CARES CASE STUDY

LOCAL ENERGY SCOTLAND

CATRINE COMMUNITY RENEWABLES

BACKGROUND

Catrine Community Renewables commissioned a 250 kW hydro scheme in 2016. CCR applied for a CARES Enablement grant to carry out a performance assessment and improvement review.

Project name: Catrine Community Renewables (CCR), Catrine Hydro Performance Assessment and Improvements

Technology: Technology Performance Review

Location: Catrine, East Ayrshire

CARES funding: Enablement Grant £20,000

Date installed/operational: Refurbished scheme 2016, Performance Assessment and Improvements Review December 2019.

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Catrine Community Renewables (CCR) is a heritage, environmental and community trust based in the ancient mill town of Catrine, East Ayrshire.

In September 2016 CCR refurbished a local hydro scheme. The scheme comprised of two Francis turbines and a lade and voe system and had previously powered a manufacturing plant between 1780 and 1947. The result was a 230 kW hydro scheme generating approximately 500,000 kWh each year over the first two years of its operation.

The refurbished hydro scheme had not generated what it was expected to and has therefore not been profitable, resulting in CCR struggling to make loan repayments. CCR applied for a CARES Enablement Grant of £20,000 to carry out a performance assessments and improvements review. Following a competitive tender process, Derwent Hydro was appointed to carry out the review and deliver a report that would recommend ways to improve the scheme's performance.

PROJECT AIMS AND OBJECTIVES

The project aimed to produce a report that would include a prioritised and fully costed Options Appraisal of recommendations to improve the hydro system's efficiency. It also aimed to produce design work for any recommended measures in advance of implementing these measures. Derwent Hydro would also engage with stakeholders such as Scottish Environment Protection Agency (SEPA) and Historic Environment Scotland to enable any improvements to take place.

OUTCOMES AND ACHIEVEMENTS

An initial project report was produced in January 2019. It identified infrastructure changes and other efficiency measures that could increase the scheme's gross income. The report also suggested seven ways for the scheme to increase its energy input, including the automation of sluice gates and reprogramming its control system.

The report also suggested four ways that the scheme could further improve the passage of fish, including improving its fish pass and checking the fish counter with its manufacturer. Work on the smolt by-pass was fast-tracked, approved by SEPA, and was installed before the April 2019 smolt run.

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The final project report details the possibility of increasing the hydro's output by 40%. This has been valued at around £48,000 extra each year. This is a big increase on the previous two years generation of £120,000 each year.

LESSONS LEARNED

A spokesperson for CCR said: "We took time to find experienced, capable companies to work with and this was invaluable in identifying solutions. They not only had the right technical expertise, but they were also able to communicate clearly with non-experts on the project. This meant that our lenders and other key stakeholders were able to fully understand the plans and requirements.

"We have gained experience in partnership working, communicating with several organisations to complete the project.

"We have also acquired knowledge and experience in dealing with Scheduled Monument Consent requirements, as well as the process for automating heritage sluice gates."

To find out more about funding from the Community and Renewable Energy Scheme, visit localenergy.scot/funding