

# LANARK HYDROS ENVIRONMENTAL FACTSHEET

## Overview

The Lanark Hydros, on the banks of the River Clyde, dates back to 1926 and is believed to be the oldest hydro-electric plant in the UK electricity industry.

The stations, Bonnington (11 MW) and Stonebyres (6 MW), were developed by the Clyde Valley Electrical Power Company to meet demand for electricity in Lanarkshire after the First World War. They are powered by three waterfalls, known collectively as the Falls of Clyde. Weirs divert an agreed amount of water from the river to power the turbines at the two stations.



## Introduction

The exceptional natural beauty of the Falls of Clyde has inspired artists, writers and poets for centuries.

The Lanark hydro-electric scheme was planned and developed at the start of last century with great care to preserve the area's natural heritage.

The stations, of late 1920s design and now of architectural interest in their own right, are now approaching their 100th anniversary and are continuing to generate green, sustainable energy. ScottishPower has lovingly maintained the stations and is continuing to invest to ensure their future environmental compliance.

The Hydros strives to minimise the impact of its operations and, over the years, has an excellent record of environmental compliance.

Staff work closely with stakeholders, including the Scottish Wildlife Trust, Scottish Environment Protection Agency and the local community, to ensure the scheme's operation has minimal impact on the landscape or environment.

This factsheet describes Lanark Hydros' environmental management systems and efforts to conserve the habitats and wildlife on site through a biodiversity action plan.



*Bonnington Linn, one of the Falls of Clyde*

## Reducing our Environmental Impact

Hydro power is recognised as being fully renewable and sustainable. Our stations at Lanark produce no direct carbon dioxide (CO<sub>2</sub>) emissions or other greenhouse gases.

The only CO<sub>2</sub> produced comes from the electricity consumed in our offices and by our machinery, and emissions from site vehicles.

The Lanark Hydros is located in an environmentally-sensitive area and operates under a licence issued by the Scottish Environment Protection Agency (SEPA).

We take seriously our responsibility to maintain the quality of water in the River Clyde and have an excellent compliance record.

Oil interceptor systems have been fitted to both stations to capture any oil, should a spill ever occur, before it enters the water course. Further efforts are made to reduce the use of resources, and minimise and recycle waste produced during our operation. Lanark Hydros operates an Environmental Management System (EMS) certified to the standard ISO 14001 and a biodiversity action plan (BAP) to protect habitats and wildlife.



*Stonebyres Power Station*

## Environmental Performance Highlights

Lanark Hydros has installed capacity to produce 17 MW of green renewable electricity each year.

The scheme operates a rolling environmental plan that aims to continually improve environmental performance. Some key achievements during 2011 include:

- We maintained at zero the number of environmental breaches, incidents and justified community complaints
- We achieved ISO 14001 certification for the Environmental Management System covering Lanark Hydros with no non-conformances found
- The five key waste streams from routine operations were identified so that reduction targets can be set
- The Hydros continued to support a Scottish Wildlife Trust Ranger at the Falls of Clyde SWT Reserve.

# Quick facts:

**Designations:** The Lanark Hydros is adjacent to New Lanark, a World Heritage Site, and the mixed broadleaf woodland community that forms the Falls of Clyde Site of Special Scientific Interest.

**UK BAP species:** Otter, Red Squirrel, Song Thrush, Tree Pipit, Spotted Flycatcher, Lesser Redpoll, Lesser Butterfly-orchid, Smooth Snake, Adder, Atlantic Salmon.

## How our Hydro Stations Work

Bonnington and Stonebyres Power Stations, the Lanark Hydros, are situated close to the World Heritage village of New Lanark and in an area of outstanding natural beauty.

The waters of the River Clyde that power the hydro scheme have created a steep gorge with a series of spectacular waterfalls. The wooded slopes have remnants of Scotland's ancient Oak forest while Alpine plants, such as Purple Saxifrage, cling to the rocky gorge.

The Scottish Wildlife Trust (SWT) manages the 59-hectare Falls of Clyde National Nature Reserve (NNR) in association with ScottishPower and the Corehouse Estate.

The Lanark Hydros launched its first biodiversity action plan (BAP) in 2005, aiming to preserve and enhance habitats and wildlife at the scheme. In 2009 a new five-year plan was published, setting out a list of ecological enhancement objectives and a timescale for their implementation. ScottishPower will work with our partners, including the SWT, to achieve many of our objectives.

The habitats at the Falls of Clyde support a wide range of biodiversity – more than 1,900 species have been recorded, many of which are listed for priority conservation action in the UK Biodiversity Action Plan (UK BAP).

Over 100 types of birds have been seen including 15 UK BAP species. A small population of Red Squirrels is present in the woodland while up to three family groups of Otters are seen on the river feeding on Eel, Sea Trout and Atlantic Salmon. Other UK BAP mammals include Water Vole, Polecat, Brown Hare and Soprano Pipistrelle – while listed reptiles are represented by Adder, Slow Worm and Common Lizard.

Around 700 species of flowering plants have been noted – including the priority species Lesser Butterfly-orchid. To encourage woodland diversity, the Hydros allow areas to grow naturally while leaving dead trees and timber to promote insect communities. Non-native species, such as Sycamore and Rhododendron, are being removed while growths of Bramble, Bracken and Ivy are thinned to improve conditions for less vigorous species of plant.

The scheme is introducing selective coppicing of woodland at Stonebyres and Bonnington to allow more light to penetrate the tree canopy and encourage the diversity of ground-level vegetation.

Work will be also carried out at Bonnington's garden to develop areas of existing lawn into a wildflower meadow and replace ornamental shrubs with native species. The SWT has erected 120 nestboxes for birds and bats on the reserve, mostly around Bonnington Station, with the help of a financial donation from the Hydros.

## Scottish Wildlife Trust Partnership

ScottishPower is proud of its partnership with the SWT and has collaborated with the Trust on several initiatives.

For over ten years ScottishPower has sponsored a seasonal ranger to support the work of the SWT at Lanark. Each year, the reserve welcomes around 60,000 visitors and the SWT organises a programme of summer activities and walks.

The duties of the 'Power Ranger' include liaising with the public, conducting wildlife surveys and reinforcing public safety at the steep gorge. The ranger also provides visitors with information about the site's history, wildlife and current status of the power stations.

Lanark Hydros also financially supported a study that looked at improving public access to historic structures on the reserve. These include the Hall of Mirrors, which was built in 1708 as a viewing gallery for the famous Corra Linn waterfall; the 18th Century Bonnington Iron Bridge; and William Wallace's Cave, a legendary hideout of the famous Scottish knight. Meanwhile, each year, operations at Lanark are suspended for a number of weeks, during outage works, to allow visitors to see the falls in their full glory.

## Nesting Falcons

Peregrine Falcons have nested in the gorge at the Falls of Clyde since 1997 and successfully raised many chicks.

A public viewing gallery is manned in summer while help from ScottishPower has enabled the SWT to allow more visitors a chance to see the spectacular bird of prey. Staff and contractors from the Lanark Hydros laid cabling to enable high-definition video footage of the falcons' nest site to be beamed back to the SWT Visitor Centre.



*The SWT Ranger Laura Whitfield with a Peregrine chick*



*A maturing Peregrine Falcon chick*