

**Project Name:** Aled Jones

% 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%	171	49.0	28.7%	122	71.3%	3.46	73%	31.21	13,670
10%	117	49.0	41.9%	68	58.1%	3.46	73%	31.21	13,670
15%	94	49.0	52.4%	45	47.6%	3.46	73%	31.21	13,670
20%	70	45.5	65.0%	25	35.0%	3.02	72%	28.73	12,582
25%	59	37.5	64.0%	21	36.0%	2.10	72%	23.89	10,462
30%	47	29.4	62.6%	18	37.4%	1.34	72%	18.91	8,282
35%	41	24.9	61.4%	16	38.6%	0.98	71%	15.82	6,930
40%	34	20.3	59.7%	14	40.3%	0.68	70%	12.79	5,600
45%	30	17.2	58.1%	12	41.9%	0.50	70%	10.82	4,741
50%	25	14.0	56.0%	11	44.0%	0.34	67%	8.47	3,710
55%	22	11.9	54.1%	10	45.9%	0.25	65%	6.99	3,063
60%	19	9.8	51.6%	9	48.4%	0.18	60%	5.32	2,330
65%	17	8.1	48.8%	8	51.2%	0.12	53%	3.86	1,692
70%	14	6.3	45.0%	8	55.0%	0.08	42%	2.40	1,050
75%	12	4.9	40.8%	7	59.2%	0.05	31%	1.38	603
80%	10	3.5	35.0%	7	65.0%	0.03	15%	0.48	208
85%	8	0.0	0.0%	8	100.0%	0.00	0%	0.00	0
90%	6	0.0	0.0%	6	100.0%	0.00	0%	0.00	0
95%	4	0.0	0.0%	4	100.0%	0.00	0%	0.00	0
100%	2	0.0	0.0%	2	100.0%	0.00	0%	0.00	0

Annual Totals	102,261
Turbine down time for maintenance in days per year	5
Estimated annual generation in kWh	100,861
Capacity Factor	36.9%

Catchment area:	0.774 km2
Run-off:	2000 mm
Gross Head (Static Head):	92.4 m
Net Head (Dynamic Head) at Design Flow:	88.9 m
Mean Flow (Annual Daily Flow ADF)	49 l/s
Abstraction regime (Percentage take above HOF)	70%
Hands Off Flow (HOF) Exceedance	95%
Hands Off Flow (HOF)	5 l/s
Max Turbine Flow or Design Flow	49.0 l/s
Min Turbine Flow as %age of max flow	5%
Min Turbine Flow	2 l/s
Q95/Qmean Ratio	0.08
Q10/Qmean Ratio	2.39
Max hourly abstraction (Design flow x 3600 sec)	176.4 m3
Max daily abstraction (Max hourly abstract x 24h)	4,233.6 m3
Max Annual abstraction (Max Daily Abstraction x 365 days)	1,545,264 m3

Flow Duration Curve for Aled Jones (Nant Maesglase)

Annual Flow Duration Curve:

Low-Flow Estimates from LowFlows  
www.hydrosolutions.co.uk  
Taken from a report produced by Wallingford HydroSolutions Limited from April 2017

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

P (%)	Q (m³/s)	(Scaled) Q [lps]
1	5	0.171
2	10	0.117
3	20	0.07
4	30	0.047
5	40	0.034
6	50	0.025
7	60	0.019
8	70	0.014
9	80	0.01
10	90	0.006
11	95	0.004
12	99	0.002

Scaling factor
1.000
1.000
1.000
1.000
1.000
1.000
1.000
1.000
1.000
1.000
1.000
1.000

LowFlows Runoff	2000	mm
LowFlows Rainfall	2450	mm
Catchment Area	0.774	km2
BFI	0.42	
LowFlows Map	64	
Average Flow	49	lps
Scaled Runoff	2000	mm
Scaled Rainfall	2450	

