Scottish & Southern Electricity Networks
TRANSMISSION

SSEN Transmission

Bingally 400 kV Overhead Line Tie-In

Environmental Appraisal

April 2025

CONTENTS

11. SUMMARY OF CUMULATIVE APPRAISAL

11.1.1 This chapter sets out a summary of the potential cumulative environmental effects as a result of the Proposed Development, as set out in more detailed as relevant, within **Technical Chapters 4-10**). The purpose of the assessment is to assess whether the combination of multiple effects upon a common receptor would result in an effect of greater significance than the individual effects.

11.1.2 The following schemes, outlined in **Table 11-1** have the potential for cumulative effects given the likelihood that they would be potentially constructed concurrently with the Proposed Development.

Table 11-1 Developments Considered in Cumulative Appraisal

Planning Application Reference / Name	Description	Location	Status	Timeframe (Construction Start)
25/00592/FUL Proposed Bingally 400 kV substation	400 kV Substation Comprising New Buildings, Platform, Plant And Machinery, Access, Laydown / Work Compound Area(s), Drainage, Landscaping, And Other Ancillary Works (National Development).	Overlaps with the Site	Under consideration	Indicative construction start April 2026
ECU00001969 Fiodhag Wind Farm (formerly known as Fasnakyle Wind Farm)	Construction of wind farm comprising of 46 turbines (height to blade tip 149.9 m).	Overlaps with the Site	Decided, Scoping Opinion obtained in 2020. No application for consent has been submitted to date.	Unknown
23/04100/FUL Fasnakyle Energy Storage (formerly known as Battery Energy Storage System (BESS))	Erection and operation of a BESS and associated infrastructure.	4.5 km north of the Site	Not decided (EIA not required)	Unknown
23/01025/SCRE Kerrow Farm BESS	Erection and operation of a BESS, multiple containerised storage units, associated infrastructure, control building, switch room, lights and associated works.	4.9 km north of the Site	Decided (EIA not required)	Unknown
Fasnakyle to Bingally 132 kV connection	The installation of an UGC / OHL to connect the proposed Bingally substation to the existing Fasnakyle Substation.	Adjacent to the Site	Not in the planning system	Unknown
Tomchrasky Wind Farm OHL connection	The installation of an OHL connection from Tomchrasky Wind Farm to the proposed Bingally substation.	Adjacent to the Site	Not in the planning system	October 2027
ECU00004704 Chrathaich Wind Farm	Erection and operation of a wind farm for a period of 30 years, comprising of 14 wind turbines with a maximum blade tip height of 149.9 m, access tracks, borrow pits, substation, control building, and ancillary infrastructure.	3.8 km east of the Site	EIAR submitted. Not decided.	Unknown

Planning Application Reference / Name	Description	Location	Status	Timeframe (Construction Start)
ECU00004569 (original application: ECU00004792) Erection of OHL	Erection of small two span spur and free-standing pole for communications mast on the 33 kVA OHL by Benevean Dam, Tomich.	3.9 km northwest of the Site	Consented, EIA not required	Unknown
ECU00005214 Cnoc Farasd Wind Farm	A wind farm consisting of 9 turbines up to 220m tip height, battery storage and associated infrastructure.	10 km northeast of the Site	Scoping report submitted. Consent date unknown.	Unknown

11.2 Appraisal

11.2.1 A cumulative effects appraisal was undertaken for the Proposed Development, in combination with the developments summarised above. This appraisal is summarised in **Table 11-2** below.

Table 11-2 Cumulative Appraisal

Topic	Potential Cumulative Effects	Mitigation Measures
Landscape Character and Visual Impact	Cumulative LVIA effects were assessed for two scenarios, including: • **Scenario 1**: The cumulative baseline for this scenario includes schemes which have been consented and / or are under construction in addition to existing operational schemes. • **Scenario 2**: The cumulative baseline for this scenario includes schemes at application stage in addition to existing operational schemes and those which have been consented and / or are under construction. Viewpoint 1 was assessed as having a negligible level of cumulative effect in Scenario 1 and minor adverse level of cumulative effect in Scenario 2. Viewpoint 2 was assessed as having a neutral level of cumulative effect in Scenario 1 and neutral level of cumulative effect in Scenario 2. Viewpoint 3 was assessed as having a no change level of cumulative effect in Scenario 1 and no change level of cumulative effect in Scenario 2.	All landscape and visual mitigation is covered in detail in the LHMP (**Appendix D Landscape Habitat Management Plan**). Visual mitigation is limited to ensuring established native woodland cover remains southwest and east of the Proposed Development and proposed Scots Pine and wet woodland helps to mitigate new electrical infrastructure from views along the northern boundary, experienced by recreational users along the core paths (Viewpoint 1).
Ecology and Nature Conservation	All ecological construction effects have been defined as negligible with the specific mitigation outlined above in place and adhered to. There is also no possibility as explained in **Chapter 5 Ecology and Nature Conservation** that there would be appreciable operational effects on ecological features. As such, the Proposed Development offers essentially no ecological adverse effects with which there could be cumulative effects between aspects of the Proposed Development itself (effects interactions) or with other identified plans or developments (in-combination effects). It is concluded therefore that the Proposed Development would not act cumulatively to give rise to significant adverse effects on ecological features.	The mitigation described in **Chapter 5 Ecology and Nature Conservation** to avoid or minimise the risk on important ecological features, and on the proposals also doing the same (e.g. managed through project-specific GEMP (**Appendix M GEMPs and SPPs**) / CEMPs), will be implemented.
Ornithology	With the exception of black grouse, no potential impacts were identified that could possibly result in a residual effect of greater than negligible. Consideration during this cumulative appraisal would	Mitigation relevant to black grouse would be relevant. This should include: Undertaking pre-construction survey, comprising a black grouse lek survey in the breeding season prior to construction

Topic	Potential Cumulative Effects	Mitigation Measures
	therefore only be given to those impacts where a residual effect of significance was concluded for the Proposed Development. However, all ornithological construction and operational effects are rendered negligible with the specific black grouse mitigation outlined in place and adhered to. As such, the Proposed Development offers essentially no ornithological adverse effects with which there could be in-combination effects, either between aspects of the Proposed Development itself or with other plans or developments. It is concluded that the Proposed Development would not act cumulatively to give rise to significant adverse effects on ecological features.	(or during construction if deemed relevant) and if possible, schedule the construction works outwith the black grouse breeding season. Where construction works are scheduled within 1 km of leks (as confirmed by the above pre-construction survey) cannot avoid the breeding season, works will be restricted to starting at least two hours after dawn in the lekking season, taken as March to mid-May, inclusive and where works would impact possible black grouse nesting habitat in the breeding season, checks will be conducted for active black grouse nests in the vicinity of works, which will be afforded a suitable buffer to prevent abandonment. Passage of vehicular construction traffic (and pedestrian passage if relevant) past the leks in the breeding season may also be subject to the above morning time restrictions.
Traffic and Transport	Potential significant cumulative effects (Moderate Adverse) for severance of communities, non-motorised user amenity, non-motorised user delay, and road vehicle and passenger delay. It should be noted that these effects would be temporary and short term.	Significant effects reported are largely due to the worst case assumption that cumulative developments are using Study Area roads for construction traffic concurrently. The implementation of a CTMP would seek to reduce the magnitude of change on Study Area roads by managing construction traffic for the Proposed Development. Coordination between cumulative developments would aim to ensure that peak construction traffic generation of cumulative developments does not occur simultaneously.
Hydrology, Hydrogeology, Geology and Soils	The construction impacts of the proposed Bingally substation and Fiodhag Wind Farm would likely be related to potential contamination of underlying groundwater, nearby surface waters and soils from oils, fuel stored in barrels in mobile tanks and / or plant / equipment used, cement, concrete, waste and wastewater, and also potentially from made ground and soil disturbance associated with the excavations of foundations. These potential effects would be managed through the SSEN Transmission CEMP and the following GEMPs; GEMP – Working in or near Water; GEMP – Watercourse Crossings; GEMP – Private Water Supplies; GEMP – Soil Management; GEMP – Contaminated Land; GEMP – Waste Management; GEMP – Oil Storage and Refuelling; GEMP – Working in Sensitive	None required for Hydrology, Hydrogeology, Geology as no significant cumulative effects anticipated. For the soils, a combined PMP (**Appendix H Peat Management Plan**) and PLHRA (**Appendix I Peat Landslide Hazard Risk Assessment**) has been undertaken to cover both the Proposed Development and the proposed Bingally substation.

Topic	Potential Cumulative Effects	Mitigation Measures
	Habitats; GEMP – Dust Management; and GEMP – Bad Weather (**Appendix M GEMPs and SPPs**Error! Reference source not found.). Potentially silt laden runoff, will be prevented from entering water courses and / or drainage channels through the use of straw bales, silt fences, cut off drains and drainage onto vegetated areas. If deemed necessary, an EnvCoW will supervise the construction works to ensure that the CEMP and associated mitigation measures are being implemented effectively. Although, the proposed Bingally substation and wind farm overlap the Site, and assuming their individual CEMPs and GEMPs are applied during the construction, operation and decommissioning it is unlikely that there will be any cumulative effects on geology, soils, and the water environment. It is not considered that the combined effects of construction, operation and decommissioning would be greater than the predicted effects for each project in isolation. In relation to the peat, the combination of the OHL and associated substation could result in larger volumes of peat disturbance, although this is not thought to be significant as both developments are to be constructed simultaneously. To mitigate this a combined PMP (**Appendix H Peat Management Plan**) and PLHRA (**Appendix I Peat Landslide Hazard Risk Assessment**) has been undertaken to cover both of these proposed developments	
Noise and Vibration	With respect to potential cumulative construction noise and operational sound from the cumulative developments and the activities within the Site, given the nature of the Proposed Development, distance separation and / or programme timings, and predicted negligible effects related to the Proposed Development, no significant cumulative noise effects have been identified. With respect to potential cumulative construction traffic noise from Proposed Development construction traffic using the proposed Bingally substation access track and the public highways network, the magnitude of impact of adding a relatively small number of Proposed Development related construction vehicles to those associated with	None required as no significant cumulative effects due to construction noise and operational sound within the Site have been identified.

Topic	Potential Cumulative Effects	Mitigation Measures
	construction of other cumulative developments is Very Low, resulting in Negligible additional effects (Not Significant).	
Climate Change	The assessment of cumulative effects does not apply to the Greenhouse Gas (GHG) assessment as the assessment is inherently cumulative. The Climate Change Resilience Assessment (CCRA) also focuses on the Proposed Development itself, so cumulative effects do not apply. Climate Change is the result of cumulative impacts as it is the result of innumerable minor activities. A single activity may itself result in a minor or insignificant impact, but when combined with many other activities, the cumulative impact could be significant. The nature of GHGs is such that their impact on receptors (the global climate) is not affected by the location of their source. The GHG emissions assessment by its nature is a cumulative assessment and considers whether the Proposed Development would contribute significantly to emissions on a national level. The global atmosphere is the receptor for Climate Change impacts and has the ability to hold GHG emissions. As noted in the third principle of considering the aspect of significance in the IEMA GHG Assessment guidance[1] "GHG emissions have a combined environmental effect that is approaching a scientifically defined environmental limit, as such any GHG emissions or reductions from a project might be considered to be significant". While the impact of any individual Proposed Development may be limited, it is the cumulative impact of many Proposed Development over time that could have a significant impact on Climate Change. As such, it is impossible to define a Study Area for the assessment of cumulative effects on GHG emissions nor undertake a cumulative effects assessment, as the identified receptor is the global climate, and effects are therefore not geographically constrained. Consequently, consideration of the Proposed Development's effects and	None required as no significant cumulative effects are anticipated.

[1] IEMA (2022) 'Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance – second Edition.' Available at: https://www.iema.net/preview-document/assessing-greenhouse-gas-emissions-and-evaluating-their-significance [Accessed 3 October 2024]

Topic	Potential Cumulative Effects	Mitigation Measures
	other developments on GHG emissions is not considered applicable. As the CCRA is only concerned with the assets of the Proposed Development and a broader consideration of existing interdependent infrastructure, a cumulative assessment is not required.	

12. SUMMARY OF MITIGATION MEASURES

12.1.1 **Chapters 4-10** above highlight the potential environmental risks and present mitigation measures for managing these risks.

12.1.2 The embedded and additional mitigation proposed within this EA is listed below in **Table 12-1**.The CEMP will include these protection measures.

Table 12-1 Schedule of Mitigation

Mitigation Reference	Title of Mitigation	Description
EM1	Lighting requirements	The Proposed Development would not be illuminated at night during normal operation. During construction, works should be carried out in daylight to minimise the risk of disturbing protected or notable nocturnal species, as far as possible. During construction temporary floodlights would be utilised only in the event of a fault during the hours of darkness; or during the overrun of planned works; or when sensor activated as security lighting for night-time access. This should be strongly directional and directed only on to the works area, and be turned off when not required, to minimise light spill and adverse effects on nocturnal wildlife. Working hours are currently anticipated between approximately 07:00 and 19:00 March to September and 07:00 and 17:30 (or within daylight hours) October to February, Monday to Friday. Weekend working would consist of Saturdays only between 07:00 and 13:00 all year round. Working hour assumptions would be agreed with THC.
EM2	Screening of Proposed Development	All landscape and visual mitigation are embedded and covered in detail in **Chapter 4 Landscape Character and Visual Impact** and **Appendix D Landscape Habitat Management Plan**. Key embedded mitigation measures relevant to landscape and visual impacts include: • Proposed Scots Pine Woodland Planting; • Proposed Wet Woodland Planting; • Proposed Heathland Restoration Planting; • Proposed Wetland Seeding along SuDS Pond; and • Proposed Peatland Restoration.
EM3	CEMP, GEMPs and SPPs	Mitigation measures will be implemented through the use of a CEMP which will cover the receptors associated with the Proposed Development. The adoption of the applicable GEMPs will reduce the probability of a pollution incident occurring and reduce the magnitude of any incident due to a combination of good site environmental management procedures, including minimising storage of soil volumes, soil management, staff training, availability of contingency equipment and emergency plans. The adoption of applicable SPPs will provide guidance and agreed procedures for the protection of species and their habitat during construction works. The relevant GEMPs and SPPs can be found in **Appendix M GEMPs and SPPs**Error! Reference source not found.**.** With regard to biodiversity, all personnel involved in the construction, operation and decommissioning of the Proposed

Mitigation Reference	Title of Mitigation	Description
		Development will be made aware of relevant ecological features and the mitigation measures and working procedures that must be adopted. This will be achieved as part of the induction process and / or through Toolbox Talks. In addition, an Ecological / Environmental Clerk of Works (ECoW / EnvCoW) will be employed for the duration of construction. They will advise on and monitor implementation of mitigation measures and compliance with legislation concerning ecological features. The ECoW or other suitably qualified and experienced ecologist will carry out pre-construction surveys for relevant protected species in suitable habitat, including otter, water vole, badger, red squirrel, pine marten and breeding birds (including black grouse) during the appropriate season. In line with NatureScot guidance, the pre-construction surveys will take place no more than three months before commencing works (including facilitating works such as vegetation clearance). Works near or at any retained native trees or semi-natural woodland will follow tree protection guidance set out in British Standard 5837:2012. Standard measures to protected mammals during construction, will be implemented including ensuring excavations are left with a method of escape for any animals that may enter overnight (such as a battered slope sufficient for mammals to walk out), and checking them at the start of each working day to ensure no animals are trapped. If otter refuges, water vole burrows, pine marten dens, red squirrel dreys, black grouse leks, or other protected breeding / resting sites are found that would be subject to disturbance or damage, there would be a constraint to the Proposed Development. If this becomes the case, an appropriate licence from NatureScot will be obtained, which will require appropriate mitigation.
EM4	CTMP	A CTMP would operate throughout the duration of the construction programme. **Appendix F Transport Statement**Error! Reference source not found. contains a draft CTMP. A detailed CTMP including the following is expected to be conditioned and provided once a Principal Contractor is appointed: • Site entry / exit arrangements from public roads; • Traffic routeing plans – defining the routes to be taken by heavy goods vehicles (HGVs) to the Site avoiding sensitive location(s); • Construction traffic hours and delivery times; • Strategy for traffic management and measures for informing construction traffic of local access routes, road restrictions (statutory limits: width, height, axle loading and gross weight), timing restrictions (if applicable) and where access is prohibited; • Measures to protect the public highway (e.g. wheel wash facilities); • Measures for the monitoring of the CTMP to ensure compliance from construction drivers and appropriate actions in the event of non-compliance;

Mitigation Reference	Title of Mitigation	Description
		• Mechanism for responding to traffic management issues arising during the works (including concerns raised from the public) including a joint consultation approach with relevant road authorities; and • Staff Travel Plan designed to reduce the number of staff / LGV trips to and from site.
EM5	BNG	A BNG assessment has been undertaken for the Proposed Development. A BNG Report (**Appendix E Biodviersity Net Gain Report**) and LHMP (**Appendix D Landscape Habitat Management Plan**) have been prepared as part of the measures necessary to achieve SSEN Transmission's target BNG figures. The LHMP details specific requirements for enhancement measures (e.g. blanket bog restoration, woodland creation / enhancement).
EM6	Reinstatement	Following commissioning of the Proposed Development, all temporary construction areas would be reinstated. Reinstatement would form part of the contract obligations for the Principal Contractor and would include the removal of all temporary access tracks and work sites.
EM7	Science Based Targets initiatives	Science-based Target initiatives (SBTi) define and promote best practice in emissions (including Scope 1, 2 and 3) reductions and net zero targets in line with climate science. SSEN Transmission have committed to the following verified SBTi , which will be applied to the Proposed Development to help mitigate against adverse GHG impacts: • Committing to reduce its combined Scope 1 and 2 emissions by 55% by 2033 from a 2020 baseline; and • Committing to working closely with its supply chain so that 35% of its suppliers will have a Science-based target (SBT) set by 2026.
EM8	SSEN Transmission Sustainable Supplier Code[2]	SSEN Transmission Sustainable Supplier Code sets out its Sustainable Procurement Goals, aligned the UN's Sustainable Development Goals. Implementation of these measures will ensure the project mitigates GHG emissions and contribute towards Scotland's Net Zero targets. The following 2025 targets include (but not limited to): • 50% of its supply chain will have a strategy for reducing energy consumption by 2025; • 56% of the supply chain by spend will have a sustainable sourcing policy; • 60% of the supply chain by spend will have strategies in place to achieve zero waste to landfill; • 60% of the supply chain by spend will have strategies in place to reduce water consumption for SSEN Transmission projects; • 65% of the supply chain by spend must have their own carbon reduction policy and target in place; and • 50% of the supply chain by spend will have a biodiversity policy. Regular inspections of equipment will be undertaken to identify deterioration of components and will

[2] SSEN, 2023. *Sustainable Supplier Code* [online]. [Accessed on 11 April 2024]. Available at: https://www.ssen.co.uk/globalassets/about-us/sustainability/documents/ssen-distribution---scsc-supplier-code-4-pager-v5.pdf

Mitigation Reference	Title of Mitigation	Description
		be replaced where necessary to ensure maximum efficiency.
EM9	Climate Change Risk Assessment	SSEN Transmission's Climate Resilience Strategy[3] provides a holistic overview of SSEN Transmission's actions for ensuring the future resilience of its business and providing benefits to customers. The strategy outlines SSEN Transmission's adaptation action including those relevant to overhead line conductors, underground cable systems, substations, transformers, and switchgears in relation to a number of extreme weather events.
HG1	Management of peat excavation PMP	A site specific Stage 1 (outline) PMP (**Appendix I Peat Management Plan**) has been prepared to meet SEPA requirements in relation to the hierarchy of design principles to minimise impacts on peat. The PMP provides specific mitigation measures that will be followed during the detailed design and construction of the Proposed Development to minimise the impacts on peat, as well as commits the Applicant to reuse the peat excavated as part of the works. The PMP also provides outline monitoring and inspection principles to be undertaken by a geotechnical engineer and EcoW that will allow auditing of the PMP process and ensure principles / commitments are being followed, as well as allowing updating of these if found not to be working. The PMP is a live document which will require updating to a Stage 2 PMP following completion of the detail design, and then updating again prior to construction.
HG2	Peat landslide risk PLHRA	A site specific Stage 1 PLHRA (**Appendix J Peat Landslide Hazard Risk Assessment**) has been prepared to ensure the risk of a peat landslide as a result of the Proposed Development has been fully considered. Where a peat landslide has been assessed and is likely, mitigation measures have been proposed to reduce the likelihood of peat landslide as part of the PLHRA. The PLHRA will require to be updated to a Stage 2, post consent and following completion of the detailed design to ensure any peat reuse / restoration areas are stable, and porposed any mitigation measures, where required, to reduce the likelihood of a peat landslide as a result of the Proposed Development.
HG3	Geotechnical Risk Register GRR	A GRR shall be produced as part of the design development and maintained to highlight key geotechnical risks associated with the Proposed Development. This GRR shall include the risks associated with the peat present and the mitigation measures which are used to reduce the risk and impact.
HG4	Follow guidelines set out by Scottish Water[4] for Drinking Water Protected Areas	The Principal Contractor is required to ensure all personnel on site are aware of the Abhainn Deabhag Drinking Water Protected Area (Surface), which may be at risk of adverse effects from construction activities. Guidance is provided by Scottish Water, they include methods such as;

[3] SSEN, 2023. *Climate Resilience Strategy [*online]. [Accessed 20 May 2024]. Available at: https://www.ssen.co.uk/globalassets/about-us/sustainability/documents/ssen-climate-resilience-strategy-progress-report-2023.pdf

[4] Scottish Water. [Online] [Accessed 18 November 2024] Available Online: Sustainable Land Management - Scottish Water

Mitigation Reference	Title of Mitigation	Description
		• Storing materials such as oils, fuels and chemicals securely and not leave any contaminants near a watercourse; • Ensuring vehicles and equipment are maintained and leaks / spillages are contaminated; and • Avoiding working through or within watercourses.
HG5	Water Quality Monitoring	Water quality and / or quantity monitoring before and during construction should be undertaken by the Principal Contractor at surface water receptors. Preconstruction monitoring should begin six months before works commence. As a minimum, WF1, WF4 and WF5 surface water locations should be included within any monitoring plan. Should turbidity be recorded downstream of the Site an emergency response plan should be implemented.
HG6	Land Contamination	Principal Contractor to be made aware of potential sources of contamination & to follow the CEMP before and during construction to protect human health and the water environment.
HG7	Land Contamination	Principal Contractor to produce a health and safety risk assessment to cover potential risks from contamination prior to construction stage.
NV1	Noise and Vibration	Best Practicable Means (BPM) measures, to be defined by the Principal Contractor once engaged, and implemented through the CEMP.
NV2	Construction Noise	General best practice mitigation included in the CEMP, GEMPs (Appendix M GEMPs and SPPs), or CTMP would include but not to be limited to: • Abiding by any agreed construction noise limits at nearby NSRs; • Avoiding working in the more sensitive evening and night times, where possible; • Ensuring that processes are in place to minimise noise before works begin and ensuring that BPM are being achieved throughout the construction programme; • Ensuring that modern plant is used, complying with the latest European noise emission requirements. Selection of inherently quiet plant where possible; • Consideration of rotary bored rather than driven piling techniques where possible; • All plant and equipment being used for the works to be properly maintained, silenced where appropriate, operated to prevent excessive noise and switched off when not in use; • All contractor staff and sub-contractors to be made familiar with current legislation and the guidance in BS 5228; • Appropriate routing of construction traffic on public roads and along access tracks, to minimise noise level increase; • Consultation with THC and local residents to advise of potential noisy works that are due to take place when they may be considered a cause of disturbance; and • Monitoring and reporting of noise complaints immediately to the contractor for investigation.

Mitigation Reference	Title of Mitigation	Description
		Regular communication with the local community throughout the construction period would also serve to publicise the works schedule and provide lines of communication where complaints can be addressed. A communication plan would be included in the CEMP as required. The appointed Principal Contractor would be encouraged to be a member of the 'Considerate Constructors Scheme' which is an initiative open to all contractors undertaking building work.