



**torrs**hydro  
NEW MILLS



# Annual Report 2012/13



## Introduction

After the euphoria of our previous year's bumper generating total, the financial year 2012/13 has brought us back to earth with a big bump. We have now completed five full years of operation, and are beginning to fully appreciate the impact of our notoriously unreliable British weather and how very variable our income can be as a result.

Experience over our first five years has given us an average annual output to date of approximately 150 MWh, with the long dry periods of the most recent year significantly reducing that average.

The year has brought us fun, recognition and challenges for our volunteers, many visitors from all over the globe and highlights such as a community focus on Archie at the annual Lantern Parade in late September.

## Power Generation during 2012 - 2013

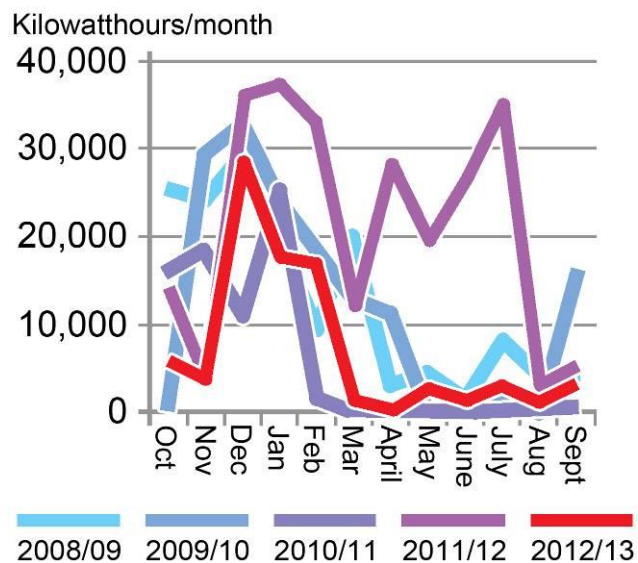
What can be said? In spite of the best efforts of our operating crew, it didn't really rain and the generating total this year was very disappointing. The winter, while very snowy, was relatively dry and this was followed by a wonderful "barbeque summer", with very little water in the river for much of the year.

We generated only 84 MWh in this financial period compared with 252 MWh last year, with only December producing anything like its monthly average.

	2008/09	2009/10	2010/11	2011/12	2012/13
Oct	24,694	212	15,935	14,012	5,654
Nov	24,786	29,195	18,278	3,891	3,591
Dec	29,397	32,673	10,931	35,866	28,353
Jan	20,036	23,544	25,445	37,293	17,579
Feb	9,203	18,739	1,687	32,985	16,747
Mar	20,146	12,909	0	11,848	1,156
Apr	3,275	11,133	0	28,285	38
May	4,436	0	0	19,227	2,519
Jun	1,089	0	0	26,379	1,439
Jul	8,653	1,273	247	34,985	2,905
Aug	3,947	370	368	2,569	965
Sept	4,324	16,030	622	5,083	3,340
TOTAL	153,986	146,078	73,513	252,423	84,286

## Electricity generation 2008 - 2013

In previous years of poor power output, it has been because of difficulties with the plant. This year the plant was ready but the river levels were inadequate.

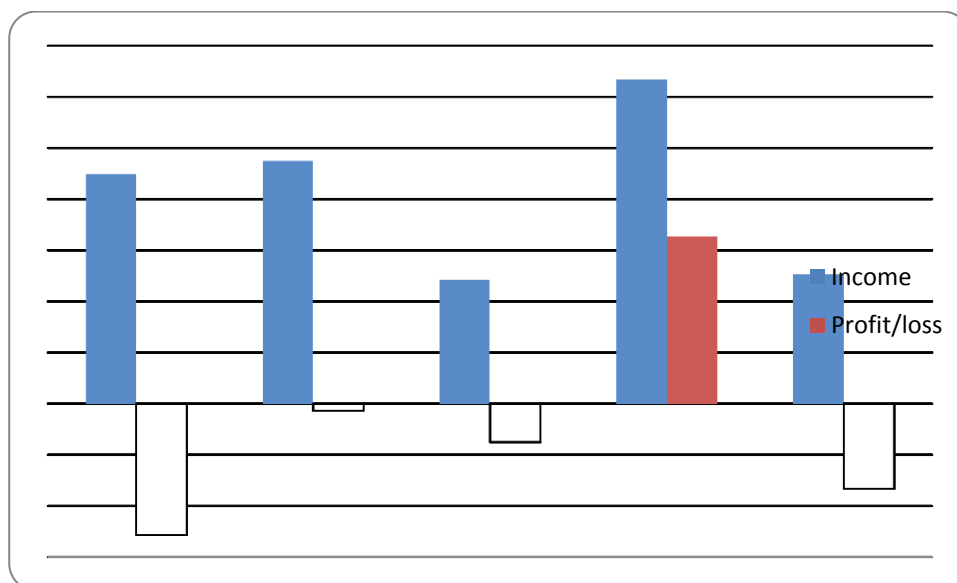


## Financial Summary

Torr's Hydro has now had 5 full years of trading. Over the years we have learnt how to manage our plant to maximise our energy generation and keep down times to a minimum. What we can't control is the weather. This has been an exceptionally dry year, and thence very low power and income generation. The financial headline figures are that income was £12,640 (compared to £31,695 in 2011/12) and expenditure was £13,765 (£12,053 in 2011/12). This has led to a loss of £8,321 being reported (a profit of £16,339 was posted in 11/12).

The scheme continues to run subject to a restriction on generation only possibly over 19KW which impacts the power generation. This year's results have highlighted how variable our income is and the board is looking at ways to manage that variation.

Torr's Hydro's Income and Profit/Loss over the last 5 years



Copies of the full 2012-13 Financial Report are available from [secretary@torrshydro.org](mailto:secretary@torrshydro.org)

## Torr's Hydro Plant Operation 2012-2013

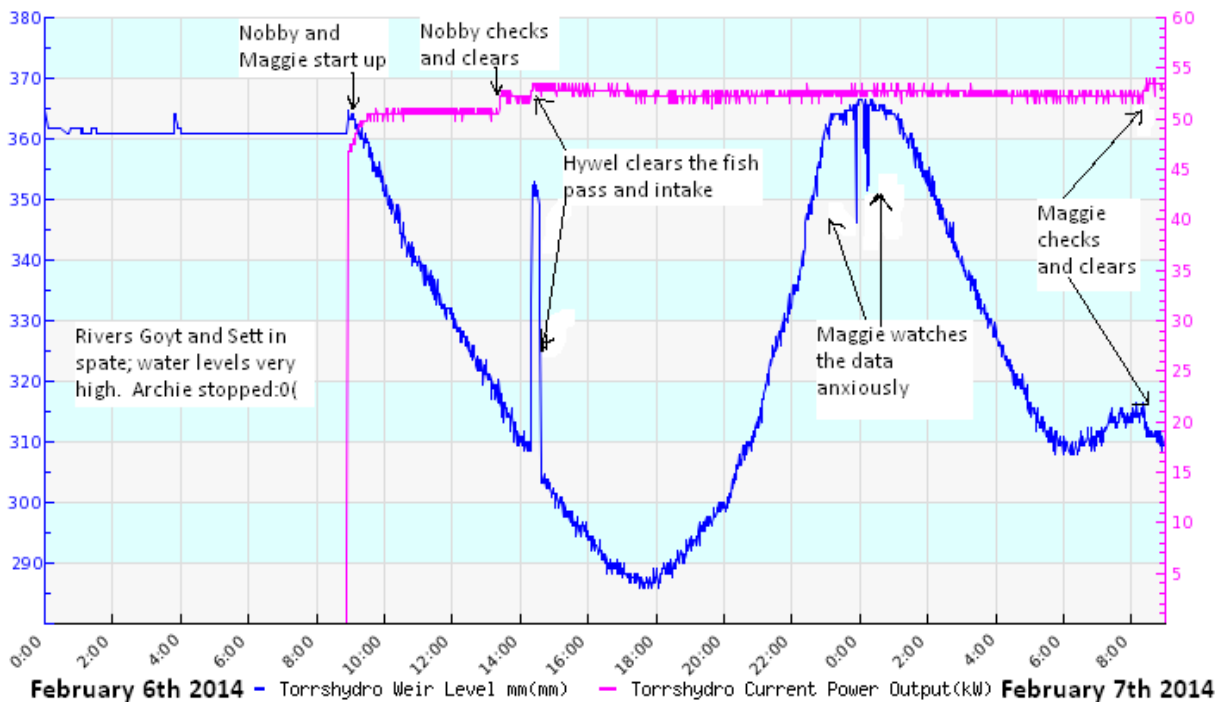
Firstly, a huge thank you to all those wonderful volunteers for their expertise in keeping Archie running as he does. 365 days a year the plant is visited at least once to ensure all is well on the site and in operation.

Generation was very low during this year, though thankfully not due to plant failure or operational problems. A heavy storm at the end of September 2012 brought a large amount of silt down the Sett, depositing in front of the intake. Despite valiant efforts to move it on manually subsequent rainfall added to the problem. Using the experience gained in 2011, negotiations with the Environment Agency were simpler this time and matters resolved by mid November 2012.

River levels, driven by rain, sleet and snow fall, ice (keeping the water frozen in and on the ground) and later on, the need to re-establish reservoir levels upstream were the primary reasons for the low generation figures. However, we continue to experience some noise issues. One unfortunate night in November the gate failed to close fully because of trapped debris underneath, disturbing some of our neighbours. We agreed with High Peak Borough Council's Environmental Health Officers to modify our decision making-process for overnight operation and hence the overnight shutdowns at low river levels over the next few months. Noise remains a daily consideration when the plant is operating.

Two essential items of plant have failed but experience and volunteer expertise meant they were dealt with in a timely fashion that caused little disruption to generation. The hydraulic pump operating the sluice gate failed following an unplanned emergency shutdown when the gate failed to close fully to the lower limit switch; it was fully refurbished and back in operation within 4 days. The head sensor, that facilitates monitoring the river level, also failed. It was replaced and returned to operation by Hywel, our expert volunteer, with the help and guidance of the supplier. Throughout the reported year we have been in negotiation with Andritz Atrio in respect of the replacement brake for Archie, outstanding since January 2009. We are hopeful that it will be delivered soon and fitted as soon as is practical thereafter at their expense.

Problems associated with the site, rather than the plant, have exercised us. We have long been aware that it is difficult to clear the tailrace and there are safety issues associated with clearing the intake. Forthcoming modifications to the fencing across the inlet will enable volunteers to more safely clear the usual debris. The tailrace is a particular problem as we consider the logistics of changing the lower bearing. We now have what we believe is a viable plan to clear the current debris and to ensure a sustainable method of regular clearance by volunteers. The cost will be in the region of £8,000 + VAT but will ensure that the site remains viable within the scope of our agreement with New Mills Town Council and within planning regulations. This work needs to be completed as a matter of urgency and before we consider possible modifications to allow the plant to run across a greater range of river levels.



River flow and generation – example monitoring

## Community Fund

At last year's AGM, it was agreed to put £2000 into the community fund. It is worth noting that this is much less than the donations we have received to date. In the event, the board allocated £1,600 to six projects as follows:

New Mills Solar School Project	£1,100	New Mills Festival	£100
The One World Festival	£100	Sticky Exhibits	£100
New Mills Heritage Centre	£100	New Mills Volunteer Centre	£100

# Volunteering Experiences

## 1. Richard Body MBE, Financial Director



*Richard Body*

Congratulations to Richard Body who was awarded an MBE in the Queen's Birthday Honours 2013. Richard, you may recall, was very instrumental in getting the project off the ground, gathering local interest in the scheme when it was first mooted, his multitude of media appearances that helped attract wider interest from around the country and then as one of the founding directors and Torrs Hydro's first secretary.

Richard says, 'Seeing a video of a screw working in Germany got me hooked', though he also modestly suggests that others might deserve the recognition more. 'Going to the investiture with the Queen at Buckingham Palace was amazing. As soon as you go through the gates, the real world is left behind and you are in a bubble. It was the first time I have seen the Queen, a huge honour, but my lasting memory will be telling my mother in person the day the list was announced.'

## 2. Nigel Thackrah, Maintenance Crew

What does being a maintenance volunteer for the New Mills Hydro involve? A lot of it is checking the mundane things like gearbox temperature, battery charge level & so on. But what I really enjoy doing is getting the waders on & jumping into the river to check that the intake & fish pass are clear.

The recent storms have provided a lot of opportunity for this. The fallen leaves of autumn make this an almost daily requirement. The job is only carried out with another volunteer standing by, but when the screw is turning, there is very little danger of being swept away over the weir. Standing on the lower bars of the intake, the pressure of water is such that the use of hands is hardly necessary.

Although the debris to be cleared is largely branches, twigs, leaves & stones; the variety of other objects is amazing. Traffic cones are a favourite, presumably chucked off upstream bridges and viaduct by merry New Mills youth.

When the river level is high, it is a fine art to balance getting as low as possible on the intake with your feet & not letting water over the top of the waders. This event can be very uncomfortable, especially walking home in the depths of winter with soggy trousers. Anyway it's all a bit like fishing. You can spend ages rooting around & getting sticks, stones & stumps out. Then – yeehah! – here comes something interesting – a sealed up Roses chocs tin. Let's have look inside. It's full of water (surprise) & an empty plastic bag. What a disappointment. Then the imagination takes over & wondering starts about what it could have contained – but has dissolved.

Unusual techniques are developed such as the "penguin shuffle". This is a method of getting non-buoyant items on the river bed, to the shallow water at the side. Then you can reach in & haul them out. Quite a strenuous operation, as the current is trying to restore the object to its former position against the bars.

So there you have it. Why do we do it? The satisfaction gained from increasing the output from 48 kW to 50 kW is incredible!



*Waving not drowning*

## Visitors and Educational Endeavours

Torrs Hydro continues to attract visitors wanting to know more about generating hydroelectricity. Our regular open days are spread throughout the year, often attached to local events such as the One World Festival, the New Mills Festival and the Lantern Parade. We also take part in countywide green initiatives like the Eco Home events and the Friends of the Peak District Green Buildings weekend. Other community groups wanting to set up hydro schemes have been welcomed, with potential new hydro start-ups in Churnet Valley, Heaton Chapel and Abingdon either visiting or phoning/emailing to ask questions and get advice.

Archie is a firm favourite with all the local schools, especially the primary schools. Electricity seems to be a common item on the curriculum and what better way to learn about it than a trip to Archie. In September children from all the New Mills area primary schools gathered at the site to perform Write Van Men's "Archie", complete with Makaton signing, for a PTA fundraiser. Archie's fame is spreading: in November 2012 we hosted a visit from 80 Birmingham primary school children which proved to be a major logistical challenge. We ended up splitting their visit into two days and using five of our directors and volunteers on each visit.

One of the directors, Esther, spoke at the Co-operatives United international conference in Manchester in November 2012. In December, we hosted 21 visitors from China's Hubei Hanjiang Electricity and Hydro Power on a fact finding tour of the UK. Luckily they had their own interpreter! Lots of photos were taken and we were presented with gifts of Chinese art books. Another visit to the site was from the Midlands branch of the Association of Preservation Trusts, who were attending a conference at Spring Bank Arts that included speakers from English Heritage.

We have also become a regular part of the Sheffield University Architecture curriculum. Every year, the students come to New Mills with a brief to design a sustainable project. Information was also provided to graduate students from Reading, Dundee, Leeds, Manchester Metropolitan, Manchester University and Democritus University (Greece) working on sustainability and community funding models. We also helped with research being conducted on behalf of the National Trust and for a Northern Ireland government study on "Community Engagement with Renewable Energy".

We receive visitors from all parts of the globe, but it is always a pleasure to have a local New Mills resident stick their head around the engine house door and say, "How's it doing then?"

*The Directors at last year's AGM*



**THANKS TO ALL OUR HARD WORKING VOLUNTEERS AND TO OUR SHARE HOLDERS,  
ALL OF WHOSE COMMITMENT TO TORRS HYDRO 'MAKES IT HAPPEN'**

**Torrs Hydro New Mills Ltd is a Community Benefit Society**

Website: [www.torrshydro.org](http://www.torrshydro.org)

Blog: [torrs-hydro-new-mills.blogspot.com](http://torrs-hydro-new-mills.blogspot.com)

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