

Project Name: Brithdir Forest - Nant Helygog

% Exceedance Probability	Flow upstream of abstraction [l/s]	Abstraction [l/s]	Abstraction as percentage of upstream flow	Residual flow downstream of weir [l/s]	Residual flow as percentage of upstream flow	Penstock Headloss [m]	Combined Turbine & Generator Efficiency [%]	Power output [kW]	Yield [kWh]
5%	439	51.2	11.7%	388	88.3%	4.32	77%	34.01	14,895
10%	292	51.2	17.5%	241	82.5%	4.32	77%	34.01	14,895
15%	234	51.2	21.9%	183	78.1%	4.32	77%	34.01	14,895
20%	176	51.2	29.1%	125	70.9%	4.32	77%	34.01	14,895
25%	149	51.2	34.4%	98	65.6%	4.32	77%	34.01	14,895
30%	122	51.2	42.0%	71	58.0%	4.32	77%	34.01	14,895
35%	106	51.2	48.5%	54	51.5%	4.32	77%	34.01	14,895
40%	89	51.2	57.5%	38	42.5%	4.32	77%	34.01	14,895
45%	78	44.8	57.4%	33	42.6%	3.37	76%	29.69	13,002
50%	67	37.1	55.4%	30	44.6%	2.38	76%	24.86	10,888
55%	59	31.5	53.4%	28	46.6%	1.76	77%	21.53	9,431
60%	51	25.9	50.8%	25	49.2%	1.22	75%	17.35	7,598
65%	45	21.7	48.2%	23	51.8%	0.88	73%	14.20	6,219
70%	39	17.5	44.9%	22	55.1%	0.59	70%	11.01	4,824
75%	34	13.7	40.7%	20	59.3%	0.37	66%	8.12	3,557
80%	28	9.8	35.0%	18	65.0%	0.20	58%	5.13	2,248
85%	23	6.3	27.4%	17	72.6%	0.09	41%	2.34	1,023
90%	18	2.8	15.6%	15	84.4%	0.02	3%	0.08	33
95%	14	0.0	0.0%	14	100.0%	0.00	0%	0.00	0
100%	9	0.0	0.0%	9	100.0%	0.00	0%	0.00	0

Annual Totals 177,983

Turbine down time for maintenance in days per year 5

Estimated annual generation in kWh 175,545

Capacity Factor 58.93%

Catchment area:	2.256 km2
Run-off:	1759 mm
Gross Head (Static Head):	92.25 m
Net Head (Dynamic Head) at Design Flow:	87.9 m
Mean Flow (Annual Daily Flow ADF)	126 l/s
Abstraction regime (Percentage take above HOF)	70%
Hands Off Flow (HOF) Exceedance	95%
Hands Off Flow (HOF)	14 l/s
Max Turbine Flow or Design Flow	51.2 l/s
Min Turbine Flow as %age of max flow	5%
Min Turbine Flow	3 l/s
Q95/Qmean Ratio	0.11
Q10/Qmean Ratio	2.32
Max hourly abstraction (Design flow x 3600 sec)	184.3 m3
Max daily abstraction (Max hourly abstract x 24h)	4,423.7 m3
Max Annual abstraction (Max Daily Abstraction x 365 days)	1,614,643 m3

Flow Duration Curve for Brithdir Forest - Nant Helygog

Annual Flow Duration Curve:
Low-Flow Estimates from LowFlows
www.hydrosolutions.co.uk

Sealy_Nant_Helygog
Natural FD series at annual resolution
Basin-name: Sealy_Nant_Helygog
Outlet at: SH 794 185

(Based on catchment characteristics derived at grid-resolution of 20 m)

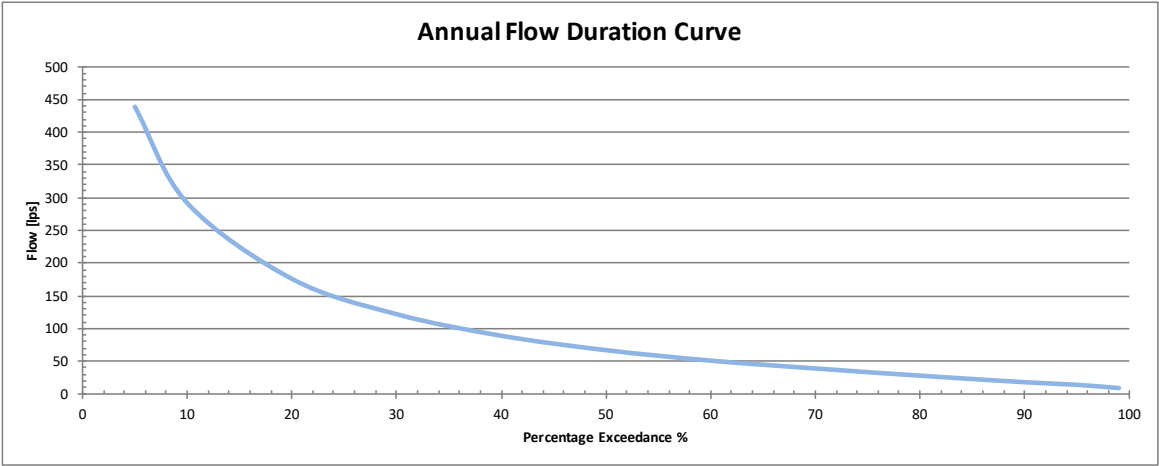
Annual mean flow	0.13 m³/s		
Q95	0.014 m³/s		
	P (%)	Q (m³/s)	(Scaled) Q [lps]
1	5	0.439	439
2	10	0.292	292
3	20	0.176	176
4	30	0.122	122
5	40	0.089	89
6	50	0.067	67
7	60	0.051	51
8	70	0.039	39
9	80	0.028	28
10	90	0.018	18
11	95	0.014	14
12	99	0.009	9

LowFlows Runoff 1759 mm
LowFlows Rainfall 2400 mm
Catchment Area 2.256 km2
BFI 0.37
LowFlows Map 64

Average Flow 126 lps

SCALED FROM A GAUGED RIVER? (Y/N)	N
Scaled from a similar catchment previously Low-flowed?	N
Catchment area originally lowflowed	0.86
Scaling factor for this catchment	1.0000

Scaling factor
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Intake’s rainfall catchment area

