

# **BERWICK BANK WIND FARM ONSHORE ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

Appendix 4.1: Site Selection Technical Reports



		Sensitivity to proposed development	3 Magnitude of impact	2 Magnitude of impact	1 Magnitude of impact	BB OPTION 1 Skateraw Substation (Substation 8)	Risk Scoring	BB OPTION 3 EDF Substation	Risk Scoring	
Natural Heritage	Designations	International, European or National Designations (e.g. SAC, Firth of Forth SPA, RAMSAR, National Parks, SSSI, Ancient Woodland)	3	Permanent, unmitigable loss with potential for significant effect noted in scoping and / or Objection through SOR	Permanent, unmitigable loss or temporary mitigatable loss, but potentially not a significant effect noted in scoping and no objection through the SOR	Temporary but mitigatable loss / No loss or impact	No loss or unmitigatable impact on designated habitats. Species are addressed seperately.	3	Substation footprint would overlap with the historical landfill area, which lies directly adjacent the SSSI. Potential for direct and possible significant impacts on the SSSI site., particularly if the landfill was destabilised, or hazardous substances released or through landslip.	6
		Regional designations (e.g. Local Nature Reserves, Wildlife Sites, RIGS)	2	Permanent, unmitigable loss with potential for significant effect noted in scoping and / or Objection through SOR	Permanent, unmitigable loss or temporary mitigatable loss, but potentially not a significant effect noted in scoping and no objection through the SOR	Temporary but mitigatable loss / No loss or impact	The SOR notes that Local Biodiversity sites within the study are should also be considered in the EIA. Specifically, the Bilsdean Coast Local Biodiversity Site, Thornton Glen Wildlife Trust Reserve, and the Dryburn Valley Local Biodiversity Site. Substation: No loss or unmitigatable impact.	2	The SOR notes that Local Biodiversity sites within the study are should also be considered in the EIA. Specifically, the Bilsdean Coast Local Biodiversity Site, Thornton Glen Wildlife Trust Reserve, and the Dryburn Valley Local Biodiversity Site. No loss or unmitigatable impact.	2
	Protected Species	European Protected Species (EPS)	3	Permanent, unmitigable loss with potential for significant effect noted in scoping and / or Objection through SOR	Permanent, unmitigable loss or temporary mitigatable loss, but potentially not a significant effect noted in scoping and no objection through the SOR	Temporary but mitigatable loss / No loss or impact	The area has potential for bats and otters which are EPS. The ecology surveys (2020 - 2021) will feed back relevant ecological constraints. Any impacts will be assessed and mitigation will be proposed. Impacts are anticipated to be temporary.	3	The area has potential for bats and otters which are EPS. The ongoing ecology surveys (2020 - 2021) will feed back relevant ecological constraints. Any impacts will be assessed and mitigation will be proposed. Impacts are anticipated to be temporary.	3
		UK Biodiversity Action Plan (BAP) species (Red/Amber List)	3	Permanent, unmitigable loss with potential for significant effect noted in scoping and / or Objection through SOR	Permanent, unmitigable loss or temporary mitigatable loss, but potentially not a significant effect noted in scoping and no objection through the SOR	Temporary but mitigatable loss / No loss or impact	East Lothian LBAP species that have the potential to be present comprise Badgers, bats, otters and birds. The ongoing ecology surveys (2020 - 2021) will feed back relevant ecological constraints. Any impacts will be assessed and mitigation will be proposed. Impacts are anticipated to be temporary.	3	East Lothian LBAP species that have the potential to be present comprise Badgers, bats, otters and birds, including coastal bird species such as waders, given the proximity to the shoreline. The ongoing ecology surveys (2020 - 2021) will feed back relevant ecological constraints. Any impacts will be assessed and mitigation will be proposed. Impacts are anticipated to be temporary.	3
	Habitats	Annex 1 Habitats, UKBAP Habitats	3	Permanent, unmitigable loss with potential for significant effect noted in scoping and / or objection through SOR	Permanent, unmitigable loss or temporary mitigatable loss, but potentially not a significant effect noted in scoping and no objection through the SOR	Temporary but mitigatable loss / No loss or impact	No Annex 1 or BAP habitat identified. All low ecological value habitat. Dominated by agriculture.	3	No Annex 1 or BAP habitat identified. All low ecological value habitat. Site is entirely agricultural.	3
		Groundwater Dependent Terrestrial Ecosystems (GWDTE)	2	Where an option is likely to compromise the integrity of known examples of GWDTE (e.g. excavation of deep peat likely to affect GWDTE).	Where an option may compromise the integrity of known examples of GWDTE e.g. by crossing the edge or being close to them	Where an option is unlikely to compromise the integrity of GWDTE	The SOR notes that the area is not known for peatlands or wetlands, therefore no significant issues with GWDTEs are anticipated. Also, RPS high level visual inspection did not identify any GWDTE habitats.	2	The SOR notes that the area is not known for peatlands or wetlands, therefore no significant issues with GWDTE are anticipated.	2

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	Ornithology	Schedule 1 Birds	3	Permanent, unmitigable loss with potential for significant effect noted in scoping and / or Objection through SOR	Permanent, unmitigable loss or temporary mitigatable loss, but potentially not a significant effect noted in scoping and no objection through the SOR	Temporary but mitigatable loss / No loss or impact	No loss of habitat within designated sites used by Schedule 1 birds given the distance between these and the principal feeding location for birds that use the SPAs and the availability of alternative feeding / roosting locations in the immediate surroundings. However, potential for species supported by the above SPAs to be within the vicinity, and therefore potential for disturbance of these species.	3	No loss of habitat within designated sites used by Schedule 1 birds given the distance between these and the principal feeding location for birds that use the SPAs and the availability of alternative feeding / roosting locations in the immediate surroundings. However, potential for species supported by the above SPAs to be within the vicinity, and therefore potential for disturbance of these species.	3
		Birds of Conservation Concern (BoCC)	2	Permanent, unmitigable loss with potential for significant effect noted in scoping and / or Objection through SOR	Permanent, unmitigable loss or temporary mitigatable loss, but potentially not a significant effect noted in scoping and no objection through the SOR	Temporary but mitigatable loss / No loss or impact	As above	3	As above	3
	Hydrology/ geology	Aquifer providing regional resources e.g. Abstractions for small public or private water supply (PWS)  Surface waters/aquatic and marine environment	2	Where a construction activity would take place within 50 m of a surface water resource or 250m of a PWS; or might disrupt groundwater or surface water availability and/or quality for a user within 50m or where construction activity is located within an area with a High risk of flooding (as defined by SEPA FRM)	Where a construction activity would take place within 100m of a surface water resource or 500m of a PW supply or Where an option may compromise quality and/or quantity of surface or groundwater of local importance or would require de-watering of construction activities	Where no construction activity would take place within 100m of a surface water resource or 500m of a PW supply  Where an option is unlikely to result in water flow pathway(s) to surface and groundwaters waters.	<b>Flood Risk:</b> Considered to be low, given absence of any significant watercourse- nearest being an unnamed burn approx. 50 m to the north. Flooding from surface water drainage can be addressed through design. And mitigation applied to protect the minor unnamed watercourse during construction. <b>Hydrogeology:</b> Groundwater is situated within Torness coastal aquifer. The aquifer is classified as Good status (SEPA, 2020). Disturbance of the landfill could release hazardous substances into the underlying aquifer or to the sea/SSSI adjacent. <b>PWS:</b> The Drinking Water Quality Regulator for Scotland database does not identify any PWS in close proximity to the substation location.	3	<b>Flood Risk:</b> Review of SEPA's online Strategic Indicative Flood Maps shows that there are few minor localised areas with potential for surface water flooding. The nearest watercourse is the Dry Burn over 500 m to the north-west. There is a risk of subsidence on the cliff which borders the SSSI. There is some potential for coastal flooding with mean high water spring less 200 m from the proposed substation location. A flood risk assessment will be completed in support of the EIA and final engineering design. <b>Hydrogeology:</b> Groundwater beneath the site is situated within Torness coastal aquifer. The aquifer is classified as Good status (SEPA, 2018) and is a moderately productive aquifer (SR, 2020). Disturbance of the landfill could release hazardous substances into the underlying aquifer or to the sea/SSSI adjacent. <b>PWS:</b> The Drinking Water Quality Regulator for Scotland database does not identify any PWS within close proximity to the substation location.	6
Cultural Heritage	Designations	World Heritage Sites (WHS), Scheduled Monuments (SM), Category A Listed Buildings  Inventory Gardens and Designed Landscapes (GDL),  Inventory Battlefields.	3	Permanent, unmitigable loss with potential for significant effect noted in scoping and / or objection through SOR	Permanent, unmitigable loss or temporary mitigatable loss, but potentially not a significant effect noted in scoping and no objection through the SOR	Temporary but mitigatable loss / No loss or objection through SOR	SM (SM4038 - Dryburn Bridge, enclosure) approximately 450m north of the SS.	3	No nationally designated Heritage assets are likely to receive any significant effect on their settings.	3
		Historic Environment Record (HERs)	1	Permanent, unmitigable loss with potential for significant effect noted in scoping and / or objection through SOR	Permanent, unmitigable loss or temporary mitigatable loss, but potentially not a significant effect noted in scoping and no objection through the SOR	Temporary but mitigatable loss / No loss or impact / No objection through SOR	No known archaeological sites intersect with the SS location.	1	One HER site would need to be removed to allow construction of the substation.	3
	Cultural Heritage Assets	Category B and C Listed buildings, Conservation Areas	2	Permanent, unmitigable loss with potential for significant effect noted in scoping and / or objection through SOR	Permanent, unmitigable loss or temporary mitigatable loss, but potentially not a significant effect noted in scoping and no objection through the SOR	Temporary but mitigatable loss / No loss or impact / No objection through SOR	A potential for an effect on the setting of Category B Listed Skateraw Farmhouse (LB7706), is approximately 400m north of SS8. Innerwick Conservation Area is located approx. 440 m south west of SS8.	2	There would be an impact on the setting of Category B Skateraw Limekiln (LB7707) which is approximately 60m north of EDF SS. There is potential for an effect on the setting of Category B Listed Building Skateraw Farmhouse (LB7706), is approximately 390m west of EDF SS	4
People	Proximity to dwellings and NSRs	Residential Properties and other sensitive receptors (e.g. schools, hospitals etc)	2	<100m very high 100 – 250m high	250 – 500m medium	>500m low	Properties within 250-500m with the potential for noise impacts. Mitigation is likely to be required to achieve noise limits.	4	Properties within 250-500m with the potential for noise impacts. Mitigation is likely to be required to achieve noise limits.	4

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Land	Land ownership and purchase	No. of landowners, Compulsory Purchase Orders (CPO)	2	CPO Only	Negotiating position plus CPO if necessary	Agreement in principal achieved.	Single landowner willing to sell. CPO could be used if necessary but considered unlikely at this time.	4	EDF currently willing to sell, but their position has not been finalised. CPO could be used, but would more complex, given OfGEM rules.	4
Landscape and Visual	Designations	National or Regional Designations: National Parks, National Scenic Areas, Inventory Gardens and Designed Landscape (GDL), Wild Land Area.  Local Designations including: Regional Scenic Areas, and  ELC Special Landscape Areas (SLA)	2	Permanent, unmitigable loss with potential for significant effect noted in scoping and / or objection through SOR	Permanent, unmitigable loss or temporary mitigatable loss, but potentially not a significant effect noted in scoping and no objection through the SOR	Temporary but mitigatable loss / No loss or impact	SS8 is unlikely to compromise the special qualities of a national or regional designation. The closest designation is the Thorntonloch to Dunglass Coast SLA situated approximately 500m to the northeast of SS8. Also the Monynut to Black Castle SLA is in close proximity to SS8, approximately 420m to the southeast. It is unlikely that SS8 would compromise the special qualities of the SLAs. SS8 may have potential intervisibility with the a small part of the SLA around Torness Power Station.	2	EDF substation is unlikely to compromise the special qualities of a national or regional designation.. EDF would be within the SLA designation of Thorntonloch to Dunglass Coast and would border the designation of s of Dunbar to Barns Ness Coast. EDF SS could compromise the special qualities of these SLAs.	4
	Landscape Character	Landscape character as defined in published character assessments (e.g. SNH national assessments; ELC SPG)	2	Permanent, unmitigable loss with potential for significant effect noted in scoping and / or objection through SOR	Permanent, unmitigable loss or temporary mitigatable loss, but potentially not a significant effect noted in scoping and no objection through the SOR	Temporary but mitigatable loss / No loss or impact	This option is located within the Landscape Character Type - Coastal Margins – Innerwick Coast. The new substation will bring a permanent change to the immediate landscape. This will be assessed in detail as part of any EIA. This is a high consent risk.	6	This option is located within the Landscape Character Type - Coastal Margins – Innerwick Coast. The new substation will bring a permanent change to the immediate landscape. This will be assessed in detail as part of any EIA. This is a high consent risk.	6
	Visual	Settlements and residential properties, key transportation and recreational routes utilised by tourists and visitors to an area, vantage points and tourist destinations from where views and landscape appreciation is important.	3	Permanent, unmitigable loss with potential for significant effect noted in scoping and / or objection through SOR	Permanent, unmitigable loss or temporary mitigatable loss, but potentially not a significant effect noted in scoping and no objection through the SOR	Temporary but mitigatable loss / No loss or impact	Potential for significant effects on nearby receptors. Including residents at Innerwick and Skateraw.	9	Potential for significant effects on nearby receptors. Including residents at Innerwick and Skateraw.	6
Land Use	Agriculture	Agricultural Land Classification (ALC)	1	Loss to Grade 1 Agricultural Land	Loss to Grade 2-3 Agricultural Land	No loss and / or Loss to Grade 4-5 Agricultural Land	Substation would have the potential to cause permanent unmitigable loss of Grade 2 ALC agricultural land.	2	Substation would have the potential to cause permanent unmitigable loss of Grade 3.1 ALC agricultural land.	2
	Forestry	Commercial Forestry		Where an option passes through an area of commercial forestry and is likely to result in sufficient loss of woodland to tree-felling/wayleave clearance activities so as to compromise the commercial viability of the forestry operation.	Where an option crosses the edge of or passes close to commercial forestry where interaction with the forestry operations may compromise the commercial returns from the forestry.	Where an option avoids interaction with areas of commercial forestry	Substation avoid areas of commercial forestry.	0	Substation avoid areas of commercial forestry.	0
	Recreation	Public Footpaths, National Cycle Routes, Tourist Area, Beaches, etc	1	Permanent, unmitigable loss with potential for significant effect noted in scoping and / or objection through SOR	Permanent, unmitigable loss or temporary mitigatable loss, but potentially not a significant effect noted in scoping and no objection through the SOR	Where there is a low concentration (relative to other substation locations) of recreational facilities and resources in the vicinity of the substation location.	No interaction with public footpaths.	1	Substation would be adjacent the John Muir Way Core Path and increase the industrial presence and visual intrusion into the walkers experience. A National Cycle Path lies 65m to the south of the EDF SS and an ELC Core Path (Route 310) lies 180m to the south. The SS has potential to increase the industrial presence and visual intrusion to the users.	2
		Commercial Highland Sports - fishing, stalking, shooting etc.	1	Permanent, unmitigable loss with potential for significant effect noted in scoping and / or objection through SOR	Permanent, unmitigable loss or temporary mitigatable loss, but potentially not a significant effect noted in scoping and no objection through the SOR	Temporary but mitigatable loss / No loss or impact	No differentiation - No records of use of the area for fishing/stalking/shooting have been identified.	0	No differentiation - No records of use of the area for fishing/stalking/shooting have been identified.	0

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	Other	Industrial land, transportation routes, grid connection infrastructure, mineshaft, quarry, historical land uses etc.	2	Permanent, unmitigable loss with potential for significant effect noted in scoping and / or objection through SOR	Permanent, unmitigable loss or temporary mitigatable loss, but potentially not a significant effect noted in scoping and no objection through the SOR	Temporary but mitigatable loss / No loss or impact	All other constraints including the ECML, A1, quarry areas, underground utilities, UXO risk, mineshaft risk have been considered / avoided for SS during site selection and refinement.	2	Located beside Torness Power Station - there is a risk for both substation and powerplant should an emergency occur ((e.g. fire, explosion, etc). A separation buffer may be required to maintain nuclear safety as well as to ensure protection of the substation. Landfill, unknown material that presents a risk to new substation infrastructure - ground investigation would be necessary to quantify any risk.  All other constraints including the ECML, A1, quarry areas have been considered. Other aspects such as underground utilities, UXO risk, mineshaft risk would need to be considered further if this option was taken forward.	4
	Access and Road Users	A1, local roads	1	Permanent, unmitigable loss with potential for significant effect noted in scoping and / or objection through SOR	Permanent, unmitigable loss or temporary mitigatable loss, but potentially not a significant effect noted in scoping and no objection through the SOR	Temporary but mitigatable loss / No loss or impact	Landfall, Substation: Disruption around access is anticipated to be temporary and mitigatable. Draft access routes have been developed and presented to Transport Scotland, BEAR Scotland and ELC Transport Planning for early feedback (Feb 2021)	1	The majority of the impacts on the trunk and access roads will be temporary and mitigatable. With the exception of the local access road to Torness Nuclear Power Station. To accommodate the substation, this road will need to be removed and rebuilt to the south east. Some disruption is anticipated. The new road will need to be constructed to a standard agreed with EDF as the road is used to move fuel flasks for the power station.	2
Planning	Policy	National/Regional/Local Planning Policy	2	Where an option is likely to be contrary with national, regional or local planning policy	Where an option as proposed may be contrary with national, regional or local planning policy	Where an option is brought forward in full compliance with national, regional or local applicable planning policy.	Subject to the acceptable environmental impacts being identified through the comprehensive EIA process, the sites are anticipated to be compliant with national and regional planning policy, although development in the rural setting may be a concern in respect to local planning policy.	4	In terms of local planning policy, co-location of infrastructure is encouraged; substation proposals must consider whether co-location is possible and if not, provide comprehensive justification. Beyond, subject to acceptable environmental impacts being identified through the EIA process, the site is otherwise likely consistent with national, regional and potentially local planning policy.	2
Initial stakeholder / regulator preference	Initial stakeholder / regulator preference	Consultees, virtual exhibition, other stakeholders	2	Objection through stakeholder/consultee engagement and informal virtual public exhibition	Concerns but not an objection through stakeholder/consultee engagement and informal virtual public exhibition	No concerns or objection through stakeholder/consultee engagement and informal virtual public exhibition	East Lothian Council have not stated a preference between the substation options, other than to request consideration of locating a substation north of the A1 to located infrastructure close to Torness Power Station. November 2020 virtual exhibition - comments through on the visual impact from the SS8 option, due to the potential visibility from Innerwick.	4	East Lothian Council has requested evaluation of land north of the A1, including land adjacent Torness Power Station. This option has not been subject to consultation at the date of writing.	2
							<b>Substation 8 score</b>		<b>70 EDF substation score</b>	<b>79</b>