

**SSEN Transmission**  
**Bingally 400 / 132 kV Substation**  
**Environmental Appraisal**  
**Volume 3**  
**Appendix P**

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## APPENDIX P: CLIMATE CHANGE RISK ASSESSMENT

1.1.1 Appendix P presents the findings of the Climate Change Resilience Assessment (CCRA). **The assumptions**, methodology, and significance criteria underpinning the CCRA are outlined in **Volume 1, Chapter 14 Climate Change**.

1.1.2 Table 1 outlines the identified climate risks along with the planned controls and adaptation measures for the construction phase of the Proposed Development, while **Table 2** focuses on the climate risks and corresponding controls and adaptation measures for the operational phase. The assumptions, methodology, and significance criteria underpinning the CCRA are outlined in **Volume 1, Chapter 14 Climate Change**.

**Table 1: CCRA: Construction**

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
Extreme heat	<p>Extreme heat days can cause ambient temperatures to rise above optimal design temperatures for construction equipment.</p> <p>This can lead to the overheating of construction equipment, resulting in delays to the construction programme, additional repairs and project costs and/or increased safety risks.</p>	Construction Equipment & the Site.	<p>A high-level risk assessment to identify severe weather impacts on the construction process will be produced by the Principal Contractor to inform required mitigations. Any receptors and/or construction-related operations and activities potentially sensitive to severe weather events will be considered in the assessment.</p> <p>The Principal Contractor will monitor weather forecasts to inform short to medium-term programme management, and plan works accordingly. Mitigation measures will be implemented to protect workers and resources from extreme weather conditions. Health and safety plans will be implemented to consider all necessary and appropriate measures to manage severe weather events.</p> <p>Construction materials and equipment with superior properties that offer increased tolerance to fluctuating temperatures, heavy precipitation and other extreme weather events, such as storms, will be used where feasible.</p>	Unlikely	Insignificant	Low (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
Extreme heat	Extreme heat events may cause health and safety impacts on the construction workforce, which could lead to sunstroke, dehydration, or other illnesses.	Human health & safety e.g. staff, visitors	<p>The Principal Contractor will monitor weather forecasts to inform short to medium-term programme management, and plan works accordingly. Mitigation measures will be put in place to protect workers and resources from any extreme weather conditions. Supportive measures for working in high temperatures might include the provision of sunblock, sun hats and lightweight clothing, refreshment breaks and cooled water supply.</p> <p>Health and safety plans will be implemented, and all necessary and appropriate measures to manage severe weather events will be considered.</p> <p>All outdoor construction workers to have access to indoor facilities, air conditioning, breaks in shaded areas and water breaks.</p> <p>Cease outdoor and nonessential work if working conditions are too dangerous, which could result in injury to workers and damage to equipment.</p> <p>Adequate cooling and ventilation systems will be included in the design of temporary office buildings and construction worker facilities.</p>	Unlikely	Insignificant	Low (Not Significant)
Changes in precipitation (extreme rainfall)	Extreme rainfall events could create unsafe working conditions for the construction workforce, leading to potential delays in the construction schedule.	Human health & safety e.g. staff, visitors	<p>The Principal Contractor will monitor weather forecasts and Scottish Environmental Protection Agency (SEPA) flood alerts to plan works to manage workers and resources in extreme weather conditions.</p> <p>Health and safety plans will include comprehensive measures to address severe weather events. This includes providing appropriate gear such as waterproof clothing, footwear, and any other necessary equipment for worker safety in challenging weather conditions.</p>	Moderate	Insignificant	Low (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
			<p>Build flexibility into the construction timeline, accounting for potential weather-related disruptions. This could include prioritising critical tasks during dry weather periods or arranging backup work for wet days.</p> <p>Welfare areas to be assigned to higher ground levels.</p>			
Changes in precipitation (extreme rainfall)	<p>Extreme rainfall events can cause surface water flooding at the construction site, which may cause disruption and damage to the site (including construction equipment) and power supply sources.</p> <p>Flooding on the site can damage critical infrastructure, increasing costs and leading to delays in the construction programme.</p>	Construction equipment & the Site	<p>The Principal Contractor will monitor weather forecasts and SEPA flood alerts to plan works accordingly to manage workers and resources in extreme weather conditions such as storms and flooding.</p> <p>Health and safety plans will be implemented, and necessary and appropriate measures to manage severe weather events will be considered.</p> <p>Critical construction equipment is to be stored at higher ground levels.</p> <p>Construction equipment is to be inspected after periods of extreme rainfall.</p> <p>Welfare areas are to be assigned to higher ground levels.</p>	Moderate	Insignificant	Low (Not Significant)
Changes in precipitation (extreme rainfall)	Extreme rainfall events can cause surface water flooding on the access track. This flooding could affect the access track to the construction site, potentially leading to	Access track	<p>The Principal Contractor will monitor weather forecasts and SEPA flood alerts to plan works accordingly to manage workers and resources in extreme weather conditions such as extreme rainfall.</p> <p>Health and safety plans will be implemented, and all necessary and appropriate measures to manage severe weather events will be considered.</p>	Moderate	Insignificant	Low (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
	construction delays and supply chain disruptions.		Incorporate flexibility into the construction timeline to account for potential weather-related supply chain disruptions. This may involve scheduling critical deliveries during dry weather and organising alternative tasks or backup work for periods of wet weather.			
Changes in precipitation (extreme rainfall)	Extreme rainfall events can cause surface water flooding in the temporary compound areas. Flood events could damage stockpile materials, stored construction plant, and temporary office and welfare compounds, leading to construction delays. It could also result in asset damage, plant downtime, and the need for machinery repairs or replacements.	Temporary construction compound	<p>The Principal Contractor will monitor weather forecasts and SEPA flood alerts to plan works accordingly to manage workers and resources in extreme weather conditions such as extreme rainfall.</p> <p>Health and safety plans will be implemented, and all necessary and appropriate measures to manage severe weather events will be considered.</p> <p>Critical construction equipment to be stored at higher ground levels.</p> <p>Construction equipment to be inspected after periods of extreme rainfall.</p> <p>Welfare areas are to be assigned to higher ground levels.</p>	Moderate	Insignificant	Low (Not significant)
Wildfire event	Increased heatwaves and dry periods increase the potential for wildfires, which could result in considerable damage to construction equipment and the construction site itself.	Construction equipment & the Site	<p>The Principal Contractor will actively monitor weather forecasts to anticipate extreme temperatures that could elevate the risk of forest fires. This proactive approach will enable early preparation and the implementation of contingency measures to minimise disruptions to construction activities.</p> <p>Comprehensive health and safety plans should be developed, including all necessary measures to manage wildfire risks effectively. This includes storing flammable</p>	Unlikely	Insignificant	Low (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
	<p>This could result in asset damage, plant downtime and machinery repair/ replacement.</p> <p>In addition, this could be exacerbated by any combustible materials at the site. e.g. generator fuel.</p>		<p>materials, such as fuels and chemicals, in designated fire-resistant containers and keeping them at a safe distance from scrub, long vegetation and forested areas during long periods of dry weather.</p> <p>Local fire risk levels will be monitored during dry periods and fire watch protocols will be implemented, especially when working near scrub, long vegetation or forests in periods of drought.</p> <p>Fire breaks will be implemented around the construction site by clearing strips of land where no vegetation grows. These act as barriers to prevent a forest fire from reaching the construction zone.</p> <p>Where possible, use fire-resistant building materials during construction, especially for temporary structures, fences, and storage areas.</p>			
Wildfire event	<p>The increased frequency of heatwaves and dry periods raises the risk of wildfires, potentially resulting in injury or fatality to construction workers.</p> <p>This could be exacerbated by any combustible materials at the site. e.g. generator fuel.</p>	Human health & safety, e.g. staff, visitors	<p>The Principal Contractor will actively monitor weather forecasts to anticipate extreme temperatures that may increase the risk of forest fires. This will allow for early preparation and implementation of contingency measures to minimise disruptions to construction activities.</p> <p>Comprehensive health and safety plans should be established, incorporating all necessary measures to effectively manage wildfire events, including evacuation procedures, to ensure the safety of personnel.</p> <p>Flammable materials, such as fuels and chemicals, should be stored in designated fire-resistant containers</p>	Unlikely	Insignificant	Low (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
			<p>and kept at a safe distance from scrub, long vegetation and forested areas.</p> <p>To minimise this risk, a Wildfire Risk Assessment will be developed with a suitable buffer zone around the substation.</p> <p>Monitor local fire risk levels during dry periods and implement fire watch protocols, especially when working near scrub, long vegetation or forests in periods of drought.</p> <p>Create fire breaks around the construction site by clearing strips of land where no vegetation grows. These act as barriers to prevent a wildfire from reaching the construction zone.</p> <p>Where possible, use fire-resistant building materials during construction, especially for temporary structures, fences, and storage areas.</p>			
Temperature-related (extreme cold)	Construction workers are at risk of hypothermia due to low temperatures. As a worst-case scenario, this could lead to death.	Human health & safety, e.g. staff, visitors	<p>The Principal Contractor will monitor weather forecasts to inform short- to medium-term programme management and plan works accordingly. Mitigation measures will be implemented to protect workers and resources from extreme weather conditions.</p> <p>Health and safety plans need to be in place, and all measures deemed necessary and appropriate to manage severe weather events must be considered.</p> <p>The Principal Contractor will allow all outdoor construction workers access to indoor facilities with appropriate heating and warm breaks in place.</p>	Moderate	Insignificant	Low (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
			Outdoor and non-essential work will cease if working conditions are too dangerous, which could result in injury to workers and damage to equipment.			
Temperature-related (extreme cold)	<p>Low temperatures can lead to ground areas becoming frozen.</p> <p>This can lead to delays and disruption to construction activities as the areas will need to be de-iced.</p>	Construction equipment & the Site	<p>The Principal Contractor will monitor weather forecasts to inform short to medium-term programme management, and plan works accordingly. Mitigation measures will be implemented to protect workers and resources from extreme weather conditions.</p> <p>Health and safety plans will be implemented, and all necessary and appropriate measures to manage severe weather events will be considered.</p> <p>Construction materials and equipment with superior properties that offer increased tolerance to cold temperatures should be used where feasible.</p>	Moderate	Insignificant	Low (Not Significant)
Storm events	<p>Storm events can create an unsafe environment for construction workers.</p> <p>Workers in outdoor or unstable environments may face increased physical risks during storms, including injuries from falling debris, flooding, or high winds.</p>	Human health & safety, e.g. staff, visitors	<p>Health and safety plans will be implemented to include all necessary and appropriate measures to manage severe weather events, ensuring staff safety and minimising risks to construction operations.</p> <p>The Principal Contractor will allow all outdoor construction workers to have access to indoor facilities with appropriate facilities in place.</p> <p>Outdoor and non-essential work will cease if working conditions are too dangerous, which could result in injury to workers.</p>	Moderate	Insignificant	Low (Not Significant)



Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
Storm events	<p>Storms and severe weather can cause disruption to construction and access to the Site.</p> <p>Impacts include delays and damage to construction materials and machinery. Flooding and blocked roads can also affect material delivery and personnel movement.</p>	Construction equipment & the Site	<p>Health and safety plans will be implemented to consider all necessary and appropriate measures to manage severe weather events.</p> <p>Construction materials with superior properties that offer increased tolerance to fluctuating temperatures, heavy precipitation and other extreme weather events, such as storms, will be used where feasible.</p> <p>Weather forecasts will be monitored so any extreme weather events are prepared in advance and contingency measures can be put in place to minimise disruption to the site.</p> <p>If applicable, undertake regular monitoring of trees and vegetation in the area, pruning as necessary to avoid damage to the construction site or blocking access tracks in the event of a storm with high wind speed.</p>	Moderate	Insignificant	Low (Not Significant)

**Table 2: CCRA: Operation**

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
Extreme temperatures (heat)	Heatwaves result in heat stress for building occupants and outdoor workers, causing health and safety incidents. e.g. sunstroke & dehydration.	Human health & safety, e.g. staff, visitors	<p>The Operator will monitor weather forecasts and plan works accordingly, protecting workers and resources from any extreme weather conditions.</p> <p>Ensure all outdoor workers have access to indoor facilities, air conditioning, breaks in shaded areas and water breaks.</p> <p>Elevate the responsibility for proper enforcement of the heat stress guidelines.</p>	Unlikely	Minor	Low (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
			<p>Cease outdoor and non-essential work if working conditions are too dangerous, which could result in injury to workers and damage to equipment.</p> <p>The substation control room will have sufficient cooling and ventilation systems (HVAC) that can respond to high temperatures, making sure occupants have adequate temperature to prevent discomfort.</p>			
Extreme temperatures (heat)	Prolonged periods of extreme heat and heatwaves can lead to damage to the access track.	Access track	<p>A regular monitoring scheme of all accesses would be initiated to ensure track maintenance.</p> <p>The Operator will monitor weather forecasts and plan works accordingly, protecting workers and resources from any extreme weather conditions.</p> <p>Surfacing shall be bituminous or unbound where appropriate therefore minimising potential damage.</p> <p>Monitor and maintain the access track to prevent potential impacts from extreme heat, which could compromise design standards.</p> <p>Regular maintenance will be carried out to ensure that the paved areas and access tracks are fit for daily operations.</p>	Unlikely	Minor	Low (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
Extreme temperatures (heat)	<p>Prolonged periods of extreme heat and heatwaves can lead to overheating transformers resulting in reduced capacity, reduced design life, increased auxiliary losses and an increased need for maintenance and replacement.</p> <p>This can increase demand for heating, ventilation and air conditioning (HVAC) for indoor areas. This increase in demand can overload transformers, causing tripping and loss of supply if network designs are not adapted to increasing demand.</p>	Substation	<p>The transformers will be designed in line with the Operator standards to operate between +40°C and -25°C.</p> <p>The Operator will monitor weather forecasts and plan works accordingly, protecting workers and resources from any extreme weather conditions.</p> <p>Inspection of vulnerable operational assets will be considered after a hot day.</p> <p>Where suitable, transformers should be coated with a heat-resistant coating that will be resistant to extreme heat, e.g., prolonged heat exposure up to a temperature of 600°C.</p> <p>Inside temperature monitoring may need to be installed.</p>	Unlikely	Minor	Low (Not Significant)
Changes in Precipitation (flooding)	<p>SEPA flood maps indicate small areas at risk of flooding near certain watercourses in the vicinity of the Substation and Access Track. These areas could flood in both a 1-in-200-year</p>	Substation & access track	<p>A flood risk assessment (FRA) and Drainage Impact Assessment (DIA) have been undertaken as part of the planning application to avoid any flood risk in the first instance and have been conducted in line with SEPA guidance.</p> <p>The assessments include the provision of national climate change allowances for rainfall and river flow (and freeboard allowances should also be included). The</p>	Unlikely	Minor	Low (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
	<p>and a 1-in-1000-year event.</p> <p>Extreme rainfall events could result in damage to on-site electrical equipment, leading to power outages and potential equipment failure. Extreme rainfall can also cause groundwater flooding as the water table rises above the ground surface. Substations located on peatland are more vulnerable to ground instability and sinking due to flooding.</p> <p>Such conditions can result in the malfunction of critical components like transformers, switchgear, and circuit breakers, disrupting normal substation operations. This disruption could lead to a loss of substation functionality, affecting the infrastructure and</p>		<p>Operator drainage spec protects critical equipment up to 1:1000+CC+freeboard, with access to operational areas up to 1:200+CC+freeboard. This will minimise flood risk to the substation platform, access track and electrical equipment.</p> <p>All drainage generated within the site will be drained using Sustainable Drainage Systems (SuDS) principles to manage the runoff in a controlled manner per the pre-development condition and will be adhered to during the design with the following:</p> <ul style="list-style-type: none"> <li>• Natural run-off collection and diversion (where required);</li> <li>• Substation platform surface water run-off drainage collection and routing; and</li> <li>• SuDS basins, cut-off drains &amp; ditches for treatment and attenuation.</li> </ul> <p>Additional planting along watercourses, as recommended in the Proposed Development's Biodiversity Net Gain Assessment Report, will enhance water absorption, intercept rainfall, and slow surface water run-off. This increased vegetation will help manage excess rainfall, reducing flood risk and supporting overall site resilience.</p> <p>Enhancing soil cover with vegetation reduces surface run-off, prevents water pollution, and improves groundwater recharge by stabilising soil and filtering contaminants.</p> <p>Implementation of the PMP and peatland restoration surrounding the substation and adjacent area would</p>			

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
	the equipment housed within, ultimately reducing the security of supply.		actively hold and maintain water within the habitat, increasing the adaptability during drought conditions.			
Changes in Precipitation (flooding)	Flooding in a substation poses significant safety hazards, including the risk of electrocution from floodwater carrying electrical currents and the potential for explosions or fires due to short circuits and electrical faults.	Substation	<p>A FRA and DIA have been undertaken as part of the planning application to avoid any flood risk in the first instance and have been conducted in line with SEPA guidance.</p> <p>The assessments include the provision of national climate change allowances for both rainfall and river flow (and freeboard allowances should also be included). The Operator drainage spec protects critical equipment up to 1:1000+CC+freeboard, with access to operational areas up to 1:200+CC+freeboard. All of this will ensure that flood risk to the substation platform, access track and electrical equipment are minimised.</p> <p>All drainage generated within the site will be drained using SuDS principles to manage the runoff in a controlled manner as per the pre-development condition. and will be adhered to during the design with the following:</p> <ul style="list-style-type: none"> <li>• Natural run-off collection and diversion (where required);</li> <li>• Platform surface water run-off drainage collection and routing; and</li> <li>• SuDS basins, cut-off drains &amp; ditches for treatment and attenuation.</li> </ul>	Rare	Moderate	Medium (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
			<p>The substation platform is designed to be free draining, so flooding would be localised to enclosed areas with hardstanding, e.g. bunds and building interiors.</p> <p>The FRA states that surface water runoff generated within the Proposed Development site will be dealt with by a dedicated drainage system designed to appropriate standards and by incorporating SuDS. Additionally, ground levels will be profiled to route runoff around and away from the substation platform.</p>			
Changes in precipitation (droughts)	<p>Prolonged dry conditions can lead to soil shrinkage and subsidence, which may affect the stability of the substation's foundation.</p> <p>Surface infrastructure foundations, e.g. concrete bunds, can be affected by these drought conditions, resulting in cracks occurring from the ground movement, leading to damage and potential leakage of hazardous materials.</p> <p>Droughts can restrict water availability, therefore impacting the substations' cooling systems,</p>	Substation & access track	<p>SuDS has been incorporated into the design. SuDS will include basins to store rainwater for prolonged dry periods, making it available for reuse. This helps ensure that the Proposed Development has access to water for cooling or maintenance purposes and supporting landscaping around the site.</p> <p>Substation platform earthworks design a maximum settlement of 25mm. Due to the granular material of the substation platform, any changes to the surrounding soil structure would result in immediate settlement.</p> <p>Implementation of the Peat Management Plan (PMP) and peatland restoration surrounding the substation and adjacent area would actively hold and maintain water within the habitat, increasing the adaptability during drought conditions.</p>	Unlikely	Minor	Low (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
	making it more challenging to maintain safe operating temperatures for equipment.					
Changes in precipitation (droughts)	Dry and windy conditions during droughts can result in increased dust and debris accumulation on the insulators and other equipment, potentially leading to electrical faults.	Substation	<p>SuDS has been incorporated into the design. SuDS will include basins to store rainwater for prolonged dry periods, making it available for reuse during dry periods. This helps ensure that the Proposed Development has access to water for cooling or maintenance purposes, as well as supporting landscaping around the site.</p> <p>Implementation of the PMP and peatland restoration surrounding the substation and adjacent area would actively hold and maintain water within the habitat, increasing the adaptability during drought conditions.</p> <p>Maintenance procedures will be in place for when these conditions occur.</p>	Unlikely	Minor	Low (Not Significant)
Wildfire events	<p>Increased incidence of heatwaves and dry periods increase the potential for wildfires, which could result in considerable damage to on-site equipment and the access track.</p> <p>For example, this could result in asset damage leading to</p>	Substation & access track	<p>'The vegetation and woodland near the Proposed Development increases the risk of wildfires within the Site Any fires on site are more likely to be human caused as a result of negligence or process failure rather than as a result of climate change. To mitigate the risk of forest wildfires, weather forecast monitoring and emergency response planning have been integrated into the health and safety plans, ensuring preparedness for any potential fire incidents.</p> <p>To minimise this risk, a Wildfire Risk Assessment will be developed with a suitable buffer zone around the</p>	Unlikely	Insignificant	Low (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
	<p>plant downtime and machinery repair/ replacement.</p> <p>In addition, this could be exacerbated by any combustible materials at the site e.g. generator fuel.</p>		<p>substation. The site will also incorporate fire measures as per specifications.</p> <p>Fire measures include a fire break around the perimeter of the substation (clear area), automated fault shut-off for electrical plant, fire damage zones to prevent the spread of fire from key combustible plant. These are primarily to prevent electrical fires from spreading but would serve a dual purpose to prevent the spread of wildfire.</p> <p>Project planning decisions, project design, construction methods and emergency response planning should take into account the level of wildfire hazard.</p> <p>Monitor local fire risk levels during dry periods and implement fire watch protocols, especially when working near scrub, long vegetation and forests or in periods of drought.</p> <p>Where possible, use fire-resistant building materials, especially for temporary structures, fences, and storage areas.</p> <p>Landscaping and vegetation will be managed to reduce wildfire risk, in line with the guidance from the Operator's Landscape and Visual Impact Assessment.</p>			



Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
Wildfire events	<p>Wildfire reaches the plant causing considerable damage to site infrastructure and operational machinery.</p> <p>This could result in injury or fatality for workers and people within the vicinity.</p>	Human health & safety e.g. staff, visitors	<p>The vegetation and woodland near the Proposed Development increase the risk of wildfires within the Site. Any fires on site are more likely to be human caused as a result of negligence or process failure rather than as a result of climate change. To mitigate the risk of forest fires, weather forecast monitoring and emergency response planning have been integrated into the health and safety plans, ensuring preparedness for any potential fire incidents.</p> <p>A Wildfire Risk Assessment will be developed with a suitable buffer zone to set up around the substation to minimise this risk. The site will also incorporate fire measures as per specifications.</p> <p>Fire measures include a fire break around the perimeter of the substation (clear area), automated fault shut-off for electrical plant, fire damage zones to prevent the spread of fire from key combustible plant. These are primarily to prevent electrical fires from spreading but would serve a dual purpose to prevent the spread of wildfire.</p> <p>Project planning decisions, project design, construction methods and emergency response planning should take into account the level of wildfire hazard.</p> <p>Monitor local fire risk levels during dry periods and implement fire watch protocols, especially when working near scrub, long vegetation or forests or in periods of drought.</p>	Unlikely	Moderate	Medium (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
			<p>Use fire-resistant building materials where possible, especially for temporary structures, fences, and storage areas.</p> <p>Landscaping and vegetation will be managed to reduce wildfire risk, in line with the guidance from the Operator's Landscape and Visual Impact Assessment.</p>			
Temperature-related (extreme cold)	Low temperatures can lead to equipment failure or damage, resulting in power outages.	Substation	<p>The transformers will be designed per the Operator standards to operate between +40°C and -25°C.</p> <p>The Operator will monitor weather forecasts and plan works accordingly, protecting workers and resources from cold weather events.</p> <p>Snow and de-icing procedures will be in place for when freezing conditions occur, this will minimise the disruption caused.</p>	Unlikely	Minor	Low (Not Significant)
Temperature-related (extreme cold)	<p>Low temperatures and snow can lead to ground areas becoming frozen, affecting site access for operational workers and contractors, preventing necessary maintenance and repairs.</p> <p>This can lead to delays and disruption to operations as the</p>	Access track	<p>The Operator will monitor weather forecasts and plan works accordingly, protecting workers and resources from cold weather events.</p> <p>Snow and de-icing procedures will be in place when these conditions occur, and this will minimise the disruption caused.</p>	Rare	Insignificant	Low (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
	areas will need to be de-iced.					
Temperature-related (extreme cold)	Freezing conditions can cause hypothermia. Low temperatures can also lead to ground areas becoming frozen, which can impact the health and safety of workers.	Human health & safety e.g. staff, visitors	<p>The Operator will monitor weather forecasts and plan works accordingly, protecting workers and resources from cold weather events.</p> <p>The Operator will follow procedures in place for working in cold conditions.</p> <p>Substation buildings will have sufficient heating that can respond to cold temperatures, making sure occupants have adequate heating and preventing discomfort.</p>	Rare	Moderate	Medium (Not Significant)
Storm events	Storm events create an unsafe environment for on-site operational workers and contractors. Workers in outdoor or unstable environments face increased physical risks during storms, including injuries from falling debris, flooding, or high winds.	Human health & safety e.g. staff, visitors	<p>The Operator will monitor weather forecasts and plan work accordingly, managing workers during storm events.</p> <p>Specifications will be followed to define a distance within which tree falling will have an impact. Regular maintenance will be scheduled to inspect the proximity of trees in order to keep the area around the Proposed Development clear of trees within the agreed distance.</p>	Moderate	Minor	Medium (Not Significant)
Storm events	Storms and severe weather can disrupt the operation of the Proposed Development.	Substation & access track	The Operator will monitor weather forecasts and plan work accordingly, managing workers during storm events.	Moderate	Minor	Medium (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
	<p>Potential impacts can include damage to on-site equipment, including electrical equipment, resulting in power outages. Flooding and blocked roads can also affect site access for operational workers and contractors, preventing necessary maintenance and repairs.</p>		<p>Civils aspects will be designed in accordance with relevant design guidance to ensure robustness during storm events.</p> <p>FRA and DIA include the provision of national climate change allowances for both rainfall and river flow (and freeboard allowances should also be included). Drainage specifications protect critical equipment up to 1:1000+CC+freeboard, with access to operational areas up to 1:200+CC+freeboard. This will ensure that flood risk to the substation platform, access, and electrical equipment is minimised.</p> <p>SuDS are implemented to manage the runoff in a controlled manner as per the pre-development condition.</p> <p>Communications will be designed to withstand severe weather conditions, allowing remote management of the substation in the majority of (non-fault) conditions and preventing most requirements for operators from attending during severe weather events.</p>			