

Balliemeanoch Pumped Storage Hydro

Environmental Impact Assessment
Report

Volume 5: Appendices
Appendix 21.1: Mitigation Register

ILI (Borders PSH) Ltd

July 2024

Quality information

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1. Introduction

This Mitigation Register provides a register for all mitigation measures that have been identified in the EIA Report (“EIA”) Chapters for the Development, some of which are incorporated within the Outline CEMP and all other topic-specific Management Plans.

Table 1 and Table 2 collate the mitigation measures outlined in the EIA Report and have been separated into construction and operation phases. These tables show the corresponding reference to the EIA Report, the relevant Management Plan(s) and also proposed responsibility for the preparation, approval, and delivery of the mitigation.

Embedded mitigation as set out in *Chapter 3: Evolution of Design Alternatives (Volume 2, Main Report)* is considered part of the design of the Development, as described in *Chapter 2: Project and Site Description (Volume 2, Main Report)*. As such, these are included within the subject of the Section 36 Application and therefore it is not considered necessary to secure the embedded mitigation.

The tables provided a source reference for each mitigation measure within the EIA Report. Whilst the measures have been separated by topic, there may be some cross references with other technical assessments, especially where shared receptors have been identified and mitigated by the same measure.

2. Construction Environment Management Plan

An Outline Construction Environment Management Plan (“Outline CEMP”) has been prepared as part of the Section 36 Application and is available in *Appendix 3.1: Outline Construction Environmental Management Plan (Volume 5)*.

The Outline CEMP sets out the environmental management framework to be adopted during construction and measures to be implemented to minimise construction environmental impacts. The Outline CEMP covers:

- Pollution prevention;
- Construction noise;
- Emergency response and flood risk management plan;
- Waste Management Plan;
- Ecological management plan;
- Biosecurity measures;
- Dust Management; and
- Tree Protection during construction

The standard good practice measures for the above topics, set out within the Outline CEMP, are considered to be embedded mitigation and assumed to be in place within the construction effects assessments contained within Chapters 5-16 of this EIA Report. Where applicable, specific measures may also have been identified within the EIA Report topic chapters and included in the Outline CEMP as additional mitigation.

The Outline CEMP will be updated post-consent on the appointment of the Construction Contractor and in consultation with ABC and other relevant consultees. Throughout the construction of the Development, the CEMP will remain a live document being updated as circumstances, policies and best working practices change.

3. Construction Traffic Management Plan

In addition to the CEMP, a Framework Construction Traffic Management Plan (“Framework CTMP”) has also been prepared as part of the Section 36 Application and is available in *Appendix 14.1: Framework Construction Traffic Management Plan (Volume 5 Appendices)*. Following award of consent, the Framework CTMP will be further developed in consultation with ABC, Transport Scotland (as necessary), Police Scotland and other stakeholders.

The CTMP sets out measures to be implemented to minimise adverse effects from construction traffic. Details to be provided in the Framework CTMP include as a minimum:

- The agreed route for construction traffic including any abnormal loads;
- The necessary agreements and timing restrictions for construction traffic, for example during works between Monday – Friday there may be timing restriction around school drop-off and pick-up times, and prohibition during loading times at commercial premises;
- Details of a proposed Condition Survey on access routes;
- Proposals for maintenance of the agreed routes for the duration of the construction phase;
- Proposals for monitoring and agreeing maintenance costs;
- Escort arrangements for abnormal loads;
- Route signing;
- Details of the advanced notification to the general public warning of any construction transport movements, specifically abnormal loads;
- Details of information road signage warning road users of forthcoming AIL transport and construction traffic movements;
- Arrangements for regular road maintenance and cleaning, e.g. road sweeping in the vicinity of the site access point as necessary, wheel cleaning / dirt control arrangements;
- Details of actions that must be taken by contractors to mitigate the traffic impact of site workers travelling to site;
- Contractor speed limits; and
- Community and emergency services liaison details.

Measures set out in the Framework CTMP are considered embedded and assumed to be in place within the construction effects assessments contained within *Chapters 5-16 of the EIA Report (Volume 2 Main Report)*. Where applicable, specific measures may also have been identified within the EIAR topic chapters as proposals for inclusion within the CTMP post-consent.

4. Housing Strategy

A draft Workers’ Housing Strategy has been prepared as part of the Section 36 Application and is available in *Appendix 16.2: Draft Workers Housing Strategy (Volume 5 Appendices)*.

The draft Workers Housing Strategy demonstrates a range of plausible options for accommodating construction workers employed by the scheme during the seven-year (approx.) construction period of the project. It is anticipated that a requirement for a detailed Workers’ Housing Strategy will be a condition of any deemed planning permission, forming part of the Section 36 Consent, issued in relation to the Project.

5. Topic Specific Management Plans

As set out in Section 1.4 of *Chapter 1: Introduction (Volume 2, Main Report)*, the Section 36 Application will be accompanied by a number of other plans, contained within *Volume 5* of the EIAR. These include;

- *Appendix 5.4: Outline Landscape and Ecology Management Plan (LEMP) (Volume 5 Appendices)* – which outlines the holistic landscape and ecological reinstatement measures;
- *Appendix 10.2: Outline Peat Management Plan (PMP) (Volume 5 Appendices)* – which details the management of peat;
- *Appendix 11.5: Outline Water Management Plan (oWMP) (Volume 5 Appendices)* – which outlines how water quality will be maintained, watercourse protection and the protection of private water supplies; and
- *Appendix 16.1: Outline Access Management Plan (Volume 5 Appendices)* – which outlines the diversions, closures and management of recreational and formal access routes and paths within the Development Site and connections to them outside the red line boundary.

As noted above, *Table 1 Construction Phase Mitigation Measures* and *Table 2 Operational Phase Mitigation Register*, below, collate the mitigation measures outlined in the EIAR and have been separated into construction and operation phases. These tables show the corresponding reference to the EIAR, the relevant Management Plan(s) and also proposed responsibility for the preparation, approval, and delivery of the mitigation.

Table 1. Construction Phase Mitigation Measures

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
Chapter 5: Landscape and Visual Assessment							
LV-01	Embedded	An Outline Landscape and Ecology Management Plan (<i>Appendix 5.4 (Volume 5 Appendices)</i>) has been developed to facilitate an integrated approach to landscape and ecological mitigation providing reinstatement planting and habitat creation which will see to integrate the various Development components into the landscape and its wider setting.	Section 5.9 (Volume 2) & Appendix 5.4 (Volume 5)	LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
LV-02	Embedded	The Headpond Embankment has been designed to soften and naturalise the profile of the north-western extent of the Headpond Embankment.	Section 5.9	Design of the Development	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
LV-03	Embedded	The temporary Access Track have been designed to minimise landscape and visual impacts, further details are available in <i>Chapter 5: Landscape and Visual (Volume 2)</i> .	Section 5.9	Design of the Development	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
LV-04	Embedded	Advanced planting of native woodland near Loch Awe and a few other locations, where existing habitats are of lower ecological value and it is appropriate to plant native woodland, which would assist in the screening and softening of construction works as well as reduce the scale of the Tailpond part of the Development.	Section 5.9 (Volume 2) & Appendix 5.4 (Volume 5)	LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
LV-05	Embedded	Landscape and visual mitigation measures during the construction phase will be set out within the CEMP, an Outline CEMP is in <i>Appendix 3.1: Outline Construction Environmental Management Plan (Volume 5)</i> .	Section 5.9 (Volume 2) & Appendix 5.4 (Volume 5)	LEMP CEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
LV-06	Embedded	Planting and habitat creation LV measures to integrate the Development into the landscape and its wider setting are set out within the Outline LEMP, <i>Appendix 5.4: Outline Landscape and Ecology Management Plan (Volume 5)</i> .	Section 5.9 (Volume 2) & Appendix 5.4 (Volume 5)	LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
LV-07	Embedded	Temporary Access Tracks will be removed, and the ground reinstated to minimise the operational visual impacts of the Development.	Section 5.9 (Volume 2) & Appendix 5.4 (Volume 5)	LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
LV-08	Embedded	Reinstatement of temporarily lost habitats, including grassland sowing and heathland sowing.	Section 5.9 (Volume 2) & Appendix 5.4 (Volume 5)	LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
LV-09	Embedded	Restoration and rehabilitation measures including peat bog / upland rehabilitation, natural regeneration and steep mountainside enhancement.	Section 5.9 (Volume 2) & Appendix 5.4 (Volume 5)	LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
LV-10	Embedded	Replacement of felled forestry plantation, where lost to widen existing tracks for access, with productive woodland, heathland and grassland planting to enhance the structure and diversity of species.	Section 5.9 (Volume 2) & Appendix 5.4 (Volume 5)	LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
LV-11	Embedded	The height of the Embankment above ground level has been minimised through the orientation of the Headpond.	Section 5.9 (Volume 2) & Appendix 5.4 (Volume 5)	LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
LV-12	Embedded	The design of the Development has minimised the requirement for additional structures, which has kept the Headpond and the Tailpond shoreline as uncluttered as possible.	Section 5.9 (Volume 2) & Appendix 5.4 (Volume 5)	LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
LV-13	Embedded	The architectural design of the buildings and structures within the Development Site will seek to assimilate them into the surrounding landscape as much as possible by using simple, clean forms and a palette of materials and colour which lessens the contrast with the surrounding landscape.	Section 5.9 (Volume 2) & Appendix 5.4 (Volume 5)	LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
Chapter 6: Terrestrial Ecology							
TE-01	Embedded	Access tracks have been minimised as far as possible, and as far as possible travel over shallower peat to avoid deeper peat (which typically supports better quality bog habitat).	Section 6.9	Design of the Development	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
TE-02	Embedded	Access tracks across peat of 1m depth or more will be designed as floating tracks.	Section 6.9	Design of the Development	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-03	Embedded	The northern access track from the A819 has been located largely along existing forestry tracks, minimising the requirement for construction of new track infrastructure and avoiding impacts on non-forestry habitats.	Section 6.9	Design of the Development	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-04	Embedded	The access track from Balliemanoch has been adjusted to avoid impacting ancient semi-natural woodland along the Allt a' Chrosaid, and to largely follow the existing access track with minimal other habitat impacts.	Section 6.9	Design of the Development	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-05	Embedded	Access tracks in the Inveraray area have been repositioned almost entirely along existing forestry tracks, avoiding or very much minimising felling requirements in long-established plantation and PAWS, and also largely avoiding impacts on wetland habitat that was crossed in previous design iterations.	Section 6.9	Design of the Development	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-06	Embedded	No access track will be constructed as part of the Development from Three Bridges – access will only be taken from Three Bridges if an access track has already been constructed by Blarghour Wind Farm and the necessary land rights have been secured, otherwise access will be taken only from the north and Balliemanoch.	Section 6.9	Design of the Development	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-07	Embedded	New access tracks throughout have been adjusted as far as possible to run though the shallowest peat, thereby also avoiding deeper, wetter and more intact blanket bog habitat.	Section 6.9	Design of the Development	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-08	Embedded	The temporary access track just north of the northern Headpond Embankment has been adjusted to avoid a base-rich flush containing bog orchid.	Section 6.9	Design of the Development	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-09	Embedded	The Tailpond works extent has been adjusted to reduce the extent of woodland loss beside Loch Awe to a minimum.	Section 6.9	Design of the Development	Applicant / construction Contractor	ABC in consultation with	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
						NatureScot, and SEPA	
TE-10	Embedded	The permanent track/bridge near permanent compound PC09 has been moved to avoid possible impact on a rocky species-rich riparian strip.	Section 6.9	Design of the Development	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-11	Embedded	Permanent compounds PC13 and PC14 have been moved to avoid shallower gradients further north with deep peat.	Section 6.9	Design of the Development	Applicant / construction Contractor	ABC, NatureScot, and SEPA	Construction Contractor
TE-12	Embedded	Permanent compound PC20 and access track have been moved to avoid deep peat.	Section 6.9	Design of the Development	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-13	Embedded	Temporary Construction Compound TC02 has been reduced in size to be confined only to agricultural improved pasture, with no impact on woodland and other habitats west of the B840 beside Loch Awe.	Section 6.9	Design of the Development	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-14	Embedded	Temporary Construction Compound TC04 has been relocated to avoid impact on a substantial rushy wetland that constitutes a potential GWDTE with greater floristic diversity than the heavily-grazed species-poor grassland that TC04 now occupies.	Section 6.9	Design of the Development	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-15	Embedded	Temporary Construction Compound TC07 has been re-shaped so that it no longer impinges on an existing grazing exclusion area by Lochan Romach with ungrazed blanket bog and native tree patches, and is now confined to habitats degraded by over-grazing, mainly wet heath and acid grassland.	Section 6.9	Design of the Development	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-16	Embedded	Temporary Construction Compound TC11 and associated access track was moved to avoid significant deep peat that also supports the only known location in the area with the notable sphagnum species <i>Sphagnum austini</i> ; subsequently, these elements have been further adjusted to avoid an additional bog area with substantial bog pools and a steep slope with local species-rich vegetation.	Section 6.9	Design of the Development	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-17	Embedded	Temporary Construction Compound TC21 has been adjusted to impact only an existing quarry, rather than adjacent long-established plantation.	Section 6.9	Design of the Development	Applicant / construction Contractor	ABC in consultation with	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
						NatureScot, and SEPA	
TE-18	Embedded	All personnel involved in the construction, operation of the 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.	Section 6.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-19	Embedded	An Ecological / Environmental Clerk of Works (EcoW / ECoW) will be employed for the duration of construction. The EcoW / EcoW will advise on and monitor implementation of mitigation measures and compliance with legislation concerning ecological features.	Section 6.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-20	Embedded	The EcoW / EcoW or other suitably qualified and experienced ecologist will carry out pre-construction surveys for relevant protected species in suitable habitat, including otter and water vole, and search for red squirrel dreys in any suitable trees requiring felling. 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).	Section 6.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-21	Embedded	A Construction Environmental Management Plan (CEMP) will be prepared and submitted for approval by Argyll and Bute Council, in consultation with SEPA and NatureScot where necessary, prior to commencement of construction. The CEMP will set out all environmental management measures and the roles and responsibilities of construction personnel.	Section 6.9	CEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-22	Embedded	During all phases of the Development, pollution prevention measures will be adopted, following SEPA Guidance on Pollution Prevention (GPP) or Pollution Prevention Guidelines (PPG), including the following: <ul style="list-style-type: none"> • Controls and contingency measures to manage run-off from construction areas and sediment; • All oils, lubricants and other chemicals will be stored in appropriate secure containers in suitable storage areas, with spill kits at the storage location and at places across the Development Site; and • all refuelling and servicing of vehicles and plant will be carried out in a designated bunded area with an impermeable base, located at least 50m from any watercourse. 	Section 6.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-23	Embedded	Works near or at any retained native trees or semi-natural woodland will follow tree protection guidance set out in British Standard 5837:2012 (British Standards Institution, 2012).	Section 6.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-24	Embedded	Any artificial lighting required for construction works will be directional to avoid or minimise light spill beyond immediate works areas and will be turned off when not needed.	Section 6.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
						NatureScot, and SEPA	
TE-25	Additional	An Outline Landscape and Ecological Management Plan (oLEMP) has been prepared for the Development and submitted as part of the S36 application. The oLEMP sets out a range of measures that will be implemented by the Development. This is intended to a) mitigate landscape and ecological impacts, and b) beyond this deliver biodiversity and general environmental enhancement. The oLEMP will be updated pre-construction, including through preparation of Method Statements where necessary, to provide the full level of detail needed to ensure successful delivery of all mitigation and enhancement measures.	Section 6.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-26	Additional	Establishment of a substantial peatland and upland habitat rehabilitation zone around the Headpond, covering approximately 3km ² . This would be deer-fenced to exclude wild deer grazing, and only conservation-level livestock grazing would be permitted, to improve the condition of over-grazed upland habitats. Burning of blanket bog (and other habitats) would also cease. On steeper slopes on lower ground within this area, natural tree regeneration may occur and would not be prevented as long as it comprised native species such as birch, willow <i>Salix</i> spp., rowan <i>Sorbus aucuparia</i> and hazel <i>Corylus avellana</i> (as already exist in extremely small quantity in small, retained ravine-like locations south-west of the Headpond);	Section 6.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-27	Additional	Restoration of localised blanket bog exhibiting bare peat exposure, and infilling of drainage grips where locally present;	Section 6.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-28	Additional	Extensive ecologically appropriate planting of woodland to expand native woodland beside Loch Awe and nearby, in places also providing visual screening of Tailpond infrastructure;	Section 6.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-29	Additional	Rehabilitation of the caravan zone near the Tailpond by a) removal of caravans, non-native plants, ruderal vegetation and hard-standing; b) planting of appropriate native trees (as standards rather than saplings) to suit and expand the existing thin strip of ancient woodland here; and c) translocation of turves (including deep soil) of ancient woodland ground flora from the Tailpond area to this rehabilitation zone, to replace existing soil/vegetation where currently degraded, under existing trees or planted standards;	Section 6.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
TE-30	Additional	Sowing of the exposed faces of the two Headpond Embankments with appropriate heathland seed mixes;	Section 6.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
TE-31	Additional	Provision of a green roof sown with lowland meadow over the Tailpond infrastructure at the edge of Loch Awe.	Section 6.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
Chapter 7: Aquatic Ecology							
AE-01	Embedded	Works in Loch Awe (and potentially other water bodies) will require a Controlled Activities Regulations (CAR) licence application to SEPA before the works can proceed. Under the CAR licence the works in Loch Awe may be restricted as to the timing of their completion, to avoid the migratory season of salmon and other fish species, which may be migrating through Loch Awe.	Section 7.11	CAR Licence	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
AE-02	Embedded	Steps have been taken during the design process to minimise impacts via design evolution, including design workshops to facilitate input from all disciplines. This facilitated the development of various design principles to minimise impacts, including those summarised below: <ul style="list-style-type: none"> The implementation of Sustainable Drainage (SuDs) features and attenuation features will control runoff into watercourses and Lochs and avoid contamination of these water bodies. The design is for a completely 'closed-loop' system, whereby water will be drawn from Loch Awe to the Headpond and returned to Loch Awe via the tunnels and spillway pipes. Therefore, the risk of water spilling into adjacent water bodies will be negligible. The risk of cross-catchment contamination during construction, for example by the spread of INNS between Loch Fyne, Loch Awe, and other catchments, will be minimised by measures set out in the CEMP, and the incorporation of temporary SuDs and attenuation features in the intervening land. Dust screens will be installed along access tracks to prevent contamination of the surroundings with dust and fine sediments during construction. Where culverts are installed at watercourse crossings, i.e., for the installation of new watercourse crossings or the upgrade of existing crossings, the culvert invert will be set below the existing watercourse bed to ensure continued longitudinal connectivity and fish passage through the culvert. Such culverts will be designed and installed according to SEPA best practice guidance¹. Watercourse crossings (new or upgraded) where appropriate will be designed as bottomless arch watercourse crossings, which will maintain natural bed material to ensure continued longitudinal connectivity and fish passage. Where possible, a 50m buffer from watercourses will be maintained to avoid the need for mitigation such as temporary silt fencing. Pipeline and tunnel infrastructure will be installed by drill and blast avoid impacts to surface habitats, including watercourses. Screening requirements at the Inlet / Outlet on Loch Awe will be finalised through discussion with SEPA / NatureScot for the CAR Licence to prevent the entrapment and/or impingement of fish, and 	Section 7.11	Design of the Development	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor

¹ SEPA (2015). WAT-PS-06-02: Culverting of Watercourses - Position Statement and Supporting Guidance. Available at: https://www.sepa.org.uk/media/150919/wat_ps_06_02.pdf

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
		<p>to minimise the transfer of INNS. More information on Development operation (e.g., turbine design & associated pressure changes), and liaison with SEPA would be required should deviation from best-practice screening be considered appropriate, for example in the presence of additional mitigation such as bubble curtains to deter fish from the Inlet / Outlet structure.</p> <ul style="list-style-type: none"> The maximum inlet velocity from Loch Awe is predicted to be 0.15 m/s given the size of the inlet structure and screen. 					
AE-03	Embedded	<p><u>Construction of the cofferdam on the shoreline of Loch Awe, including piling, de-watering, and substrate removal</u></p> <p>A silt curtain or equivalent will be installed prior to the cofferdam being installed. This is to reduce the potential for sediment mobilisation and dispersal in Loch Awe during construction.</p> <p>Once the cofferdam has been removed there may be a requirement for some localised dredging to remove any material that has built about around the piles. This will require a dredger and a silt curtain (or equivalent) to prevent any pollution to Loch Awe. Dredging should be supervised by the Aquatic Ecological Clerk of Works (ECoW) due to the potential for INNS and fish to be encountered during the works.</p>	Section 7.11	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
AE-04	Embedded	<p><u>Watercourse crossings for temporary access roads, including culverting of watercourses:</u></p> <p>Where culverts are required for watercourse crossings, these will be installed as per SEPA guidelines based on the principles set out in the standalone Design Statement submitted with the application.</p> <p>A CAR licence for all watercourse crossings will be obtained well in advance of the works, where required in consultation with SEPA / NatureScot.</p> <p>The construction of watercourse crossings will avoid the migration and spawning seasons of resident brown trout and migratory Atlantic salmon, where those species are present (Atlantic salmon in Allt Criche (tributary of Erralich Water): BL-01; Brown/sea trout in four watercourses: Allt Criche (tributary of Erralich Water): BL-01; Erralich Water: BL02; River Aray: BL-22; Unnamed tributary of River Aray: BL-23), as follows:</p> <ul style="list-style-type: none"> Brown trout spawning – January to March Atlantic salmon upstream migration and spawning – November to February 	Section 7.11	CAR Licence	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
AE-05	Embedded	<p><u>Construction of the Headpond and Headpond Embankments, including land take and transport of excavated material:</u></p> <p>Details of drainage and water management measures during the Headpond and Embankment works will be detailed in the standalone Design Statement submitted with the application and will be informed by the CEMP. (<i>Appendix 3.1 Outline CEMP (Volume 5 Appendices)</i>).</p>	Section 7.11	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
AE-06	Embedded	<p><u>Transport of excavated tunnel material to Headpond via dump trucks, and spoil management of material from tunnelling works, including general plant movement throughout the Development Site:</u></p> <p>Spoil management, including stockpiling and transport, will be carried out according to the standalone Design Statement submitted with the application and CEMP. Measures have been built into the design to ensure that spoil management is effective in minimising runoff and subsequent contamination of water bodies. It is anticipated that such measures in the CEMP will include dust screens and vehicle washing facilities to minimise dust and siltation.</p>	Section 7.11	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
		<p>Wherever feasible, a 50m standoff buffer between works, especially those involving spoil management, and aquatic habitats will be maintained to reduce the risk of runoff contaminating water bodies. This buffer will be maintained as a vegetated strip to act as a sediment trap if runoff does occur.</p> <p>Where considered necessary to prevent silt-laden runoff into aquatic habitats, silt fencing will be installed alongside spoil stockpiles. This will be supervised and monitored by the ECoW to ensure that silt control measures are effective.</p>					
AE-07	Embedded	<p><u>Potential spread of INNS through the site:</u></p> <p>There are potential effects due to the spread of INNS through the Development Site, notably from Loch Awe during de-watering and substrate excavation, and effects of transporting materials onto the Development Site and the potential introduction of INNS from Loch Fyne and other catchments. Mitigation has been built into the design, and will be outlined in the Outline CEMP, to prevent the transport of INNS into other areas and to prevent the upstream transport of INNS. (<i>Appendix 3.1 Outline CEMP (Volume 5 Appendices)</i>)</p>	Section 7.11	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
AE-08	Additional	<p><u>Construction of the cofferdam on the shoreline of Loch Awe, including piling, de-watering, and substrate removal:</u></p> <p>To minimise the effects of noise from piling on fish, there should be a 'soft start' to piling works to deter fish from the immediate area where physical injury may occur. Mason and Collett (2011) suggest a soft start to piling using a blow energy of 150 kJ and show that using a soft start will have a lower impact on the salmon initially. Alternatively, vibro-driven piles will be used to minimise the effects of underwater noise and vibration on fish, including Atlantic salmon.</p> <p>Works in Loch Awe should be carried out under the supervision of an Aquatic ECoW; this is likely to be a condition of the CAR licence.</p> <p>A fish rescue will be required during de-watering of the cofferdam as it is highly likely that fish will congregate in these sheltered areas during construction and then become trapped as the cofferdam is sealed. This process will form part of the CAR licence, and detailed methodology will be provided for the licence application.</p>	Section 7.11	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
AE-09		<p><u>Watercourse crossings for temporary access roads, including culverting of watercourses:</u></p> <p>In addition to the pre-commencement fish surveys described above, it is recommended that culverting of watercourses is supervised by the Aquatic ECoW, and this is likely to form a condition of the CAR licence. The ECoW will ensure the correct installation and functioning of silt and pollution control measures.</p> <p>Culverting of watercourses will require sections to be isolated and fish rescues carried out, according to the conditions of the CAR licence. This process will be informed by the fish surveys of watercourse crossing locations.</p>	Section 7.11	CAR Licence	Applicant / construction Contractor	SEPA	Construction Contractor
AE-10		<p><u>Construction of the Headpond and Headpond Embankments, including land take and transport of excavated material:</u></p> <p>The pre-construction fish surveys described above will inform the mitigation requirements for the loss of Lochan Airigh. It is envisaged that this will involve the translocation of fish to a suitable nearby receptor</p>	Section 7.11	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
		<p>site – there are numerous similar lochans locally. Due to the abundance of this type of habitat locally, it is considered that a replacement water body is not required.</p> <p>Works in this area will be supervised by the Aquatic ECoW to ensure that water management measures, including drainage ditches, attenuation ponds, buffer strips, and silt fencing, will be effective in preventing the runoff of silt-laden water to adjacent watercourses and water bodies.</p>					
AE-11		<p><u>Effects due to temporary site drainage, including settlement ponds, temporary ditches, and other drainage features:</u></p> <p>As described above, the installation of temporary site drainage will be supervised and monitored by the ECoW to ensure that it is effective in preventing the contamination of watercourses and water bodies.</p>	Section 7.11	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
AE-12		<p><u>Potential effects due to the spread of INNS through the Site:</u></p> <p>Material excavated or dredged from Loch Awe must be retained in the immediate area, i.e., stockpiled on the loch shoreline, to prevent the spread of INNS, including Elodea sp., which is known to be present in Loch Awe.</p> <p>The Aquatic ECoW will supervise all excavation and dredging works in Loch Awe to check for the presence of INNS and ensure that appropriate biosecurity measures, as detailed in the CEMP, are implemented. (<i>Appendix 3.1 Outline CEMP (Volume 5 Appendices)</i>)</p> <p>Biosecurity measures should be implemented throughout the development, following 'Check, Clean, Dry' principles as set out in the CEMP. These measures will include, but are not limited to:</p> <ul style="list-style-type: none"> • Vigilance for the presence of INNS, including pre-commencement surveys, supervision, and monitoring by the ECoW; • Vehicle washing facilities, including washing plant and vehicles before transferring between this and different construction sites; • Washing and disinfection of Plant, PPE, and materials after works in aquatic habitats, especially in Loch Awe where INNS are known to be present; • Ensuring where possible that materials are retained in the habitats where they originated, especially where INNS are known to be present, i.e. Loch Awe; • Drying facilities should be provided for equipment and PPE – some INNS can live, or seeds and propagules remain viable, in moist conditions for long periods; • Avoid the transfer of water between aquatic habitats on site. 	Section 7.11	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
Chapter 8: Marine Ecology							
ME-01	Embedded	The installation of the piles during the construction of the jetty will be undertaken using vibratory piling wherever possible and impact piling only used where necessary to drive the pile toe into bedrock.	Section 8.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
ME-02	Embedded	Where impact piling is used the project will follow the JNCC guidance to minimise the risk of injury to marine mammals (JNCC, 2010) and such measures will be incorporated into the project CEMP.	Section 8.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
ME-03	Embedded	Measures in the Loch Fyne Marine Biosecurity Plan (Gov Scot, 2020) relevant to the construction methods used in the marine environment will be adopted and incorporated into the project CEMP.	Section 8.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
ME-04	Embedded	All vessels will follow the International Regulations for Preventing Collisions at Sea 1972 (COLREGS) and International Convention for the Safety of Life at Sea 1974 (SOLAS).	Section 8.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
ME-05	Embedded	All vessels will be in compliance with the International Convention for the Prevention of Pollution from Ships (MARPOL) regulations and will therefore be equipped with waste disposal facilities onboard. The discharging of contaminants is not permitted within 12 NM from the coast to preserve bathing waters.	Section 8.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
ME-06	Embedded	Control measures and shipboard oil pollution emergency plans (SOPEP) will be in place and adhered to under MARPOL Annex I requirements for all vessels.	Section 8.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
ME-07	Embedded	Ballast water discharges from all vessels will be managed under International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (Ballast Water Management Convention).	Section 8.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
ME-08	Embedded	All vessels will adhere to the International Maritime Organisation guidelines for the control and management of ships' biofouling to minimise the transfer of invasive aquatic species (Biofouling Guidelines) (resolution MEPC.207(62)).	Section 8.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot, and SEPA	Construction Contractor
ME-09	Embedded	All vessels will be in compliance with the International Convention for the Prevention of Pollution from Ships (MARPOL) regulations and will therefore be equipped with waste disposal facilities onboard. The discharging of contaminants is not permitted within 12 NM from the coast to preserve bathing waters.	Section 8.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
					NatureScot, and SEPA		
Chapter 9: Ornithology							
O-01	Embedded	In the breeding season prior to commencement of construction and throughout the construction phase, a programme of breeding bird surveys will be carried out within the potential Zol of the Development. The survey methods will follow those adopted during the surveys which have informed the EIA. The surveys will be carried out by a suitably experienced ornithologist(s) and will follow best practice methods. The results of on-going surveys will be communicated to relevant construction personnel to ensure that appropriate mitigation is implemented to protect identified breeding birds. The detailed programme of breeding bird surveys will be set out in a Species Protection Plan (SPP), which will be approved by Argyll and Bute Council, in consultation with NatureScot, prior to the commencement of construction works.	Section 9.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot	Applicant/ Construction Contractor
O-02	Embedded	The northern access track from the A819 has been located largely along existing forestry tracks, minimising the requirement for construction of new track infrastructure and avoiding impacts on non-forestry habitats;	Section 9.9	Design of Development	Applicant / construction Contractor	ABC in consultation with NatureScot	Applicant/ Construction Contractor
O-03	Embedded	The access track from Balliemanoch (west of the headpond) has been adjusted to avoid impacting ancient semi-natural woodland along the Allt a' Chrosaid, and to largely follow the existing access track with minimal other habitat impacts;	Section 9.9	Design of Development	Applicant / construction Contractor	ABC in consultation with NatureScot	Applicant/ Construction Contractor
O-04	Embedded	Access Tracks in the Inveraray area have been positioned almost entirely along existing forestry tracks, avoiding or very much minimising felling requirements, and also largely avoiding impacts on wetland habitat that was crossed in previous design iterations;	Section 9.9	Design of Development	Applicant / construction Contractor	ABC in consultation with NatureScot	Applicant/ Construction Contractor
O-05	Embedded	No access track will be constructed as part of the Development from Three Bridges (off the A819 south-east of the Development) – access will only be taken from Three Bridges if an access track has already been constructed by Blarghour Wind Farm and the necessary land rights have been secured, otherwise access will be taken only from the north and west (Balliemanoch);	Section 9.9	Design of Development	Applicant / construction Contractor	ABC in consultation with NatureScot	Applicant/ Construction Contractor
O-06	Embedded	New access tracks throughout have been adjusted as far as possible to run though the shallowest peat, thereby also avoiding deeper, wetter and more intact blanket bog habitat;	Section 9.9	Design of Development	Applicant / construction Contractor	ABC in consultation with NatureScot	Applicant/ Construction Contractor
O-07	Embedded	The Tailpond works extent has been adjusted to reduce the extent of woodland loss beside Loch Awe to a minimum;	Section 9.9	Design of Development	Applicant / construction Contractor	ABC in consultation with NatureScot	Applicant/ Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
O-08	Embedded	Temporary Construction Compound TC02 has been reduced to be confined only to agriculturally improved pasture, with no further impact on woodland beside Loch Awe;	Section 9.9	Design of Development	Applicant / construction Contractor	ABC in consultation with NatureScot	Applicant/ Construction Contractor
O-09	Embedded	Temporary Construction Compound TC04 has been relocated to avoid impact on a substantial rushy wetland that constitutes a potential Groundwater Dependent Terrestrial Ecosystem (GWDTE) with greater floristic diversity than the heavily grazed species-poor grassland that TC04 now occupies;	Section 9.9	Design of Development	Applicant / construction Contractor	ABC in consultation with NatureScot	Applicant/ Construction Contractor
O-10	Embedded	Temporary Construction Compound TC07 has been re-shaped so that it no longer impinges on an existing grazing exclusion area by Lochan Romach with ungrazed blanket bog and native tree patches, and is now confined to habitats degraded by over-grazing, mainly wet heath and acid grassland;	Section 9.9	Design of Development	Applicant / construction Contractor	ABC in consultation with NatureScot	Applicant/ Construction Contractor
O-11	Embedded	Temporary Construction Compound TC21 has been adjusted to impact only an existing quarry, rather than adjacent long-established plantation.	Section 9.9	Design of Development	Applicant / construction Contractor	ABC in consultation with NatureScot	Applicant/ Construction Contractor
O-13	Embedded	An Ecological / Environmental Clerk of Works (ECoW) will be employed for the duration of the construction of the Development. The remit of the ECoW will include, but may not be limited to: <ul style="list-style-type: none"> Carrying out pre-works checks for important bird species and nesting birds; Advising on exact infrastructure placement within micro-siting tolerances; Monitoring of, and advising on, storage of overburden to minimise habitat damage; Monitoring of any peat/vegetated turves that may be stored for later reinstatement; Advising on habitat reinstatement; Monitoring of pollution control measures and advising on placement of ditches, settlement ponds, etc. to minimise habitat damage. 	Section 9.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot	Construction Contractor
O-14	Embedded	As far as possible, works that will directly impact upon areas of vegetation that could be used by nesting birds will be undertaken outside of the breeding season, this being taken to be between March and August, inclusive. Should vegetation clearance works be required during the breeding season, a pre-works check for active nests will be carried out by the ECoW or another suitably experienced ornithologist. Such checks will be completed no more than 72 hours in advance of clearance works taking place as nests can be quickly established. Where any active nests are identified, suitable species-specific exclusion zones will be implemented and maintained until the breeding attempt has concluded.	Section 9.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot	Construction Contractor
O-15	Embedded	Sightings of protected and/or important bird species within the Development Site during the construction period will be recorded. If any evidence or sightings of specially protected bird species listed on Schedule 1 of the WCA suggest that a nest site may be present within 1km of active or planned near term works, then works in that area will stop immediately and the ECoW will be contacted for further advice.	Section 9.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
O-16	Embedded	A Construction Environmental Management Plan (CEMP) will be prepared and submitted for approval by Argyll and Bute Council, in consultation with SEPA and NatureScot, where necessary, prior to commencement of construction. The CEMP will set out all environmental management measures and the roles and responsibilities of construction personnel.	Section 9.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot	Construction Contractor
O-17	Embedded	<p>During all phases of the Development, pollution prevention measures will be adopted, following SEPA Pollution Prevention Guidelines (PPG) and Guidance on Pollution Prevention (GPP), including the following:</p> <ul style="list-style-type: none"> • Controls and contingency measures will be provided to manage run-off from construction areas and to manage sediment; • All oils, lubricants or other chemicals will be stored in an appropriate secure container in a suitable storage area, with spill kits provided at the storage location and at places across the Development Site; • In order to avoid pollution impacts to soils, vegetation and watercourses / waterbodies during construction, all refuelling and servicing of vehicles and plant will be carried out in a designated area which is bunded and has an impermeable base. This will be situated at least 50m away from any watercourse. 	Section 9.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot	Construction Contractor
O-18	Embedded	Works near or at any retained native trees or semi-natural woodland will follow guidance in British Standard 5837:2012 <i>Trees in relation to design, demolition and construction – Recommendations</i> (British Standards Institution, 2012);	Section 9.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot	Construction Contractor
O-19	Embedded	Any artificial lighting required for construction works will be directional to avoid or minimise light spill beyond immediate works areas.	Section 9.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot	Construction Contractor
O-20	Additional	Access Tracks and other infrastructure will be micro-sited, where necessary and as far as possible, to minimise damage to or loss of flush or other important wetland habitats, including GWDTE;	Section 9.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot	Construction Contractor
O-21	Additional	As far as possible, Access Tracks will be constructed via a 'floating' method, which retains the underlying substrate <i>in situ</i> and promotes continued flow of groundwater;	Section 9.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot	Construction Contractor
O-22	Additional	Where floating track construction cannot be adopted, the access track will be constructed so as to permit the continued flow of surface water from one side to the other. This will involve the installation of culverts or small cross-pipes, incorporated at regular intervals and in particular in areas of obvious water flow.	Section 9.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
O-23	Additional	Where breeding by curlew or golden plover is suspected, the ECoW will, as necessary, implement a suitable works exclusion zone of at least 300m around known or suspected nest location to ensure that the accidental destruction of the nests is avoided and to minimise disturbance to the breeding birds. No works will be permitted to take place within this exclusion zone until otherwise approved by the ECoW. Should the ECoW determine through monitoring that breeding has failed, successfully completed or that birds have moved chicks to other areas, then the exclusion zone may be lifted or moved, accordingly.	Section 9.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot	Construction Contractor
O-24	Additional	Specific mitigation relating to golden eagle is described in <i>Confidential Appendix 9.1 (Volume 6 Confidential Appendices)</i> .	Section 9.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot	Construction Contractor
O-25	Additional	No black grouse leks were identified within 500m of any proposed infrastructure during field surveys carried out for the Development. However, should a black grouse lek be identified by pre- or during-construction ornithological surveys within 500m of any construction area, no works will be permitted to take place within this area during the period of one hour before sunrise until one hour after sunrise, in the months of April and May. This will ensure there is no disturbance to displaying black grouse.	Section 9.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot	Construction Contractor
O-26	Additional	An Outline Landscape and Ecological Management Plan has been prepared for the Development and submitted as part of the Section 36 application. The oLEMP sets out a range of measures that will be implemented by the Development. This is intended to a) mitigate landscape and ecological/ornithological impacts, and b) beyond this deliver biodiversity and general environmental enhancement.	Section 9.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot	Construction Contractor
O-27	Additional	In the breeding season prior to commencement of construction and in the breeding seasons throughout the construction phase, the ECoW or another suitably experienced ornithologist will be responsible for carrying out a full programme of survey for sensitive bird species, namely lekking black grouse, breeding waders, breeding raptors and breeding divers. These surveys will follow good practice guidelines as adopted during the fieldwork completed to inform this EIA and referenced in this chapter and in Appendix 9.1. The purpose of these surveys will be to determine if and where sensitive bird species establish nest sites, and to therefore allow for appropriate avoidance and/or mitigation measures to be implemented to avoid or minimise impacts upon them. This will be particularly relevant to those bird species listed on Schedule 1 of the WCA, which may not be disturbed when actively breeding. Full details of the pre- and during-construction ornithological monitoring programme will be set out in the Species Protection Plan for the Development, to be submitted to Argyll and Bute Council and NatureScot in advance of the commencement of construction. The results of all during-construction ornithological survey will be provided to NatureScot and (for relevant species) the Argyll RSG.	Section 9.9	CEMP LEMP	Applicant / construction Contractor	ABC in consultation with NatureScot	Construction Contractor
Chapter 10: Geology and Soils							
G-01	Embedded	Post-consenting SI works will confirm soil and rock properties to assist the detailed design. SI works are likely to include additional peat probing to inform the exact routes / location of above and below ground infrastructure.	Section 10.9	Further SI Works	Applicant	ABC	Construction Contractor
G-02	Embedded	The Phase 1 Peat Probing survey identified areas of peat > 1.0 m in depth across the Development. The following embedded mitigation measures have been included in the design, with respect to peat:	Section 10.9	Development Design	Applicant	ABC	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
		<ul style="list-style-type: none"> Where access tracks are present, areas of peat > 1.0 m have been avoided where possible, however, where this was not feasible, floating access tracks have been defined. Where peat > 1.0m was identified within the Headpond at elevations below the BWL (374m AOD). Peat in this area will not be excavated and left in-situ. 					
G-03	Embedded	Within the Headpond basin, in elevations above BWL (374m AOD) peat will be permanently lost. An <i>Outline PMP (Appendix 10.2, Volume 5)</i> has been produced which demonstrates the approximate volumes of peat expected to be disturbed / excavated, the potential re-use options and handling and storage methods to be used.	Section 10.9	Development Design	Applicant	ABC	Construction Contractor
Chapter 11: Water Environment							
WQ-01		The Development Components have been sited to avoid water features where possible, although for large spatial components such as the Headpond, this is practically not possible. As per the advice from SEPA (see Table 11-3) all water features have had a 50 m buffer applied to them to ensure that wherever possible new permanent infrastructure or temporary compounds are set back. This will help to mitigate the risk from construction and operation phase runoff (including chemical spillages) as well as avoid physical impacts. However, in addition to the headpond, there are some locations where it is not possible to maintain this 50 m buffer zone. Many of these occurrences relate to watercourse crossings (either new crossings or where an existing crossing may need to be modified), but there are others. In their EIA scoping opinion response SEPA requested that where the 50 m buffer could not be maintained that these breaches should be clearly identified in the EIAR. Each breach is listed in Table 11-33 alongside the justification for the breach.	Section 11.9	Development Design	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-02	Embedded	<p><u>Management of water quality risks from permanent Development:</u></p> <ul style="list-style-type: none"> Each of the permanent and temporary compounds will include sustainable drainage and / or proprietary drainage measures to intercept and treat surface water run-off from the Development during construction and operation. During construction, measures may include temporary earth ponds / settlement lagoons, ditches, fabric silt fences, the use of silt busters or lamella clarifiers, dewatering / sediment bags (e.g. silt tubes), silt curtains, and measures to manage spillage risks such as designated bunded refuelling areas. Spoil storage and processing from the construction of the Headpond will be within the Headpond area at TC15. Further details are provided later in this section under 'Standard Mitigation.' To minimise the risk of chemical spillages, a cut off drain will be installed at the toe of the new embankment to collect water run-off during construction and prevent it, and any chemicals that may have been spilled, propagating from the Development Site without treatment. 	Section 11.9	Development Design	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-03	Embedded	<p><u>Design of watercourse crossings</u></p> <p>Two types of watercourse crossings are proposed, outlined on Drawing S03-Z0-02-DR-CE-300601. Closed pipe culverts will be used where existing crossings are to be upgraded and open arch culverts will be used where new crossings are required. During the site survey, a number of existing crossings were viewed and photographed. The crossing type at the visited sites were closed pipe culverts, which</p>	Section 11.9	Development Design	Applicant	ABC in consultation with SEPA	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
		<p>appear to have minimal impact on flow and geomorphological processes due to the channel typology (see <i>Chapter 11 Water Environment Section 11.7.25 (Volume 2) and Appendix 11.4 (Volume 5)</i>).</p> <p>It is proposed that arched culverts will be used for new crossings, to minimise the impact of new access tracks.</p> <p>All crossings are proposed to be permanent, except for B27 and B28 located on a tributary to the Buinne Dhubh, where the temporary construction track on the north side of the Headpond will be constructed. Watercourse crossings are described in <i>Appendix 11.4</i>, including which are existing crossings to be upgraded and which will be new.</p>					
WQ-04		<p><u>Embankment construction method</u></p> <p>At this stage there is no detailed construction method for the construction of any of the two proposed embankments. For this assessment it has been assumed that a concrete box culvert will be constructed offline in the location of the main embankment (Embankment 1) along the face of the Headpond but adjacent to the Allt Beochlich. The Allt Beochlich will then be diverted through the culvert, which will allow flows to be maintained while the embankment is constructed either side and over the culvert. The culvert will be plugged to allow the Headpond to fill once construction of the embankments and associated infrastructure is complete.</p>	Section 11.9	Development Design	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-05	Embedded	<p><u>Loch Fyne jetty</u></p> <p>A temporary jetty will be constructed within Loch Fyne which will be used for delivery of abnormal indivisible loads (ALLs) of materials and equipment during construction, removed post construction and reassembled during operation for maintenance when required. The jetty will be used for delivery of a maximum of 10 shipments (estimated based on a combination of the number of ALLs and units that can be carried on a barge appropriate for the size of the marine facility) and only at high tide due to the tidal nature of the loch and the design of the jetty.</p> <p>The jetty will be constructed with driven piles (not drill and grout) to reduce impacts from dispersion of fine suspended material. Runoff from the jetty is assumed to flow directly to the loch.</p> <p>Mitigation measures outlining the protection measures for marine ecologies is described within <i>Chapter 8: Marine Ecology (Volume 2)</i> and for measures protecting the marine physical environment see <i>Chapter 18: Marine Physical Environment and Coastal Processes (Volume 2)</i>.</p>	Section 11.9	Development Design	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-06	Embedded	<p><u>Management of groundwater</u></p> <p>The Contractor will aim to stem any uncontrolled water/ ingress into Waterways, the Power Cavern Complex and Access Tunnels using a combination of sprayed concrete and/or other forms of lining as appropriate. A significant amount of the construction will be at great depth, where the amount of fracturing will reduce, and therefore inflow will also reduce.</p> <p>The amount of interaction with the underlying groundwater body will be minimal. Although no springs have been found in this area, if during construction water ingress to the Headpond is discovered, the possible installation of a granular fill beneath the lining may be required.</p>	Section 11.9	Development Design	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-07	Embedded	<p>The <i>Outline Water Management Plan (oWMP) (See Appendix 11.5, Volume 5)</i> describes all measures required to avoid, reduce and minimise adverse impacts on the water environment during construction, including setting out the scope in detail of any water quality or other relevant monitoring.</p>	Section 11.9	oWMP	Applicant	ABC in consultation with SEPA	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
		<p>The oWMP has been developed and will be implemented by the Contractor and would support the Construction Environmental Management Plan (CEMP) by describing the measures to protect the water environment during the construction works in greater detail, with reference to specific construction activities and programme e.g. for earthworks or works affecting specific waterbodies.</p> <p>The mitigation listed in this section will be implemented in accordance with the CEMP and oWMP, and reflect any conditions imposed by SEPA or other statutory consultees through the consenting and future CAR application processes.</p>					
WQ-08	Embedded	<p><u>Control of construction water environment risks</u></p> <p>A CEMP referring to a range of standard mitigation measures will be prepared and implemented by the Contractor as necessary to protect the water environment from pollution and physical impacts during construction works.</p> <p>Pollution prevention mitigation measures that accord with legal compliance and good practice guidance are to be implemented to:</p> <ul style="list-style-type: none"> • Control and minimise the risk of pollution to surface waters and groundwater by managing construction site runoff and the risk of chemical spillages; • Control the storage, handling and disposal of potentially polluting substances during construction; • Manage water removed from excavations to ensure to protect nearby water features from any pollution risk but also to support flows if there is a risk of reductions to baseflow. • If necessary, provide compensatory discharges to surface water features or GWDTEs that are groundwater fed to minimise impacts on the water level and flows to these receptors and any third-party users; and • Avoid and minimise the risk of damage to physical form and processes of water features. 	Section 11.9	CEMP	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-09	Embedded	<p><u>Secondary consents</u></p> <p>The construction of the Development will be undertaken in accordance with good practice as detailed below. It is assumed that all temporary works will be carried out under the necessary consents/permits (e.g. CAR licences as required under the Water Environment (Controlled Activities) Regulations 2011, and that the contractor will comply with any conditions imposed by any relevant permission. It is assumed that the contractor will ensure all permits/consents in place for works in, or near watercourses.</p>	Section 11.9	CEMP	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-10	Embedded	<p><u>Standard good practice</u></p> <p>There are many ways in which construction pollution risks to the water environment can be dealt with. All works to be undertaken in line with the CEMP for the Development, which shall be developed in the design phase and refined for the consented project in advance of and during construction. Central to this will be a programme of water quality monitoring (described later under 'Additional Mitigation') and the implementation of a temporary drainage system. The temporary drainage system will be prepared in accordance with good practice guidance. There will be no direct discharges to groundwater or surface waters without appropriate treatment (where required to meet consent standards); the Contractor will ensure that there is adequate space to ensure that appropriate drainage control measures can be implemented for the duration of the construction works; and all secondary consents will be complied with. Further details are provided in the following sections.</p>	Section 11.9	CEMP	Applicant	ABC in consultation with SEPA	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
WQ-11	Embedded	<p><u>Management of construction site run-off</u></p> <p>Mitigation measures to management run-off are detailed in the oWMP and are therefore not repeated here in detail. Below is a summary of measures:</p> <ul style="list-style-type: none"> • Avoidance of wet weather working where practical, especially site clearance, earthworks and works to water features; • Appropriate separate storage of topsoil/subsoil and materials, and at least 20 m from water Features on flat ground; • Any earth bund/ stockpile to be present for longer than two weeks will be either seeded, covered using geotextiles, or other pressures provided to ensure it is not a source of excessive fine sediment in runoff to water features; • The implementation of a temporary drainage system and other measures to manage pollution risk during construction (e.g., fabric silt fences, lagoons, bunds, straw bales, sandbags, lamella clarifiers or other proprietary measures as may be required) etc; • Any dewatering of excavations will include measures where necessary to filter the water prior to discharge to a watercourse or ground (there shall be no discharge of any construction site runoff to existing ponds); and • The control of mud deposits at entry and exits to the Site using wheel washing facilities and/ or road sweepers operating during earthworks or other times as considered necessary. <p>Construction works directly affecting water features will require careful management and the implementation of stringent working practices and mitigation. This applies to the construction of the inlet / outlet structure within Loch Awe, and to other minor watercourses that may be crossed by new or upgraded access tracks, or to which new surface water drainage connections are made.</p> <p>All works within Loch Awe are to be undertaken behind two levels of containment. Firstly, it is proposed to install a site-specific silt curtain around the working area that would be designed so that it is tailored to the shoreline and anchored to the bed. Secondly, and once the silt curtain has been installed, a coffer dam would be constructed. Any fine sediment mobilised during the construction of the coffer dam would be contained within the silt curtain and would not propagate from the close vicinity of the work and will over time resettle to the bed. Water behind the coffer dam would be pumped out using baffles to prevent any bed / bank erosion or further disturbance of any fine sediment on the loch bed.</p> <p>Any works in the channels of smaller watercourses will be undertaken in a dry working environment, where possible, with flow temporarily over-pumped or flumed or isolated from the working area using sand/ pea gravel bags or other similar and inert barrier.</p>	Section 11.9	CEMP	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-12	Embedded	<p><u>Management of spillage risk</u></p> <p>To prevent chemicals, fuels / oils and other such substances from entering the water environment, measures to control the storage, handling and disposal of these substances would be put in place prior to and during construction. The outline CEMP and oWMP provide detailed information relating to the control of spillages and leaks, and these are not repeated here.</p>	Section 11.9	CEMP oWMP	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-13	Embedded	<p><u>Concrete batching plants and use</u></p> <p>Any on-site concrete batching facilities will be located at least 50 m from any water feature, on flat ground, and suitable impermeable hardstanding, so that surface water run-off can be intercepted for</p>	Section 11.9	CEMP oWMP	Applicant	ABC in consultation with SEPA	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
		<p>either treatment or disposal off-site at an appropriate licensed waste facility. It is assumed that water for use in the process will be delivered to the site from a commercial source rather than abstracted locally. If a local abstraction is proposed in the future, this will be subject to an abstraction licence from SEPA, and thus will not be granted if it is to have significant adverse effects on the water environment or any third-party users.</p> <p>Significant amounts of concrete will be required for various construction components. This will be a mixture of precast and cast in-situ. Where possible, concrete would not be batched on-site and would instead be delivered on an 'as and when' basis in ready mixed lorries. If on-site batching is required these facilities would be located on flat impermeable hardstanding at least 50 m from any watercourse and with a surface water drainage system that is isolated so that no run-off may enter any natural water feature.</p> <p>Particular care would be taken with the delivery and use of concrete and cement as it is highly corrosive and alkaline. No washing out of delivery vehicles to take place on site without suitable provision for the washing out water and provision of a suitable location (e.g. geotextile wrapped sealed skip, container or earth-bunded area) that is lined with a geotextile to prevent infiltration to ground. Such washing would not be allowed to flow into any drain and the final CEMP/ WMP would contain a methodology for dealing with any washing out water, or wheel wash. Wash water would be adequately contained, prevented from entering any drain, and removed from the Development Site for appropriate disposal at a suitably licensed waste facility.</p>					
WQ-14	Additional	<p>A Water Quality and Flow Monitoring Plan and subsequent delivery of that monitoring is proposed for the following requirements:</p> <ul style="list-style-type: none"> • Due to the nature and scale of the Development and the proximity of works to numerous water features and some PWS, it is necessary that a programme of water quality monitoring is carried out in advance of and during the construction phase. • There is limited data available on water quality, phytoplankton composition and thermal stratification of Loch Awe, and thus it is necessary to gather additional baseline data in advance of the commissioning of the Development in order that subsequent monitoring during initial years of operation have a baseline reference. • The construction of the Headpond and severance of the upper Allt Beochlich catchment requires the determination of a suitable compensation flow, and this will require flow monitoring of the catchment to generate a baseline flow duration curve. 	Section 11.9	Water Quality and Flow Monitoring Plan	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-15	Additional	<p><u>Pre-construction and construction phase water quality monitoring – water features</u></p> <p>During construction it is proposed to undertake a water quality monitoring programme to ensure that mitigation measures are operating as planned and managing the risk of water pollution effectively. Monitoring will help to ensure that should pollution occur it is identified as quickly as possible and appropriate action is taken in line with the Emergency Response Plan. To support the construction phase monitoring, a pre-construction baseline will need to be determined.</p> <p>The scope of the water quality monitoring programme will be developed at a post-consent stage and in consultation with SEPA and other relevant stakeholders. Water quality monitoring will be required of all potentially affected water features and may include daily visual and olfactory observations or after heavy</p>	Section 11.9	Water Quality and Flow Monitoring Plan	Applicant	-	Applicant/ Operator

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
		<p>or prolonged rainfall, in situ monitoring using a calibrated hand-held probe, and potentially grab samples on a regular or ad hoc basis for analysis at an accredited laboratory.</p> <p>To ensure that monitoring during construction is effective it will be necessary to carry out pre-construction monitoring. There is no guidance on how long or frequent this should be, but it is recommended that as a minimum there are 12 monthly visits taking in a range of flow and weather conditions. The scope of pre-construction water quality monitoring, and monitoring during construction will be set out in the Water Quality and Flow Monitoring Plan, likely pursuant to a pre-commencement planning condition.</p>					
WQ-16	Additional	<p><u>Pre-construction and construction phase water quality monitoring – water features</u></p> <p>Any secondary permissions that are required for works affecting, or for temporary discharges to, the water features and watercourses in and around the Development, such as a CAR or water abstraction licences, will be obtained prior to any relevant works taking place on site, and preferably in advance of all works (save enabling works where not relevant to these secondary consents).</p>	Section 11.9	CAR Licence	Applicant	-	Applicant/ Operator
WQ-17	Additional	<p><u>Pre-construction and construction phase water quality monitoring – PWS</u></p> <p>The PWS identified within <i>Appendix 11.3</i> were mostly sourced from surface water or from groundwater springs. A visit to each of the PWS will be carried out to confirm the source of each of the PWS and to inform subsequent pre-construction and construction phase monitoring. With regards to the identified PWS sourced from groundwater, water levels will also be monitored prior to any construction activities to determine the normal response pattern and then during construction to identify any changes to supply. Water quality should also be monitored pre-construction and during construction.</p> <p>To ensure that monitoring during construction is effective it will also be necessary to carry out pre-construction monitoring. In keeping with the monitoring for water features, it is recommended that as a minimum there are 12 monthly visits prior to construction starting. The scope of pre-construction and construction phase water quality monitoring of PWS will also be set out in the Water Quality and Flow Monitoring Plan, which we assume would be required pursuant to a pre-commencement planning condition.</p> <p>Finally, if it were to be determined that any effects were due to construction, then the provision of an alternate supply would be needed to be provided. It is advised that trigger levels for both levels and quality are set after the pre-construction monitoring has been undertaken.</p>	Section 11.9	Water Quality and Flow Monitoring Plan	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-18	Additional	<p><u>Flow monitoring</u></p> <p>The construction of the Headpond and severance of the upper Allt Beochlich catchment requires the determination of a suitable compensation flow for aquatic habitats and the continued and uninterrupted operation of the small local HEP scheme. The basis of this compensation flow will require the generation of a flow duration curve, which will require monitoring of the flow at multiple locations. This may involve continuous stage monitoring combined with spot flow gauging or other suitable method depending on site constraints to data collection. It is recommended that this data is collected over a minimum of 12 months prior to any works occurring in order for a robust baseline flow duration curve to be generated. The data will also need to be interpreted in the context of the weather conditions during the monitoring period, to account for whether the monitoring was carried out in a drier or wetter year than average, as well as consider the future influence of climate change.</p>	Section 11.9	Water Quality and Flow Monitoring Plan	Applicant	ABC in consultation with SEPA	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
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WQ-19	Additional	<p><u>Baseline water quality monitoring during pre-commissioning</u></p> <p>The scope of baseline water quality monitoring of Loch Awe pre-commissioning of the Development will be defined in the Water Quality and Flow Monitoring Plan.</p> <p>In the absence of any additional data from SEPA, it is recommended that water temperature profiling of Loch Awe is undertaken to establish a baseline for any thermal stratification of the Loch in the basin nearest to the inlet / outlet. This will establish when thermal stratification occurs and the depth of the thermocline during the period of stratification prior to overturn sometime in the autumn. It is expected that this monitoring can be achieved by installing one or two monitoring buoys fitted with a temperature sonde and an automated variable depth measuring system plus telemetry. The monitoring should be implemented so that at least two seasons of data can be collected prior to commissioning of the Development. Monitoring should cover the period May through to post overturn in the autumn.</p> <p>In addition to temperature profiling of the water column, it is also recommended that baseline water quality and phytoplankton samples are collected from the Loch over a 12 month period. Samples will need to be collected from near the surface and at depth so that the effects of thermal stratification can be assessed. Samples below the surface can be collected using a van dorn sampler or similar. The frequency of sampling may need to be reasonably high during the period of thermal stratification (e.g. every two weeks). It may be possible to add additional sondes to the monitoring buoys, although some analysis may require collection of grab samples for laboratory analysis.</p>	Section 11.9	Water Quality and Flow Monitoring Plan	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-20	Additional	<p><u>Baseline water quality monitoring during post-commissioning</u></p> <p>Water quality monitoring of Loch Awe as described above should continue during the initial years of operation to determine actual changes in stratification to inform management measures. In addition, it is proposed that the water quality within the Headpond is also monitored on a routine basis during operation of the Development. Visual / olfactory observations, in-situ measurements using either a hand-held or permanently installed water quality probe, and regular water samples for laboratory analysis may be required (including phytoplankton). The purpose of the monitoring is to build up an understanding of how water quality changes whilst it is stored in the Headpond as well as how this may influence water quality in Loch Awe upon discharge.</p> <p>These measures are in addition to the operational requirements and daily observations which will be undertaken in the Headpond and Tailpond inlet / outlet, and the introduction of the screens at both inlet / outlets to prevent debris entrainment.</p> <p>This preventative measure will support decisions about operation to ensure that unforeseen water quality impacts on Loch Awe are avoided. If water quality monitoring results remain stable and operation of the Development is consistent it may be possible to reduce or even stop routine water quality monitoring.</p> <p>The monitoring of water ingress to Power Cavern Complex may also be required during the operation phase.</p>	Section 11.9	Water Quality and Flow Monitoring Plan	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-21	Additional	<p><u>Sediment Management Plan</u></p> <p>Although it is predicted that sediment transport along the Allt Beochlich will be relatively unaffected due to steep gradient, low sediment load and the commitment to provide a suitable compensation flow downstream of the Headpond Embankment, in keeping with good practice a Sediment Management Plan will be prepared. This will consider the impact of the Development in the long term on downstream</p>	Section 11.9	Water Quality and Flow Monitoring Plan	Applicant	ABC in consultation with SEPA	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
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		sediment transport and include measures to ameliorate any adverse impacts. The Sediment Management Plan will also set out details of how frequent sediment in the Headpond will be monitored and when action to remove sediment may be required (also informed by long term water quality monitoring). It is assumed that the plan can be prepared pursuant to a pre-construction planning condition in consultation with SEPA.					
WQ-22	Additional	<u>Water Features Restoration Plan (decommissioning)</u> Following decommissioning of the infrastructure on site, a Water Features Restoration Plan should be implemented, to allow for reinstatement of river processes in the affected reaches. This may require removal of fine sediment and replanting. The reinstatement should be informed by preconstruction photographic survey and mapping.	Section 11.9	Water Quality and Flow Monitoring Plan	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-23	Additional	<u>Summary of list of commitments</u> To summarise the additional mitigation measures, the following will be produced and may be secured through an appropriate planning condition: <ul style="list-style-type: none"> Water Quality and Flow Monitoring Plan (and subsequent baseline, pre-construction and construction phase water quality, PWS and flow monitoring). Water Management Plan including an Emergency Response Plan. Detailed Drainage Strategy. Sediment Management Plan. 	Section 11.9	Water Quality and Flow Monitoring Plan	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-24	Additional	A CAR Licence and a Water Abstraction Licence (Scotland) will be required for permission to impound and divert watercourses, abstract and discharge water to and from Loch Awe, temporary works in, over, under water features, and to determine what compensation flow will be required downstream of the main Headpond Embankment (Embankment 1) and along the Allt Beochlich.	Section 11.9	Water Quality and Flow Monitoring Plan	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-25	Additional	A Water Features Restoration Plan will be required following decommissioning of the infrastructure on site to inform the reinstatement of river processes in the affected reaches. This may be defined and included as part of a future planning application to cover the decommissioning of the Development rather than this application.	Section 11.9	Water Quality and Flow Monitoring Plan	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-26	Additional	The Water Environment chapter and <i>Outline Water Management Plan (chapter 11 and Appendix 11.5)</i> records in the mitigation that during construction Scottish Water will be contacted in the event of an incident that could affect the drinking water protected areas using the Customer Helpline number 0800 0778 778.	Section 11.9	oWMP	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-27	Additional	The Water Environment chapter and <i>Outline Water Management Plan (chapter 11 and Appendix 11.5)</i> include mitigation that given this area is located within a drinking water catchment this will be noted in future documentation by the appointed construction contractor. In addition, anyone working on site will be made aware of this during site inductions.	Section 11.9	oWMP	Applicant	ABC in consultation with SEPA	Construction Contractor
WQ-28	Additional	The Water Environment chapter and <i>Outline Water Management Plan (chapter 11 and Appendix 11.5)</i> state Scottish Water will be consulted during detailed design stage and provided timescales of construction start dates so that any cumulative pollution risks with other third party major construction	Section 11.9	oWMP	Applicant	ABC in consultation with SEPA	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
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		projects can be determined and, with Scottish Water and these third parties, appropriate water quality risk reduction measures implemented across the drinking water catchment.					
WQ-29	Additional	The Water Environment chapter and <i>Outline Water Management Plan (chapter 11 and Appendix 11.5)</i> include mitigation to the effect of: 3 months in advance of any works commencing on site, Scottish Water is notified at protectdwsources@scottishwater.co.uk. so SW are aware of activities in the catchment and to arrange a site meeting with the relevant member of SW Sustainable Land Management team if it is deemed a requirement.	Section 11.9	oWMP	Applicant	ABC in consultation with SEPA	Construction Contractor
Chapter 12: Water Resources							
F-01	Embedded	During the construction phase of the project, a Construction Environmental Management Plan (CEMP) will be implemented. The CEMP includes the contents of an Environmental Response and Flood Risk Management Plan. These measures outlined within this document will be implemented to prevent any adverse effects to the previously identified receptors, for all three stages of the Development.	Section 12.9	oWMP CEMP	Applicant	ABC in consultation with SEPA	Construction Contractor
F-02	Embedded	Any Sustainable urban Drainage Systems (SuDS) for surface water storage will be designed appropriately with the correct locations, type, size in line with the CIRClA SuDS Manual C753 (Ref 21) to be concluded within the detailed design phase (as described within <i>Appendix 12.2 Flood Risk Assessment (Volume 5 Appendices)</i>). As stated, these will be positioned correctly to store overland flow but additionally will consider the effect they may have on the downstream flood risk receptors or connectivity with other water resources to avoid impacts to shared receptors, reducing inter-cumulative effects. A Surface Water Management Strategy (SWMP) will be prepared providing these details, building on the requirements set out in the FRA (<i>Appendix 12.2 Flood Risk Assessment (Volume 5 Appendices)</i>) and submitted to Argyll and Bute council for approval prior to construction.	Section 12.9	Design of Development	Applicant	ABC in consultation with SEPA	Construction Contractor
Chapter 13: Cultural Heritage							
CH-01	Embedded	Embedded landscape mitigation, such as planting to provide screening, as well as the design of the above ground infrastructure, has also been developed to reduce impacts on setting.	Section 13.9	Design of Development	Applicant	ABC in consultation with HES	Construction Contractor
CH-02	Embedded	A number of embedded mitigation measures will be utilised to reduce potential effects resulting from the Development. Additional mitigation measures could include micro-siting of access tracks or reducing the working width of access tracks within the Limits of Deviation, to avoid heritage assets, as well as the protection of assets near work areas through fencing.	Section 13.9	Design of Development	Applicant	ABC in consultation with HES	Construction Contractor
CH-03	Additional	In most cases the construction phase of the scheme will result in the loss of assets identified within the Limits of Deviation, and a number of different types of mitigation will be suitable. This includes detailed landscape survey to confirm / disprove the presence of previously recorded archaeological remains, archaeological evaluation, and archaeological excavation prior to works commencing. This is also likely to be supported by / followed by an archaeological watching brief of topsoil and subsoil removal during construction.	Section 13.9	Design of Development	Applicant	ABC in consultation with HES	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
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CH-04	Additional	There is also the potential to add interpretation panels, or undertake outreach work to disseminate information gathered as part of any future archaeological surveys or excavation, although this will need to be examined once the full extent of fieldwork is agreed.	Section 13.9	Design of Development	Applicant	ABC in consultation with HES	Construction Contractor
CH-05	Additional	No works will be undertaken within Inveraray Garden and Designed Landscape (GDL00223) until the full extent of works have been agreed with HES. This includes, but is not limited to, tree clearance, vegetation removal, cutting back trees and scrub, and track widening.	Section 13.9	CEMP	Applicant	ABC in consultation with HES	Construction Contractor
CH-06	Additional	All mitigation will be agreed and approved by the planning archaeologists for the area (i.e. WoSAS), with no works commencing on site until a Written Scheme of Investigation (WSI) has been agreed and approved.	Section 13.9	Design of Development	Applicant	ABC in consultation with HES	Construction Contractor
Chapter 14: Access, Traffic and Transport							
T-01	Embedded	An HGV construction traffic bypass route will be implemented between the A83 east of Inveraray and the A819 to the north of Inveraray. This utilises a combination of existing construction access track and new access tracks to the north of Inveraray Castle.	Section 14.9	Development Design	Applicant	ABC	Construction Contractor
T-02	Embedded	An AIL route, utilising Upper Avenue, between the A83 south of Inveraray and the A819 north of Inveraray will be utilised to facilitate the movement of AIL deliveries from the proposed pier facility.	Section 14.9	Development Design	Applicant	ABC	Construction Contractor
T-03	Embedded	HGV construction traffic will avoid the B840. It is unlikely that this route would be required for construction traffic as a route will be available directly from access tracks from the A819 at Craig nan Sassanach to the Proposed Development site.	Section 14.9	Development Design	Applicant	ABC	Construction Contractor
T-04	Embedded	The proposed HGV construction traffic routes would avoid Inveraray Town Centre as well as the historic Aray Bridge on the A83.	Section 14.9	Development Design	Applicant	ABC	Construction Contractor
T-05	Embedded	<p>A Construction Traffic Management Plan (CTMP) would operate throughout the duration of the construction programme. A detailed CTMP is expected to be conditioned and would be provided once a principal contractor is appointed, and will likely include the following</p> <ul style="list-style-type: none"> • Site and the entry/exit arrangements from public roads; • Traffic routing plans – defining the routes to be taken by HGVs to the Site. For example, prioritising the use of A and B-roads as far as possible and avoidance of sensitive locations; • construction hours and delivery times; • strategy for traffic management and measures for informing construction traffic of local access routes, road restrictions, timing restrictions 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 drivers and appropriate actions in the event of non-compliance; • mechanism for responding to traffic management issues arising during the works (including concerns raised from the public) including a joint consultation approach with relevant highways authorities; 	Section 14.9	CTMP	Applicant / Construction Contractor	ABC	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
		<ul style="list-style-type: none"> details of traffic management requirements; and 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. 					
Chapter 15: Noise and Vibration							
NV-01	Embedded	During the construction phase a commitment has been made by the Applicant to not utilise the B840 for the purpose of delivering materials to/from the Site, resulting in no change of traffic noise impact at NSRs close to the B840 in relation to the movement of Development construction vehicle on local roads.	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-02	Embedded	To achieve Best Practical Means (BPM) as required by the Control of Pollution Act 1974 during the construction phase, good practice measures have been embedded into the project. These measures are particularly important during construction works being undertaken in the vicinity of the Lower Reservoir, temporary jetty and during the upgrade of existing tracks or establishment of new access track passing in the vicinity of NSRs, namely Upper Avenue access track, the Inveraray Castle access track and the B840 diversion. The good practice embedded measures are detailed in the following Construction Noise and Vibration Mitigation Measures.	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-03	Embedded	Establishing and maintaining good community relations throughout the construction process to keep residents and stakeholders informed on progress and the measures put in place to minimise noise impacts; <ul style="list-style-type: none"> One stakeholder has highlighted the potential for the diesel impact piling at the temporary jetty to affect their underwater measurements on "trial days" where noise sensitive equipment is being tested within Loch Fyne. The trial days are understood to be up to 12 days per year and would be undertaken in blocks of 2 to 4 days at a time from 2025 onwards. diesel impact piling will therefore cease on these days, to avoid any adverse impacts. 	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-04	Embedded	Adherence to standard construction working hours, i.e. 0700 hours – 1900 hours weekdays and 0800 hours – 1300 hours Saturdays, with no working on Sundays or Bank Holidays (including site deliveries) unless agreed in advance with the local planning authority.	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-05	Embedded	Selection of quiet and low vibration equipment and methodologies in accordance with the principles of BPM;	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-06	Embedded	Locating of fixed and semi-fixed ancillary plant such as generators, compressors and pumps away from NSR locations wherever possible;	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-07	Embedded	Provision of electrical power to the appointed Contractor for the construction phase which minimises the requirement for diesel generators at the Site;	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
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NV-08	Embedded	Regular maintenance of all plant used on site, paying attention to the integrity of silencers and acoustic enclosures;	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-09	Embedded	Fitting of compressors with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers;	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-10	Embedded	Shutting down of all noise generating construction plant when not in use.	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-11	Embedded	Loading and unloading of materials away from residential properties, ideally in locations which are acoustically screened from nearby NSRs;	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-12	Embedded	Handling of materials with care and placement rather than dropping where possible. Drop heights of materials from lorries and other plant shall be kept to a minimum;	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-13	Embedded	Selection of modern plant shall which complies with the latest European Commission noise emission requirements. Electrical plant items (as opposed to diesel powered plant items) shall be used wherever practicable. All major compressors shall be low noise models fitted with properly lined and sealed acoustic covers. All ancillary pneumatic percussive tools would be fitted with mufflers or silencers of the type recommended by the manufacturers;	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-14	Embedded	Organisation of site operations and vehicle routes to minimise the need for reversing movements, and to take advantage of any natural acoustic screening present in the surrounding topography;	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-15	Embedded	No employees, subcontractors and persons employed on the Site will cause unnecessary noise from their activities, e.g., excessive 'revving' of vehicle engines, music from radios, shouting and general behaviour etc. All staff inductions at the Site shall include information on minimising noise and reminding them to be considerate of the nearby residents; and	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-16	Embedded	As far as practicable, planning of noisier activities to take place during periods of the day which are generally considered to be less noise sensitive, i.e., not particularly early or late in the day.	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-17	Embedded	Reduction of the air overpressure and vibration effects of blasting through good blast design, although this may come at the expense of higher drilling and detonator costs. Smaller, more frequent blasts lead to smaller but more frequent effects, and the balance between these factors will need to be discussed with ABC.	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
NV-18	Embedded	Agreement of the methods employed to control air overpressure and vibration from blasting operations agreed with ABC prior to any blasting, as well as the frequency of blasting and a 90% confidence limit for blast PPV values at NSRs. The PPV blasting vibration limit should follow the guidance provided within BS 6472-2:2008 of between 6.0 and 10.0 mm/s during the daytime and 2.0 mm/s at night.	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-19	Embedded	Avoidance of ground blasting in the early morning, late afternoon or evening. The local community will be given advance notice prior to any blasting.	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-20	Embedded	An air overpressure limit at NSRs should follow the guidance provided within BS 6472-2:2008 (120 – 150 dB(lin)) and be agreed with ABC.	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-21	Embedded	Implementation of a blast monitoring scheme for air overpressure and vibration. Any scheme should include details on the location of monitoring points and vibration sensitive properties, and the equipment to be used. This should include a series of representative initial trial blasts at the start of the blasting to accurately identify allowable MICs to prevent exceedance of the identified limits at nearby receptors.	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-22	Embedded	Monitoring of all blasts at the proposed Development Site and maintenance of records so that the historical peak particle velocity from blasts can be produced as required.	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-23	Embedded	Maintenance of a close working relationship between the construction / blasting operator and the local planning authority to facilitate the exchange of information regarding blasting events.	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-24	Embedded	Carrying out of all blasting using BPM where available, to ensure that the resultant noise, vibration and air overpressure are minimised in accordance with current British Standards and guidelines.	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-25	Embedded	Development of blast designs with the aid of regression lines determined from a logarithmic plot of Peak Particle Velocity against scaled distances. The regression lines should be regularly updated using the blasting monitoring information. The regression lines should be made available for inspection upon request.	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-26	Embedded	Control of fly rock requirements through Health and Safety legislation.	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor
NV-27	Embedded	Appropriate noise and vibration mitigation measures will be incorporated into the template Construction Environmental Management Plan (CEMP) (EIAR Volume II Appendix 5A), which will form the basis of the Contractor CEMP. The Contractor CEMP will be implemented by the E&C contractor, who is yet to be appointed.	Section 15.7	Design of Development	Applicant / Construction Contractor	ABC	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
NV-28	Additional	<p>Activity P2-A1-T3 (temporary jetty construction) has been shown to have the potential to cause an exceedance of the 65 dB LAeq,12hr threshold value by up to 10 dB at NSR440 and no more than 3 dB at NSR041. This activity is dominated by the Diesel Hammer Piling which has been as the most conservative assumption. With reference to BS 5228-1 it has been noted that 10 dB reduction could be achieved by selecting a quieter diesel hammer piling rig. Noise level reducing mitigation measures specific to a piling rig can also be utilised providing up to 5 to 10 dB of attenuation. These measures are outlined in BS 5228-1 Table B.1 i.e. enclosure of hammer head with acoustic screen, use a resilient pad between pile and hammer head, use of sound reduction equipment, exhausts or screens on power units and base machine where possible. Finally, the assessment has assumed that piling rig would be operational 60% of the work period on each day (Mon-Sat) for almost 12 months, this is a conservative assumption and would be less in practice.</p> <p>Using one or a combination of these measures it is feasible that the activity P2-A1-T3 (temporary jetty construction) would be compliant with 65 dB LAeq,12hr threshold value at NSR440 and NSR041 on the basis that following the appointment of a construction contractor a specific mitigation plan for P2-A-T3 would be implemented as part of the CEMP.</p>	Section 15.7	CEMP	Applicant / Construction Contractor	ABC	Construction Contractor
NV-29	Additional	<p>The magnitude of impact associated with unmitigated impact piling at the temporary jetty is predicted to up to Moderate adverse with reference to Table 15.9 and therefore the significance of effects is considered as a localised, temporary, moderate adverse effect for this high sensitivity NSR, which is considered Significant.</p> <p>The predicted vibration levels are at the lower end of the Moderate PPV range 1.0 to < 10 mm/s and as noted in Table 15.9 whilst such levels are likely to cause complaint, they “can be tolerated if prior warning and explanation has been given to residents”.</p> <p>Therefore, specific mitigation is included in the form of a suitable plan of communication between the contractor and the resident at NSR440.</p>	Section 15.7	Suitable Plan of Communication	Applicant / Construction Contractor	-	Construction Contractor
NV-30	Additional	The final design of the blasting requirements will be undertaken by specialist blasting contractor to avoid vibration and air overpressure impacts that are greater than minor adverse at NSRs.	Section 15.7	Design of Development	Applicant / Construction Contractor	-	Construction Contractor
NV-31	Additional	As the northern access has no receptors in the immediate vicinity, specific mitigation in the form of utilising the northern access (Link 6) for two-way access to the Site is proposed to avoid the use of the southern site access track wherever possible and therefore avoid significant construction road traffic noise impacts at these NSRs.	Section 15.7	Design of Development	Applicant / Construction Contractor	-	Construction Contractor
NV-32	Additional	NSRs in the vicinity of Links 5, 9, 10 and 16 are predicted to potentially experience moderate adverse effects at worst on the basis that all links carry all construction traffic at the same time. In practice the moderate adverse impacts can be reduced to Minor, by applying specific mitigation in the form of splitting construction traffic over the north and south routes to the site entrance. This would provide a reduction of the with construction traffic noise levels on each link which would reduce the effect to minor adverse at worst.	Section 15.7	Design of Development	Applicant / Construction Contractor	-	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
NV-33	Additional	NSRs in the vicinity of Link 12 have been determined to be far enough away from the link to experience minor adverse effects at worst, with the exception of NSR220 which is located approximately 45m from Link 12. The 16 hour road traffic noise level from construction traffic movements was predicted at the receptor in Table 15.29 and was shown to be just less than 4 dB over the measured ambient in the area of 50 dB LAeq,16hr. Therefore a potentially effective mitigation measure would be a road side acoustic barrier with height and length determined to provide at least 5 dB attenuation at NSR220 from passing construction vehicles. With the barrier installed the increase in ambient level at the NSR would be reduced to less than 3 dB which would be classified as minor adverse effect and Not Significant. According to BS 5228-1 Table B.1 up to 10 dB can be observed generally from an acoustic screen. The location and parameters of a suitable barrier would be included in the final Contractor CEMP by the E&C contractor.	Section 15.7	Design of Development	Applicant / Construction Contractor		Construction Contractor
Chapter 16: Socio-Economics and Tourism							
ST-01	Embedded	<i>Chapter 5: Landscape and Visual Assessment, and Chapter 13 Cultural Heritage (Volume 2)</i> sets out mitigation measures which will be implemented to reduce and avoid any significant impacts upon the local area's setting and character, where possible.	Section 16.8	LEMP	Applicant	ABC	Construction Contractor
ST-02	Embedded	The Community Liaison Group, established during the pre-construction phase, will remain throughout construction facilitating direct, two-way discussion between the Applicant and the local community including businesses, tourist / recreational operators. This channel of communication will enable the Applicant to consult with operators of nearby restaurants, hotels and B&Bs, ensuring that nearby businesses do not experience any interruption to their daily operations as a result of the Development. The Applicant will seek to proactively address any issues communicated through this channel to prevent any adverse impacts of the Development's construction upon the amenity of local tourist services. As such, it is anticipated that there will be no significant effects to any socio-economic resources.	Section 16.8	Community Liaison Group	Applicant	ABC	Community Liaison Group
ST-03	Embedded	Any diversions of Core Paths and recreational routes deemed necessary will be in place to maintain access through the Site, providing alternative routes for active travel users. Such alternatives minimise the impact of the Development's construction resulting in no adverse impact.	Section 16.8	CEMP	Applicant	ABC	Construction Contractor
ST-04	Embedded	In order to mitigate against delays and amenity loss associated with peak or abnormal construction traffic, a Construction Traffic Management Plan (CTMP) will be implemented for the construction period. The CTMP is detailed further in the Access, Traffic and Transport Mitigation.	Section 16.8	CTMP	Applicant	ABC	Construction Contractor
ST-05	Embedded	An outline Housing Strategy has been drafted (<i>Appendix 16.2 Workers Housing Strategy</i>)(Volume 5 Appendices) which sets out options to accommodate the majority of construction workers throughout the construction period. This will allow for local hotels / holiday lodges and other accommodation to be readily available for tourists with use of some low season hotel capacity a potential option for some workers without impacting upon tourism. No impact upon the availability of tourist accommodation is therefore expected as a result of the Development's construction and further mitigation is therefore not required.	Section 16.8	Outline Housing Strategy	Applicant	ABC	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
ST-06	Embedded	Offsite planting will screen the construction activities, helping to minimise the impact of visual, noise and dust disturbance upon nearby residents, businesses and attractions thus reducing any negative impacts which may deter visitors.	Section 16.8	Design of Development	Applicant	ABC	Construction Contractor
ST-07	Embedded	The majority of recreational routes will remain accessible throughout the construction phase. In the interest of public safety, it is expected that signage will be erected on certain forestry paths falling within the Development Site warning users where construction vehicles are likely to cross the given path. The accompanying Outline Access Management Plan (<i>Appendix 16.1: Outline Access Management Plan (Volume 5 Appendices)</i>) provides detail on the measures which will be implemented to maintain public access throughout construction and operation of the Development. A finalised Access Management Plan will be prepared post consent once the contractor has been appointed.	Section 16.8	CTMP/OAMP	Applicant	ABC	Construction Contractor
ST-08	Embedded	Consultation with local stakeholders, such as Inspire Inveraray who represent the local community, will be undertaken prior to construction. Moreover, engagement with Clydeport at least two months prior to construction will ensure that information is shared widely amongst recreational loch users, informing them of works commencing within Loch Awe. Clyde Cruising Club and other local boat clubs will also be informed of the intended construction start date by the appointed contractor two months prior to construction commencing. A notice will be issued in the local Notices to Mariners which ensures that details of the upcoming works are communicated to all local clubs. In addition, it has been agreed with the MoD/QinetiQ that piling activities within Loch Fyne will cease on trial days for circa 12 days per year with dates to be agreed with the appointed Construction contractor who will maintain in contact with the MoD throughout construction as required, and therefore their availability for the range of uses will continue largely as normal.	Section 16.8	CTMP/OAMP	Applicant	ABC	Construction Contractor
Chapter 17: Climate							
C-01	Embedded	An outline construction environmental management plan (CEMP) is included within the planning application. This identifies various mitigation measures to be embedded within the Development to reduce the GHG impact, including: <ul style="list-style-type: none"> Adopting the Considerate Constructors Scheme (CCS) to assist in reducing pollution, including GHG emissions, from the Development by employing good industry practice measures which go beyond statutory compliance; Implementing a Construction Traffic Management Plan (CTMP) to reduce the volume of construction trips to the Site; Liaising with construction personnel on the potential to implement staff minibuses and car-sharing options; Switching vehicles and plant off when not in use and ensuring construction vehicles conform to European Union (EU) vehicle emissions standards for the types of plant and vehicles to be used; Conducting regular planned maintenance of the plant and machinery to optimise efficiency; Increasing recyclability by segregating construction waste to be re-used and recycled where reasonably practicable; 	Section 17.9	CEMP	Applicant	ABC	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
		<ul style="list-style-type: none"> Designing, constructing and implementing the Development in such a way as to minimise the creation of waste; Where practicable, maximise the use of alternative materials with lower embodied carbon, such as locally sourced products and materials with a higher recycled content; and A Peat Management Plan has been developed for the Development. This contains measures to reduce the impact of damaged peat lands as a result of the Development. Measures include reusing excavated peat for access tracks. 					
C-02	Embedded	<p>Further climate change resilience measures embedded within the Development, particularly in relation to flood risk are included in the outline CEMP. The specific flood risk impacts and associated adaption measures are discussed in more detail in <i>Chapter 11: Water Environment and Chapter 9: Flood Risk, Drainage and Surface Water</i>.</p> <p>The following adaption measures are included within the outline CEMP;</p> <ul style="list-style-type: none"> Storing topsoil, construction plant and construction materials outside of high-risk flood risk areas; Named person(s) – likely the Safety, Health and Environment Manager/ Ecological Clerk of Works (ECoW) – to monitor weather forecasts and receive SEPA flood alerts to allow works to be planned and carried out accordingly to manage extreme weather conditions, such as storms and flooding; and Health and safety plans developed for construction activities will be required to account for potential climate change impacts on workers, such as flooding and heatwaves. Measures such as Toolbox Talks to educate workers on the dangers of extreme weather conditions should be included. 	Section 17.9	CEMP	Applicant	ABC	Construction Contractor
Chapter 18: Marine Physical Environment and Coastal Processes							
MC-01	Embedded	Piled foundations will be used to support the deck of the Marine Facility. This provides minimal blockage to tidal currents and wave propagation relative to alternative construction options. This will minimise the impact of the Marine Facility on the local flows during the operational phase.	Section 18.10	Development Design	Applicant	ABC	Construction Contractor
MC-02	Embedded	The avoidance of dredging means there will be minimal disturbance to sediments on the seabed during the construction phase. The potential requirement for maintenance dredging and spoil disposal is also avoided.	Section 18.10	Development Design	Applicant	ABC	Construction Contractor
Chapter 19: Shipping and Navigation							
SN-01	Embedded	<p><u>Promulgation of information</u></p> <p>Information will be distributed via means such as Notices to Mariners, Radio Navigational Warnings, NAVTEX and/or other navigation broadcast warnings as soon as reasonably practicable in advance of and during vessel activities.</p>	Section 19.9	-	Applicant	ABC	Construction Contractor
SN-02	Embedded	<p><u>Use of advisory safe clearance distances during vessel activities</u></p> <p>Passing vessels will be requested to maintain a safe passing distance around any project vessels restricted in manoeuvrability.</p>	Section 19.9	CEMP	Applicant	ABC	Construction Contractor

Ref No	Measure Embedded / Additional	Construction Mitigation Measure	EIA Ref	Method of Delivery	Responsibility		
					Preparation	Approval	Delivery
SN-03	Embedded	<u>Vessel traffic monitoring and marine coordination</u> Marine coordination (e.g., the preparation of a Vessel Management Plan) and communication will be used to manage project vessel movements and minimise impact on other vessels. This will include the timing of vessel movements to not interfere with scheduled ferries and other known vessel movements.	Section 19.9	CEMP	Applicant	ABC	Construction Contractor
SN-04	Embedded	<u>Compliance with COLREGs/SOLAS</u> Compliance of all project vessels with international marine regulations as adopted by the Flag State, notably the COLREGs (IMO, 1972/78) and SOLAS (IMO, 1974).	Section 19.9	CEMP	Applicant	ABC	Construction Contractor
SN-05	Embedded	<u>As-Built Information</u> The location, extent and nature of the marine facility will be communicated with the UKHO and any other relevant bodies to ensure awareness of the Development.	Section 19.9	Communication with relevant bodies	Applicant	ABC	Construction Contractor
SN-06	Embedded	<u>Marking and lighting of Marine Facility and construction vessels</u> Project vessels will display appropriate marks and lights, and will broadcast their status on AIS at all times, to indicate the nature of the work in progress, and highlight their restricted manoeuvrability, if applicable. The Marine Facility will also be marked and lit as per the requirements of IALA guidance and in agreement with the NLB.	Section 19.9	CEMP	Applicant	ABC	Construction Contractor
SN-07	Embedded	<u>Liaison with Clydeport and local harbours</u> Liaison with local ports and harbours, particularly Clydeport, during the construction phase.	Section 19.9	Liaison with local ports and harbours	Applicant	ABC	Construction Contractor
SN-08	Embedded	<u>Liaison with MoD</u> Liaison with the MoD will be undertaken to ensure project activities do not interfere with military exercises. Piling works associated with the construction phase will cease during trials within Loch Fyne (circa 12 days per year) to avoid generating noise in the water.	Section 19.9	Liaison with MoD	Applicant	ABC	Construction Contractor
SN-09	Embedded	<u>Review of feasibility of delivery of construction materials via Loch Fyne</u> Review of the route through Loch Fyne will be undertaken to ensure the navigation channel is feasible and suitable vessels are used.	Section 19.9	Design of Development	Applicant	ABC	Construction Contractor

Table 2 Operational Phase Mitigation Register, below, collates the mitigation measures outlined in the EIAR for the operation phase. This table shows the corresponding reference to the EIAR, the relevant Management Plan(s) and also proposed responsibility for the preparation, approval, and delivery of the mitigation.

Table 2. Operational Phase Mitigation Register

Ref No	Measure Embedded / Additional?	Operational Mitigation Measure	EIA Ref	Relevant Management Plan	Responsibility		
					Preparation	Approval	Delivery
General Environmental Management Principles and Responsibilities							
GEN01 - EMS	Embedded	The Development will be operated in accordance with the Development Operator's environmental management system.	-	EMS	Operator	-	Operator
GEN02 - EMS	Embedded	All Site personnel involved in the construction, operation and decommissioning of the Development will be made aware of the environmental features at the Development Site and the mitigation measures and working procedures which must be adopted. This will be achieved as part of the Site induction process through the delivery of a Toolbox Talk. In addition, as required, briefings will be provided to all Site personnel in advance of works which are considered to present an increased risk of impacting upon environmental features.	-	EMS	Operator	-	Operator
Chapter 5: Landscape and Visual							
LV-14	Embedded	The oLEMP contains details on the ongoing long-term management for the proposed planting associated with the Development. A detailed landscape management and maintenance plan would be developed alongside the detailed landscape and ecological design. The maintenance and management plan is likely to cover the first 25 year period of operation of the Development. Within the first five years after planting, all plants found to be dead or dying would be replaced within the first planting seasons. The oLEMP will be developed into a detailed landscape and ecology management and maintenance plan based on the objectives set out within the oLEMP. The final LEMP will allow flexibility to adapt to future changes and trends regarding planting, species selection and maintenance operations.	Appendix 5.4 (Volume 5)	LEMP	Operator	-	Operator
Chapter 6: Terrestrial Ecology							
TE-32	Embedded	The oLEMP contains details on the ongoing habitat and species management. The oLEMP will be developed into a detailed landscape and ecology management and maintenance plan based on the objectives set out within the oLEMP.	Appendix 5.4 (Volume 5)	LEMP	Operator	-	Operator
Chapter 7: Aquatic Ecology							
AE-13		Running a full generation cycle has the potential to push loch levels out of an acceptable range, in terms of ecology, flood risk, operation of Cruachan power station, and operation of the Loch Awe Barrage and associated fish lift. The impact of operation is dependent on initial water level and balancing inflows and outflows to the loch. Additional mitigation is proposed through the hydrological assessment (<i>Chapter 12 Water Resources and Flood Risk (Volume 2)</i>), whereby operational conditions will ensure that water levels in Loch Awe remain within the historic range. In this way, the continued operation of the Loch Awe barrage and fish lift will be maintained. This includes:	Section 7.11	EMS	Operator	-	Operator

Ref No	Measure Embedded / Additional?	Operational Mitigation Measure	EIA Ref	Relevant Management Plan	Responsibility		
					Preparation	Approval	Delivery
		<ul style="list-style-type: none"> Ensuring that the maximum recorded level is not exceeded, likely based on the annual maximum flood level. The highest levels recorded in the 2013-2021 period were 38.3 mAOD in 2014 and 2018. The 5% exceedance level is 36.97 mAOD. It is recommended that a commitment be made to restrict the draw-down of Loch Awe to the 95% exceedance level of 35.97 mAOD. This will be implemented as an operational restriction on the operation of the Scheme, to ensure that fish passage is maintained at the fish lift at the Loch Awe Barrage. Ensuring that loch levels do not fall below the minimum operating level: The winter target minimum operating level for the Loch Awe Barrage is 36.96 mAOD. This corresponds to the 95% percentile exceedance probability for the entire flow series. It is unknown at this stage at which levels the fish lift (fish pass) of the Loch Awe Barrage is no longer able to operate. A prolonged period of low loch levels in July 2021 took the level down to 35.52 mAOD. Other low periods in 2013, 2014 and 2019 had minimum levels of approximately 35.8 mAOD. <p>These operational conditions will be confirmed and set post-consent, to ensure the continued operation of the Loch Awe barrage and fish lift.</p>					
AE-14		<p>Monitoring of aquatic habitats upon completion of the Development is recommended for the following aspects:</p> <ul style="list-style-type: none"> Annual monitoring surveys for the presence of aquatic INNS, to be combined with surveys for terrestrial INNS, in watercourses within the Site and assessed as receptors in relation to INNS above. Due to the potential for INNS to be transferred to the Headpond, it is recommended that the Headpond and these receptors are monitored for INNS for a period of five years. Regular monitoring and maintenance of the Inlet / Outlet on the shore of Loch Awe should be carried out to ensure the integrity of the screen and assess any potential impacts in relation to fish, in particular migratory salmon, and other species due to the potential for distraction and entrapment / impingement. Where permanent culverts are installed in watercourse crossings, it is recommended that these are monitored to ensure that there are no lasting effects on fish passage, especially in the event that Atlantic salmon or brown trout or other protected / notable species are shown to be present in pre-commencement fish surveys (i.e., in particular for Allt Criche (tributary of Erralich Water): BL-01, Erralich Water: BL02, River Aray: BL-22, and Unnamed tributary of River Aray: BL-23). 	Section 7.11	EMS	Operator	-	Operator
Chapter 9: Ornithology							
O-28		All personnel involved in the construction and operation of the Development will be made aware of the ornithological features within the Zol and the mitigation measures and working procedures that must be adopted. This will be achieved as part of the induction process and through the delivery of Toolbox Talks, where required.	Section 9.9	EMS	Operator	-	Operator
Chapter 11: Water Environment							

Ref No	Measure Embedded / Additional?	Operational Mitigation Measure	EIA Ref	Relevant Management Plan	Responsibility		
					Preparation	Approval	Delivery
WQ-30		During operation, surface water runoff from permanent above ground facilities will be treated using sustainable drainage systems that may include SuDS ponds/settlement lagoons, temporary ditches, silt fences, silt busters, dewatering/sediment bags, silt curtains and designated bunded fuelling areas. The access tracks will have swales to capture any runoff. The type of treatment measure and the number of treatment train components will be determined during detailed design. This will be informed by a water quality risk assessment applying the Simple Index Approach described in the C753 The SuDS Manual.	Section 11.9	EMS	Operator	-	Operator
WQ-31		<p><u>Headpond and interception of watercourses</u></p> <p>Allt Beochlich will be intercepted from around NN 03855 15923 by the Embankment. This will cut off much of Allt Beochlich Catchment area including multiple tributaries and Lochan Airigh. This area will be completely lost to the Development. Flow downstream of NN 03855 15923, will be compensated with a compensation flow scheme. More details of this can be found below at, 'Compensation Flow'.</p> <p>Embankment construction method</p> <p>At this stage there is no detailed construction method for the construction of any of the two proposed embankments. This will be developed at the detailed design stage pursuant to a pre-commencement planning condition. For this assessment it has been assumed that a concrete box culvert will be constructed offline in the location of the main Embankment (Embankment 1) along the face of the Headpond but adjacent to the Allt Beochlich. The Allt Beochlich will then be diverted through the culvert, which will allow flows to be maintained while the Embankment is constructed either side and over the culvert. The culvert will be plugged to allow the Headpond to fill once construction of the Embankments and associated infrastructure is complete.</p>	Section 11.9	Design of Development	Applicant	ABC	Construction Contractor
WQ-32		<p><u>Tailpond Inlet / Outlet</u></p> <p>To avoid fish and debris entrainment, the tailpond inlet / outlet structure where the Waterways terminate into Loch Awe, will incorporate a suitably sized screen mesh. The screen also acts as an energy dissipation measure to reduce the velocity of the water discharging from the Development. This ensures that the 0.3 m/s maximum discharge velocity is not exceeded. Also, the spillway outlet will contain energy dissipation components to reduce the force of the water entering the loch and causing scour of the bed.</p> <p>The loch bed of Loch Awe will be reprofiled to accommodate a new level of 18.2 m AOD. The inlet / outlet Structure will be approximately 18 m deep (within the bank of Loch Awe). The tailrace divides into Loch Awe from the Lower Gatehouse just upstream of the outlet which is fronted by two sets of screens 74 m wide and around 19 m high. The majority of the structure is either sub-surface within the bank of Loch Awe or beneath the water level of the Loch (as shown on <i>Figure 2.16 Indicative Tailpond inlet / outlet Cross Section (Volume 3 Figures)</i>). The inlet / outlet structure consists of an inclined screen and a screen cleaning mechanism, stoplog, rock armour and silting chamber.</p>	Section 11.9	Design of Development	Applicant	ABC	Construction Contractor

Ref No	Measure Embedded / Additional?	Operational Mitigation Measure	EIA Ref	Relevant Management Plan	Responsibility		
					Preparation	Approval	Delivery
WQ-33		<p><u>Allt Beochlich compensation flow</u></p> <p>To ensure that significant impacts on the downstream flow regime for LA6 are avoided, including ecology and the local HEP scheme, it is proposed to ensure that a suitable compensation flow is maintained at all times. Unlike other HEP schemes, water for the pumped storage scheme is abstracted from Loch Awe rather than the catchment in which the Headpond is located. Flow into the catchment from further upstream can be effectively passed forward to maintain downstream flows and the existing flow regime as far as practically possible. The outlet from the Headpond to the LA6 watercourse downstream of the Embankment will be set at a low elevation within the Headpond so that a source of water is always present regardless of whether the Headpond is in a charged or uncharged state. There are options for how the compensation flow is defined. It could be linked to a control catchment or water level in the Beochlich Lochan so that a penstock is automatically opened or closed to allow a certain flow through the compensation outlet, or a defined flow could be maintained at all times.</p> <p>It is proposed that the compensation flow will be determined at a later stage as part of the CAR Licence application. In advance of this, a programme of water level and flow monitoring will be undertaken on the LA6 (and tributaries) as well as potentially level monitoring in the LA8 (if such data is not already recorded for the local HEP scheme). This data will inform determination of a suitable compensation flow regime that maintains as close to the current flow regime as is practical. This also the potential to benefit hydromorphological processes, as the compensation flow structure could be designed with a natural bed, to allow transport of coarse sediment from the upstream catchment to the downstream reach.</p>	Section 11.9	Design of Development	Applicant	ABC	Applicant/ Operator
Chapter 12: Water Resources							
FO-03		<p>An effect of operation is the potential of increased flood risk as a result of increased Loch Awe levels and downstream flows in the River Awe. This would be contrary to the guidance outlined within the Argyll and Bute Flood Risk Management Policy supplementary guidance. The comprehensive Flood Risk Assessment (<i>Appendix 12.2 Flood Risk Assessment (Volume 5 Appendices)</i>) undertaken assess the areas at risk from the Development, with a design event of 0.5%AEP+59%CC resulting in a flooded water level of 39.8 mAOD. To mitigate flooding to the Development itself and downstream receptors, the proposed hands-off level for generation is 37.67 mAOD, which corresponds to a 50% AEP flood event. An additional operating regime will be applied to the Development with a hands-off level of 37.0 mAOD when forecasted rainfall amounts for 3 days subsequent exceed 150 mm (which is roughly equivalent to a 10% AEP event).</p>	Section 12.9	Operation regime	Applicant	SEPA	Operator / Applicant
FO-04		<p>Abstraction of large quantities of water from Loch Awe during periods of low water levels can have a negative effect on the ability to maintain flow within the River Awe. The significant effect of abstraction, as mentioned above, needs to be mitigated against, therefore it is proposed that abstraction is limited based on a minimum water level in Loch Awe.</p>	Section 12.9	Operation regime	Applicant	SEPA	Operator / Applicant

Ref No	Measure Embedded / Additional?	Operational Mitigation Measure	EIA Ref	Relevant Management Plan	Responsibility		
					Preparation	Approval	Delivery
		<p>To ensure this mitigation procedure is in place, a monitoring arrangement and control procedures will be installed at the inlet/outlet structure on Loch Awe to measure the water level, and if necessary, stop the abstraction of water if below the level limit, set out by the operation rules. The operation loch limit based on a set hands off level is to be set at a water level of 35.97 mAOD. This equates to the 95th percentile water level (a level which is exceeded 95% of the time).</p> <p>The mitigating effect, mentioned within <i>Chapter 12 Water Resources and Flood Risk (Volume 2 Main Report)</i>, has a dual effect of mitigating the impact on fish passage at the Awe Barrage, the operating regime is based on the historical variation of Loch Awe, to allow for viability of fish passage. The fluctuation of Loch Awe, posed by the Development is within the existing operating parameters therefore, there should be a negligible effect of fish passage at the Awe Barrage.</p> <p>Any operational discharges or abstractions required by the Development will be regulated by the CAR license, as supervised by SEPA. Therefore, the appropriate operational levels for either activity will be agreed and secured by this regulatory regime.</p> <p>The implementation of the above-mentioned operation regime will ensure that the abstraction of water from Loch Awe will have a negligible impact on available water resource.</p>					
Chapter 16: Socio-Economics and Tourism							
ST-09	Embedded	Any diversions of Core Paths or recreational routes will have due regard to use by walkers. The recommendations from British Standard 5709:2006 "Gaps, Gates and Stiles" will be considered in consultation with the Argyll and Bute Council Access Officer and other parties.	Section 16.8	Design of Development	Applicant	ABC	Construction Contractor
ST-10	Embedded	The Site's proposed Access Tracks are expected to cross Public Right of Way (ProW) SA128, within the commercial forest to the north of the core Development Site. Although noted on Scotways' Catalogue of Rights of Way, it is understood that this path is no longer an extant feature on the ground and is not in frequent use. Any physical change to the path would occur over an area of less than 5 m, thus minimising the impact. Moreover, access to route SA128 will be maintained throughout operation of the Development. Appropriate signage warning walkers of construction traffic will also be introduced where the PRoW intersects the Development's internal Access Tracks. As such, it is understood that any adverse impacts will be negated.	Section 16.8	Design of Development	Applicant	ABC	Construction Contractor
ST-11	Embedded	Post-construction local paths affected by the Development will be realigned and made good using appropriate materials for path use. Longer diversions on the core paths will be left in-situ.	Section 16.8	Design of Development	Applicant	ABC	Construction Contractor
ST-12	Embedded	Certain forestry paths falling within the Development Site may be impacted during operation, however through the upgrade and addition of new Walking Routes through the Development Site area, overall access in the local area is expected to be maintained. Details of the proposed upgrades will be provided when a construction contractor has been appointed.	Section 16.8	Design of Development	Applicant	ABC	Construction Contractor

Ref No	Measure Embedded / Additional?	Operational Mitigation Measure	EIA Ref	Relevant Management Plan	Responsibility		
					Preparation	Approval	Delivery
Chapter 18: Marine Physical Environment and Coastal Processes							
MC-03	Additional	<p>A limited scope of post-construction monitoring is recommended as a precautionary measure, as outlined below:</p> <ul style="list-style-type: none"> • Visual inspection of outfalls to check for accretion of sediment (monthly); and • Visual inspection of coastline 500 m either side of the Marine Facility to check for any localised erosion or accretion (monthly). <p>If after 5 years it is found from the monthly inspections that there is no change in local accretion and/or erosion, there would be no requirement for continued monitoring.</p>	Section 18.10	-	Operator	-	Operator

