



Code: UKCAL-CWF-CON-EIA-RPT-00007-7A04

Volume 7A Overview Chapter Appendices

Appendix 6-3 Substation Site Appraisal RAG Criteria

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Revision	Issued
Date	18 October 2024

Table of Contents

1	Criteria for RAG Assessment	1
2	References	8

List of Tables

Table 1-1: RAG Criteria Used for Substation Appraisal.....2

Acronyms and Abbreviations

GCR	Geological Conservation Review
LCA	Land Capability for Agriculture
NPF4	National Planning Framework 4
NSA	National Scenic Area
PWS	Private Water Supply
RAG	Red Amber Green
SAC	Special Area of Conservation
SLA	Special Landscape Area
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

1 Criteria for RAG Assessment

- 1.1.1.1 Each potential shortlisted substation site was considered using a Red Amber Green (RAG) assessment methodology. RAG is a tool frequently used to assess high-level potential risks of proposed development options.
- 1.1.1.2 Each site is rated Red, Amber or Green on each of the criteria used indicating the adverse or positive impacts of the site. It should be noted that a Red score does not necessarily preclude the site location from being considered, rather it indicates that other locations may perform better on that specific criterion.
- 1.1.1.3 The criteria considered as part of the RAG assessment include:
- Biodiversity;
 - Landscape and Visual;
 - Hydrology and Watercourses;
 - Geology, Soils and Land Use;
 - Cultural Heritage;
 - Road Network;
 - Infrastructure Impact;
 - Community; and
 - Planning Policy/Development Planning.
- 1.1.1.4 It should be noted that this stage of the site selection process was undertaken prior to the adoption of National Planning Framework 4 (NPF4) (Scottish Government, 2023¹). NPF4 was adopted after the long list development process and sets out the national spatial principles for developments in Scotland. NPF4 has therefore been considered in subsequent site selection appraisal stages, refer to Volume 1, Chapter 6: Site Selection and Alternatives for further information.

Table 1-1: RAG Criteria Used for Substation Appraisal

Topic	Favourable scenario (Green)	Less Favourable scenario (Amber)	Unfavourable scenario (Red)
Biodiversity			
Proximity to National Designations	<ul style="list-style-type: none"> The site is >1km from internationally, and nationally protected sites such as Special Protection Areas (SPA), Special Areas of Conservation (SAC), Site of Special Scientific Interest (SSSI), and RAMSAR. 	<ul style="list-style-type: none"> The site is <1km from internationally and nationally protected sites such as SPA, SAC, SSSI and RAMSAR. 	<ul style="list-style-type: none"> The site lies within a internationally and nationally designated sites such as SPA, SAC, SSSI and RAMSAR.
Proximity to Local Designations	<ul style="list-style-type: none"> The site is >500m from locally protected sites such as Local Nature Reserves and Local Wildlife Sites. 	<ul style="list-style-type: none"> The site is <500m from locally protected sites such as Local Nature Reserves and Local Wildlife Sites. 	<ul style="list-style-type: none"> The site lies within a locally designated site such as Local Nature Reserves and Local Wildlife Sites.
Proximity to ancient woodland	<ul style="list-style-type: none"> The site is >500m from areas of ancient woodland. 	<ul style="list-style-type: none"> The site is <500m from ancient woodland. 	<ul style="list-style-type: none"> The site lies within an area of ancient woodland.
Suitability to support protected and/or notable species.	<ul style="list-style-type: none"> The site appears to have a low number of varied habitat types that could support a wide range of protected and/or notable species. 	<ul style="list-style-type: none"> The site contains a number of varied habitats that may suit a number of protected and/or notable species and in particular, European Protected Species. 	<ul style="list-style-type: none"> High likelihood that the site is used by protected and notable species. In particular, European Protected Species and/or those that are qualifying features of a European designated site.
Landscape			
Potential to affect nationally important landscape planning designations and defined	<ul style="list-style-type: none"> Not within proximity to or visible from NSAs and Wild Land areas. 	<ul style="list-style-type: none"> Within proximity to and visible from NSAs and Wild Land areas. 	<ul style="list-style-type: none"> Within NSAs and Wild Land areas.

Topic	Favourable scenario (Green)	Less Favourable scenario (Amber)	Unfavourable scenario (Red)
sites – National Scenic Area (NSA), Wild Land Area			
Potential to affect locally designated sensitive landscape areas	<ul style="list-style-type: none"> ▪ Not within proximity to or visible from Special Landscape Areas (SLAs). 	<ul style="list-style-type: none"> ▪ Within proximity to and visible from SLAs. 	<ul style="list-style-type: none"> ▪ Within a SLA.
Landscape character sensitivity to development	<ul style="list-style-type: none"> ▪ Landscape character has notable human influences in the form of development. 	<ul style="list-style-type: none"> ▪ Landscape character has some human influences in the form of development. 	<ul style="list-style-type: none"> ▪ Landscape character exhibits sense of remoteness and is without notable human influences/development.
Visual sensitivity to development	<ul style="list-style-type: none"> ▪ Residential properties beyond 500m of site. ▪ Core paths and public roads with only distant views towards the site. 	<ul style="list-style-type: none"> ▪ Residential properties beyond 250m of substation site. ▪ Core Paths and public roads with partially obscured or moderately distant views towards the site. 	<ul style="list-style-type: none"> ▪ Residential properties within 250m of substation site with or without cumulative effects with other similar development. ▪ Core Paths/LDRs and public roads with open views towards the site.
Physical suitability of site for substation and mitigation	<ul style="list-style-type: none"> ▪ No areas of valued landscape features such as hedgerows, trees, woodland, dry stone walls, consumption dykes on the site would require to be removed; ▪ Land is relatively flat so does not require extensive cut and fill to achieve large, flat site or site can be 	<ul style="list-style-type: none"> ▪ Limited areas of valued landscape features such as hedgerows, trees, woodland, dry stone walls, consumption dykes on the site would require to be removed; ▪ Land is moderately sloping (less than 2.5%) so requires only moderately intrusive cut and fill to achieve large, flat site or site can be readily 	<ul style="list-style-type: none"> ▪ Extensive areas of valued landscape features such as hedgerows, trees, woodland, dry stone walls, consumption dykes on the site would require to be removed. ▪ Sloping/undulating land (greater than 2.5%) requires extensive cut and fill to achieve large, flat site. ▪ Insufficient land to achieve gently sloping landform changes and landscape mitigation.

Topic	Favourable scenario (Green)	Less Favourable scenario (Amber)	Unfavourable scenario (Red)
	<p>readily concealed from sensitive receptors by use of earthworks;</p> <ul style="list-style-type: none"> ▪ Sufficient land to achieve gently sloping landform changes and landscape and visual mitigation and ▪ Land is not overlooked by sensitive receptors and there are opportunities within intervening land to screen views. 	<p>concealed from sensitive receptors by use of earthworks;</p> <ul style="list-style-type: none"> ▪ Sufficient land to achieve landform changes with a maximum of 1 in 3 slopes (to allow planting and maintenance) and some landscape and visual mitigation; and ▪ Land is overlooked by a small number of sensitive receptors and there are opportunities within intervening land to screen views. 	<ul style="list-style-type: none"> ▪ Land is overlooked by sensitive receptors with limited opportunity within intervening land to screen views.
Hydrology			
Proximity to areas of flood risk	<ul style="list-style-type: none"> ▪ No flood risk or within an area of low likelihood of flooding 	<ul style="list-style-type: none"> ▪ Within an area of low likelihood of flooding 	<ul style="list-style-type: none"> ▪ Within an area of medium to high likelihood of flooding
Proximity to watercourse	<ul style="list-style-type: none"> ▪ >15m from watercourse 	<ul style="list-style-type: none"> ▪ 10-15m from watercourse 	<ul style="list-style-type: none"> ▪ <10m from watercourse – particular issue where site intersects watercourse
Proximity to private water supplies	<ul style="list-style-type: none"> ▪ 0 – 5 Private Water Supplies (PWS) within 500m of site 	<ul style="list-style-type: none"> ▪ 5 – 10 PWS within 500m of site 	<ul style="list-style-type: none"> ▪ >10 PWS within 500m of site
Geology, Soils and Land Use			

Topic	Favourable scenario (Green)	Less Favourable scenario (Amber)	Unfavourable scenario (Red)
Potential for impacts on Geological Conservation Review Sites	<ul style="list-style-type: none"> The site is >500m from a Geological Conservation Review (GCR) Site. 	<ul style="list-style-type: none"> The site is <500m from a GCR Site. 	<ul style="list-style-type: none"> Within a GCR Site.
Potential impact on deep peat and priority peatland.	<ul style="list-style-type: none"> Not within an area of peatland. 	<ul style="list-style-type: none"> Class 3 to Class 5 peatland. 	<ul style="list-style-type: none"> In an area of Class 1 or Class 2 priority peatland (James Hutton Institute soil map) or All of site or majority of site is Class 3 to 5 peatland and is connected to a larger peatland area which includes priority peatland Classes 1 or 2 or British Geological Society geological maps show significant peat
Land Capability for Agriculture	<ul style="list-style-type: none"> Land Capability for Agriculture (LCA) grade 5.1 and above. (Improved Grassland or Rough Grazing) 	<ul style="list-style-type: none"> LCA grade 3.2 to 4.2. (Mixed Agriculture) 	<ul style="list-style-type: none"> LCA grade 1, 2 and 3.1 (Arable Agriculture)
Earthworks, Materials and Waste	<ul style="list-style-type: none"> Ground Conditions favourable for development and engineering properties of soils anticipated to be generally suitable for reuse on site; and Example: glacial till, granular deposits. 	<ul style="list-style-type: none"> Ground conditions less favourable for development and engineering properties of soils may be poor and of limited potential for reuse on site; and Example: alluvium, glaciolacustrine. 	<ul style="list-style-type: none"> Ground conditions unfavourable for development, likely resulting in complex foundation/substructure design, or soils which may have poor engineering properties and be difficult to reuse on site; and Example: peat soils.
Contaminated Land			

Topic	Favourable scenario (Green)	Less Favourable scenario (Amber)	Unfavourable scenario (Red)
Potential for constraints or adverse impacts to arise from ground contamination	<ul style="list-style-type: none"> Greenfield agricultural site with no historic development 	<ul style="list-style-type: none"> Current or historic activities on site with potential for some minor or localised contamination (examples: gravel extraction, agricultural, mill, railway lines) 	<ul style="list-style-type: none"> Current or historic activities on site with potential for significant contamination (examples: landfill, gas works, heavy industry, military activity)
Cultural Heritage			
Proximity to National Designations (SMs, Category, Registered Park and Gardens, A Listed Buildings)	<ul style="list-style-type: none"> The site is >500m from National Designations 	<ul style="list-style-type: none"> The site is <500m from National Designations 	<ul style="list-style-type: none"> The site lies within National Designations
Proximity to Regional and Local Designations (Conservation areas, Category B and C Listed Buildings)	<ul style="list-style-type: none"> The site is >500m from Regional and Local Designations 	<ul style="list-style-type: none"> The site is <500m from Regional and Local Designations 	<ul style="list-style-type: none"> The site lies within Regional and Local Designations
Site Access			
Proximity to road network	<ul style="list-style-type: none"> The site is within 50m to the existing road network (minor roads) 	<ul style="list-style-type: none"> The site is >100m from existing road network (minor roads) 	<ul style="list-style-type: none"> The site is >500m from existing road network (minor roads)
Watercourse crossing	<ul style="list-style-type: none"> No requirement to cross watercourse as part of site access 	<ul style="list-style-type: none"> Potential for watercourse crossing requirement as part of site access 	<ul style="list-style-type: none"> Requirement to cross watercourse as part of site access

Topic	Favourable scenario (Green)	Less Favourable scenario (Amber)	Unfavourable scenario (Red)
Infrastructure Impact			
Impact to existing infrastructure (requirement to reroute infrastructure / reroute roads/tracks)	<ul style="list-style-type: none"> ▪ No potential for existing infrastructure to be impacted, rerouted or diverted 	<ul style="list-style-type: none"> ▪ Potential for existing infrastructure to be impacted, rerouted or diverted 	<ul style="list-style-type: none"> ▪ Requirement to reroute or divert existing infrastructure
Community			
Residential and Commercial Properties	<ul style="list-style-type: none"> ▪ No residential or commercial properties within 250m 	<ul style="list-style-type: none"> ▪ Residential or commercial properties located within close proximity (<250m) 	<ul style="list-style-type: none"> ▪ Residential or commercial properties within 50m
Core Paths/Recreational routes	<ul style="list-style-type: none"> ▪ No Core Paths / Recreational Routes within 250m 	<ul style="list-style-type: none"> ▪ Core Paths / Recreational Routes in close proximity (<250m) or crossing site 	<ul style="list-style-type: none"> ▪ Not applicable
Planning			
Planning	<ul style="list-style-type: none"> ▪ No conflict with permitted planning applications; and ▪ No conflict with adopted/proposed planning allocations. 	<ul style="list-style-type: none"> ▪ Potential conflict with permitted planning applications; ▪ Potential conflict with adopted/proposed planning allocations. 	<ul style="list-style-type: none"> ▪ Direct conflict with permitted planning applications; and ▪ Direct conflict with adopted/proposed planning allocations.

2 References

¹ Scottish Government (2023) 'National Planning Framework 4'. Available at: <https://www.gov.scot/publications/national-planning-framework-4/> (Accessed 24/09/2024).

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