



Barr River hydro scheme

Monthly report – October 2024

1 Summary

Below average generation due to low rainfall and some scheme outages due to grid faults.

2 Monthly generation & revenue

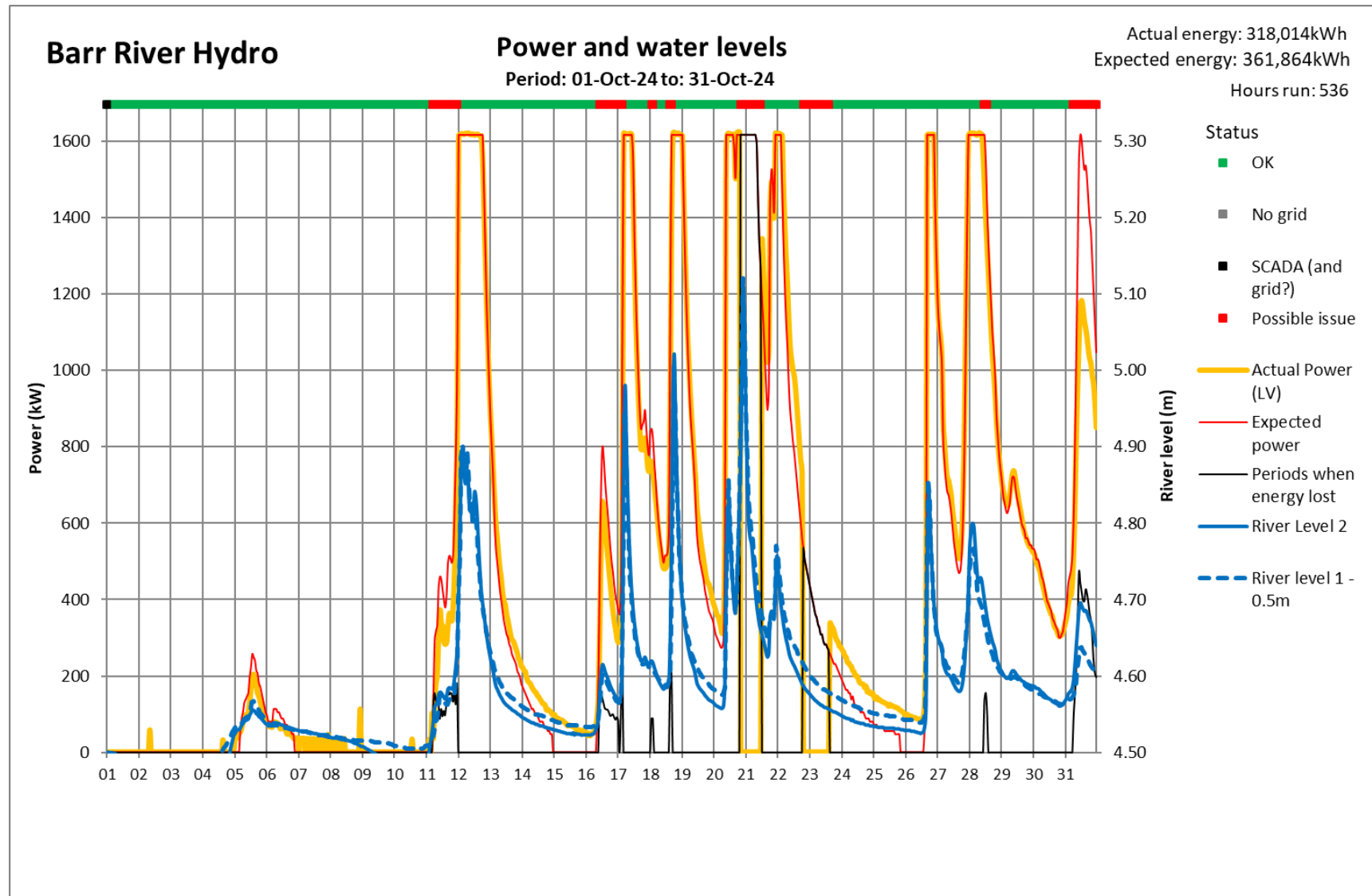
Parameter	Value
Actual generation (FIT meter), kWh	318,014
Average generation in month, kWh	593,249
Forecast generation in month (P50), kWh	582,631
Actual relative to forecast	54.6%
Rainfall relative to 1991-2020 average by month	67%
Calculated generation ¹ kWh	361,864
Actual relative to calculated generation, kWh	-43,850
Actual relative to calculated generation, %	-12.1%
Approximate revenue in month ²	£25,160

¹ Calculated generation is based on river level data and seeks to establish the expected generation with no performance issues.

² Export revenue based on reported export and estimated GDUoS charges.

Export meter	Value
Export, kWh	£54,449.14
Variance to generation, kWh	£27,253.80
Variance to generation, %	£80,656.19

3 System reporting



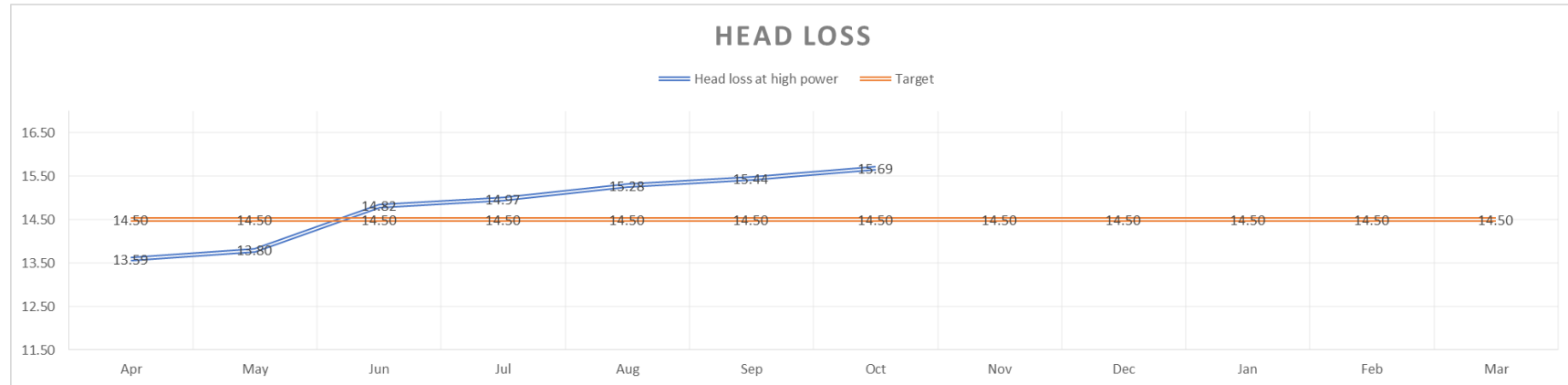
3.1 Scheme anomalies to calculated generation

Date/time	Details	Action required
8/10/24	9am-4pm Quartzelec onsite carrying out generator inspection - turbine shutdown.	n/a
20/10/24 19:00 – 21/10/24 12:00	Scheme shut down due to grid trip. Manual onsite reset of QF1 fault required. Email notification received.	Nick T reset the breaker
22/10/24 19:00 - 23/10/24 15:00	Scheme off due to grid trip. QF1 fault. No email notification received.	GHC followed up with Bluenergy, who have set up the UPS in the comms cabinet correctly on site.
31/10/24	Underperforming 31/10-1/11 but improved after following high river levels (and possible screen clean)	

3.2 Other system events

Date/time	Details	Action required
27/10/24	00:27am - grid wobble, machine auto restarted	None.

3.3 Head loss – head loss increasing. GHC have asked DA MacDonald for a price for this. They have quoted the same price as last time. We have also approached Chris Henshaw who inspected the scheme on site and will prepare a proposal.



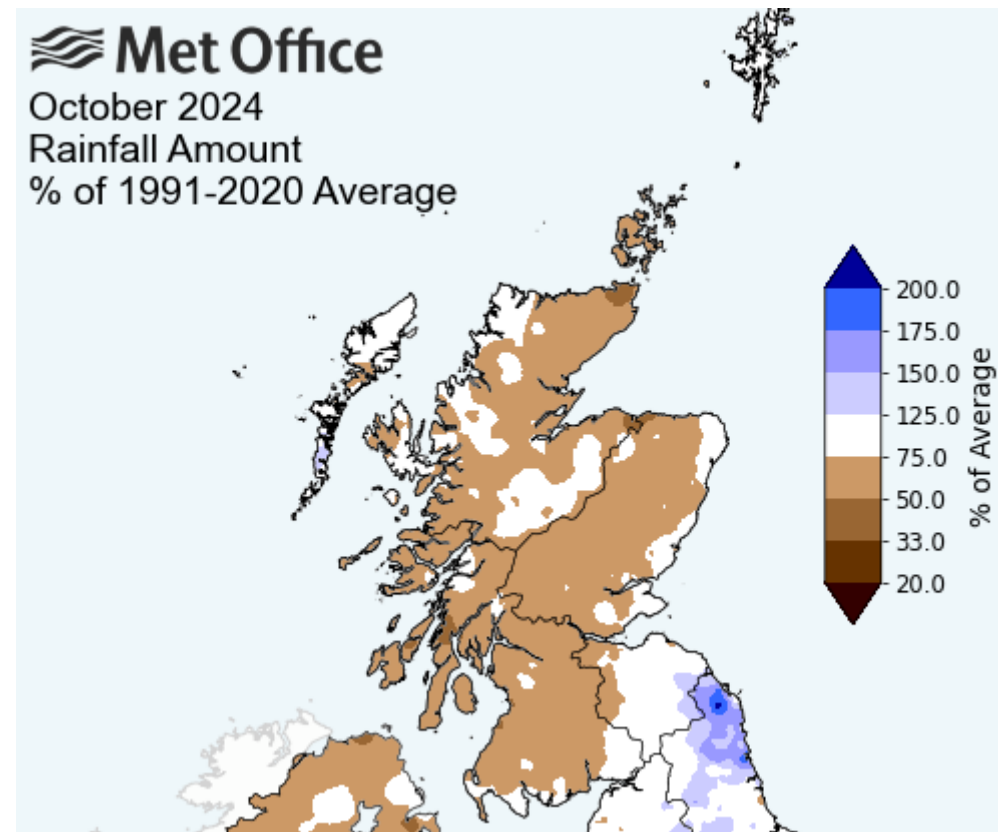
3.4 Temperatures – limited data points

Parameter	Temperature at or near full power, °C	Alert level, °C	Parameter	Temperature at or near full power, °C	Alert level, °C
Generator DE bearing	40	85	Generator winding 1	65	145
Generator NDE bearing 1	43	85	Generator winding 2	62	145
Generator NDE bearing 2	46	85	Generator winding 3	67	145
Turbine room	22	30	Power cabinet (RG1)	31	42

3.5 Vibration

Parameter	Vibration at or near full power, mm/s	Alert level, mm/s	Parameter	Vibration at or near full power, mm/s	Alert level, mm/s
Generator DE	0.46	3.0	Generator NDE	1.19	3.0

4 Rainfall



Rainfall this month (rain gauge), mm	147
Western Scotland rainfall in month with respect to 1991-2020 long term average	67%

5 Scheme annual performance summary

FY 2024/5	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Actual generation kWh	298,851	170,950	236,233	302,216	636,431	181,760	318,014						2,144,455
Average generation since commissioning	244,074	240,920	198,801	351,584	308,927	342,342	593,249	597,546	467,890	563,949	559,368	279,361	2,279,895
Forecast generation (P50)	369,360	226,766	188,561	195,146	280,601	387,431	582,631	618,214	620,057	695,941	554,678	611,047	2,230,496
Actual relative to forecast	80.9%	75.4%	125.3%	154.9%	226.8%	46.9%	54.6%						96.1%
Rainfall relative to 1991-2020 average by month	174%	102%	81%	70%	201%	49%	67%						106%
Calculated generation kWh	301,701	175,752	236,233	302,398	728,169	189,926	361,864						2,296,042
Variance to calculated generation kWh	-2,850	-4,802	Nil	-182	-91,738	-8,166	-43,850	-	-	-	-	-	-151,587
Variance to calculated generation %	-0.9%	-2.7%	Nil	-0.1%	-12.6%	-4.3%	-12.1%						-6.6%
Approximate revenue	£73,237	£41,323	£57,663	£73,743	£157,116	£43,866	£81,703						£528,651
Capacity factor (monthly)	25.6%	14.2%	20.3%	25.1%	52.8%	15.6%	26.4%						25.7%
Industry wide RoR capacity factor	43.5%	11.4%	20.8%	16.5%	47.0%								23.5%
FY 2023/4	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Actual generation kWh	240,542	57,453	111,100	374,109	360,348	431,554	434,771	406,551	667,311	502,737	582,749	241,042	4,410,267
Average generation since commissioning	247,605	424,386	286,501	165,261	174,610	297,736	672,489	693,043	368,179	594,556	547,677	298,520	4,770,561
Forecast generation (P50)	369,360	226,766	188,561	195,146	280,601	387,431	582,631	618,214	620,057	695,941	554,678	611,047	5,330,433
Actual relative to forecast	65.1%	25.3%	58.9%	191.7%	128.4%	111.4%	74.6%	65.8%	107.6%	72.2%	105.1%	39.4%	82.7%
Rainfall relative to 1991-2020 average	83%	45%	81%	152%	73%	145%	83%	74%	137%	81%	106%	92%	96%
Calculated generation kWh	243,307	59,162	112,194	377,850	418,162	438,789	445,408	428,068	672,901	536,047	620,238	250,456	4,602,582
Variance to calculated generation kWh	-2,765	-1,709	-1,094	-3,741	-57,814	-7,235	-10,637	-21,517	-5,590	-33,310	-37,489	-9,414	-192,315
Variance to calculated generation %	-1.1%	-2.9%	-1.0%	-1.0%	-13.8%	-1.6%	-2.4%	-5.0%	-0.8%	-6.2%	-6.0%	-3.8%	-4.2%
Approximate revenue	£18,747	£7,087	£14,675	£52,099	£50,104	£60,181	£148,850	£137,974	£227,701	£170,888	£205,490	£81,339	£1,182,212
Capacity factor (monthly)	20.6%	4.8%	9.5%	31.0%	29.9%	37.0%	36.1%	34.9%	55.4%	41.7%	53.5%	20.0%	31.2%
Industry wide RoR capacity factor	20.7%	5.7%	6.0%	27.5%	25.0%	36.0%	40.0%	45.0%	46.0%	43.3%	59.8%	37.2%	32.7%

