

**SSEN Transmission**  
**Bingally 400 kV Overhead Line Tie-In**  
**Climate Change Risk Assessment**  
**Appendix L**

**April 2025**



Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
Construction						
Extreme Heat	<p>Extreme heat days result in ambient temperatures to rise above optimal design temperatures of construction equipment.</p> <p>This can cause the overheating of construction equipment, resulting in delay to construction programme, repairs, additional project costs and / or safety risks.</p>	Construction equipment and site	<p>The contractor will produce a high-level risk assessment of severe weather impacts on the construction process to inform specific mitigations. This assessment will consider any receptors and / or construction-related operations and activities potentially sensitive to severe weather events. The contractor will monitor weather forecasts to inform short to medium-term programme management, allowing for the planning of works and timely implementation of mitigation measures to protect workers and resources from extreme weather conditions.</p> <p>Health and safety plans will be put in place to include all necessary and appropriate measures to manage severe weather events, ensuring staff safety and minimising risks to construction operations.</p> <p>The contractor should consider the use of construction materials and equipment with enhanced durability and resilience against climate extremes.</p>	Unlikely	Insignificant	Low (Not Significant)
Extreme Heat	Extreme heat events cause health and safety to the construction workforce, which could lead to sun stroke and dehydration, or in a worst-case scenario death.	Human health and safety e.g. Staff, visitors	<p>The contractor will monitor weather forecasts to inform short to medium-term programme management, allowing for the planning of works and timely implementation of mitigation measures to protect workers and resources from 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 put in place to include all necessary and appropriate measures to manage severe weather events, ensuring staff safety and minimising risks to construction operations.</p> <p>Adequate cooling and ventilation systems is vital in the design of temporary office buildings and construction worker facilities, that's sufficient to deal with hotter and more extreme temperatures.</p>	Unlikely	Insignificant	Low (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
Changes in precipitation (Extreme rainfall)	Extreme rainfall events result in damage to construction equipment and/or unsafe working conditions resulting in a delay in the construction programme	Construction equipment and site	Contractor will monitor weather forecasts and receive SEPA flood alerts and plan works accordingly with internal methodologies to manage workers and resources in extreme weather conditions such as storms, flooding. Health and safety plans will be put in place to include all necessary and appropriate measures to manage severe weather events, ensuring staff safety and minimising risks to construction operations.	Moderate	Minor	Medium (Not Significant)
Changes in precipitation (Extreme rainfall)	Extreme rainfall events can cause surface water flooding at the construction site which can cause disruption and damage to the Site and sources of power supply. Flooding on the Site can result in critical infrastructure becoming damaged, which can increase costs and lead to delays in the construction programme.	Construction equipment and site	Contractor will monitor weather forecasts and receive Scottish Environment Protection Agency (SEPA) flood alerts and plan works accordingly with internal methodologies to manage workers and resources in extreme weather conditions such as storms, flooding. Health and safety plans will be put in place to include all necessary and appropriate measures to manage severe weather events, ensuring staff safety and minimising risks to construction operations.	Moderate	Minor	Medium (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. This could result in asset damage, plant downtime and machinery repair/ replacement. In addition, this could be exacerbated by any combustible materials at the Site. E.g. generator fuel.	Construction equipment and site	Weather forecasts should be monitored so expected extreme temperatures are prepared for in advance, and contingency measures can be put in place to minimise disruption to the construction. Health and safety plans to be in place and consider all measures deemed necessary and appropriate to manage severe weather events. Construction materials and equipment with superior properties that offer increased tolerance to fluctuating temperatures, heavy precipitation and other extreme weather events such as storms, should be used, where feasible.	Rare	Insignificant	Low (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
Wildfire Event	<p>Increased heatwaves and dry periods increase the potential for wildfires, which could result in injury or fatality to personal.</p> <p>This could be exacerbated by any combustible materials at the Site. E.g. generator fuel.</p>	Human health and safety e.g. Staff, visitors	<p>The contractor will monitor weather forecasts to inform short to medium-term programme management, allowing for the planning of works and timely implementation of mitigation measures to protect workers and resources from extreme weather conditions.</p> <p>Health and safety plans will be put in place to include all necessary and appropriate measures to manage severe weather events, ensuring staff safety and minimising risks to construction operations.</p>	Rare	Insignificant	Low (Not Significant)
Temperature-related (Extreme cold)	Construction workers are at risk of hypothermia due to low temperatures.	Human health and safety e.g. Staff, visitors	<p>The contractor will monitor weather forecasts to inform short to medium-term programme management, allowing for the planning of works and timely implementation of mitigation measures to protect workers and resources from extreme weather conditions.</p> <p>Health and safety plans will be put in place to include all necessary and appropriate measures to manage severe weather events, ensuring staff safety and minimising risks to construction operations.</p> <p>All outdoor construction workers should have access to indoor facilities with appropriate heating in place and warm breaks.</p>	Moderate	Minor	Medium (Not Significant)
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 and site	<p>The contractor will monitor weather forecasts to inform short to medium-term programme management, allowing for the planning of works and timely implementation of mitigation measures to protect workers and resources from extreme weather conditions.</p> <p>Health and safety plans will be put in place to include all necessary and appropriate measures to manage severe weather events, ensuring staff safety and minimising risks to construction operations.</p>	Moderate	Minor	Medium (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
Storm Events	Storm events create an unsafe environment for construction workers. Workers in outdoor or unstable environments face increased physical risks during storms, including injuries from falling debris, flooding, or high winds.	Human health and safety e.g. Staff, visitors	Health and safety plans will be put in place to include all necessary and appropriate measures to manage severe weather events, ensuring staff safety and minimising risks to construction operations.	Moderate	Minor	Medium (Not Significant)
Storm Events	Storms and severe weather can disrupt the construction of the Proposed Development and access to the Site.  Impacts include delays, damage to construction materials, and machinery. Flooding and blocked roads can also affect material delivery and personnel movement.	Construction equipment and site	Health and safety plans will be put in place to include all necessary and appropriate measures to manage severe weather events, ensuring staff safety and minimising risks to construction operations. The contractor will monitor weather forecasts to inform short to medium-term programme management, allowing for the planning of works and timely implementation of mitigation measures to protect workers and resources from extreme weather conditions. The contractor should consider the use of construction materials and equipment with enhanced durability and resilience against climate extremes.	Moderate	Minor	Medium (Not Significant)
Operation						
Extreme temperatures (heat)	Heatwaves result in heat stress for building occupants and outdoor workers, causing health and safety incidents e.g. sunstroke and dehydration.	Human health and safety e.g. Staff, visitors	The Operator will monitor weather forecasts and plan operations accordingly to protect workers and resources from any extreme weather conditions. The Operator should ensure all outdoor workers have access to indoor facilities, air conditioning, breaks in shaded areas and water breaks. Buildings should have sufficient cooling and ventilation systems (HVAC) that can respond to high temperatures, making sure occupants have adequate cooling system preventing discomfort.	Unlikely	Minor	Low (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
Changes in Precipitation (Flooding)	Extreme rainfall events could result in damage to on-site electrical equipment, and overhead line equipment leading to power outages and potential equipment damage.	OHL Equipment	No planned controls and / or adaptation measures have been considered.	Moderate	Minor	Medium (Not Significant)
Wildfire Event	Increased heatwaves and dry periods increase the potential for wildfires, which could result in considerable damage to overhead line equipment. This could result in asset damage, plant downtime and machinery repair / replacement. In addition, this could be exacerbated by any combustible materials at the Site.	OHL Equipment	Monitoring the weather forecast and emergency response planning should be integrated into the health and safety plans, ensuring preparedness for any potential fire incidents. Project planning decisions, project design, construction methods and emergency response planning should take into account the level of wildfire hazard.	Rare	Insignificant	Low (Not Significant)
Wildfire Event	Wildfire reaches the plant causing considerable damage to site infrastructure and operational machinery. This could result in injury or fatality for workers and people within the vicinity.	Human health and safety e.g. Staff, visitors	Project planning decisions, project design, construction methods and emergency response planning should take into account the level of wildfire hazard.	Rare	Insignificant	Low (Not Significant)
Temperature-related (Extreme cold)	Ice accumulation on the OHL equipment can add additional weight to these structures leading to damage.	OHL Equipment	The asset will either be designed for the climatic conditions projected for the end of its design life, using appropriate design guidance where available or adaptive capacity will be built into the designs. Snow and de-icing procedures should be in place for when these conditions occur, this will minimise the disruption caused.	Rare	Insignificant	Low (Not Significant)
Temperature-related (Extreme cold)	Low temperatures can lead to ground areas becoming frozen, which can impact the health and safety of workers. Freezing	Human health and safety e.g. Staff, visitors	The Operator will monitor weather forecasts to inform short to medium-term programme management, allowing for the planning of works and timely implementation of mitigation measures to protect workers and resources from extreme	Rare	Insignificant	Low (Not Significant)

Climate variable	Description of impacts	Receptor	Planned Controls & Adaptation measures	Likelihood	Consequence	Risk Rating
	conditions can also cause hypothermia.		weather conditions. Buildings should have sufficient cooling and ventilation systems (HVAC) that can respond to cold temperatures, making sure occupants have adequate heating and preventing discomfort.			
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 and safety e.g. Staff, visitors	The Operator will monitor weather forecasts to inform short to medium-term programme management, allowing for the planning of works and timely implementation of mitigation measures to protect workers and resources from extreme weather conditions. The asset will either be designed for the climatic conditions projected for the end of its design life, using appropriate design guidance where available or adaptive capacity will be built into the designs.	Moderate	Minor	Medium (Not Significant)
Storm Events	Storms and severe weather can disrupt the operation of the Proposed Development due to damage to overhead line equipment, resulting in power outages. Flooding and blocked roads can also affect Site access for operational workers and contractors preventing necessary maintenance and repairs.	OHL Equipment	The Operator will monitor weather forecasts to inform short to medium-term programme management, allowing for the planning of works and timely implementation of mitigation measures to protect workers and resources from extreme weather conditions. The asset will either be designed for the climatic conditions projected for the end of its design life, using appropriate design guidance where available or adaptive capacity will be built into the designs.	Moderate	Minor	Medium (Not Significant)