taynuilt substation, whereas the existing section of line between Inveraray substation and North Argyll substation will be retained. If the new substation were proposed for a site which was a significant distance from this overhead line between Taynuilt and Inveraray, it would require the construction of additional new overhead line, which would entail additional land requirements and the associated additional costs of constructing the new overhead line.
- 5.1.3 The constructability of the substation building is also related to the proximity to the public road network. The distance from TSAs to the public road network is directly related to the cost of the creation of new access tracks; that is, the further a TSA is from the public road network the greater the potential costs for construction of access tracks. Therefore, when selecting a preferred TSA, SHET will attempt to minimise the distance from the public road network.
- 5.1.4 Elevation above sea level is also another key constructability consideration for siting a substation site and overhead line route. The greater the elevation above sea level the less suitable the site becomes; with TSAs in excess of 500 m above sea level being considered less suitable for substation development and routes in excess of 200 m above sea level less suitable for overhead line routes.
- 5.1.5 The TSA with the least number of identified environmental constraints is TSA5, Balliemeanoch Forest. TSA5 is over 5 km from the existing overhead line from Taynuilt to Inveraray, which would require a significant diversion of the existing overhead line to connect to a substation at this location. The additional overhead line would also require a route with an elevation in excess of 200 m, which would require strengthening of towers, due to the additional ice and snow fall with increased elevation above sea level. The additional length of overhead line due to the diversion from the existing line and the additional strengthening due to the elevation would increase the overall cost of the project.
- 5.1.6 The TSA with only one environmental constraint is TSA7 West of Craig nan Sassanach. This TSA is in close proximity to both the existing overhead line from Taynuilt to Inveraray and the public road network. Therefore, this TSA is the preferred TSA for the location of the North Argyll substation and further OHL route analysis assessments will be conducted using this TSA.

## 6. References

Argyll and Bute Council (March 2015). Local Development Plan.

Argyll and Bute Council (2014). Core Paths Plan: Finalised Draft (Maps)

Argyll and Bute Council (Februray 2013) 'Proposed Supplementary Guidance (to the Local Development Plan): Protecting, Conserving and Enhancing our Outstanding Environment'

Gillespies (2010). Argyll and Bute Landscape Capacity Study: Mid Argyll and Inverary. Argyll and Bute Council

Scottish Right of Way and Access Society (2011). Scottish Hill Tracks (5th Edition).

Scottish Government (2014). Scottish Planning Policy.

Scottish Natural Heritage (2014). Carbon-rich soil, deep peat and priority peatland habitats map: consultation document.

ERM (1996). Landscape Assessment of Argyll and the Firth of Clyde. SNH Natural Heritage Review No.78).

The Planning etc. (Scotland) Act 2006. Office of Public Sector Information (OPSI). http://www.opsi.gov.uk.

The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011.

The Town and Country Planning (Scotland) Act 1997 as amended. <u>www.legislation.gov.uk</u>.

The Town and Country Planning (Hierarchy of Development) (Scotland) Regulations 2009 (The Hierarchy Regulations).

## Websites Used

Argyll and Bute Council (2014). <u>http://www.argyll-bute.gov.uk/home</u>

Historic Scotland Data Services - http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2000:10:0

SEPA Flood Risk Mapping - http://map.sepa.org.uk/floodmap/map.htm

SNHi Site Link - http://www.snh.gov.uk/publications-data-and-research/snhi-information-service/

Royal Commission on Ancient and Historical Monuments of Scotland - <u>http://canmore.rcahms.gov.uk/</u>

West of Scotland Archaeology Service - http://www.wosas.net/about.html

Bing Mapping aerial photography - https://www.bing.com/maps/?FORM=EXIPRV

































25 2	6			
The fee	1 mars		Кеу	
in.	f Caroh	32		
	1			Study Area
	TA	31		
	G Amount		9	Targeted Search Area
- 1	1	73		300 x 300m - Nominal Size of
Human	in the second	10		AIS Substation
J. com	B. U.S	20		160 x 160m - Nominal Size of GIS Substation
Bush	- BAG Charte	20		Geological Conservation Review site
1	10	28		(GCR)
10	- Castar	20		Waterbodies
Vera	E Sug	27		
1- mar	A.S	21		Watercourses
Form	Bein Lui7	26	Dui suita D	and and W
12 Par	210	20	Priority Pe	eatland *
L -) TAN	*			Class 1
Repri		25		Class 2
$F \ge 1$	78			
1	1	24		Class 3
1 N	Not.			
SE	X	23		Class 4
1224	and the second			Class X
Yoni Bioto	of Which and	22		
			* peat classif	ication as follows:
		21	Class 1: Al habitats - a	I vegetation cover indicates priority peatland nd - All soils are carbon rich soils and deep
25 2	6 		peat	est of the vegetation cover indicates priority
	AL LA	7 <b>2</b>	peatland ha	abitats - and - All soils are carbon rich soil and
513	596		deep peat Class 3: Ve	egetation cover does not indicate priority
5 1	- 1000	19	peatland ha	abitat but is associated with wet and acidic soil
200	S E		areas of de	ep peat
STI	シシシ	18	Class 4: Ar habitats or	ea unlikely to be associated with peatland wet and acidic soils - and - Area unlikely to
MA I			include carl	bon rich soils
		17	habitat - an	d - All soils are carbon rich soil and deep peat
in	12			
Maol B	Rek 3	16		
×				
1-2-5	-	15		
12m	Aller			
SSS Medi / m	Crue 1 3 a02	14		
TYN	No.			
	1A	13		
12/2/				
S. Car		12		
Erra.	in and			
and and	e Usine	11	25	cottish and Southern
15/17 2	6		P F	nergy
(Beinn 17)	a he	71	Pr	ower Distribution
K SBS	Logita		Decid 11	
S. J.S.S.	153	09	Reproduced by Crown cop	y permission of organance survey on behalf of HMSO. yright and database right 2015 all rights reserved.
Beinn me			Droject Nev 1	
a f	122	08	Project NO: L	
长山	a li		Project: NOF APF	RAISAL
122	1 th	07	Title: Geo	logy, Hydrology and Peat with Targeted
Core Se	Call Call		Sea	rch Areas
The foodler of		06		Date: 19/06/2015
193	- St		Eigure 16	Date. 10/00/2013
15 2	б			







