

EARBA STORAGE

A GILKES ENERGY COMPANY

Earba Pumped Storage Hydro Scheme EIA Report

Chapter 4: Assessment Methodology, Scoping and Consultation

February 2024



Quality Information

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Revision History

Revision

01

Revision Date

February 2024

Details

Issue to ECU

Authorised

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4. Assessment Methodology, Scoping and Consultation

4.1 Introduction

- 4.1.1 This chapter of the EIA Report sets out the broad approach taken to the Environmental Impact Assessment (EIA) of the proposed Development and the terminology used. For a detailed description of topic-specific assessment methods reference should be made to the relevant chapter.

4.2 EIA Regulations

- 4.2.1 EIA is a means of drawing together, in a systematic way, an assessment of the likely significant environmental effects arising from a proposed development. The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 ("the EIA Regulations") apply to applications under sections 36 of the Electricity Act and set out the legislative requirements of the EIA process.
- 4.2.2 EIA is a process that consists of:
- the preparation of an EIA report by the applicant;
 - the carrying out of consultation, publication and notification at certain stages of the process;
 - the examination by the Scottish Ministers of the information presented in the EIA report and any other environmental information; and
 - the reasoned conclusion by the Scottish Ministers on the significant effects of the development on the environment, and the integration of that reasoned conclusion into the decision notice issued in respect of the application.
- 4.2.3 Schedule 1 of the EIA Regulations identifies development types and thresholds for which EIA must always be undertaken. Schedule 2 of the EIA Regulations identifies development which may require EIA to be undertaken, but only where the development is likely to have significant effects by virtue of factors such as its nature, size or location. Developments that require EIA are known as 'EIA development'. As a generating station of greater than 50 Mega Watts (MW) the Development constitutes an EIA development under Regulation 2(1) of the EIA Regulations.

4.3 Requirements of the Regulations

- 4.3.1 Applications for developments considered to be EIA development must be accompanied by an EIA Report. To comply with Schedule 4 of the EIA Regulations, an EIA Report must contain certain information. Table 4.1 summarises these requirements and identifies where the relevant information may be found within this EIA Report.

Table 4.1 – Information Required in the EIA Report

Legislative Requirement	Where this information is in the EIA Report
1. A description of the development, including in particular: (a) a description of the location of the development; (b) a description of the physical characteristics of the whole development, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases; (c) a description of the main characteristics of the operational phase of the development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used; (d) an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the construction and operation phases.	The Proposed Development is described in the EIAR Chapter 2 – The Proposed Development.
2. A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.	Reasonable alternatives in terms of long duration electricity storage technology, selection criteria for this site and the design alternatives considered within the site are presented with reasoning in Chapter 3 – Consideration of Alternatives and Design Evolution.
3. A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.	Each technical chapter of the EIA Report contains a description of the baseline scenario pertinent to the subject of the chapter, together with details of the information gathered to inform that baseline.
4. A description of the factors specified in regulation 4(2) likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.	All of these factors are considered in the relevant technical chapters of the EIA Report.

Legislative Requirement	Where this information is in the EIA Report
5. A description of the likely significant effects of the development on the environment resulting from, inter alia: (a) the construction and existence of the development, including, where relevant, demolition works; (b) the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources; (c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste; (d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters); (e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources; (f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change; (g) the technologies and the substances used. The description of the likely significant effects on the factors specified in regulation 4(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development. This description should take into account the environmental protection objectives established at Union or Member State level which are relevant to the project, including in particular those established under Council Directive 92/43/EEC(1) and Directive 2009/147/EC(2).	Where any likely significant effects resulting from the construction, operation and decommissioning of the Proposed Development have been assessed, these are presented in the technical chapters.
6. A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.	This is presented in each technical chapter.
7. A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.	Chapter 3 of the EIAR, Consideration of Alternatives and Design Evolution details the embedded mitigation inherent in the layout and design of the Proposed Development presented in the EIAR. Further mitigation is presented in each technical chapter and in the Mitigation Schedule at Chapter 20.

Legislative Requirement	Where this information is in the EIA Report
8. A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to EU legislation such as Directive 2012/18/EU(3) of the European Parliament and of the Council or Council Directive 2009/71/Euratom(4) or UK environmental assessments may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.	The key vulnerability of the development to risks of major accidents and/or disasters relates to the inclusion of a number of dams within the design of the Proposed Development. This would be managed as detailed in various technical chapters by the application of the Reservoirs (Scotland) Act 2011.
9. A non-technical summary of the information provided under paragraphs 1 to 8.	A Non-Technical Summary is provided as a separate document.
10. A reference list detailing the sources used for the descriptions and assessments included in the environmental statement.	References are provided as footnotes within the EIAR text.

4.4 Scoping and Consultation

- 4.4.1 To inform the scope of the assessment for the Proposed Development, consultation was undertaken with statutory and non-statutory bodies.
- 4.4.2 Part 1 Section 4(3) of the EIA Regulations sets out the factors that should be identified, described and assessed within an EIA Report where there are likely significant effects on the factors listed and / or the interaction between those factors. These factors are:
- Population and human health;
 - Biodiversity;
 - Land, soil, water, air and climate; and
 - Material assets, cultural heritage and the landscape.
- 4.4.3 EIA Reports also require to include the expected effects deriving from the vulnerability of the development to the risks of major accidents and disasters.
- 4.4.4 How these factors are relevant to the Proposed Development and the scope of their assessment within this EIA Report have been agreed through consultation with relevant statutory and non-statutory consultees through the following processes:
- The provision of a Scoping Report to the Energy Consents Unit (ECU) of the Scottish Government on 30 January 2023. A Scoping Opinion was received on 13 April 2023. This is attached at **Appendix 4.1 – Scoping Report**. A matrix of

the scoping responses and how these have been addressed in the EIA Report is attached at **Appendix 4.2 – Scoping Response Matrix**.

- On 7 February 2023 a Major Project Pre-application meeting was held with the Highland Council (THC). The report issued by THC following this meeting is attached at **Appendix 4.3 – Pre-application Advice for Major Developments**. A matrix of the advice and how it has been addressed in the EIA Report is attached at **Appendix 4.4 – Pre-Application Advice Response Matrix**.
- Between Scoping and submission of the S36 application, consultation meetings have been held with various statutory and non-statutory consultees as detailed in the Gate Check 1 Report attached at **Appendix 4.5 – Gate Check 1 Report**.
- Consultation with local communities and the wider public has taken place at two public consultation events held in February and November 2023, at both times in the Laggan Community Hall and the Spean Bridge Community Centre. Consultation with the public has also taken place through the project website, www.earbastorage.co.uk, which has a facility for submitting questions or comments. Public consultation is detailed in **Appendix 4.6 – Pre-application Consultation (PAC) Report**.

4.5 Issues Scoped Out of the EIA

Population and Human Health

- 4.5.1 The Proposed Development is located in a rural area with relatively few nearby sensitive receptors. The closest sensitive receptors to the west of The Proposed Development are the properties at Moy Bridge at the access to the Proposed Development from the A86.
- 4.5.2 Potential effects relating to population and human health could arise from Electric and Magnetic fields (EMF), Electromagnetic Interference (EMI), air quality, water quality, noise and / or vibration effects, light disturbance or residential visual amenity effects.
- 4.5.3 It is not anticipated that there would be any likely significant effects in relation to EMF or EMI as a result of the construction or operation of the Proposed Development. Potential effects on human health as a result of the Proposed Development could relate to noise, vibrations and air quality during construction, and water quality and residential visual amenity effects during both construction and operation.
- 4.5.4 The visual assessment described in **Chapter 7 – Landscape and Visual** of this EIA Report comprises a receptor-based assessment considering the potential for effects on visual amenity within the study area, including residential properties. Residential visual amenity has therefore been considered further as part of the landscape and visual assessment in the EIA Report.
- 4.5.5 Potential impacts on water quality during construction and operations have been assessed in this EIA Report at **Chapter 12 - Geology, Soils and Water**.
- 4.5.6 Construction noise and vibrations have been assessed in this EIA Report in **Chapter 18 – Noise and Vibration**.

- 4.5.7 As potential effects on human health, that are relevant to the Proposed Development, have been adequately covered in the EIA a separate assessment has been scoped out of the EIA.

Risk of Major Accidents

- 4.5.8 Flood risk in the event of a dam failing would be the biggest risk of major accident and/or disaster associated with the Proposed Development. Management of the reservoirs and risks associated with failure of any of the proposed dams would be covered by the Reservoirs (Scotland) Act 2011, following grant of any planning permission, rather than form part of the EIA. Other potential flood risk impacts have been assessed in this EIA Report in **Chapter 12 - Geology, Soils and Water**. Flood risk within the powerhouse shafts would also be a risk, which would be managed by the robust detailed design and risk management of these facilities in accordance with industry best practice.
- 4.5.9 Given the nature of the Proposed Development, and its remote location, the risk of any other type of major accident and/or disaster is considered to be very low. Furthermore, the Principal Designer would need to fully assess risks and mitigate as appropriate during the design stage as part of the requirements of the Construction (Design and Management) Regulations (2015). For these reasons, an assessment of the risk of major accidents and / or disasters has been scoped out of the EIA.

Climate Change

- 4.5.10 With regard to climate change, in the context of the EIA process climate change is considered both in relation to the contribution of the Proposed Development to increasing or decreasing gaseous emissions with global warming potential (GWP), and in relation to climate change adaptation.
- 4.5.11 Emissions associated with the Proposed Development would be limited to temporary and short-term emissions of exhaust gases from vehicles and construction plant, and the potential for the release of carbon dioxide as a result of dewatering and exposing peat and peat soils during construction. Neither source is considered likely to be significant in terms of GWP.
- 4.5.12 Air Quality was assessed in Chapter 16 of the Scoping Report and on that basis it was scoped out of the EIA.
- 4.5.13 A carbon balance for the Proposed Development is provide in the EIA Report at **Chapter 12 – Geology, Soils and Water**.
- 4.5.14 A further consideration in relation to climate change is the potential loss of habitats that are important for carbon capture and storage to accommodate the construction of the Proposed Development, such as woodland and peatland habitats. This has been assessed in the EIA Report at **Chapter 8 – Terrestrial Ecology** and Chapter **12 – Geology Soils and Water**.
- 4.5.15 In terms of climate adaptation, consideration would be given to the potential implications of climate change on design of the development (e.g., design for increased flood risk and adverse weather); however, no potential for significant impacts have been identified and it is therefore proposed that an assessment of climate change is scoped out of the EIA.

Material Assets

- 4.5.16 The Proposed Development would be located entirely on Ardverikie Estate. The estate is used for highland sports, commercial forestry, hydroelectric generation (there are two existing reservoir storage hydro schemes), holiday accommodation and as a film location. These activities would be disrupted on or in the vicinity of Loch Earba or Loch Leamhain during construction of the Proposed Development.
- 4.5.17 Ardverikie Estate also contains areas of commercial forestry, although none within the development area. Any minor stands of woodland which would lie within the maximum inundation level of the Proposed Development, around Loch Earba would need to be permanently felled.
- 4.5.18 Most of the impacts on existing material assets would be temporary and limited to the construction phase of the Proposed Development only. There would be some very minor permanent loss in riparian woodland. Effects on woodland are assessed in **Chapter 9 - Forestry** of this EIA. It is therefore considered that an assessment of material assets has been adequately covered in the EIA Report and a separate assessment be scoped out of the EIA.

Telecommunications, TV, Radio Links

- 4.5.19 The Proposed Development is in a rural area with relatively few nearby sensitive receptors. No significant changes to the reception of radio, digital television or digital radio as a result of this type of development are anticipated. For this reason an assessment of interference with radio, digital television or digital radio links has been scoped out of the EIA.

4.6 Assessment of Effects

- 4.6.1 Within the EIA Report, the assessment of effects for each environmental topic considers the environmental impacts of both the construction and operational phases of the Proposed Development.
- 4.6.2 In order to determine whether or not the potential effects of the Proposed Development are likely to be 'significant' a number of criteria are used. The significance criteria vary between topics but generally consider the following:
- international, national and local designations or standards;
 - relationship with planning policy;
 - sensitivity of the receiving environment;
 - magnitude of impact;
 - reversibility and duration of the effect; and
 - inter-relationship between effects.
- 4.6.3 Effects that are likely to be significant, prior to mitigation, are identified within the EIA Report. The significance attributed to the resulting effect is informed by professional judgement, by the sensitivity of the affected receptor(s) and by the nature and magnitude of the predicted changes/impacts. Table 4.2 below is used as a guide to the relationship between the sensitivity of the identified receptor and the anticipated magnitude of an impact/change. Professional judgement is

however equally important in establishing the assessment of the significance of any individual effect.

Table 4.2 Guide to the Inter-Relationship Between Magnitude of Impact and Sensitivity of Receptor

		Sensitivity of Receptor/Receiving Environment to Change			
		High	Medium	Low	Negligible
Magnitude of Impact /	High	Major	Major	Moderate	Negligible
	Medium	Major	Moderate	Minor	Negligible
	Low	Moderate	Minor	Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

4.6.4 The following terms are used in the EIA Report, unless otherwise stated, to determine the level of effects predicted to occur:

- major beneficial or adverse effect – where the proposed Development would result in a significant improvement (or deterioration) to the existing environment;
- moderate beneficial or adverse effect – where the proposed Development would result in a noticeable improvement (or deterioration) to the existing environment;
- minor beneficial or adverse effect – where the proposed Development would result in a small improvement (or deterioration) to the existing environment; and
- negligible – where the proposed Development would result in no discernible improvement (or deterioration) to the existing environment.

4.6.5 In line with the Guidelines for Environmental Impact Assessment (IEMA, 2004), assessments within this EIA Report consider effects of major or moderate to be significant, while those of minor or negligible to be non-significant. If there are deviations from this, these will be clearly stated within the individual technical chapters.

4.6.6 The characteristics of an effect will vary depending on the duration of the activity causing the effect, the sensitivity of the receptor and the resultant change. It is therefore necessary to assess whether the effect is temporary or permanent; beneficial or adverse; and indirect or direct. Effects that are temporary are usually reversible and generally confined to the construction period.

4.7 Approach to Mitigation

- 4.7.1 Some mitigation measures to avoid, reduce or offset the consequences of the Development, are embedded within the design of the development, whilst others may require adherence to particular constraints on construction methods or mode of operation. The final assessment of significance will take into account the mitigation measures and constraints that have been incorporated into the Proposed Development – this will be the assessment of residual likely significant environmental effects, based on the assumption that the identified mitigations are implemented.
- 4.7.2 The EIA also identifies where it is considered appropriate to undertake monitoring as part of construction and / or operation of the Development. Monitoring provides a mechanism to take remedial action in the event that unforeseen significant effects occur. For example, this could include monitoring the water quality in discharges to ensure that no contaminated water is being released or monitoring noise emissions to ensure that they comply with agreed limits.
- 4.7.3 Mitigation measures are identified to prevent, reduce or remedy any potentially significant adverse environmental effects identified, beyond that already taken into account as normal good practice, that is to say embedded mitigation, for example the measures outlined in the EIA Report at **Appendix 2.4 - Construction Environment Management Document**. These measures would be implemented during detailed design, construction and / or operation of the Proposed Development.
- 4.7.4 Each technical chapter details the measures recommended to mitigate identified likely significant effects, and a summary of the recommended mitigation measures is provided in the EIA Report at Chapter 20 – Mitigation Schedule.

4.8 Cumulative Effects

- 4.8.1 Part 5 of Schedule 4 of The EIA Regulations sets out the matters that require to be incorporated within EIA Reports. The EIA Regulations state that EIA Reports should include an assessment of “the cumulation of effects with other existing and/or approved development, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources”.
- 4.8.2 There are two aspects to Cumulative Effects, defined as follows:
- In-combination effects: the combined effect of the Proposed Development together with other reasonably foreseeable developments; and
 - Effects interactions: the combined effect caused by the combination of a number of effects on a particular receptor which may collectively cause a more significant effect than individually.
- 4.8.3 Where relevant, the individual technical chapters within this EIA Report consider the cumulative effects the Proposed Development with other existing or future developments in the planning system that have the potential to result in significant cumulative effects in combination with those resulting from the Proposed Development.

- 4.8.4 Other developments that have been identified as either going through screening or scoping, with a granted planning application or under construction at present are listed in Table 4.3, Cumulative Developments

Table 4.3 - Cumulative Developments

Development Name and Type	Planning Ref. and Status	Description	Potentially Shared Receptors
Coire Glas PSH	EC00003164 Consented	A 1500MW pumped storage hydro scheme at Loch Lochy approximately 19km to the south-west of Fort Augustus	Roads
Strathmashie Distillery	CNPA 2023/0267/DET Consented	Erection of distillery, 3No. warehouses, access, parking, offices, boreholes	Roads
Cloiche Windfarm	ECU00002054 Consented	A 29 turbine wind farm, of total capacity between 100 and 200MW located adjacent to the operational Stronelairg Wind Farm and Glendoe Hydroelectric Scheme, approximately 11 km to the south east of Fort Augustus and 14 km west of Newtonmore.	Visual

4.9 Assumptions and Limitations

- 4.9.1 The EIA process is designed to enable good decision-making based on the best possible information about the environmental implications of a proposed development. However, there will always be some uncertainty inherent in the scale and nature of the predicted environmental impacts. This uncertainty can arise because of the potential for minor alterations to project designs following completion of the EIA Report (e.g. during micro-siting) and/or due to the limitations of the prediction process. Where specific assumptions have been made in relation to the technical environmental assessments, these are reported in the relevant chapters of this EIA Report.
- 4.9.2 The environmental impacts reported in this EIA Report and the level of mitigation described set the minimum standard which will be achieved by the final development.