Barr River hydro scheme

Monthly report – July 2025

1 Summary

A reasonable month, in line with the long-term average on slightly lower than average rainfall.

2 Monthly generation & revenue

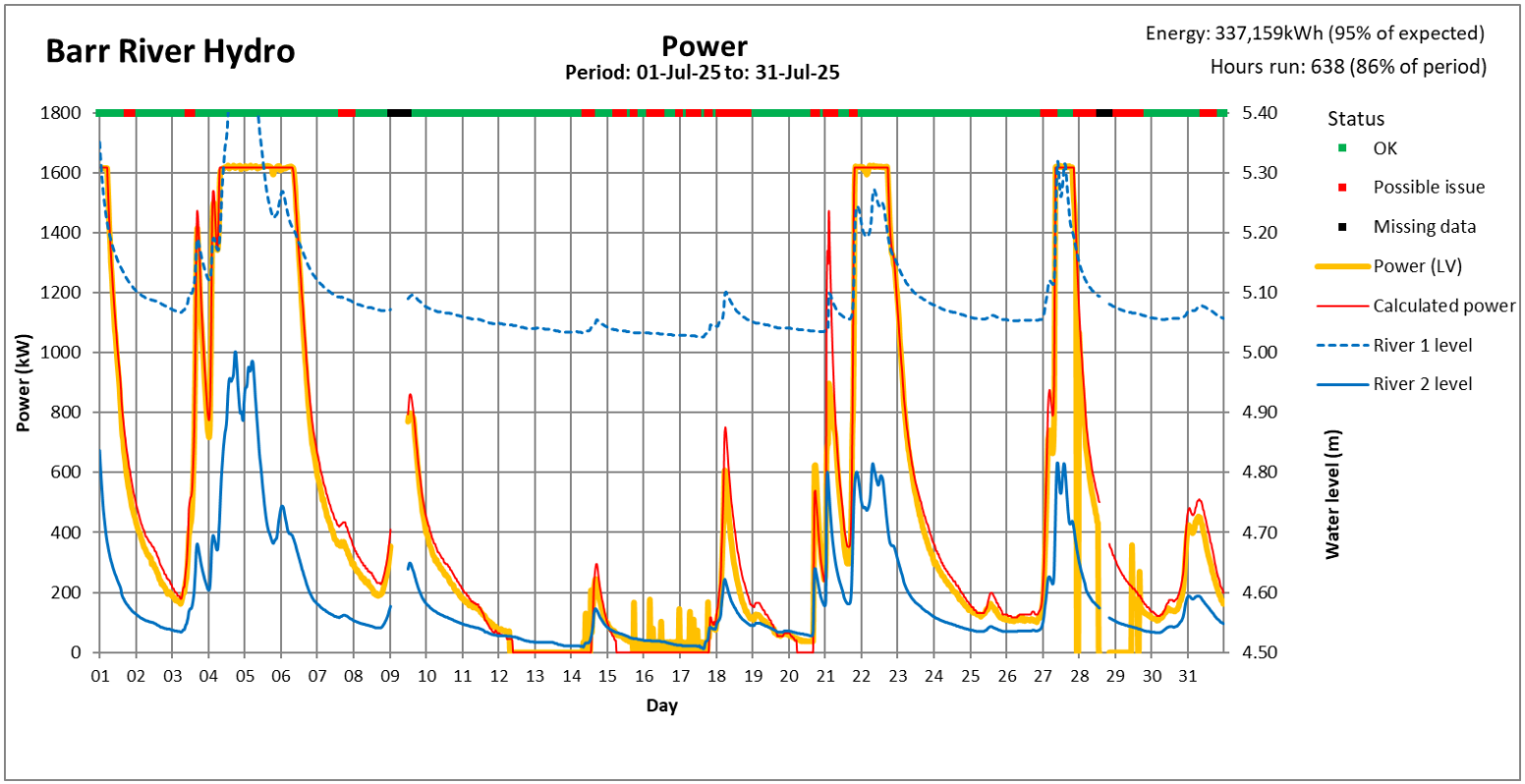
Parameter	Value
Actual generation (FIT meter), kWh	337,159
Average generation in month, kWh	335,128
Forecast generation in month (P50), kWh	195,146
Actual relative to forecast	172.8%
Rainfall relative to 1991-2020 average by month	95%
Calculated generation[1] kWh	355,612
Actual relative to calculated generation, kWh	-18,453
Actual relative to calculated generation, %	-5.2%
Approximate revenue in month[2]	£59,373

[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	332,488
Variance to generation, kWh	-4,671
Variance to generation, %	-1.4%

3 System reporting



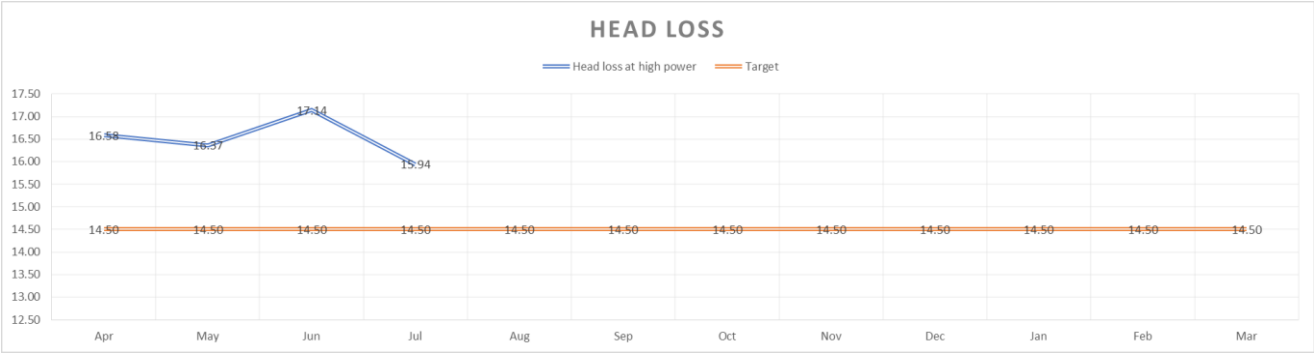
3.1 Scheme anomalies to calculated generation

Date/time	Details	Action required
General	The scheme appears to be slightly under generating during times when river level is dropping. We suspect that this is also happening at partial powers when the river is rising but is hidden by the sharp rises in river level.	We believe that this is a function of the shape of the expected power curve, rather that lost generation. GHC are reviewing the power curve but a closer fit is challenging due to the influence of the multiple intakes.
28-29/7/2025	Shutdowns due to new breakers being installed by Quartzelec and Bluenergy	

3.2 Other system events

Date/time	Details	Action required
9/7/2025	Data outage	
12/7/2025	Scheme pigged. During a spot check it was noticed the scheme has started short-cycling since being pigged. Chamber sensor position has possibly been disturbed.	Adjusted water level chamber 1 start level from 3.071 to 3.075
27/7/2025	Grid disturbance tripped generator breaker at 22:20	Douglas visited site around 23:00 to reset breaker

3.3 Head loss –Scheme pigged by Chris Henshaw 12-13/7/25. From the limited data that we have, the head loss appears to have reduced from 17.3m to 13.7m post pigging. This will result in an expected gain of 67MWh p.a., worth around £13.3k.

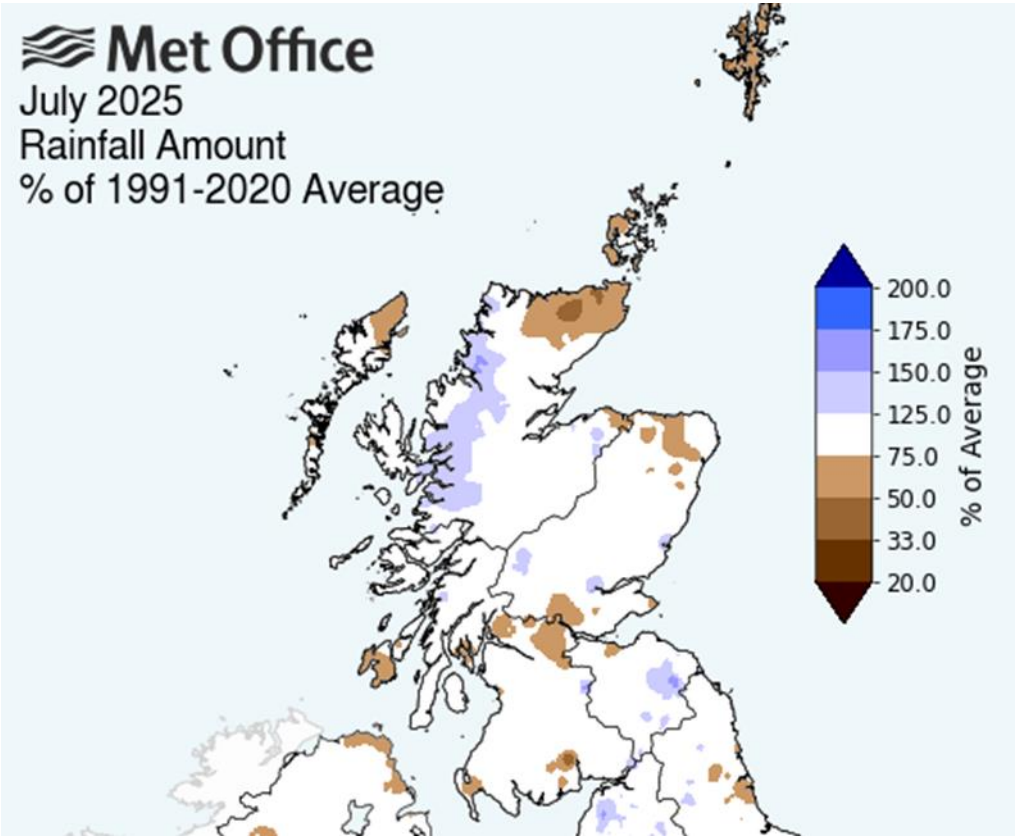


3.4 Temperatures & Vibration

Parameter	Temperature at or near full power, ^{0}C	Alert level, ^{0}C
Generator DE bearing	49.0	85
Generator NDE bearing 1	44.7	85
Generator NDE bearing 2	51.9	85
Generator windings	70.2	145

Parameter	Vibration at or near full power, mm/s	Alert level, mm/s
Generator DE	0.47	3.0
Generator NDE	1.34	3.0

4 Rainfall



Rainfall this month (rain gauge), mm	126.6
Western Scotland rainfall in month with respect to 1991-2020 long term average	95%

5 Scheme annual performance summary

FY 2025/6	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Actual generation kWh	66,263	120,774	475,565	337,159									999,761
Average generation since commissioning	262,333	217,596	211,278	335,128	418,095	302,196	524,441	539,763	555,825	506,699	511,675	283,133	1,026,335
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	979,833
Actual relative to forecast	17.9%	53.3%	252.2%	172.8%									102.0%
Rainfall relative to 1991-2020 average by month	54%	107%	134%	95%									98%
Calculated generation kWh	65,116	125,464	503,781	355,612									1,049,973
Variance to calculated generation kWh	1,147	-4,690	-28,216	-18,453	-	-	-	-	-	-	-	-	-50,212
Variance to calculated generation %	+1.8%	-3.7%	-5.6%	-5.2%									-4.8%
Approximate revenue	£10,279	£20,713	£84,263	£59,373									£174,375
Capacity factor (monthly)	5.7%	10.0%	40.8%	28.0%									21.1%
Industry wide RoR capacity factor	10.5%	12.6%	25.8%										16.3%
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	366,415	819,629	334,946	368,598	294,450	4,328,493
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	4,748,008
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	80.9%	75.4%	125.3%	154.9%	226.8%	46.9%	54.6%	59.3%	132.2%	48.1%	66.5%	48.2%	81.2%
Rainfall relative to 1991-2020 average by month	174%	102%	81%	70%	201%	49%	67%	44%	108%	46%	78%	56%	90%
Calculated generation kWh	301,701	175,752	236,233	302,398	728,169	189,926	361,864	367,128	828,135	360,967	359,919	288,473	4,500,665
Variance to calculated generation kWh	-2,850	-4,802	Nil	-182	-91,738	-8,166	-43,850	-713	-8,506	-26,021	8,679	5,977	-172,172
Variance to calculated generation %	-0.9%	-2.7%	Nil	-0.1%	-12.6%	-4.3%	-12.1%	-0.2%	-1.0%	-7.2%	+2.4%	+2.1%	-3.8%
Approximate revenue	£73,237	£41,323	£57,663	£73,743	£157,116	£43,866	£81,703	£94,692	£212,560	£86,231	£94,994	£48,500	£1,065,335
Capacity factor (monthly)	25.6%	14.2%	20.3%	25.1%	52.8%	15.6%	26.4%	31.4%	68.0%	27.8%	33.9%	24.4%	30.5%
Industry wide RoR capacity factor	43.5%	11.4%	20.8%	16.5%	47.0%	22.0%	27.7%	20.8%	62.1%	26.3%	34.0%	17.5%	30.2%