



torrshydro
NEW MILLS

Annual Report 2018/19



Welcome!

Welcome to our 12th annual report – yes, it is the 12th!

The journey with Archie has continued to be a learning process, and the year from October 2018 to September 2019 has been an eventful one, some of it completely beyond our control.

The electrical problems identified initially in October 2018, indicating that the earthing system was unsafe, meant that the plant had to be shut down for a period while remedies were found. Then an unprecedented period of heavy rainfall in late July 2019 led to the emergency upstream, which necessitated that Todbrook Reservoir at Whaley Bridge be hastily emptied. This brought with it quantities of silt, presenting another challenge.

We are as ever hugely grateful to all our volunteers, who in their different ways help to keep Archie turning and to maximise our renewable energy generation.

Power Generation in 2018-19

The power generation during this year was very disappointing – just under 7,500KWh. This was due partly to the remedial work to make Archie electrically safe (which required a shut-down from mid-October to the end of May). However, this period was unusually dry, so had Archie been able to run, our generation would have been low anyway. Our calculation (based on readings of the water levels, bearing in mind that Archie cannot run when the river is below a certain level) is that we only actually lost the equivalent of about two months' generation during the shutdown.

Financial Summary

Very low power generation and increased maintenance costs this year have made a sizeable loss unavoidable. We are therefore reporting a loss of £9,571 this year compared to a profit of £7,818 in 2017-18.

Income and Expenditure for the year to 30 September 2019

	2019	2018
	£	£
Income		
Sales	695	11,741
Deferred income	3,748	3,748
ROCS	431	6,752
Fish Pass	970	970
Donations	0	21
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	5,844	23,232
Cost of sales		
Commissions payable	250	1,018
	<hr/>	<hr/>
Gross profit	5,594	22,214

Administrative expenses		
Rent	600	600
Postage	31	86
Stationery and printing	8	5
Subscriptions	99	306
Bank charges	0	30
Insurance	4,513	4,364
Equipment expensed	0	57
Repairs and maintenance	2,653	1,678
Depreciation	7,130	7,165
AGM costs	43	11
Sundry expenses	0	100
Consultancy fees	250	0
	<u>15,327</u>	<u>14,402</u>
Operating profit/(loss)	<u>(9,733)</u>	<u>7,812</u>
Exceptional items		
Interest receivable	162	11
Interest payable	0	0
Profit/(loss) on ordinary activities before taxation	<u>(9,571)</u>	<u>7,823</u>
Tax on profit/(loss) on ordinary activities	0	(5)
Profit/(loss) for the financial year	<u>(9,571)</u>	<u>7,818</u>

Hydro Operations

After the very dry summer of 2018 we were looking forward to a wet autumn and winter, and to see Archie turning again. However that was not to be.

Following concerns from one of our volunteers, an electrical safety condition report was undertaken in mid-Autumn 2018, and this highlighted a number of problems with the earthing of the system. It was declared unsafe to generate until these had been rectified. (See later for more details.)

Torrs Hydro directors looked back to see which contractors had been responsible for the electrical installation and for checking during construction and commissioning that the system was electrically safe. However, the fault was identified over 10 years after commissioning, and the companies involved have ceased trading. It was therefore felt that the only viable option was for Torrs Hydro to address the issues and bear the cost of them itself. Work sufficient to re-start Archie was completed, tested and declared safe on 3rd June 2019.

After an extremely dry spell of weather that had lasted for months, the heavens really opened during the weekend of 26-29th July 2019. After the hottest day on record on the 25th July, the North West then got a month's rainfall in those few days and so instead of drought, we had flood.

Never daunted, on Sunday 27th, our gallant volunteer, Nobby, got to grips with the torrent, cleared the fish pass of accumulated debris so a reading could be taken and managed to get 100kWh generated before the effort became too much for Archie.

On Monday 28th July as the rain and head of water started to ease, Archie was again up and running.

But you can have too much of a good thing!

It carried on raining on High Peak, with some very heavy outbursts. This resulted in the unsettling situation upstream where the dam wall at Toddbrook Reservoir in Whaley Bridge threatened to give way. Homes in the flood zone downstream of the reservoir were evacuated for a week; and Archie was left underwater while the reservoir was hastily emptied into the Goyt river.

Once things had settled down, a digger was employed and the site cleared ready to get back to the business of power generation.

Overview of the electrical issues affecting Archie in 2018-19

The generator house was briefly inspected in October 2018 and a number of deficiencies were observed. Most of these related to the electrical earthing within the generator room or more precisely the lack of. It was decided to carry out a full inspection by a qualified electrical inspector and 20 separate issues relating to the electrical installation of Archie were reported. A number of these were serious enough that Archie had to be shut down on safety grounds until the defects were remedied.

The issues were various but could be categorized as follows:

1. Lack of earth bonding. Standard procedure is to ensure that all exposed metal parts, such as cable trays, cabinets, trucking etc should be earth bonded in order to avoid these become live during an electrical fault. A number of items in the generator building were not bonded.
2. Incorrect earth bonding. A number the earthing cables had incorrect earth cable sizes, had loose terminals and in a number of cases the incorrect earthing lugs had been badly fitted to the earth cables.
3. Exposed live terminals. A number of holes of various sizes in the cabinets meant there was a risk of electrical shock.
4. Incorrect cables used. The Low Voltage mains cables laid between the generator and the Coop supermarket are not according to standard practice. The Wiring Regulations state you must not separate multi-core 3 phase connections across separate cables. The connection to the Coop should made with a single 4-core cable (3 phases and neutral) or even 2 separate 4 core cables, but here the installation is made with two 2-core cables, contravening the regulations.
5. Lack of sufficient electrical labelling of the equipment.
6. Incorrect circuit breakers fitted.
7. Live wiring in the generator room not sleeved.

All of the above points have been corrected during 2018-19 with the exception of point 4. After seeking expert advice, it was confirmed that it is electrically safe to run Archie with the existing cables to the Coop. Further measurements have been scheduled to be taken to understand the impact if any to the voltage losses and any induced currents that could affect the performance of the generator.

Events down on the site

A very successful open day was held down at the project site after the AGM in April 2019. It was a lovely day and well attended, with plenty of interesting questions from visitors.

Later in the summer, on Sunday 7th July 2019, the Torrs Youth Festival took place in the area beside the Torrs Hydro site in what is fast becoming an annual event. Young people were invited to take part in a free afternoon of music, discussion, crafts and other activities. And Torrs Hydro's input? Well Archie provided the power of course!

Archie's Angels – a new team of volunteers

At the August 2019 board meeting, the need for ad-hoc work parties to undertake maintenance, repairs and clearing the inlet was discussed. The name – Archie's Angels - came quickly. The group was publicised and soon over 20 people had volunteered to help where they could. The Angels were first called out on 29th September, where they were shown around the site to familiarise themselves before general weeding and tidying. There's no regular commitment. The scheme operates with an email sent when a work party is needed and already we can see how much benefit their actions have made.

Two Archie's Angels volunteers have now also joined the team undertaking regular checks on the plant.



Archie's Angels

Richard Body

In appreciation of Nigel Thackrah



Nigel Thackrah

Richard Body

A long-standing shareholder and volunteer at Torrs Hydro, Nigel died in November 2019 from cancer. He was a very keen mountain walker, camper and outdoor person. His working life involved him in health and safety but we knew him at Torrs Hydro during his very active retirement years. He was a shareholder from the beginning of the scheme and became a volunteer early on, coming to do daily checks twice a week and always on hand to do any maintenance work that needed a willing pair of hands.

Living in New Mills made it easy to pop down to Archie at any time. There was nothing he liked better than to don a pair of waders and be in the river moving

the debris that accumulated against the inlet, whether it was just Autumn leaves and sticks on the bars or half a canoe or the inevitable plastic cones trapped under stones and silt after a heavy downpour. He was like a dog at a bone, never content until he had wrangled the offending debris out and left the inlet free and clear with the head of water as good as could be!

He was a very fit retiree and spent as much time as he could bagging his favourite mountains. He regularly spent days away, sleeping in his beloved camper van, to collect as many TUMPS, Wainwrights or Marilyns as he could for his checklist or find elusive Benchmarks on buildings, bridges or walls. He loved to talk about these latest achievements when sharing the daily check or clearing up at the hydro.

He kept a logbook about all his walks and used it to identify the location of a Trig Point from photos I sent him, in the times when he could no longer get to the top of a mountain.

He'd been involved with Kinder Mountain Rescue, loved wildlife and the countryside, abhorred destruction to nature and could have a sharp way of denouncing litter louts and thoughtless vandalism. He was very keen to use any green initiative he could and even in his final months was walking down into the Torrs to do his daily check and see how well the scheme was generating, even though latterly, he had to struggle down the paths with a walking stick. He stopped coming only a few weeks before he died.

He was a lovely man to have on the team and is sorely missed.



3rd August 2019

Richard Body

Torrs Hydro New Mills Limited is a Community Benefit Society

Website: www.torrshydro.org Blog: torrs-hydro-newmills.blogspot.com

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