

## OVERVIEW

ScottishPower is required to make some changes to the way it operates the Galloway hydro-electric scheme between now and

2015 to meet the objectives of the European Water Framework Directive.

The company is consulting stakeholders

about these changes and liaising with the Scottish Environment Protection Agency (SEPA), which has responsibilities under the

Water Environment and Water Services Scotland Act 2003 to develop and implement River Basin Management Plans.

## WATER FRAMEWORK DIRECTIVE

The Water Framework Directive (WFD) was introduced by the European Commission in 2000.

This significant piece of legislation aims to protect, improve and ensure the sustainable management of water resources to a common standard across the European Union. It covers wetlands, rivers, lochs, estuaries, coastal and underground water.

Under the WFD member states must ensure all inland and coastal waters within defined River Basin Districts reach "good" ecological status by 2015, by implementing a programme of measures contained in a formal River Basin Management Plan (RBMP). The Galloway Hydros sits mainly within the Solway Tweed River Basin District, but the upper part of the scheme is within the Scotland River Basin District.

The Solway Tweed River Basin District straddles the border with England. As a result, SEPA and the Environment Agency have joint responsibility for co-ordinating key areas of work. These include:

- Publishing environmental and economic characterisations for the river basin district.

These are detailed descriptions of pressures and impacts on the water environment and an economic analysis of water use

- Publishing a report on significant water management issues, including pressures on the water environment, such as pollution, abstraction and invasive species
- Publishing a strategic environmental

assessment of the river basin district

- Introducing a new classification system and monitoring programme for water bodies
- Developing environmental objectives for each water body and a Programme of Measures to help achieve those objectives
- Co-ordinating the development of a River Basin Management Plan.

The main river catchments in the Solway Tweed district are the Tweed, Eden, Esk, Annan, Nith, Dee-Ken and Cree and their associated wetlands.

The River Doon sits within the Scotland River Basin District, which covers most of Scotland.

The RBMPs were published in December 2009 and seek to ensure the protection, improvement and sustainable use of the water environment for future generations.

The RBMPs will contain environmental targets to be met by 2015 and will be delivered by Area Advisory Groups, which link in to a National Advisory Group.

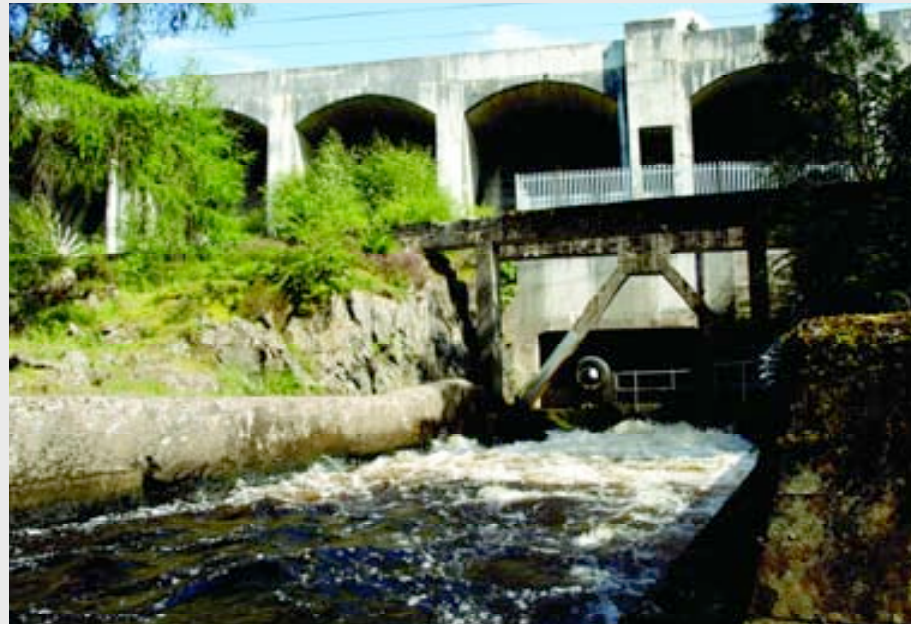
RBMPs will cover six-year cycles, the first from 2009-2015. For further information visit:

<http://ec.europa.eu/environment/water/water-framework>

[www.scotland.gov.uk/topics/environment/water/wfd](http://www.scotland.gov.uk/topics/environment/water/wfd)

[www.sepa.org.uk/water/river\\_basin\\_planning.aspx](http://www.sepa.org.uk/water/river_basin_planning.aspx)

For further information on the Galloway Hydros, email: [visithydros@scottishpower.com](mailto:visithydros@scottishpower.com) or visit: [www.spenergywholesale.com](http://www.spenergywholesale.com)



■ Compensation flows at Loch Doon Dam (left) and the fish ladder (above) and, below, River Doon



## WHAT SCOTTISHPOWER MUST DO

To meet the requirements of the EU Water Framework Directive, ScottishPower must examine the operation of the Galloway Hydros and determine how to achieve the best ecological outcome for all the water bodies associated with the scheme.

The company has commissioned independent ecology and hydrology consultants to assist this task, which aims to ensure the various water bodies meet SEPA's classification for Good Ecological Potential (GEP).

Proposals developed by ScottishPower will be submitted to SEPA, which issues the company's licence under the Water Environment (Controlled Activities) (Scotland) Regulations 2005.

SEPA would only approve any variation to our licence after thorough scrutiny of the company's proposals, which takes into account stakeholder feedback, following a period of consultation.

## PROGRAMME OF WORK

Proposals may involve diverting a portion of the compensation flow from one river to another and working to achieve variable flows, often referred to as "Ecologically Acceptable Flows", that replicate natural river conditions. The company is also considering whether additional fish passes may be required.

We have conducted preliminary ecological studies prior to undertaking hydrological modelling and river gauging works. River gauging needs to be conducted during periods of dry weather and low rainfall. If we can conduct these works in summer 2009 we will submit an application to SEPA, along with supporting environmental assessments, to vary our CAR licence.

If this submission is acceptable to SEPA, they will commence a period of statutory consultation.

## YOUR QUESTIONS ANSWERED ABOUT OUR REVIEW

### What are you looking at in relation to the River Doon?

We are looking at the feasibility of reducing the baseline compensation flow to the River Doon to allow variable flows which replicate more natural river conditions.

Our hydrology consultants are investigating optimal conditions for compensation flows across the whole of the scheme. This is an issue that has not been examined in depth since the scheme began operations in the 1930s.

### What reductions in compensation flows are you proposing?

We have not yet quantified any reduction as further hydrological studies are required, with data validation using SEPA-approved software.

Figures that have appeared in recent press articles cannot be validated at this time by ScottishPower. However they do correspond to the minimum flows that SEPA require for good ecological potential.

### Are you trying to generate extra power to increase profits?

No. We are committed to generating clean hydro power in support of the Scottish and UK Government's renewable energy targets and climate change objectives, but this review of our operations is driven entirely by the forthcoming requirements of the EU's Water Framework Directive.

Some of the changes we may be obliged to introduce would actually reduce our output.

Recovering these losses would require significant investment to extract power from the increased compensation water, however there would be no net gain in power output.

### “Save the Doon” campaigners say a reduction in compensation water will damage the Doon.

ScottishPower has a long track record of working with stakeholders to achieve the best outcome for the environment.

We would be pleased to speak directly

■ *The Pullagh Burn which enters Clatteringshaws Loch via a canal. ScottishPower plans to install a fish pass here and compensation flow – neither of these exists at present*



■ The Galloway Fisheries Trust has registered its support for the targeted proposals suggested for the River Dee system.

■ Jamie Ribbens, the Trust's Senior Fisheries Biologist, said: "These are significant and will help enormously with finally returning healthy numbers of salmon to the river. Increased compensation flows are all directed at key problem areas that have been highlighted in the Dee Salmon Plan.

■ "This will assist adult fish access and produce more suitable juvenile fish habitat. The Pullagh Burn work will reconnect the burn to the Black Water of Dee system allowing fish, water and spawning substrate to move more freely.

■ "The Trust and the Dee District Salmon Fishery Board are very supportive and excited about the Dee proposals which will be a key component of the overall strategy to improve the ecology of the river."

to the people who have started this campaign to allay their fears.

The current review is at an early stage and we need further scientific input before we firm up our proposals.

However, we do believe the River Doon will benefit from the introduction of variable flows. Benefits include:

- Providing a more natural and variable flow in the river to mimic the natural weather patterns more closely
- More natural upstream and downstream running of migratory fish and a higher likelihood of successful spawning in tune with fluctuating water levels and lower overall winter levels
- More favourable flows for existing mussel beds due to potentially less buffeting and gravel/stone movement,

along with the possibility of greater food supplies and favourable changes in water chemistry.

Rebalancing compensation flows would also result in considerable ecological benefits for the Ken and Dee.

These rivers' levels of compensation flow, set in the mid-1930s, are now considered by experts to be below ecologically acceptable standards.

This is particularly the case below Tongland and Clatteringshaws dams, where compensation flows would require to be significantly increased. Installation of new fish ladders and screens at these locations is also under consideration.

The Galloway Hydros supports fisheries groups across Galloway and Ayrshire to protect Salmon, Freshwater

## ACHIEVING THE BEST ECOLOGICAL OUTCOME

A team at the Galloway Hydros is investigating how the ecological status of the scheme as a whole can be improved as part of the River Basin Management Plans for the Solway Tweed and Scotland river basin districts.

Water management issues relating to the hydros, identified by SEPA, include flow rates in rivers and overcoming barriers to fish migration.

A key area being examined by our appointed ecologists and hydrologists is that of compensation flows – water the hydro stations release to local rivers to compensate for impounding water via its dams.

Levels of compensation flow in some rivers in the scheme do not achieve SEPA's criteria for Good Ecological Potential, while flows to others – such as the River Doon – are much higher than SEPA would require for Good Ecological Potential to be achieved.

The compensation flow of 45 million gallons/day to the River Doon was agreed as part of the Galloway

Water Power Act in 1929.

At that time the compensation flow was agreed with the owners of mills on the river to support their operations. However, these mills longer exist.

ScottishPower is, therefore, looking at optimising water flows to benefit all rivers and water bodies associated with the Galloway hydro scheme.

The Dee-Ken Catchment Management Plan, published by SEPA, states: "The amount of water within a river system is paramount to the well-being of the catchment.

"Too little water will result in drought and loss of wildlife habitats, whilst too much can cause damage to banks and riparian zones as well as causing great cost to human interests.

"At present in Scotland there is little regulation of water amounts, but this may change with the introduction of the WFD in the coming months."

Pearl Mussels and their habitats – see our **Fisheries Management Factsheet** for details.

### Who is being consulted?

We consulted stakeholders as part of a preliminary ecological study in 2008.

Consultees included Ayrshire Rivers Trust, Galloway Fisheries Trust, the Doon and Dee District Salmon Fishery Boards, SNH, SEPA, RSPB, Fisheries Research Services and the SWT.

We will take account of stakeholder feedback in our plans. Once our proposals have been finalised – and this will depend on the outcome of ongoing hydrology work – any plans would be subject to independent environmental assessments. We are

happy to speak to stakeholders about any issues as our plans develop and will produce updated factsheets at key stages in the work.

### What about issues such as pollution, highlighted by “Save the Doon” campaigners?

We have no direct influence over diffuse pollution on Ayr beach but this issue will be considered through our work with independent consultants and SEPA.

It will also be considered in its own right as part of the implementation of the Water Framework Directive. Likewise, any potential ecological impacts on freshwater pearl mussels, saucer bugs or salmon would be addressed in detail during environmental assessments.