

Technical Appendix

Lairdmannoch Energy Park

Technical Appendix 8-3: Schedule of Watercourse Crossings

Lairdmannoch Energy Park Limited

May 2025



Contents

1	Introduction	4
	1.1 Relevant Legislation	4
2	Watercourse Crossing Details	6
3	Summary and Recommendations	14
4	References	15
Ta	ıbles	
	Table 8-3-3: WX01	6
	Table 8-3-2: WX02	7
	Table 8-3-1: WX03	8
	Table 8-3-4: WX04	9
	Table 8-3-5: WX05	10
	Table 8-3-6: WX06	11
	Table 8-3-7: WX07	12
	Table 8-3-8: WX08	13





Glossary of Terms

Term	Definition
The Applicant	Lairdmannoch Energy Park Limited
The Agent	Atmos Consulting Limited
Environmental Advisors and Planning Consultants	Atmos Consulting Limited
Environmental Impact Assessment	Environmental Impact Assessment (EIA) is a means of carrying out, in a systematic way, an assessment of the likely significant environmental effects from a development
Environmental Impact Assessment Regulations	The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (EIA Regulations)
Environmental Impact Assessment Report	A document reporting the findings of the EIA and produced in accordance with the EIA Regulations
The Proposed Development	Lairdmannoch Energy Park
The Proposed Development Site	The full application boundary as per Figure 1-1

List of Abbreviations

Abbreviation	Description
CAR	Controlled Activities Regulations
GBR	General Binding Rules
OS	Ordnance Survey
SEPA	Scottish Environment Protection Agency
SLR	SLR Consulting Ltd
WX	Watercourse Crossing
WFD	Water Framework Directive
WEWS	Water Environment and Water Services



1 Introduction

SLR Consulting Ltd (SLR) was commissioned by Lairdmannoch Energy Park Limited to prepare a schedule of proposed new watercourse crossings which will be required to facilitate construction and operation of Lairdmannoch Energy Park (the Proposed Development).

This Technical Appendix presents photographs and dimensions for each proposed watercourse crossing point. The report also details the likely form of the track crossing solution (e.g., culvert, arch culvert, or bridge). The final design of each crossing solution would be agreed with the Scottish Environment Protection Agency (SEPA) prior to construction as part of the detailed site design.

A survey of the proposed watercourse crossings was undertaken between November 2024 and March 2025 by experienced SLR hydrologists.

The location of the watercourse crossings is shown in **Figure 8-1** of the EIA Report and details of the hydrological setting of the Proposed Development are outlined in **Chapter 8: Hydrology, Geology and Hydrogeology** of the EIA Report.

1.1 Relevant Legislation

The Water Framework Directive (2000/60/EC) (WFD) has been transposed into Scottish legislation as the Water Environment and Water Services (Scotland) Act 2003 (or WEWS) and has given Scottish ministers powers to introduce regulatory controls over activities in order to protect and improve Scotland's water environment. The water environment includes wetlands, rivers, lochs, transitional waters (estuaries), coastal waters and groundwater. These regulatory controls, known as the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) came into force in 2011 and have since been amended in 2013, 2017, and 2021.

With respect to watercourse crossings, CAR requires that all engineering works in inland surface waters and wetlands are subject to authorisation and allow for proportionate risk-based regulation which is outlined in the CAR Practical Guide (v9.4, July 2024). The authorisation process operates at three levels:

- General Binding Rules (GBR):
 - Minor crossings with no construction on bed or banks.
- Registration:
 - Bridges across rivers and lochs where no part of the structure encroaches on the bed (e.g., no piers or in-channel supports). In addition, the total length of the structures on both banks should not be more than 20 m. This category includes bottomless arch culverts; and
 - Closed culverts used for single-track tracks, footpaths and/or cycle routes, where the affected river is not more than 2 m wide.
- Licence (Simple/Complex):
 - All other bridges, fords or causeways; and
 - This category would include bridges affecting more than 20 m total bank lengths, bridges with in-stream supports or closed culverts for crossings not specified above.



SEPA provide authorisation for watercourse crossings shown on the 1:50,000 scale Ordnance Survey (OS) maps (Landranger Series). All other watercourses are classed as "minor watercourse" and are exempt under CAR.



2 Watercourse Crossing Details

The Proposed Development has sought to utilise existing tracks and access routes where possible. However, eight new watercourse crossings are required to facilitate the Proposed Development, details of which are included below. It is noted that the southwestern access track has not been surveyed as part of the watercourse crossing survey due to access issues.

Table 8-3-1: WX01

Watercourse Crossing ID	WX01
Watercourse Crossing	Grid Reference: E 265089 / N 560322
Details	Status: New
	Watercourse Width: 0.1 m
	Watercourse Depth: 0.05 m
	Notes: Located within a small channel which is approximately 0.2 m wide
	and 0.2 m deep.
Photograph Looking Upstream	
Downstream	
Potential Crossing Type Likely Required CAR Authorisation	Culvert Registration



Table 8-3-2: WX02

Watercourse Crossing ID	WX02	
Watercourse Crossing	Grid Reference: E 265084 / N 560154	
Details	Status: New	
	Watercourse Width: 0.1 m	
	Watercourse Depth: 0.2 m	
	Notes: Minor field drainage ditch.	
Photograph Looking Upstream		
Photograph Looking Downstream		
Potential Crossing Type Likely Required CAR Authorisation	Culvert Registration	



Watercourse Crossing ID	WX03
Watercourse Crossing Details	Grid Reference: E 264953 / N 559942
	Status: New
	Watercourse Width: 4 m
	Watercourse Depth: 0.3 m
	Notes: Located within a shallow channel which is approximately 0.5
	m nign.
Photograph Looking Upstream	
Photograph Looking Downstream	
Potential Crossing Type	Bridge
LINELY NEQUIED CAR AUTIONS	

Table 8-3-3: WX03



Table 8-3-4: WX04

Watercourse Crossing ID	WX04	
Watercourse Crossing	Grid Reference: E 264902 / N 560795	
Details	Status: New	
	Watercourse Width: 0.2 m	
	Watercourse Depth: 0.1 m	
	Notes: Located within a small channel which is approximately 1 m wide	
	and 0.5 m deep.	
Photograph Looking Upstream		
Photograph Looking Downstream		
Potential Crossing Type	Culvert	
Likely Required CAR Authorisation	Registration	



Table 8-3-5: WX05

Watercourse Crossing ID	WX05
Watercourse Crossing	Grid Reference: E 264860 /N 562138
Details	Status: New
	Watercourse Width: 0.1 m
	Watercourse Depth: 0.2 m
	Notes: Watercourse surveyed approximately 35m upstream of proposed
	crossing point. Watercourse located within small channel approximately
	0.2 m deep.
Photograph Looking Upstream	
Photograph Looking Downstream	
Potential Crossing Type	Culvert
Likely Required CAR Authorisation	Registration



Table 8-3-6: WX06

Watercourse Crossing ID	WX06
Watercourse Crossing	Grid Reference: E 265845 / N 562366
Details	Status: New
	Watercourse Width: 2.5 m
	Watercourse Depth: 0.2 m
	Notes: Watercourse located within an incised channel which is up to 7.5 m deep. Evidence of out of bank flood wrack lines noted approximately 0.5 m above the surveyed water level.
Photograph Looking Upstream	
Photograph Looking Downstream	
Potential Crossing Type	Bridge
Likely Required CAR	Licence
Authorisation	



Table 8-3-7: WX07

Watercourse Crossing ID	WX07
Watercourse Crossing	Grid Reference: E 267431 / N 561415
Details	Status: New
	Watercourse Width: 0.3 m
	Watercourse Depth: 0.3 m
	Notes: None.
Photograph Looking Upstream	
	Althin with a set
Photograph Looking Downstream	
	A A NOW AND A REAL AND A
Potential Crossing Type	Culvert
Likely Required CAR Authorisation	Registration



Table 8-3-8: WX08

Watercourse Crossing ID	WX08
Watercourse Crossing	Grid Reference: E 267696 / N 560894
Details	Status: New
	Watercourse Width: 8 m
	Watercourse Depth: 0.5 m
	Notes: Some evidence of out of bank flood wrack lines noted
	approximately 0.5 m above the solveyed water level.
Upstream	
Photograph Looking	
Downstream	
	and the second second second
	and the second sec
	Carrier Contraction of the second sec
	and the second
Potential Crossing Type	Bridge
Likely Required CAR Authorisation	Licence



3 Summary and Recommendations

Eight new watercourse crossings are required to facilitate the Proposed Development, the location of which are shown on **Figure 8-1** of the EIA Report.

As stated in the EIA Report Chapter the crossings would be designed to pass the 200year flood event plus an allowance for climate change and their design and construction details would be agreed with SEPA and DGC as part of the final CEMP.

In accordance with SEPA Technical Flood Risk Guidance and Good Practice Guidance for river crossings hydraulic modelling of crossings WX03, WX06 and WX08 would be undertaken at the detailed design stage of the project to inform the proposed bridge designs. This would establish accurate baseline flood extents, depths and velocities and key parameters for design.

The hydraulic model would then be used to assess the proposed bridge crossing and access track to ensure that they are capable of passing the 200-year flood event plus climate change, without adversely impacting peak flood extents and flood depths upstream or downstream. The output of the modelling would form part of a CAR application for the bridging solutions made to SEPA prior to any construction occurring. During determination of the CAR application NatureScot, Scottish Water and Galloway Fisheries Trust would be consulted to ensure that their interests are appropriately considered and addressed.

Good practice methods which will be adopted during construction and operation of the Proposed Development are outlined in **Chapter 8** of the EIA Report.



4 References

EU (2000) Water Framework Directive (2000/60/EC)

SEPA (2024) The Water Environment (Controlled Activities) (Scotland) Regulations. A Practical Guide, version 9.4

SEPA (2022) Technical Flood Risk Guidance for Stakeholders

SEPA (2010) Engineering in the water environment: Good Practice Guidance: River Crossings, 2^{nd} edition.

SEPA (2015) WAT-PS-06-02: Culverting of Watercourses – Position Statement and Supporting Guidance, version 2.

Scottish Government (2011) The Water Environment (Controlled Activities) (Scotland)

Scottish Government (2003) Water Environment and Water Services (Scotland) Act 2003 (WEWS)