



**The Water Environment (Controlled Activities)(Scotland) Regulations
2011**

LICENCE APPLICATION FORM D

ABSTRACTIONS AND IMPOUNDMENTS

SECTION 1: ACTIVITIES APPLIED FOR

ACTIVITIES APPLIED FOR (please use CAR-LA-FORM-K for the construction of deep boreholes >200m)

Please indicate how many activities you are applying for under each category.	No.:	National Grid Reference (10 character) of abstraction or impoundment	Name of source waterbody or impounded waters	Source type <ul style="list-style-type: none"> • Watercourse • Reservoir • Loch • Groundwater • Spring • Wetlands
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1.1 Abstractions:

Registration	An abstraction of more than 10m ³ /day and less than or equal to 50m ³ /day		<i>Attach separate application forms for registration to this application</i>		
Simple Licence	An abstraction of more than 50m ³ /day and less than or equal to 2000m ³ /day		- -		
Complex Licence	An abstraction of more than 2000m ³ /day		- -		

1.2 Borehole construction and operation

To construct and operate a borehole you need to obtain a CAR registration or licence

Enter registration or licence number if you have already obtained a permit:

1.3 Mobile abstraction units used to abstract water under this application

Mobile Plant	Additional mobile unit abstraction location(s)		- -		
If applicable please state how many mobile abstraction units are to be used to abstract water applied for under this licence					

1.4 Impoundments:

Simple Licence	Existing passive weir		- -		
	Existing managed weir less than or equal to 1 metre high		- -		
	Existing raised loch less than or equal to 1 metre high		- -		
	Construction of all new impoundments less than or equal to 1m high that do not affect the passage of salmon or sea trout.		- -		
Complex Licence	Construction and operation of all other impoundments	1	██████████	Pattack	Loch

SECTION 2: REASONABLE NEED**2.1 PLEASE INDICATE YOUR MAIN CATEGORY OR CATEGORIES OF USE (if appropriate)**

Agricultural irrigation		Please complete Q2 and Table A
Agricultural water supply		Please complete Q2 and Table B
Golf Course irrigation		Please complete Q2 and Table C
Industry (other than hydropower)		Please complete Q2 and Table D
Private Water Supply		Please complete Q2 and Table E
Public Water Supply		Please complete Q2 and Table F
Hydropower	X	Please complete Q2 and Table G
Other(please specify)		Please complete Q2 and Table H

2.2 ALL USERS

2.2.1 Total Quantities to be authorised Please give the total volume of usage in cubic metres to be authorised from all sources in the periods indicated	Hour (m ³) 15,480	Day (m ³) 371,520	Year (m ³) 135,604,800
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2.2.2 Please set out here any other information, e.g. supporting calculations, operational practices or other reasons, in addition to that which you include in the following tables, to show how you have arrived at the quantities set out above that you are seeking to have authorised. (Please continue on a separate sheet were necessary)	<p>The current CAR licence for the River Pattack Intake / Abstraction 1 allows abstraction of up to 8m³/s or daily abstraction of 691,200m³.</p> <p>The built scheme actually only abstracts a maximum of 4.2 m³/s and so we would like to amend the rate of abstraction of Intake 1 from 8m³/s to 4.3 m³/s accordingly.</p> <p>In addition a new impoundment is proposed upstream of the existing impoundment 1, namely the proposed Loch Pattack Weir, details below and attached.</p>
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2.2.3 Please set out here what steps you have taken or intend to introduce to ensure efficient use of water (Please continue on a separate sheet if necessary)	<p>The current Pattack Hydro reservoir, impoundment 1 in the CAR licence, stores approximately 196,000m³ water, which is sufficient for approximately 12 hours of running of the River Pattack Hydro at 4.3 cumecs abstraction. The reservoir therefore is small and spills regularly.</p> <p>The proposed Loch Pattack Weir will raise Loch Pattack within its current annual flood range, by 1.5m above minimum loch level of 422.0 to 423.5m AOD and impound approximately an additional 1,200,000m³ within Loch Pattack and hence store sufficient water to allow the turbines to run for several days drawing down the loch slightly more gradually than its natural hydrograph.</p> <p>The current average annual energy production (AAEP) for the 2MW +3MW combined scheme without diversion intakes is 20.5 GWh. With the consented diversions, Abstractions 2-5 within the current CAR licence, the estimated AAEP is increased by 0.5GWh to 21.0GWh.</p> <p>The additional storage at Loch Pattack will improve the yield of the hydro power scheme to 23.0 GWh and so will provide an additional 2.0 GWh additional renewable energy per annum. This is sufficient to power the electrical needs of an additional 555 homes on average each year. This is based on an average annual demand of 3.6MWh per annum per dwelling according to UK government figures.</p>
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Table G – Hydropower	
G.1 Please give the head of water (H) and the design flow (Q)	H: 150 in metres Q: 4.3 in m ³ /sec
G.2 Provide the estimated installed efficiency of the turbine	78.7 % (including pipe losses)
G.3 Please give the installed capacity of the turbine in Mega Watts	1.99 + 2.99 MW

SECTION 4: APPLICATIONS INCLUDING IMPOUNDMENT ACTIVITIES

Complete this table for all impoundments that you are applying for. If you are applying for a licence which includes more than one impoundment structure please copy, complete and reference a separate table for each activity

No. of Section 4 tables completed:	1	Table ref: (e.g.1 of 2, 2 of 2)	1
IMPOUNDMENT DETAILS:			
4.1 Impoundment No/Ref/Name: (This should correspond to the reference on the site map)	Loch Pattack Weir		
4.2 Type of original waterbody to be impounded:	<input type="checkbox"/> WATERCOURSE x LOCH <input type="checkbox"/> NONE		
4.3 Name of watercourse or loch to be impounded:	Loch Pattack		
4.4 National Grid Reference of proposed impoundment (from mid point of impounding structure):	[REDACTED]		
4.5 Using the look up table in Section 4 of the guidance specify the Purpose Category/Categories for the use of the impounded water. Continue on separate sheet if necessary.	Primary purpose: Hydropower Secondary purpose:		
4.6 Do you consider this impoundment would qualify as an environmental service?	x NO <input type="checkbox"/> YES, provide details on separate sheet		
	Document name/ reference:		
4.7 Do you consider this impoundment would qualify for abated charges?	<input type="checkbox"/> NO x YES, provide details on separate sheet		
	Document name/ reference:	Hydropower / sustainable generation	
4.8 Where a management agreement is in place which influences the operation of the impoundment, please provide details.	Document name / reference:		
4.9 Please provide a full description of your proposals to construct or alter the impoundment, including plans and cross sections.	Document name / reference:	Refer to attached EA and plans	
4.10 Please provide method statements describing the method and controls of construction	Document name / reference:	TBD	
4.11 If applicable, what date do you intend to start construction or alteration works for the impoundment?	Document name / reference:	June 2022	
4.12 Height of impoundment structure:	2m		
4.13 Please give the level of the overflow or crest of the dam (metres AOD) if this is different to the height of the impoundment structure	421.5m AOD (Variable weir up to 423.5m AOD)		
4.14 National Grid Reference of outflow point from impounded waterbody	[REDACTED]		

4.15 Where there is a means of drawing the impounded water down, what is the minimum draw-off level (metres AOD)?	421.5m AOD	Lower sill of variable weir
4.16 Provide details of ongoing maintenance of this impoundment structure e.g. debris clearance, scour valve operation, fish pass maintenance etc.	Document name / reference:	TBD
4.17 Please provide details of any sediment management plan associated with this impoundment (see guidance in section 4.17)	Document name / reference:	Sediment would be flushed through under high water with lowered weir
4.18 Is there to be provision for fish passage?	<input type="checkbox"/> NO, please provide a justification for this on a separate sheet <input type="checkbox"/> YES, if so, please design details on separate sheet	
	Document name / reference:	TBD
4.19 Are there to be fish screens or other fish protection measures?	<input checked="" type="checkbox"/> NO, please provide a justification for this on a separate sheet <input type="checkbox"/> YES, if so, please design details on separate sheet	
	Document name / reference:	Not reqd, no abstraction
4.20 Provide information of the proposed operating regime (e.g. compensation release, freshets, drawdown)	Document name / reference:	Refer to EA document

4.21 For reservoirs, the total volume of water to be impounded and, if different total volume of waterbody (where known) (litres or cubic metres): (N.B. this information is not mandatory for schemes less than 25000m ³)	Volume of impounded water: 1,224,000 m ³	
	Total volume of waterbody: 4,306,401 m ³	
4.22 Provide details on any interconnections with other impoundments, abstractions or catchments.	Document name / reference:	None
4.23 Is registration required under the Reservoirs (Scotland) Act 2011? (i.e. can the reservoir hold 25,000m ³ or more above the surrounding land?) If yes, answer the following question:	<input type="checkbox"/> NO <input checked="" type="checkbox"/> YES	
	<input type="checkbox"/> YES Confirm reference number? RES/R/..... <input checked="" type="checkbox"/> NO Contact SEPA's Reservoir Regulatory Unit at Reservoirs@sepa.org.uk to register	

SECTION 5: ADDITIONAL INFORMATION

5.1 CUMULATIVE CHARGABLE ABSTRACTION VALUE

Please specify the combined maximum volume of abstraction from all abstraction points subject to a subsistence charge? (Please see guidance for more details)

Conversion: 1m³ = 1000 litres
 1m³ = 220 gallons

m³/day

5.2 ADDITIONAL INFORMATION SUBMITTED

Please reference additional supporting documents submitted as part of this application

Document name:
 Document reference:

Document name:
 Document reference:

Document name:
 Document reference:

Document name:
 Document reference: