



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.

BACKGROUND TO THE 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 implementing a programme of measures contained in a formal River Basin Management Plan (RBMP).

Heavily Modified Water Bodies, such as the Galloway Hydros, must achieve 'Good Ecological Potential' – this means providing maximum net environmental benefit without impacting on the operation of the scheme.

The Galloway Hydros sits mainly in 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
- Reporting on key water management



■ *The outfall from Earlstoun Power Station, part of the Galloway Hydro-electric Scheme*

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
- Developing environmental objectives for each water body and 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.

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

The RBMPs contain environmental targets to be met by 2015, 2021 and 2027 and will be delivered by Area Advisory Groups that link in to a National Advisory Group. RBMPs will cover six-year cycles, the first from 2009-2015.

ACHIEVING GOOD ECOLOGICAL POTENTIAL

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

A key area examined by our consultants was compensation flows – water the hydro stations release to rivers to compensate for impounding water in 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.

ScottishPower is a founding partner of the Dee-Ken Catchment Management Plan that promotes the sustainability of the area's water resource. The Plan,



■ *The River Doon, near Loch Doon*

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."

The current minimum compensation flow of 45 million gallons per day (mgd) to the River Doon was agreed as part of the Galloway Water Power Act in 1929, to satisfy the requirements of mill owners. However, these mills longer exist.

Following our detailed ecological and hydrological studies, we have submitted our options to SEPA.

These aim to optimise water flows across the hydro-electric scheme as a whole – See our **Water Framework Directive "Our Proposals"** factsheet for details.

FIND OUT MORE

- For more information about the WFD please visit:

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

www.scotland.gov.uk/topics/environment/water/wfd

www.sepa.org.uk/water/river_basin_planning.aspx

- For further information about the Galloway Hydros, email: visithydros@scottishpower.com or visit: www.spenergywholesale.com

YOUR QUESTIONS ABOUT OUR PROPOSALS TO MEET THE WFD

What are you proposing in relation to the River Doon?

We are looking at reducing the baseline compensation flow to the River Doon to allow increases in compensation flows to other parts of the Galloway Hydro-electric Scheme.

Our hydrology consultants have investigated 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.

Campaigners have said that a reduction in compensation water will damage the Doon.

Our understanding and knowledge of environmental issues and local water conditions have improved significantly since the Galloway Hydros was built in the 1930s.

The proposals we have submitted to SEPA aim to optimise water flows across the Scheme as a whole.

Our preferred proposal minimises the reduction in minimum compensation flow to the River Doon.

We believe the Doon will benefit from the introduction of more natural flow conditions, including variable flows.

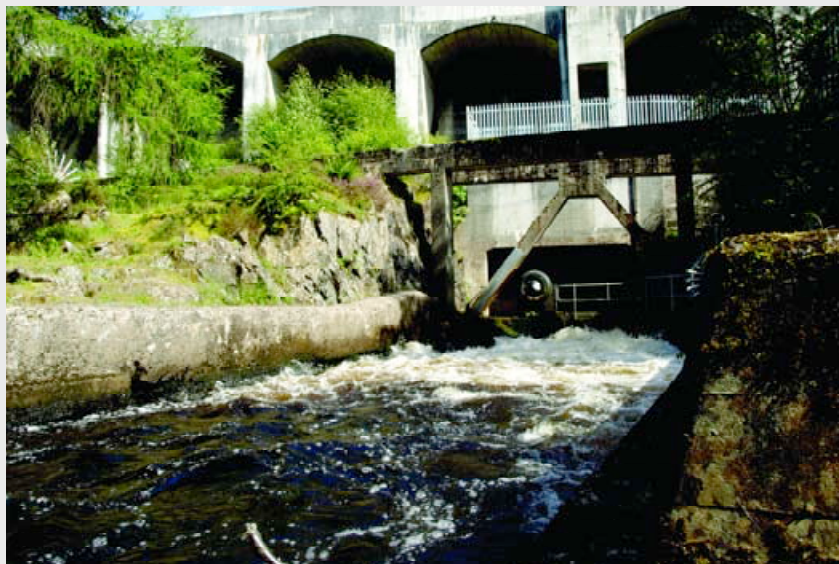
The potential impacts of these changes are explained in detail in the ecology report, however, key benefits include:

- 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

Rebalancing compensation flows would also result in considerable ecological benefits for the Ken and Dee. See our **Water Framework Directive "Our Proposals"** factsheet for more information.



■ The River Dee at Tongland (above) and compensation flow from Loch Doon dam



How did you calculate figures for the new compensation flows?

In the absence of detailed ecological data, SEPA developed hydrological models that must be implemented at certain water bodies to achieve good ecological potential.

This stipulates that the minimum flow in a river downstream of a water abstraction intake or dam must, as a minimum, achieve a flow that would, in natural conditions, be exceeded

95% of the time. This is known as the Q95 flow and is what we are seeking to achieve for the River Dee at Tongland.

To achieve this, we have asked to divert some compensation water from the River Doon, where a flow of Q88 would be achieved, through a minimum compensation flow of 36.5 million gallons per day.

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.

This review of our operations is driven entirely by the requirements of the EU's Water Framework Directive.

We have to achieve the best ecological outcome for all water bodies in the

scheme and both of the options under consideration are energy neutral – we will neither gain nor lose power.

Why don't you leave the Doon alone and make up for lost hydro power by installing some wind turbines?

We are doing this already. ScottishPower Renewables is the biggest windfarm developer and operator in the UK, with a capacity of more than 800MW.

But we don't want to lose any hydro

power – it remains important in helping to achieve the Scottish Government's target of meeting 80% of the nation's energy needs from renewables by 2020.

What about issues such as pollution, highlighted by River Doon campaigners?

There has been an issue concerning diffuse pollution on Ayr beach, but this appears to be due to old sewerage infrastructure. It is a separate issue from the variation in our CAR Licence and one that we cannot influence.

What happens next?

SEPA have a period of four months to process our application during which time there will be a period of consultation to allow stakeholders' views to be heard.

Should an agreement be reached, the changes would take effect no later than December 2012.

You can view ScottishPower's application on SEPA's website:

<http://www.sepa.org.uk/>

Who is being consulted about your proposals?

ScottishPower has a long track record of stakeholder consultation and have held meetings with local people, groups and organisations since we announced our initial proposals in January 2010.

We consulted stakeholders as part of preliminary ecological study in 2008. Consultees included:

- Ayrshire Rivers Trust
- Galloway Fisheries Trust
- The Doon and Dee District Salmon Fishery Boards
- Scottish Natural Heritage
- Scottish Environment Protection Agency
- Marine Scotland
- Fisheries' owners
- Fish producing companies
- The Fisheries Committee
- Local councillors
- Ayrshire Biological Records Centre
- Dumfries and Galloway Environmental Resource Centre
- Royal Society for the Protection of Birds.

We have taken account of stakeholder feedback in the proposals we have submitted to SEPA, as well as expert advice from hydrological and ecological consultants.

SEPA will undertake detailed scrutiny of our plans to ensure they meet the objectives of the Water Framework Directive.