SSEN Transmission

Bingally 400 / 132 kV Substation

Environmental Appraisal

Volume 3

Appendix Q

February 2025

APPENDIX Q IN-COMBINATION CLIMATE CHANGE IMPACT ASSESSMENT

Discipline	Climate hazard	Likelihood of hazard occurring	Likely ICCIs identified	Description of ICCI considering embedded environmental measures/good practice	Likelihood of ICCI occurring	Consequence	Significance of effects
Ornithology	Changes in precipitation (droughts)	Unlikely	Reduction in breeding success for black grouse	Loss of black grouse foraging habitat associated with the Proposed Development could have effects in combination with climate change. Black grouse using the site for foraging could have reduced availability of wetland invertebrates. Compensatory habitat / enhancement measures as part of the wider scheme would restore the natural hydrology of degraded blanket bog. These measures would improve the condition and increase the total area of blanket bog - and therefore promote resilience to climate change impacts.	Very unlikely	Very low	Negligible (Not significant)
Ornithology	Wildfire event	Very unlikely	Reduction in breeding success for black grouse	Loss of black grouse nesting habitat associated with the Proposed Development could have effects in combination with climate change. Potential impacts could include direct mortality to eggs/chicks in nests, changes in feeding opportunities for chicks / adults and reduced suitability in nesting habitat. Compensatory habitat / enhancement measures as part of the wider scheme would overall increase the quality of habitat for nesting black grouse (e.g. through planting of woodland) - and therefore promote resilience to climate change impacts.	Very unlikely	Very low	Negligible (Not significant)
Ecology	Changes in precipitation (droughts)	Unlikely	Habitat degradation of notable habitats (e.g. wetlands, birchwood)	Prolonged hot and dry weather during the construction phase, exacerbated by climate change, could increase the risk of dust generation and deposition, potentially leading to habitat degradation. Dust and particulate production will be minimised as far as reasonably practicable, through measures outlined in the Construction Environmental Management Plan (CEMP), such as dust suppression using water bowsers and appropriate transportation and storage of materials.	Very unlikely	Very low	Negligible (Not significant)
Ecology	Changes in precipitation (flooding) Storm events	Possible	Reduction in breeding success for notable mammal species (i.e. water vole Arvicola amphibius).	Prolonged precipitation during the operational phase, exacerbated by climate change, is likely to increase the risk of flooding and waterlogging, leading to habitat degradation that supports important mammal species. Water voles, in particular, are vulnerable to extreme weather events. Flooding can result in direct mortality as individuals	Unlikely	Very low	Negligible (Not significant)

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				may drown in their burrows during flash floods; however, they are mobile and can temporarily move away from burrows if flooding is not too severe. Embedded mitigation includes water management on-site through Sustainable Urban Drainage Systems (SuDS), which are designed with climate change in mind to minimise flood risk. Water management during the operational phase will follow best practices to reduce flooding in local watercourses.			
Ecology	Changes in precipitation (droughts)	Unlikely	Changes to hydrological conditions resulting in habitat change for notable wetlands (e.g. blanket bog, wet heathland, wet woodland, including groundwater dependent terrestrial ecosystems).	Extended periods of hot and dry weather during the operational phase, exacerbated by climate change, could alter the hydrology of notable wetland habitats, potentially leading to their degradation. Alignment of the access tracks to avoid areas of deep peat as well as embedded mitigation, such as permeable tracks, will help maintain wetland hydrology. In addition, compensatory habitat and enhancement measures, as part of the wider scheme, will aim to restore the natural hydrology of degraded blanket bog. These measures will improve the condition and increase the total area of blanket bog, enhancing the resilience of these habitats to climate change impacts.	Very unlikely	Very low	Negligible (Not significant)
Hydrology	Changes in precipitation (extreme rainfall)	Possible	Contaminants leaking into nearby waterbodies.	Increased precipitation rates during the construction phase, exacerbated by climate change, may lead to higher groundwater levels, increased flows, and surface run-off, raising the risk of contaminants leaking into nearby waterbodies. Consequence will be reduced as far as reasonably possible through the measures defined in the CEMP (e.g. storing contaminants away from waterbodies) and including proposed monitoring. No impacts on waterbodies are anticipated during the operational phase.	Unlikely	Low	Negligible (Not significant)
Hydrology	Changes in precipitation (droughts)	Unlikely	Increased concentration of potential contaminants in surface waterbodies.	Reduced precipitation rates during the construction phase, exacerbated by climate change, may lead to reduced flows and lower groundwater tables, increasing the concentration of potential contaminants in surface waterbodies. Conversely, increased precipitation rates, driven by climate change, could raise groundwater levels and flows, making it more likely for contaminants to spread	Unlikely	Low	Negligible (Not significant)

Discipline	Climate hazard	Likelihood of hazard occurring	Likely ICCIs identified	Description of ICCI considering embedded environmental measures/good practice	Likelihood of ICCI occurring	Consequence	Significance of effects
				quickly and increasing the risk of surface run-off affecting waterbodies. Consequence will be reduced as far as reasonably possible through the measures defined in the CEMP (e.g. storing contaminants away from waterbodies) and including proposed monitoring. No impacts on waterbodies are anticipated during the operational phase.			
Hydrology	Changes in Precipitation (flooding)	Possible	Contaminants to spread quickly into nearby waterbodies.	Increased precipitation rates during the construction phase, exacerbated by climate change, may lead to higher groundwater levels and increased flows, making it more likely for contaminants to spread quickly into nearby waterbodies. There is also an increased risk of surface run-off impacting these waterbodies. Consequence will be reduced as far as reasonably possible through the measures defined in the CEMP (e.g. storing contaminants away from waterbodies) and including proposed monitoring. No impacts on waterbodies are anticipated during the operational phase.	Unlikely	Low	Negligible (Not significant)
Hydrology	Storm event	Possible	Contaminants spreading more quickly into nearby waterbodies.	Increased precipitation rates due to storms during the construction phase, exacerbated by climate change, may lead to higher groundwater levels and increased flows, raising the likelihood of contaminants spreading more quickly into nearby waterbodies. There is also a higher chance of surface run-off affecting these waterbodies. Consequence will be reduced as far as reasonably possible through the measures defined in the CEMP (e.g. storing contaminants away from waterbodies) and including proposed monitoring. No impacts on waterbodies are anticipated during the operational phase	Unlikely	Low	Negligible (Not significant)
Hydrology	Changes in precipitation (droughts)	Unlikely	Higher concentrations of potential contaminants in surface waterbodies.	Reduced precipitation and lower groundwater levels due to drought during the construction stage, exacerbated by climate change, could lead to higher concentrations of potential contaminants in surface waterbodies. Consequence will be reduced as far as reasonably possible through the measures defined in the CEMP (e.g. storing contaminants away from waterbodies) and including proposed monitoring. No impacts on waterbodies are anticipated during the operational phase.	Unlikely	Low	Negligible (Not significant)

Discipline	Climate hazard	Likelihood of hazard occurring	Likely ICCIs identified	Description of ICCI considering embedded environmental measures/good practice	Likelihood of ICCI occurring	Consequence	Significance of effects
Landscape	Extreme heat	Unlikely	Reduced growth rate of plant and/ or plant failure.	The increased occurrence of heatwaves, exacerbated by climate change, can reduce the growth rates of plant material and increase the likelihood of plant failure. Landscape species to be selected and maintained in accordance with the guidance set out within the Landscape and Habitat Management Plan (LHMP). During the establishment period planting may require increased irrigation.	Possible	Low	Minor (not significant)
Landscape	Changes in precipitation (droughts)	Unlikely	Reduced growth rate of plant and/or plant failure.	The increased occurrence of droughts, exacerbated by climate change, can reduce the growth rates of plant material and increase the likelihood of plant failure. Planting to be regularly monitored and maintained in accordance with guidance set out within the LHMP. During the establishment period planting may require increased irrigation. If vegetation does not establish the Proposed Development may not be visually screened as required.	Possible	Low	Minor (not significant)
Geology and Soils – Contamination	Changes in precipitation (flooding)	Possible	Potential migration of contaminants driven by increased precipitation and heightened flood risk.	Mitigation measures used during construction include investigation and removal of any identified contamination encountered. The design incorporates hardstanding to reduce water infiltration during operation, thereby minimising the mobilisation and migration of any residual contamination.	Possible	Low	Minor (Not Significant)
Geology and Soils – Contamination	Wildfires	Unlikely	Introduction of potential contaminants through fire-fighting methods, with their mobilisation and migration exacerbated by the loss of vegetation and increased infiltration rates.	Mitigation measures used during construction include vigilance against potential for wildfires starting/ spreading. The design incorporates hardstanding which will reduce the impact of wildfires.	Unlikely	Low	Negligible (Not Significant)