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# Chapter 12: Schedule of Mitigation & Residual Effects

# **Cossans Solar & BESS EIA Report**

# **TRIO POWER Limited**

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# Acronyms and Abbreviations

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### **12.0 Schedule of Mitigation and Summary of Residual Effects**

#### **12.1 Introduction**

- 12.1.1 The Schedule of Mitigation provides a summary of good practice, mitigation measures and commitments that have been proposed throughout the Environmental Impact Assessment (EIA) Report to prevent, reduce or offset the effects of the Proposed Development on the environment.
- 12.1.2 Good practice and mitigation measures have been integral to the design evolution of the Proposed Development as described in **Chapter 2: Site Selection and Design Iteration**. A series of environmental and technical constraint led design reviews were undertaken to minimise potential significant environmental impacts prior to finalising the design of the Proposed Development. Areas which were examined in depth include landscape and visual constraints, sensitive habitats, cultural heritage and hydrological constraints.
- 12.1.3 Mitigation measures which may need to be implemented during decommissioning would be agreed with the key stakeholders at that time via a Decommissioning Environmental Management Plan (DEMP). The detail of this is likely to be similar to the Construction Environmental Management Plan (CEMP) in line with best practice measures at that time. The DEMP is not included in **Table 12-1**.

#### **12.2 Schedule of Mitigation**

- 12.2.1 The mitigation measures and best practice commitments in **Table 12-1** are those which would be applied prior to construction, during construction, and during operation of the Proposed Development.
- 12.2.2 A number of embedded measures have been applied throughout the EIA, which are detailed throughout each chapter.

#### Table 12-1: Schedule of Mitigation and Commitments

EIA Report Chapter	Type of Mitigation or Compensation	Environmental Measure	Responsibility for Implementation
Chapter 3: Proposed Development Description	Pre-and during Construction (CEMP)	Construction Environmental Management Plan A CEMP will be prepared prior to the commencement of construction and will detail measures undertaken to avoid or mitigate any potential effects associated with key construction activities. These will reflect and expand upon measures identified in the EIA Report, and will be agreed with the planning authority, SEPA, NatureScot and other stakeholders where appropriate. An outline CEMP is provided as <b>Technical Appendix 3.1</b> of the EIA Report. In acknowledgement that the CEMP is a live document, that would evolve throughout the construction of the Proposed Development, only the principles of the CEMP are outlined at this stage.	Developer / Contractor / ECoW
	Operation	<b>Battery Safety Management Plan</b> A Site specific Battery Safety Management Plan (BSMP) will need to be developed and implemented during the operational life of the BESS. A Battery Storage Statement is included as Technical Appendix 3.2 of the EIA Report.	Developer
	Construction (Construction Hours)	<ul> <li>Construction Hours</li> <li>The construction working hours for the Proposed Development:</li> <li>Monday – Friday: 07:00 to 19:00</li> <li>Saturdays - 07:00 to 13:00</li> <li>No working is proposed on Sundays or public holidays. It should be noted that out of necessity some activities, for example, abnormal load deliveries, concrete deliveries during foundation pours and also the lifting of the turbine components, may occur outside of the specified hours stated. These activities would not be undertaken without prior approval from Angus Council.</li> <li>The Principal Contractor will keep local residents informed of the proposed working schedule, where appropriate, including the times and duration of any abnormally noisy activity that may cause concern.</li> </ul>	Developer / Contractor
	Construction (Waste)	Site Waste Management Plan A SWMP would form part of the CEMP and will be developed for implementation during construction as discussed in the outline CEMP ( <b>Technical Appendix 3.1</b> ).	Developer / Contractor

EIA Report Chapter	Type of Mitigation or Compensation	Environmental Measure	Responsibility for Implementation
		This will outline the types and quantities of wastes arising during construction and how best to manage them.	
	Construction	Ecological Clerk of Works (ECoW)	Developer
	(ECoW)	The ECoW is responsible for monitoring the implementation of the environmental mitigation measures on Site prior to, during and post-construction. The ECoW will be, or will be supported by, a Suitably Qualified Ecologist (SQE), will be aware of the ecological sensitivities on the Site and the legal implications of not complying with agreed working practices.	
		The ECoW will be employed throughout the duration of the construction period, to ensure environmental interests are safeguarded, although this may not be a full-time role throughout.	
Chapter 5: Landscape and Visual	Construction / Post Construction	The timing and phasing of planting and habitat establishment have been developed to ensure that key screening features, particularly along sensitive boundaries, can begin to take effect before construction is complete.	Developer
		Proposed landscaping features include the following:	
		• 111 new native standard trees;	
		6,100 linear metres of new native hedgerow;	
		31,200 square metres of new native woodland;	
		• 771,850 square metres of new meadow grassland, and;	
		30,000 square metres of new wet meadow grassland.	
		In addition to the above mitigation, the Proposed Development includes an offsite wildlife area to the south of the Site.	
		As part of this mitigation, a CEMP and landscape planting scheme will be implemented prior to works commencing. An indicative landscaping scheme is provided as <b>Figure 5.5a</b> and <b>5.5b</b> of the EIA Report.	

EIA Report Chapter	Type of Mitigation or Compensation	Environmental Measure	Responsibility for Implementation
Chapter 6: Ecology & Ornithology	Pre-construction (Surveys & Plans)	No more than 12 months prior to the commencement of construction, pre- construction ecological and ornithological surveys to update baseline information and to inform Species Protection Plans.	Developer / ECoW
	Construction (Good practice)	<ul> <li>A Pollution Prevention Plan must be developed and implemented throughout the construction phase.</li> <li>Unnecessary disturbance to habitats will be avoided, by minimising the extent of ground clearance and other construction practices as far as practicable.</li> <li>An ecological toolbox talk will be given by the ECoW to all construction personnel as part of site induction on the potential presence of species and any measures that need to be undertaken should such species be discovered during</li> </ul>	Developer / Contractor
		<ul> <li>construction activities. The toolbox talk will also include the requirement to report and log any protected species or bird casualties at the Proposed Development during construction and operation of the site.</li> <li>Wherever possible works should be undertaken during daylight hours, but avoiding the two hours from sunrise and the two hours before sunset (this can be reduced to one hour from November to February, inclusive, when daylight hours are limited).</li> <li>Cover/fence-off any excavations, or provide escape ramps at the end of the working day to avoid animals becoming trapped (if an animal does become trapped, advice should be sought immediately from NatureScot).</li> <li>Cap any temporarily exposed pipe systems out of work hours.</li> </ul>	
	Pre-Construction & Construction (Disturbance of breeding birds)	Recommended disturbance buffers apply for protected species places of rest and/or denning/natal sites and bird species at their nest sites, with recommended distances outlined by Goodship and Furness (2022) and the Forestry Commission (FCS, 2006). Any disturbance or intentional or reckless harassment to Schedule 1A species is considered to be a criminal offence and therefore should any nests or activity from such species be identified during future pre-commencement surveys and ongoing monitoring, the following protocols should be maintained:	Developer / Contractor / ECoW

EIA Report Chapter	Type of Mitigation or Compensation	Environmental Measure	Responsibility for Implementation
		• No heavy construction works will take place within the recommended guidance distances, as determined by the appointed ECoW (i.e. 150-300m for red kite).	
		<ul> <li>Risk of "harassment" of roosting birds can be minimised by avoiding activity overnight and within two hours of dusk (two hours before official sunset time) and dawn (two hours after official sunrise time).</li> </ul>	
		In order to avoid the abandonment of nests or breeding territories as a result of disturbance during the breeding season, all works including vegetation removal and/or site clearance will be undertaken outside of the breeding bird season wherever possible. If this is not possible, all works will be subject to pre- construction nesting bird checks. The appointed ECoW will identify active nesting locations prior to any works taking place. If nest sites are identified, then appropriate mitigation measures (such as suitable exclusion zones/buffers for all species) to protect nest sites will be implemented. The recommended (no) disturbance buffer required for heavy construction activities is 200-300m for curlew, and 50-100m for breeding locations of oystercatcher (Goodship and Furness, 2022). Lapwing is not mentioned within the guidance but another plover species, ringed plover, has recommended distance of 100-200m as has dunlin (Goodship and Furness, 2022) and so a similar value is presumed appropriate for lapwing.	
		The appointed ECoW will monitor the vegetation that has been cleared in the non- breeding season ahead of construction to ensure that it has not developed to a stage making it suitable for ground nesting birds. As the construction phases progress, during the breeding season the ECoW will check the following works area for any nesting birds within 48 hours preceding the scheduled works, and following any requirements for mitigation.	
	Construction & Operational (Lighting)	A sensitive lighting scheme that aims to avoid disruption to bat, otter and badger foraging and commuting behaviour and nesting bird activity will be adopted. The following measures are to be incorporated into the design and installation of temporary lighting during works, and the permanent lighting scheme:	Developer / Contractor

EIA Report Chapter	Type of Mitigation or Compensation	Environmental Measure	Responsibility for Implementation
		• Any lighting will be directional (using fittings such as hoods, cowls or shields to direct light downwards wherever possible and avoid unnecessary light spill);	
		• LED Luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability;	
		• A warm white spectrum (ideally <2700 Kelvin, max 4000 Kelvin) should be adopted to reduce the blue light component;	
		• Lighting will be positioned to avoid illuminating suitable foraging, commuting and nesting habitat within hedgerows and edge habitat adjacent to the Site and any newly created woodland and hedgerow habitats that form part of the planting design for the Site; and	
		• The times during which lighting is on should be limited to provide dark periods.	
	Construction / Post- construction / Operational (Biodiversity Enhancement / Site Restoration Plan)	A Biodiversity Enhancement and Management Plan will be developed and implemented on-site. The focus will be on creating priority meadow habitat, wetland features and connect existing blocks of woodland providing habitat corridors and enhanced resources for protected and priority species. The enhancement measures will correspond with any required protected species mitigation. The following objectives are proposed:	Developer / Contractor
		Species-rich meadow creation on and off-Site ;	
		• Wetland scrapes and wet meadow creation both on and off-Site ;	
		Creation of species-rich hedgerows and tree planting;	
		<ul> <li>Native woodland and scrub planting, riparian planting and woodland edge enhancement;</li> </ul>	
		• Wetland features of biodiversity value incorporated into Sustainable Urban Drainage Systems (SuDS); and	
		Installation of bird boxes, and log piles.	
Chapter 7: Hydrology & Flood Risk	Pre- and during Construction	The CEMP will include methods such as locating stockpiles away from watercourses, seeding or covering exposed soils, using cut-off drains to prevent water ingress into excavations, and directing any collected water through settlement lagoons and silt traps before discharge.	Developer / Contractor

EIA Report Chapter	Type of Mitigation or Compensation	Environmental Measure	Responsibility for Implementation
		A detailed flood emergency / response plan will be prepared by the applicant in consultation with a flood expert. These internal procedures should be integrated into the site operating plan and included within the staff training packs.	
		External contractors visiting / working on site should also be made aware of the potential flood risks as part of their induction pack.	
		As part of the development flood emergency / response plan, a responsible person for the Applicant will sign up to the SEPA Flood line and Met Office weather warning service and disseminate information to staff and users of the site ahead of potential extreme flood events.	
		During construction it will be necessary to consistently monitor available resources when planning and managing works. Following the construction phase, it is envisioned that activity onsite will be limited to occasional maintenance and inspection works. No site visits or works should go ahead without taking due consideration of flood alerts, current river levels and weather warnings. Those responsible for monitoring flood risk information should be clearly identified within the works risk assessment, be aware of their responsibilities to inform others and be trained in the deployment of the Food Action Plan.	
	Construction / Operation	A drainage strategy / SuDS will be implemented on-site during the operational phase of the project.	Developer / Contractor
Chapter 8: Archaeology and Cultural Heritage	Pre- and during Construction (Archaeology)	Archaeological Works A programme of archaeological works of works will be required in advance of the construction of the Proposed Development. Such works could take the form of an archaeological evaluation by trial trenching in portions of Land Parcel 1 and 2. If significant features are found further mitigation is likely to be required and may include full excavation to be followed by a programme of post-excavation analysis including publication. The scope and scale of these works will need to be agreed with Angus Council, as advised by the Aberdeenshire Council Archaeology Service (ACAS), via a Written Scheme of Investigation (WSI).	Developer / Contractor

EIA Report Chapter	Type of Mitigation or Compensation	Environmental Measure	Responsibility for Implementation
Chapter 9: Noise	Construction (Noise Control measures)	The principal means of mitigation during the construction phase is adherence to the noise limits and good practice measures outlined in the CEMP. Best Practicable Means (BPM) will be applied to minimise construction noise at sensitive receptors. No additional mitigation is proposed beyond standard site practices and implementation of the CEMP.	Developer / Contractor
Chapter 10: Traffic & Transport	Construction (Traffic management)	To manage construction-related traffic, a detailed Construction Traffic Management Plan (CTMP) will be prepared and implemented prior to the start of works.	Developer / Contractor
		The construction Site would be registered with the Considerate Constructors Scheme which requires constructors to comply with a Code of Considerate Practice.	
		Construction traffic and personal would be managed within the existing site with appropriate procedures including signage and dedicated laydown area. A banksman would be responsible for ensuring the safe manoeuvring of heavy goods vehicles (HGVs) into, out of and within the Site.	
		In order to ensure any potential adverse effects on the road network are minimised, a monitoring scheme could be implemented and reviewed on a three- month post-commencement basis, with any findings reported to AC. Such a scheme would be extended to the haulage route and would incorporate assessment of Site operations and related traffic impacts, to identify any issues and implement further measures where necessary to mitigate traffic delay and / or disturbance to local receptors.	
		Two new grasscrete passing places will be introduced on Drumgley Road to facilitate safe HGV movement, and all HGVs will use designated haul routes via the A90(T), A94 and U364.	
		A wheel washing facility would be installed at the exit / entry to each work zone, which would be used as required.	

EIA Report Chapter	Type of Mitigation or Compensation	Environmental Measure	Responsibility for Implementation
	Construction (Dust Management)	Measures will be included within the CEMP to mitigate potential dust nuisance by covering HGVs on departure from the Site. In addition, during prolonged dry periods, dust suppression measures would be implemented on site appropriate to the hazard, such as, spraying or hosing of material prior to excavation and loading.	
Chapter 11: Glint & Glare	Post Construction / Operation	A landscape mitigation plan will be implemented to provide screening where potential glint and glare effects have been identified.	Developer

#### **12.3 Summary of Residual Effects**

12.3.1 **Table 12-2** provides reference to residual effects identified in the technical chapters of the EIA Report, as well as cross reference to relevant mitigation measures identified.

#### Table 12-2: Summary of Residual Effects

Description of Effect	Significance of Residual Effect	
	Significance	Beneficial / Adverse
Landscape and Visual Impact Assessment		
Landscape Character		
Effects on LCT 384: Broad Valley Lowlands – Tayside (Strathmore Unit)	Minor	Adverse
Effects on LCT 382: Lowland Hill Ranges	Negligible	Adverse
Effects on LCT 386: Low Moorland Hills	Negligible	Adverse
Drumgley - Effects on views from properties adjacent to the site and in the inner northeast of the study area including Core Path 237.	Moderate from Sparrowmuir and southwest Nether Drumgley	Adverse
	Moderate/Minor from Upper     Drumgley	

Description of Effect	Significance of Residual Effect	
	Significance	Beneficial / Adverse
	Minor from Core Path 237 and Easter Drumgley	
	<ul> <li>Negligible From Cotterton of Drumgley</li> </ul>	
Cossans - Impacts on southern outlook from where available from residential properties at the east of the group	Moderate / Minor	Adverse
Lochmill to North Leckaway - Impacts on outlook from residential properties and minor road	Moderate / Minor	Adverse
Ingliston to Mains of Brighton - Impacts on outlook from residential properties and minor road	Moderate / Minor	Adverse
Forfar - Impacts on settlement on the southern fringe of the town	Minor / Negligible	Adverse
Douglastown - Impacts on residential properties at the northern edge of the village	Minor	Adverse
Jericho to Upper Hayson - Impacts on outlook from residential properties and minor roads and Core Path 243	Minor	Adverse
Local road users and residents to the north of site	Minor / Negligible	Adverse
Haugh of Cossans - Impacts on the setting and outlook of residential property	Major / Moderate	Adverse
A94 - Impacts on views from road users	Minor / Negligible	Adverse
A90 - Impacts on views from road users	Minor / Negligible	Adverse
A926 - Impacts on views from road users	Minor / Negligible	Adverse
Core Path 272 - Drumgley to Glamis Station	Major / Moderate	Adverse
Core paths to the southeast of the Site	Maor / Moderate	Adverse
Ecology and Ornithology	·	
Construction & Decommissioning		

Description of Effect	Significance of Residual Effect	
	Significance	Beneficial / Adverse
Displacement of qualifying species from Loch of Kinnordy SPA and Ramsar (greylag goose, pink-footed goose)	Minor	Adverse
Displacement of qualifying species from Loch of Lintrathen SPA and Ramsar (greylag goose, whooper swan)	Minor	Adverse
Displacement of breeding, foraging or roosting waders from the Site	Negligible	n/a
During Operation		
Permanent displacement of SPA species (Kinnordy) due to habitat loss	Minor	Adverse
Permanent displacement of SPA species (Lintrathen) due to habitat loss	Minor	Adverse
Ongoing displacement or avoidance by breeding waders during operational life of solar farm	Negligible	n/a
Delivery of the OBEMP the Proposed Development is expected to deliver an enhanced level of biodiversity from the baseline conditions	Moderate	Beneficial
Cumulative Effects		
Displacement of features of the Loch of Kinnordy SPA and Ramsar site/ Displacement of features of the Loch of Lintrathen SPA and Ramsar site/ Displacement of breeding, foraging or roosting waders from the Site	Negligible	n/a
Flood Risk and Drainage		
During Construction and Decommissioning		
Changes to groundwater due to shallow ground disturbance	Negligible	n/a
Pollution impact from sediment run-off/ transport to hydrology	Negligible	n/a
Pollution impact from sediment run-off/ transport to designated sites	Negligible	n/a
Direct discharge of untreated foul drainage to hydrology	Minor	Adverse
Direct discharge of untreated foul drainage to designated sites	Negligible	n/a
During Operation		

Description of Effect	Significance of Residual Effect	
	Significance	Beneficial / Adverse
Increased flood risk due to surface water runoff	Minor	Adverse
Pollution impact from sediment run-off/ transport or chemical contaminated run-off to hydrology	Minor	Adverse
Pollution impact from sediment run-off/ transport or chemical contaminated run-off to designated sites	Negligible	n/a
Long-term groundwater changes	Minor	Adverse
Cultural Heritage		
During Construction and Decommissioning		
Direct impacts on known heritage assets	Minor	Adverse
Direct impacts on unknown heritage assets	Minor	Adverse
During Operation		· · ·
Setting effect on St Orland's Stone (Scheduled Monument)	Moderate	Adverse
Setting effect on Haughs of Cossans Farmhouse (Category C Listed Building)	Moderate	Adverse
Setting effect on Glamis Castle Garden and Designed Landscape (GDL)	Minor	Adverse
Setting effects on other designated assets (various Scheduled Monuments and Listed Buildings)	Negligible or Neutral	n/a
Transport and Access		· ·
During Construction and Decommissioning		
Traffic flows on public road network	Minor	Adverse
Accidents and safety	Negligible	n/a
Disruption and Driver Delay due to vehicle breakdowns or dirt and debris on road	Negligible	n/a

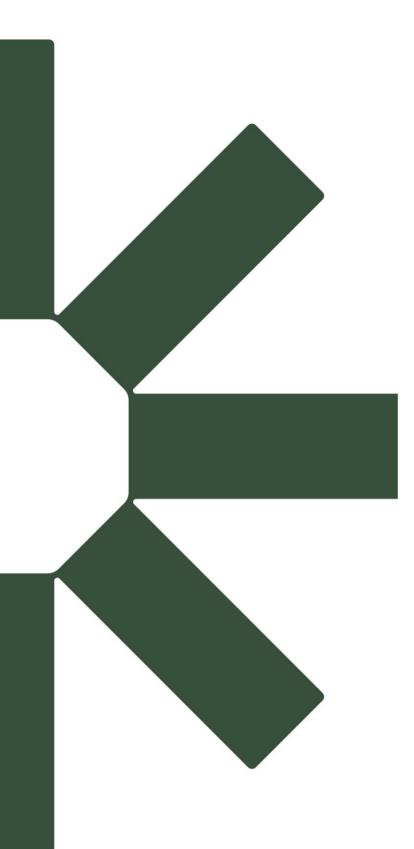
Description of Effect	Significance of Residual Effect	
	Significance	Beneficial / Adverse
Disruption and Driver Delay due to change in traffic flows	Negligible	n/a
Fear, Intimidation and Pedestrian / Cyclist Amenity	Negligible	n/a
Severance	Negligible	n/a
Public Transport	Negligible	n/a
Operation	·	
Traffic flows on public road network	Negligible	n/a
Accidents and safety	Negligible	n/a
Disruption and Driver Delay	Negligible	n/a
Fear, Intimidation and Pedestrian / Cyclist Amenity	Moderate	Adverse
Severance	Moderate	Adverse
Public Transport	Minor	Adverse
Noise		
Construction and Decommissioning		
Noise and Vibration at Sensitive Receptors	Negligible	n/a
During Operation		
Noise at Sensitive Receptors	Negligible	n/a
Glint and Glare		
Operation		
Effect on all road receptors	Minimal / Negligible	Adverse
Effect on fixed (residential) receptors	Minimal	Adverse

#### 12.4 References

FCS (2006). FCS Guidance Note 32: Forest operations and birds in Scottish forests: November 2006. Available at:

https://www.forestry.gov.scot/images/corporate/pdf/Guidancenote32Birddisturbance.pdf

Goodship, N. M., & Furness, R. W. (2022). Disturbance Distances in selected Scottish Bird Species – NatureScot Guidance. Available at: <u>https://www.nature.scot/doc/disturbance-distances-selected-scottish-bird-species-naturescot-guidance</u>



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