



**torrs**hydro  
NEW MILLS

Annual Report 2021/22

# Torrs Hydro Annual Report, 2021-2022

## Welcome!

It is as ever a pleasure to welcome readers to the Torrs Hydro Annual Report. Our financial year 1<sup>st</sup> October 2021 – 30<sup>th</sup> September 2022 is our 15<sup>th</sup> year of power generation.

This year began with huge optimism. A new variable speed control system had recently been installed and the early signs were that its benefits would be as predicted, with an increase in both running time and overall power output.

But as those who have followed Torrs Hydro for a number of years will know, not all years are as successful as each other. Over time, we have gained more experience of running the plant, and are growing to appreciate more and more what we cannot control, e.g. the rainfall, and what we can predict and mitigate for. As well as the regular maintenance, there are parts of the plant that need less frequent attention. Their failures can and do take the plant out of action for several weeks, months even. So where attention can be predicted before a breakdown, maintenance can be done in the summer months when water levels are usually lower. At least that's the theory...

In short, the financial year 2021-2022 became 'The Year of the Gearbox'.

While the period of downtime was disappointing, the sterling efforts, ingenuity and determination on the part of our volunteers to solve the engineering problems and get the plant running again as quickly as possible was inspiring.

As always, we are hugely grateful to all our members and volunteers, for their courage, persistence and continued support.

## Plant Operations

As mentioned above, this year was dominated by the issues with the gearbox.

These problems gradually became apparent during the summer and autumn of 2021, and Archie eventually had to be turned off at the end of November 2021 because the gearbox had reached its end of life. There was much discussion as to whether to repair or replace the gearbox before an agreement was reached for it to be 'refurbished'. The refurbishment entailed replacing every moving part, so it was only the original block that contained all these that was retained.

A big practical challenge was how to remove the gearbox from its position in the engine house for this refurbishment, and how to return it afterwards.

At this point a new volunteer, with considerable experience in this sort of complex project, stepped forward and agreed to project manage this task. He was absolutely instrumental in devising and executing a plan which involved removing a section of the roof, and using a spider crane to remove the gearbox and generator from the engine house. The job itself went smoothly, thanks to his detailed planning and attention to detail – and the fine group of volunteers that we mustered.

The gearbox was not the only repair of the year. A routine service through our current maintenance contract with Hydro Maintain highlighted several issues that were subsequently rectified. The fish bumpers - the rubber strips on the blades at the top of the screw - have been replaced; the bottom of the blades have had the rough edges removed and the covers over the hydraulics have been modified.

## Power Generation

This year's generation broadly fell into three parts; before the gearbox broke down, while the gearbox was inoperable, and after it had been refurbished and was working again.

At the start of our financial year, in October and November 2021, we had a good level of power generation with the system running well. We then had to shut down for December 2021 through to April 2022 because of the gearbox.

Restarting again in April, after the gearbox had been replaced, the river level was low, but we could still generate thanks to the new control system. However, the excessively hot and dry spring and summer meant that it was only possible to generate on 3 days in May and 1 between June and September.

The final generation figure for the financial year was 28,524 kWh, our third worst after 2015-16 (when the bottom bearing failed) and 2018-19 (owing to an electrical fault). As has happened before, the rains started again early in October 2022 and we have been generating steadily since then.

## Financial Report

The low power generation has meant that despite having negotiated a higher price for our electricity, our total income for the year, taking into account deferred income has reduced dramatically – just £12,320 compared to £43,243 in 2020/21. It should be noted that 2020/21 was the highest annual income achieved since our commencement in 2008/09, and our average total income to date is £22,846.

The expenditure has increased dramatically because of the refurbishment of the gearbox. The refurbishment costs were £19,229 out of the repairs and maintenance total of £22,902. We have maintained other expenditure at normal levels. These figures have been kept as low as possible by our wonderful volunteers and the many hours they have contributed to maintaining Archie and running the society.

We have posted a loss year of £25,429, compared to a profit of £10,809 in 2020/21. The cost of repairing the gearbox has been covered by our reserves, maintained for exactly this type of occurrence, so the society remains financially secure.

## Enormous thanks to our Volunteers!

Torrs Hydro volunteers really worked hard this year, particularly through the Autumn, Winter and early Spring.

The board's decision to go ahead with the gearbox refurbishment spurred our engineering colleagues into action.

First, the engine house had to be cleared, and temporary storage found for all the equipment kept in it. Then, as previously mentioned, a temporary section of roof put in place. And finally the plan for the removal of the plant was enacted.

When the big day came, all went well; and again on the return of the refurbished plant, with the whole process carried out again in reverse. It was a marvellous example of cooperation and teamwork.

The general maintenance of the site seems rather mundane in comparison: cleaning, sweeping, weeding and inlet clearing have carried on throughout the year. Three major storms Arwen, Barra and Corrie, in November, December and January, each deposited tonnes of silt and debris in front of the inlet. After each we held digging parties and called on our volunteers to get the fish pass and maceration plant overflow clear and flowing. Our past experience in finding the best way to tackle the removal of stones and silt helps get the job done as efficiently as possible.

Saturday mornings tend to be a favourite time to spend no more than two hours on site on those jobs. It is usually the same group of volunteers able to give this sort of time but some younger helpers have been a very welcome addition to "Archie's Angels". Looking to the future, attracting more youthful volunteers with more strength and better backs, will be paramount to our continued operation.

Visitors and open days have also continued. Torrs Hydro has taken part in the One World Festival and The Torrs Youth Festival. As well as group visits, open days have been lively and have yielded a few new volunteers.

Torrs Hydro extends special thanks and appreciation to two long-standing directors David Cooper and Michael Brueck, who retired from the board in May and September 2022 respectively, for their contributions.



## TIMELINE: Landmark dates over the last 15 years include:-

**31<sup>st</sup> Jan 2008** Our first community share offer closes, with enough funds raised to start building

**8<sup>th</sup> Jun 2008** The Big Lift

**July 2009** Lady Manners School from Bakewell is the first school to visit Archie, and do so in conjunction with local geologists, historians and the Environment Agency.  
Despite a number of early challenges, generation passes 150,000 kWh

**Feb 2011** the 'Flood' blocked the intake with many tons of silt including huge boulders

**Jan 2012** Generated 37,293 kWh in one month

**Dec 2012** Visitors from China's Hubei Hanjiang Electricity and Hydro Power company on a fact-finding tour of the UK

**Dec 2013 –  
July 2014** Visitor and speaker engagements continue with invitations to speak at a Cooperative Alternatives workshop in Belfast and the Bakewell Green Show, and a visit from Tim Pedmore, storyteller and member of Gearshift Theatre, on a countywide bicycle tour and using his journey experiences in his productions.

**8<sup>th</sup> Apr 2015** A landmark 1,000,000 kWh generated



*Directors at Archie when the one millionth kilowatt hour passed*

**October 2015** The failure of the bottom bearing



*Volunteers digging out the silt to allow the bottom bearing to be replaced*

**May & September 2016** Visits by representatives of the Midlands Coop Group (*right*) and the International Energy Agency



**18<sup>th</sup> Sept 2018** Solar PV panels installed at New Mills School with support from Torr's Hydro's Community Fund commence electricity generation

**Spring and Summer 2020** The first Coronavirus lockdown brings many curious walkers into the Torr's and our hydro plant is suddenly very much more conspicuous.

**Jan 2021** A further share offer funds the variable speed upgrade to the plant

**May 2021** A new price for electricity is agreed with the Coop supermarket, taking it to 12ppu (pence per unit), and backdated to January 2021.

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Torr's Hydro New Mills Limited is a Community Benefit Society

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