LAMPIRAN A

Tabel Pengukuran Produksi Listrik pada PLTH Bayu Baru

(Sistem 48 V)

Hari Pertama (Kamis-Jum'at/28-29 Desember 2017)

No	Waktu	Arus Masuk ($I_{in} = G1 + G2 + G3 + G4$)					Tegangan Masuk (V_{in})	Daya Masuk ($P_{in} = I_{in} \,.\, V_{in}$)
		Grup I	Grup II		Grup III	Grup IV		
			PV	TA				
1	09.00	17.96	19.62	0	21.72	12.97	50.7	3664.089
2	10.00	18.56	20.40	0	22.04	12.86	50.9	3759.474
3	11.00	19.83	20.95	0	22.47	13.03	53.0	4042.84
4	12.00	26.65	22.76	0	27.49	15.49	51.3	4739.607
5	13.00	24.51	27.07	0	25.51	16.26	51.8	4835.53
6	14.00	21.91	24.52	0	24.75	16.15	53.5	4672.155
7	15.00	16.54	24.43	0	16.97	12.48	51.7	3640.714
8	16.00	8.46	17.22	0	9.53	7.50	51.0	2178.21
9	17.00	1.21	1.29	0	1.28	0.80	49.0	224.42

10	18.00	0	0	0	0	0	47.5	0
11	19.00	0	0	0	0	0	47.2	0
12	20.00	0	0	0	0	0	47.0	0
13	21.00	0	0	0	0	0	46.3	0
14	22.00	0	0	0	0	0	48.1	0
15	23.00	0	0	0	0	0	46.6	0
16	24.00	0	0	0	0	0	46.4	0
17	01.00	0	0	0	0	0	46.4	0
18	02.00	0	0	0	0	0	46.4	0
19	03.00	0	0	0	0	0	46.4	0
20	04.00	0	0	0	0	0	46.4	0
21	05.00	0	0	0	0	0	46.4	0
22	06.00	1.84	2.35	0	2.45	1.49	46.4	377.232
23	07.00	11.45	15.22	0	15.06	8.56	50.4	2534.616
24	08.00	19.75	22.08	0	21.25	12.01	51.6	3874.644
Jumlah produksi daya total								38543.53

Hari Kedua (Jum'at-Sabtu/29-30 Desember 2017)

No	Waktu	Arus Masuk (I_{in})					Tegangan Masuk (V_{in})	Daya Masuk ($P_{in} = I_{in} . V_{in}$)
		Grup I	Grup II		Grup III	Grup IV		
			PV	TA				
1	09.00	22.80	28.13	0	28.56	16.58	51.7	4966.819
2	10.00	24.39	25.23	0	26.19	15.05	51.3	4661.118
3	11.00	25.08	26.75	0	26.79	16.12	52.0	4926.48
4	12.00	24.41	26.38	0	26.91	15.15	52.3	4856.055
5	13.00	23.27	25.28	0	24.47	12.77	53.3	4572.607
6	14.00	21.29	22.86	0	22.16	13.34	53.2	4237.38
7	15.00	7.28	8.30	0	8.77	5.74	53.2	1600.788
8	16.00	1.66	2.08	0	1.96	1.15	48.8	334.28
9	17.00	0.22	0.16	0	0.24	0.13	47.7	35.775
10	18.00	0	0	0	0	0	46.9	0

11	19.00	0	0	0	0	0	46.6	0
12	20.00	0	0	0	0	0	44.8	0
13	21.00	0	0	0	0	0	49.0	0
14	22.00	0	0	0	0	0	46.4	0
15	23.00	0	0	0	0	0	46.7	0
16	24.00	0	0	0	0	0	45.7	0
17	01.00	0	0	0	0	0	46.2	0
18	02.00	0	0	0	0	0	46.2	0
19	03.00	0	0	0	0	0	46.2	0
20	04.00	0	0	0	0	0	46.1	0
21	05.00	0	0	0	0	0	46.1	0
22	06.00	4.48	6.07	0	6.11	3.74	48.9	3388.77
23	07.00	2.40	2.79	0	3.11	1.99	47.7	490.833
24	08.00	3.34	4.25	0	4.47	2.90	49.4	739.024
Jumlah produksi daya total								34809.93

Hari Ketiga (Sabtu-Minggu/30-31 Desember 2017)

No	Waktu	Arus Masuk (I_{in})					Tegangan Masuk (V_{in})	Daya Masuk ($P_{in} = I_{in} . V_{in}$)
		Grup I	Grup II		Grup III	Grup IV		
			PV	TA				
1	09.00	15.01	18.84	0	18.98	11.19	50.5	3233.01
2	10.00	32.57	34.26	0	33.98	17.68	51.8	6137.782
3	11.00	28.25	29.76	0	29.97	15.97	50.8	5280.66
4	12.00	24.96	27.46	0	27.09	15.90	51.6	4923.156
5	13.00	26.28	27.82	0	29.18	16.63	51.2	5115.392
6	14.00	16.77	18.43	0	18.87	11.81	50.8	3346.704
7	15.00	16.56	17.86	0	16.95	12.68	52.1	3337.005
8	16.00	5.44	6.50	0	6,95	4.62	48.3	799.848
9	17.00	0.77	0.65	0	0.85	0.48	47.4	130.35
10	18.00	0	0	0	0	0	46.3	0

11	19.00	0	0	0	0	0	46.7	0
12	20.00	0	0	0	0	0	46.1	0
13	21.00	0	0	0	0	0	48.8	0
14	22.00	0	0	0	0	0	47.7	0
15	23.00	0	0	0	0	0	47.8	0
16	24.00	0	0	0	0	0	47.8	0
17	01.00	0	0	0	0	0	47.3	0
18	02.00	0	0	0	0	0	46.5	0
19	03.00	0	0	0	0	0	46.4	0
20	04.00	0	0	0	0	0	46.0	0
21	05.00	0	0	0	0	0	45.9	0
22	06.00	3.18	4.74	0	4.79	2.75	46.4	717.344
23	07.00	5.14	6.47	0	6.40	4.06	48.8	1077.016
24	08.00	17.57	20.40	0	14.75	7.64	51.1	3084.396
Jumlah produksi daya total								37182.66

Tabel Pengukuran Produksi Listrik pada PLTH Bayu Baru

(Sistem 240 V)

Hari Pertama (Kamis-Jum'at/28-29 Desember 2017)

No	Waktu	Arus Masuk (I_{in})		Tegangan Masuk (V_{in})	Daya Masuk ($P_{in} = I_{in} . V_{in}$)
		TA	PV		
1	09.00	0	4.32	246.1	1063.152
2	10.00	0	4.35	245.2	1066.62
3	11.00	0	4.61	252.4	1163.564
4	12.00	0	7.09	260.9	1849.781
5	13.00	0	8.09	274.0	2216.66
6	14.00	0	6.14	276.3	1696.482
7	15.00	0	3.30	273.3	901.89
8	16.00	0	1.98	269.8	534.204
9	17.00	0	0.39	261.9	102.141
10	18.00	0	0	244.3	0
11	19.00	0	0	240.4	0
12	20.00	0	0	236.4	0
13	21.00	0	0	232.4	0
14	22.00	0	0	229.3	0
15	23.00	0	0	226.4	0
16	24.00	0	0	223.8	0
17	01.00	0	0	221.9	0
18	02.00	0	0	218.4	0
19	03.00	0	0	213.3	0
20	04.00	0	0	209.3	0
21	05.00	0	0	206.8	0
22	06.00	0	0.45	12.16	5.472
23	07.00	0	3.08	46.4	142.912
24	08.00	0	4.42	232.8	1028.976
Jumlah produksi daya total					11771.85

Hari Kedua (Jum'at-Sabtu/29-30 Desember 2017)

No	Waktu	Arus Masuk (I_{in})		Tegangan Masuk (V_{in})	Daya Masuk ($P_{in} = I_{in} . V_{in}$)
		TA	PV		
1	09.00	0	8.60	255.8	2199.88
2	10.00	0	8.96	264.2	2367.232
3	11.00	0	5.08	269.3	1368.044
4	12.00	0	4.07	274.4	1116.808
5	13.00	0	3.98	278.4	1108.032
6	14.00	0	3.07	280.7	861.749
7	15.00	0	1.02	269.4	274.788
8	16.00	0	0.14	262.7	36.778
9	17.00	0	0.03	244.8	7.344
10	18.00	0	0	244.0	0
11	19.00	0	0	243.1	0
12	20.00	0	0	239.6	0
13	21.00	0	0	238.6	0
14	22.00	0	0	233.9	0
15	23.00	0	0	232.5	0
16	24.00	0	0	231.3	0
17	01.00	0	0	229.3	0
18	02.00	0	0	227.9	0
19	03.00	0	0	225.5	0
20	04.00	0	0	222.5	0
21	05.00	0	0	19.32	0
22	06.00	0	0.78	230.9	180.102
23	07.00	0	0.38	232.2	88.236
24	08.00	0	0.54	240.5	129.87
Jumlah produksi daya total					9738.863

Hari Ketiga (Sabtu-Minggu/30-31 Desember 2017)

No	Waktu	Arus Masuk (I_{in})		Tegangan Masuk (V_{in})	Daya Masuk ($P_{in} = I_{in} . V_{in}$)
		TA	PV		
1	09.00	0	1.84	243.2	447.488
2	10.00	0	2.15	245.0	526.75
3	11.00	0	5.44	260.5	1417.12
4	12.00	0	5.45	264.1	1429.345
5	13.00	0	3.77	266.1	1003.197
6	14.00	0	1.91	265.1	506.341
7	15.00	0	2.42	268.2	649.044
8	16.00	0	0.78	262.3	204.594
9	17.00	0	0.10	244.0	24.4
10	18.00	0	0	240.0	0
11	19.00	0	0	233.6	0
12	20.00	0	0	240.0	0
13	21.00	0	0	233.6	0
14	22.00	0	0	231.7	0
15	23.00	0	0	229.6	0
16	24.00	0	0	216.8	0
17	01.00	0	0	212.1	0
18	02.00	0	0	180.3	0
19	03.00	0	0	160.8	0
20	04.00	0	0	146.7	0
21	05.00	0	0	124.9	0
22	06.00	0	0.91	238.1	216.671
23	07.00	0	3.06	245.5	751.23
24	08.00	0	7.48	256.8	1920.864
Jumlah produksi daya total					9097.044

Data Perhitungan Produksi PLTH Bayu Baru

1. Data Produksi Listrik PLTH Bayu Baru Sistem 48 V

Produksi Sistem 48 V			
Waktu	**Hari Pertama**	**Hari Kedua**	**Hari Ketiga**
9.00	3664.089	4966.819	3233.01
10.00	3759.474	4661.118	6137.782
11.00	4042.84	4926.48	5280.66
12.00	4739.607	4856.055	4923.156
13.00	4835.53	4572.607	5115.392
14.00	4672.155	4237.38	3346.704
15.00	3640.714	1600.788	3337.005
16.00	2178.21	334.28	799.848
17.00	224.42	35.775	130.35
18.00	0	0	0
19.00	0	0	0
20.00	0	0	0
21.00	0	0	0
22.00	0	0	0
23.00	0	0	0
24.00	0	0	0
1.00	0	0	0
2.00	0	0	0
3.00	0	0	0
4.00	0	0	0
5.00	0	0	0
6.00	377.232	3388.77	717.344
7.00	2534.616	490.833	1077.016
8.00	3874.644	739.024	3084.396
Jumlah	**38543.53**	**34809.93**	**37182.66**
Rata-rata	**1605.98**	**1450.41**	**1549.28**
Max	**4835.53**	**4966.819**	**6137.782**
Min	**0**	**0**	**0**

2. Data Produksi Listrik PLTH Bayu Baru Sistem 240 V

Produksi Sistem 240 V			
Waktu	**Hari Pertama**	**Hari Kedua**	**Hari Ketiga**
9.00	1063.152	2199.88	447.488
10.00	1066.62	2367.232	526.75
11.00	1163.564	1368.044	1417.12
12.00	1849.781	1116.808	1429.345
13.00	2216.66	1108.032	1003.197
14.00	1696.482	861.749	506.341
15.00	901.89	274.788	649.044
16.00	534.204	36.778	204.594
17.00	102.141	7.344	24.4
18.00	0	0	0
19.00	0	0	0
20.00	0	0	0
21.00	0	0	0
22.00	0	0	0
23.00	0	0	0
24.00	0	0	0
1.00	0	0	0
2.00	0	0	0
3.00	0	0	0
4.00	0	0	0
5.00	0	0	0
6.00	5.472	180.102	216.671
7.00	142.912	88.236	751.23
8.00	1028.976	129.87	1920.864
Jumlah	**11771.85**	**9738.863**	**9097.044**
Rata-Rata	**490.49**	**405.79**	**379.04**
Max	**2216.66**	**2367.232**	**1920.864**
Min	**0**	**0**	**0**

Tabel Pengukuran Konsumsi Listrik pada PLTH Bayu Baru 48 V

(Grup Barat)

Hari Pertama (Kamis-Jum'at/28-29 Desember 2017)

No	Waktu	Arus Keluar (I_{out})	Tegangan Keluar (V_{out})	Daya Keluar ($P_{out} = I_{out} . V_{out}$)
1	09.00	3.45	220	759
2	10.00	2.65	220	583
3	11.00	2.75	220	605
4	12.00	3.16	220	695.2
5	13.00	3.04	220	668.8
6	14.00	1.98	220	435.6
7	15.00	2.05	220	451
8	16.00	2.08	220	457.6
9	17.00	1.97	220	433.4
10	18.00	1.55	220	341
11	19.00	1.54	220	338.8
12	20.00	1.55	220	341
13	21.00	0	220	0
14	22.00	1.66	220	365.2
15	23.00	1.75	220	385
16	24.00	1.59	220	349.8
17	01.00	0	220	0
18	02.00	0	220	0
19	03.00	0	220	0
20	04.00	0	220	0
21	05.00	0	220	0
22	06.00	1.73	220	380.6
23	07.00	1.85	220	407
24	08.00	2.22	220	488.4
Jumlah konsumsi daya total				8485.4

Hari Kedua (Jum'at-Sabtu/29-30 Desember 2017)

No	Waktu	Arus Keluar (I_{out})	Tegangan Keluar (V_{out})	Daya Keluar ($P_{out} = I_{out} . V_{out}$)
1	09.00	1.85	220	407
2	10.00	1.87	220	411.4
3	11.00	1.93	220	424.6
4	12.00	1.69	220	371.8
5	13.00	1.80	220	396
6	14.00	1.86	220	409.2
7	15.00	3.11	220	684.2
8	16.00	2.51	220	552.2
9	17.00	2.36	220	519.2
10	18.00	2.48	220	545.6
11	19.00	2.17	220	477.4
12	20.00	2.14	220	470.8
13	21.00	0	220	0
14	22.00	1.94	220	426.8
15	23.00	2.11	220	464.2
16	24.00	1.88	220	413.6
17	01.00	0	220	0
18	02.00	0	220	0
19	03.00	0	220	0
20	04.00	0	220	0
21	05.00	0	220	0
22	06.00	0	220	0
23	07.00	0	220	0
24	08.00	0	220	0
Jumlah konsumsi daya total				6974

Hari Ketiga (Sabtu-Minggu/30-31 Desember 2017)

No	Waktu	Arus Keluar (I_{out})	Tegangan Keluar (V_{out})	Daya Keluar ($P_{out} = I_{out} . V_{out}$)
1	09.00	2.90	220	638
2	10.00	2.31	220	508.2
3	11.00	4.50	220	990
4	12.00	2.64	220	580.8
5	13.00	3.73	220	820.6
6	14.00	3.54	220	778.8
7	15.00	0	220	0
8	16.00	2.27	220	499.4
9	17.00	0	220	0
10	18.00	2.79	220	613.8
11	19.00	0	220	0
12	20.00	0	220	0
13	21.00	0	220	0
14	22.00	0	220	0
15	23.00	0	220	0
16	24.00	0	220	0
17	01.00	0	220	0
18	02.00	0	220	0
19	03.00	0	220	0
20	04.00	0	220	0
21	05.00	0	220	0
22	06.00	0	220	0
23	07.00	1.72	220	378.4
24	08.00	1.30	220	286
Jumlah konsumsi daya total				6094

(Grup Tengah)

Hari Pertama (Kamis-Jum'at/28-29 Desember 2017)

No	Waktu	Arus Keluar (I_{out})	Tegangan Keluar (V_{out})	Daya Keluar ($P_{out} = I_{out} . V_{out}$)
1	09.00	2.50	220	550
2	10.00	2.52	220	554.4
3	11.00	2.55	220	561
4	12.00	2.69	220	591.8
5	13.00	0	220	0
6	14.00	2.91	220	640.2
7	15.00	2.74	220	602.8
8	16.00	1.51	220	332.2
9	17.00	1.85	220	407
10	18.00	1.64	220	360.8
11	19.00	1.25	220	275
12	20.00	1.02	220	224.4
13	21.00	0	220	0
14	22.00	1.07	220	235.4
15	23.00	1.03	220	226.6
16	24.00	1.01	220	222.2
17	01.00	1.19	220	261.8
18	02.00	1.16	220	255.2
19	03.00	1.13	220	248.6
20	04.00	1.18	220	259.6
21	05.00	1.20	220	264.0
22	06.00	1.08	220	237.6
23	07.00	1.00	220	220
24	08.00	1.12	220	246.4
Jumlah konsumsi daya total				7777

Hari Kedua (Jum'at-Sabtu/29-30 Desember 2017)

No	Waktu	Arus Keluar (I_{out})	Tegangan Keluar (V_{out})	Daya Keluar ($P_{out} = I_{out} . V_{out}$)
1	09.00	2.71	220	596.2
2	10.00	2.60	220	572
3	11.00	1.33	220	292.6
4	12.00	1.33	220	292.6
5	13.00	1.35	220	297
6	14.00	1.35	220	297
7	15.00	1.34	220	294.8
8	16.00	1.42	220	312.4
9	17.00	1.69	220	371.8
10	18.00	1.21	220	266.2
11	19.00	1.05	220	231
12	20.00	1.08	220	237.6
13	21.00	1.27	220	279.4
14	22.00	1.08	220	237.6
15	23.00	1.04	220	228.8
16	24.00	1.00	220	220
17	01.00	1.21	220	266.2
18	02.00	1.18	220	259.6
19	03.00	1.22	220	268.4
20	04.00	1.18	220	259.6
21	05.00	1.17	220	257.4
22	06.00	2.06	220	453.2
23	07.00	0	220	0
24	08.00	0	220	0
Jumlah konsumsi daya total				6791.4

Hari Ketiga (Sabtu-Minggu/30-31 Desember 2017)

No	Waktu	Arus Keluar (I_{out})	Tegangan Keluar (V_{out})	Daya Keluar ($P_{out} = I_{out} . V_{out}$)
1	09.00	1.93	220	424.6
2	10.00	1.81	220	398.2
3	11.00	3.07	220	675.4
4	12.00	1.77	220	389.4
5	13.00	2.93	220	644.6
6	14.00	1.90	220	418
7	15.00	0	220	0
8	16.00	1.88	220	413.6
9	17.00	1.88	220	413.6
10	18.00	4.39	220	965.8
11	19.00	0.98	220	215.6
12	20.00	0.97	220	213.4
13	21.00	1.16	220	255.2
14	22.00	0	220	0
15	23.00	0	220	0
16	24.00	0	220	0
17	01.00	1.27	220	279.4
18	02.00	1.31	220	288.2
19	03.00	0	220	0
20	04.00	0	220	0
21	05.00	0	220	0
22	06.00	0	220	0
23	07.00	1.96	220	431.2
24	08.00	3.42	220	752.4
Jumlah konsumsi daya total				2219.8

(Grup Timur)

Hari Pertama (Kamis-Jum'at/28-29 Desember 2017)

No	Waktu	Arus Keluar (I_{out})	Tegangan Keluar (V_{out})	Daya Keluar ($P_{out} = I_{out} . V_{out}$)
1	09.00	0	220	0
2	10.00	0	220	0
3	11.00	0	220	0
4	12.00	3.35	220	737
5	13.00	0	220	0
6	14.00	2.45	220	539
7	15.00	2.78	220	611.6
8	16.00	2.96	220	651.2
9	17.00	2.68	220	589.6
10	18.00	2.27	220	499.4
11	19.00	2.30	220	506
12	20.00	2.31	220	508.2
13	21.00	0	220	0
14	22.00	2.40	220	528
15	23.00	2.36	220	519.2
16	24.00	2.43	220	534.6
17	01.00	0	220	0
18	02.00	0	220	0
19	03.00	0	220	0
20	04.00	0	220	0
21	05.00	0	220	0
22	06.00	2.54	220	558.8
23	07.00	2.49	220	547.8
24	08.00	2.76	220	607.2
Jumlah konsumsi daya total				7937.6

Hari Kedua (Jum'at-Sabtu/29-30 Desember 2017)

No	Waktu	Arus Keluar (I_{out})	Tegangan Keluar (V_{out})	Daya Keluar ($P_{out} = I_{out} . V_{out}$)
1	09.00	2.62	220	576.4
2	10.00	3.19	220	701.8
3	11.00	3.25	220	715
4	12.00	2.78	220	611.6
5	13.00	3.11	220	684.2
6	14.00	3.26	220	717.2
7	15.00	3.02	220	664.4
8	16.00	2.73	220	600.6
9	17.00	2.53	220	556.6
10	18.00	2.28	220	501.6
11	19.00	2.19	220	481.8
12	20.00	2.28	220	501.6
13	21.00	0	220	0
14	22.00	2.23	220	490.6
15	23.00	0	220	0
16	24.00	0	220	0
17	01.00	0	220	0
18	02.00	0	220	0
19	03.00	0	220	0
20	04.00	0	220	0
21	05.00	0	220	0
22	06.00	0	220	0
23	07.00	0	220	0
24	08.00	0	220	0
Jumlah konsumsi daya total				7803.4

Hari Ketiga (Sabtu-Minggu/30-31 Desember 2017)

No	Waktu	Arus Keluar (I_{out})	Tegangan Keluar (V_{out})	Daya Keluar ($P_{out} = I_{out} . V_{out}$)
1	09.00	3.53	220	776.6
2	10.00	3.39	220	745.8
3	11.00	3.36	220	739.2
4	12.00	2.83	220	622.6
5	13.00	3.45	220	759
6	14.00	3.20	220	704
7	15.00	3.47	220	763.4
8	16.00	3.43	220	754.6
9	17.00	2.52	220	554.4
10	18.00	2.33	220	512.6
11	19.00	2.35	220	517
12	20.00	2.30	220	506
13	21.00	0	220	0
14	22.00	0	220	0
15	23.00	0	220	0
16	24.00	0	220	0
17	01.00	0	220	0
18	02.00	0	220	0
19	03.00	0	220	0
20	04.00	0	220	0
21	05.00	0	220	0
22	06.00	0	220	0
23	07.00	2.80	220	616
24	08.00	3.29	220	723.8
Jumlah konsumsi daya total				9295

(Kantor PLTH)

Hari Pertama (Kamis-Jum'at/28-29 Desember 2017)

No	Waktu	Arus Keluar (I_{out})	Tegangan Keluar (V_{out})	Daya Keluar ($P_{out} = I_{out} . V_{out}$)
1	09.00	0.73	220	160.6
2	10.00	0.74	220	162.8
3	11.00	0.73	220	160.6
4	12.00	2.07	220	455.4
5	13.00	0.75	220	165
6	14.00	0.74	220	162.8
7	15.00	0.76	220	167.2
8	16.00	0.72	220	136.4
9	17.00	0.67	220	147.4
10	18.00	1.00	220	220
11	19.00	1.00	220	220
12	20.00	2.41	220	530.2
13	21.00	1.08	220	237.6
14	22.00	1.12	220	246.4
15	23.00	1.00	220	220
16	24.00	1.01	220	222.2
17	01.00	0.99	220	217.8
18	02.00	1.02	220	224.4
19	03.00	1.00	220	220
20	04.00	1.02	220	224.4
21	05.00	1.01	220	222.2
22	06.00	1.02	220	224.4
23	07.00	0.76	220	167.2
24	08.00	0.48	220	105.6
Jumlah konsumsi daya total				5220.6

Hari Kedua (Jum'at-Sabtu/29-30 Desember 2017)

No	Waktu	Arus Keluar (I_{out})	Tegangan Keluar (V_{out})	Daya Keluar ($P_{out} = I_{out} . V_{out}$)
1	09.00	0.63	220	138.6
2	10.00	0.75	220	165
3	11.00	0.70	220	154
4	12.00	0.60	220	132
5	13.00	0.53	220	116.6
6	14.00	0.68	220	149.6
7	15.00	0.61	220	134.2
8	16.00	0.91	220	200.2
9	17.00	1.01	220	222.2
10	18.00	1.03	220	226.6
11	19.00	1.04	220	228.8
12	20.00	1.00	220	220
13	21.00	1.00	220	220
14	22.00	1.02	220	224.4
15	23.00	0.99	220	217.8
16	24.00	1.00	220	220
17	01.00	0.88	220	193.6
18	02.00	0.96	220	211.2
19	03.00	0.98	220	215.6
20	04.00	1.00	220	220
21	05.00	1.04	220	228.8
22	06.00	0.68	220	149.6
23	07.00	0.56	220	123.2
24	08.00	0.55	220	121
Jumlah konsumsi daya total				4433

Hari Ketiga (Sabtu-Minggu/30-31 Desember 2017)

No	Waktu	Arus Keluar (I_{out})	Tegangan Keluar (V_{out})	Daya Keluar ($P_{out} = I_{out} . V_{out}$)
1	09.00	0.46	220	101.2
2	10.00	0.54	220	118.8
3	11.00	0.38	220	83.6
4	12.00	0.41	220	90.2
5	13.00	0.36	220	79.2
6	14.00	0.36	220	79.2
7	15.00	0.85	220	187
8	16.00	0.82	220	180.4
9	17.00	0.90	220	198
10	18.00	0.86	220	189.2
11	19.00	0.93	220	204.6
12	20.00	0.97	220	213.4
13	21.00	1.00	220	220
14	22.00	0.69	220	151.8
15	23.00	0.92	220	202.4
16	24.00	0.92	220	202.4
17	01.00	0.93	220	204.6
18	02.00	0.94	220	206.8
19	03.00	0.93	220	204.6
20	04.00	0.93	220	204.6
21	05.00	0.91	220	200.2
22	06.00	0.90	220	198
23	07.00	0.41	220	90.2
24	08.00	0.33	220	72.6
Jumlah konsumsi daya total				3833

Tabel Pengukuran Konsumsi Listrik pada PLTH Bayu Baru

(Penerangan Jalan Umum)

Hari Pertama (Kamis-Jum'at/28-29 Desember 2017)

No	Waktu	Arus Keluar (I_{out})	Tegangan Keluar (V_{out})	Daya Keluar ($P_{out} = I_{out} . V_{out}$)
1	09.00	0	0	0
2	10.00	0	0	0
3	11.00	0	0	0
4	12.00	0	0	0
5	13.00	0	0	0
6	14.00	0	0	0
7	15.00	0	0	0
8	16.00	0	0	0
9	17.00	0	0	0
10	18.00	3.32	244.3	811.076
11	19.00	3.46	240.4	831.784
12	20.00	3.36	236.4	794.304
13	21.00	3.26	232.4	757.624
14	22.00	3.36	229.3	770.448
15	23.00	3.34	226.4	756.176
16	24.00	3.28	223.8	734.064
17	01.00	3.25	221.9	721.175
18	02.00	3.37	218.4	736.008
19	03.00	3.24	213.3	691.092
20	04.00	3.40	209.3	711.62
21	05.00	3.38	206.8	698.984
22	06.00	1.76	12.16	21.4016
23	07.00	3.87	46.4	179.568
24	08.00	0	0	0
Jumlah konsumsi daya total				9215.325

Hari Kedua (Jum'at-Sabtu/29-30 Desember 2017)

No	Waktu	Arus Keluar (I_{out})	Tegangan Keluar (V_{out})	Daya Keluar ($P_{out} = I_{out} . V_{out}$)
1	09.00	0	0	0
2	10.00	0	0	0
3	11.00	0	0	0
4	12.00	0	0	0
5	13.00	0	0	0
6	14.00	0	0	0
7	15.00	0	0	0
8	16.00	0	0	0
9	17.00	2.32	244.8	567.936
10	18.00	2.35	244.0	573.4
11	19.00	2.40	243.1	538.44
12	20.00	2.37	239.6	567.852
13	21.00	2.34	238.9	559.026
14	22.00	2.31	233.9	540.309
15	23.00	3.12	232.5	725.4
16	24.00	3.13	231.3	723.969
17	01.00	3.13	229.3	717.709
18	02.00	3.14	227.9	715.606
19	03.00	3.12	225.5	703.56
20	04.00	3.12	222.5	694.2
21	05.00	3.40	19.32	65.688
22	06.00	0	0	0
23	07.00	0	0	0
24	08.00	0	0	0
Jumlah konsumsi daya total				7693.095

Hari Ketiga (Sabtu-Minggu/30-31 Desember 2017)

No	Waktu	Arus Keluar (I_{out})	Tegangan Keluar (V_{out})	Daya Keluar ($P_{out} = I_{out} . V_{out}$)
1	09.00	0	0	0
2	10.00	0	0	0
3	11.00	0	0	0
4	12.00	0	0	0
5	13.00	0	0	0
6	14.00	0	0	0
7	15.00	0	0	0
8	16.00	0	0	0
9	17.00	3.44	244.0	839.36
10	18.00	3.50	240.0	840
11	19.00	3.31	233.6	773.216
12	20.00	3.39	240.0	813.6
13	21.00	3.48	233.6	812.928
14	22.00	3.56	231.7	824.852
15	23.00	3.73	229.6	856.408
16	24.00	3.89	216.8	843.352
17	01.00	0	0	0
18	02.00	0	0	0
19	03.00	0	0	0
20	04.00	0	0	0
21	05.00	0	0	0
22	06.00	0	0	0
23	07.00	0	0	0
24	08.00	0	0	0
Jumlah konsumsi daya total				6603.716

Data Perhitungan Konsumsi PLTH Bayu Baru

1. Daya Konsumsi Listrik Sistem 48 V

Konsumsi Sistem 48 V			
Waktu	**Hari Pertama**	**Hari Kedua**	**Hari Ketiga**
9.00	1469.6	1718.2	1940.4
10.00	1300.2	1850.2	1771
11.00	1326.6	1586.2	2488.2
12.00	2479.4	1408	1683
13.00	833.8	1493.8	2303.4
14.00	1777.6	1573	1980
15.00	1832.6	1777.6	950.4
16.00	1577.4	1665.4	1848
17.00	1577.4	1669.8	1166
18.00	1421.2	1540	2281.4
19.00	1339.8	1419	937.2
20.00	1603.8	1430	932.8
21.00	237.6	499.4	475.2
22.00	1375	1379.4	151.8
23.00	1350.8	910.8	202.4
24.00	1328.8	853.6	202.4
1.00	479.6	459.8	484
2.00	479.6	470.8	495
3.00	468.6	484	204.6
4.00	484	479.6	204.6
5.00	486.2	486.2	200.2
6.00	1401.4	602.8	198
7.00	1342	123.2	1515.8
8.00	1447.6	121	1834.8
Jumlah	**29420.6**	**26001.8**	**26450.6**
Rata-rata	**1225.86**	**1083.41**	**1102.11**
Max	**2479.4**	**1850.2**	**2488.2**
Min	**237.6**	**121**	**151.8**

2. Daya Konsumsi Sistem 240 V

Konsumsi Sistem 240 V			
Waktu	**Hari Pertama**	**Total Konsumsi**	**Total Konsumsi**
9.00	0	0	0
10.00	0	0	0
11.00	0	0	0
12.00	0	0	0
13.00	0	0	0
14.00	0	0	0
15.00	0	0	0
16.00	0	0	0
17.00	0	567.936	839.36
18.00	811.076	573.4	840
19.00	831.784	538.44	773.216
20.00	794.304	567.852	813.6
21.00	757.624	559.026	812.928
22.00	770.448	540.309	824.852
23.00	756.176	725.4	856.408
24.00	734.064	723.969	843.352
1.00	721.175	717.709	0
2.00	736.008	715.606	0
3.00	691.092	703.56	0
4.00	711.62	694.2	0
5.00	698.984	65.688	0
6.00	21.4016	0	0
7.00	179.568	0	0
8.00	0	0	0
Jumlah	**9215.32**	**7693.095**	**6603.716**
Rata-rata	**383.97**	**320.55**	**275.15**
Max	**831.78**	**725.4**	**856.408**
Min	**0**	**0**	**0**

LAMPIRAN B

Perhitungan Daya Optimal PLTH Bayu Baru

(Sistem 48 V)

Hari Pertama (Kamis-Jum'at/28-29 Desember 2017)

Daya Optimal Modul PV 10kW/48 V Grup I-III										
Waktu	**G_{ukur} (W/m^2)**	**G_{STC} (W/m2)**	**% G (W/m2)**	**I_{mp} (A)**	**I_{hitung} (A)**	**V_{mp} (V)**	**V_{hitung} (V)**	**P_{hitung} (W)**	**N_{PV} (Unit)**	**P_{max} PV (W)**
9.00	431.6	1000	43.16	7.93	3.42	29.82	12.87	44.05	48	2114.39
10.00	410.3	1000	41.03	7.93	3.25	29.82	12.24	39.81	48	1910.84
11.00	430.6	1000	43.06	7.93	3.41	29.82	12.84	43.85	48	2104.60
12.00	573.8	1000	57.38	7.93	4.55	29.82	17.11	77.86	48	3737.17
13.00	671.5	1000	67.15	7.93	5.32	29.82	20.02	106.63	48	5118.16
14.00	517	1000	51.7	7.93	4.10	29.82	15.42	63.21	48	3033.91
15.00	378.1	1000	37.81	7.93	3.00	29.82	11.27	33.81	48	1622.69
16.00	239.7	1000	23.97	7.93	1.90	29.82	7.15	13.59	48	652.17
17.00	37.44	1000	3.744	7.93	0.30	29.82	1.12	0.33	48	15.91
6.00	32.22	1000	3.222	7.93	0.26	29.82	0.96	0.25	48	11.78
7.00	220.1	1000	22.01	7.93	1.75	29.82	6.56	11.46	48	549.87
8.00	324.9	1000	32.49	7.93	2.58	29.82	9.69	24.96	48	1198.18
Jumlah	**4267.26**	**12000**	**426.73**	**95.16**	**33.84**	**357.84**	**127.25**	**459.79**	**576.00**	**22069.68**
Rata-rata	**355.61**	**1000**	**35.56**	**7.93**	**2.82**	**29.82**	**10.60**	**38.32**	**48.00**	**1839.14**
Max	**671.5**	**1000**	**67.15**	**7.93**	**5.32**	**29.82**	**20.02**	**106.63**	**48.00**	**5118.16**
Min	**32.22**	**1000**	**3.22**	**7.93**	**0.26**	**29.82**	**0.96**	**0.25**	**48**	**11.78**

Daya Optimal Modul PV 4kW/48 V Grup IV										
Waktu	**G_{ukur} (W/m^2)**	**G_{STC} (W/m2)**	**% G (W/m2)**	**I_{mp} (A)**	**I_{hitung} (A)**	**V_{mp} (V)**	**V_{hitung} (V)**	**P_{hitung} (W)**	**N_{PV} (Unit)**	**P_{max} PV (W)**
9.00	431.6	1000	43.16	2.93	1.26	34.2	14.76	18.67	40	746.65
10.00	410.3	1000	41.03	2.93	1.20	34.2	14.03	16.87	40	674.77
11.00	430.6	1000	43.06	2.93	1.26	34.2	14.73	18.58	40	743.19
12.00	573.8	1000	57.38	2.93	1.68	34.2	19.62	32.99	40	1319.70
13.00	671.5	1000	67.15	2.93	1.97	34.2	22.97	45.18	40	1807.36
14.00	517	1000	51.7	2.93	1.51	34.2	17.68	26.78	40	1071.36
15.00	378.1	1000	37.81	2.93	1.11	34.2	12.93	14.33	40	573.02
16.00	239.7	1000	23.97	2.93	0.70	34.2	8.20	5.76	40	230.30
17.00	37.44	1000	3.744	2.93	0.11	34.2	1.28	0.14	40	5.62
6.00	32.22	1000	3.222	2.93	0.09	34.2	1.10	0.10	40	4.16
7.00	220.1	1000	22.01	2.93	0.64	34.2	7.53	4.85	40	194.18
8.00	324.9	1000	32.49	2.93	0.95	34.2	11.11	10.58	40	423.11
Jumlah	**4267.26**	**12000**	**426.73**	**35.16**	**12.50**	**410.4**	**145.94**	**194.84**	**480.00**	**7793.41**
Rata-rata	**355.61**	**1000**	**35.56**	**2.93**	**1.04**	**34.2**	**12.16**	**16.24**	**40.00**	**649.45**
Max	**671.5**	**1000**	**67.15**	**2.93**	**1.97**	**34.2**	**22.97**	**45.18**	**40.00**	**1807.36**
Min	**32.22**	**1000**	**3.22**	**2.93**	**0.09**	**34.2**	**1.10**	**0.1040267**	**40**	**4.16**

Daya Optimal Turbin Angin 1kW/48 V						
Waktu	**v (m/s)**	**ρ (kg/m^3)**	**A (m^2)**	**P_{maks} (W)**	**N_{TA} (unit)**	**P_{max} TA (W)**
9.00	1.9	1.293	7.12	17.29	4	69.15
10.00	0	1.293	7.12	0.00	4	0.00
11.00	0.6	1.293	7.12	0.54	4	2.18
12.00	1.8	1.293	7.12	14.70	4	58.80
13.00	3.4	1.293	7.12	99.06	4	396.26
14.00	0.6	1.293	7.12	0.54	4	2.18
15.00	2.3	1.293	7.12	30.67	4	122.67
16.00	0	1.293	7.12	0.00	4	0.00
17.00	0.6	1.293	7.12	0.54	4	2.18
18.00	0.5	1.293	7.12	0.32	4	1.26
19.00	0	1.293	7.12	0.00	4	0.00
20.00	1.3	1.293	7.12	5.54	4	22.15
21.00	2.9	1.293	7.12	61.47	4	245.89
22.00	1.1	1.293	7.12	3.35	4	13.42
23.00	0	1.293	7.12	0.00	4	0.00
24.00	0	1.293	7.12	0.00	4	0.00
1.00	1.8	1.293	7.12	14.70	4	58.80
2.00	0	1.293	7.12	0.00	4	0.00
3.00	1.3	1.293	7.12	5.54	4	22.15
4.00	1.1	1.293	7.12	3.35	4	13.42
5.00	2.7	1.293	7.12	49.61	4	198.44
6.00	1.5	1.293	7.12	8.51	4	34.03
7.00	1.2	1.293	7.12	4.36	4	17.42
8.00	0.9	1.293	7.12	1.84	4	7.35
Jumlah	**27.5**	**31.03**	**170.88**	**321.93**	**96**	**1287.73**
Rata-rata	**1.1458333**	**1.29**	**7.12**	**13.41**	**4**	**53.66**
Max	**3.4**	**1.29**	**7.12**	**99.06**	**4**	**396.26**
Min	**0**	**1.29**	**7.12**	**0**	**4**	**0**

Hari Kedua (Jum'at-Sabtu/29-30 Desember 2017)

Daya Optimal Modul PV 10kW/48 V Grup I-III										
Waktu	**G_{ukur} (W/m^2)**	**G_{STC} (W/m2)**	**% G (W/m2)**	**I_{mp} (A)**	**I_{hitung} (A)**	**V_{mp} (V)**	**V_{hitung} (V)**	**P_{hitung} (W)**	**N_{PV} (Unit)**	**P_{max} PV (W)**
9.00	624.9	1000	62.49	7.93	4.96	29.82	18.63	92.34	48	4432.44
10.00	620.9	1000	62.09	7.93	4.92	29.82	18.52	91.16	48	4375.88
11.00	767.4	1000	76.74	7.93	6.09	29.82	22.88	139.26	48	6684.45
12.00	651.5	1000	65.15	7.93	5.17	29.82	19.43	100.37	48	4817.82
13.00	700.1	1000	70.01	7.93	5.55	29.82	20.88	115.90	48	5563.42
14.00	610.5	1000	61.05	7.93	4.84	29.82	18.21	88.14	48	4230.52
15.00	181.5	1000	18.15	7.93	1.44	29.82	5.41	7.79	48	373.92
16.00	49.27	1000	4.927	7.93	0.39	29.82	1.47	0.57	48	27.55
17.00	0.87	1000	0.087	7.93	0.01	29.82	0.03	0.00	48	0.01
6.00	122.8	1000	12.280	7.93	0.97	29.82	3.66	3.57	48	171.17
7.00	58.44	1000	5.844	7.93	0.46	29.82	1.74	0.81	48	38.77
8.00	103.2	1000	10.32	7.93	0.82	29.82	3.08	2.52	48	120.89
Jumlah	**4491.38**	**12000**	**449.14**	**95.16**	**35.62**	**357.84**	**133.93**	**642.43**	**576.00**	**30836.84**
Rata-rata	**374.28**	**1000**	**37.43**	**7.93**	**2.97**	**29.82**	**11.16**	**53.54**	**48.00**	**2569.74**
Max	**767.4**	**1000**	**76.74**	**7.93**	**6.09**	**29.82**	**22.88**	**139.26**	**48.00**	**6684.45**
Min	**0.87**	**1000**	**0.09**	**7.93**	**0.01**	**29.82**	**0.03**	**0.00**	**48**	**0.01**

Daya Optimal Modul PV 4kW/48 V Grup IV										
Waktu	**G_{ukur} (W/m2)**	**G_{STC} (W/m2)**	**% G (W/m2)**	**I_{mp} (A)**	**I_{hitung} (A)**	**V_{mp} (V)**	**V_{hitung} (V)**	**P_{hitung} (W)**	**N_{PV} (Unit)**	**P_{max} PV (W)**
9.00	624.9	1000	62.49	2.93	1.83	34.2	21.37	39.13	40	1565.22
10.00	620.9	1000	62.09	2.93	1.82	34.2	21.23	38.63	40	1545.24
11.00	767.4	1000	76.74	2.93	2.25	34.2	26.25	59.01	40	2360.46
12.00	651.5	1000	65.15	2.93	1.91	34.2	22.28	42.53	40	1701.31
13.00	700.1	1000	70.01	2.93	2.05	34.2	23.94	49.11	40	1964.60
14.00	610.5	1000	61.05	2.93	1.79	34.2	20.88	37.35	40	1493.91
15.00	181.5	1000	18.15	2.93	0.53	34.2	6.21	3.30	40	132.04
16.00	49.27	1000	4.927	2.93	0.14	34.2	1.69	0.24	40	9.73
17.00	0.87	1000	0.087	2.93	0.00	34.2	0.03	0.00	40	0.00
6.00	122.8	1000	12.280	2.93	0.36	34.2	4.20	1.51	40	60.44
7.00	58.44	1000	5.844	2.93	0.17	34.2	2.00	0.34	40	13.69
8.00	103.2	1000	10.32	2.93	0.30	34.2	3.53	1.07	40	42.69
Jumlah	**4491.38**	**12000**	**449.14**	**35.16**	**13.16**	**410.4**	**153.61**	**272.23**	**480.00**	**10889.34**
Rata-rata	**374.28**	**1000**	**37.43**	**2.93**	**1.10**	**34.2**	**12.80**	**22.69**	**40.00**	**907.44**
Max	**767.4**	**1000**	**76.74**	**2.93**	**2.25**	**34.2**	**26.25**	**59.01**	**40.00**	**2360.46**
Min	**0.87**	**1000**	**0.087**	**2.93**	**0.00**	**34.2**	**0.03**	**7.585E-05**	**40**	**0.00**

Daya Optimal Turbin Angin 1kW/48 V						
Waktu	**v (m/s)**	**ρ (kg/m^3)**	**A (m^2)**	**P_{maks} (W)**	**N_{TA} (unit)**	**P_{max} TA (W)**
9.00	1.5	1.293	7.12	8.51	4	34.03
10.00	1.1	1.293	7.12	3.35	4	13.42
11.00	3.9	1.293	7.12	149.51	4	598.05
12.00	2.3	1.293	7.12	30.67	4	122.67
13.00	2.3	1.293	7.12	30.67	4	122.67
14.00	0.2	1.293	7.12	0.02	4	0.08
15.00	0.5	1.293	7.12	0.32	4	1.26
16.00	0.5	1.293	7.12	0.32	4	1.26
17.00	0.2	1.293	7.12	0.02	4	0.08
18.00	0	1.293	7.12	0.00	4	0.00
19.00	0.8	1.293	7.12	1.29	4	5.16
20.00	1.5	1.293	7.12	8.51	4	34.03
21.00	0.4	1.293	7.12	0.16	4	0.65
22.00	0	1.293	7.12	0.00	4	0.00
23.00	1.9	1.293	7.12	17.29	4	69.15
24.00	0	1.293	7.12	0.00	4	0.00
1.00	0	1.293	7.12	0.00	4	0.00
2.00	0	1.293	7.12	0.00	4	0.00
3.00	1.5	1.293	7.12	8.51	4	34.03
4.00	1.2	1.293	7.12	4.36	4	17.42
5.00	0	1.293	7.12	0.00	4	0.00
6.00	0	1.293	7.12	0.00	4	0.00
7.00	0	1.293	7.12	0.00	4	0.00
8.00	0	1.293	7.12	0.00	4	0.00
Jumlah	**19.8**	**31.03**	**170.88**	**263.49**	**96**	**1053.94**
Rata-rata	**0.825**	**1.29**	**7.12**	**10.98**	**4**	**43.91**
Max	**3.9**	**1.29**	**7.12**	**149.51**	**4**	**598.05**
Min	**0**	**1.29**	**7.12**	**0**	**4**	**0**

Hari Ketiga (Sabtu-Minggu/30-31 Desember 2017)

Daya Optimal Modul PV 10kW/48 V Grup I-III										
Waktu	**G_{ukur} (W/m^2)**	**G_{STC} (W/m2)**	**% G (W/m2)**	**I_{mp} (A)**	**I_{hitung} (A)**	**V_{mp} (V)**	**V_{hitung} (V)**	**P_{hitung} (W)**	**N_{PV} (Unit)**	**P_{max} PV (W)**
9.00	334	1000	33.4	7.93	2.65	29.82	9.96	26.38	48	1266.24
10.00	390.1	1000	39.01	7.93	3.09	29.82	11.63	35.99	48	1727.32
11.00	790.6	1000	79.06	7.93	6.27	29.82	23.58	147.81	48	7094.73
12.00	793	1000	79.3	7.93	6.29	29.82	23.65	148.71	48	7137.87
13.00	749.5	1000	74.95	7.93	5.94	29.82	22.35	132.84	48	6376.25
14.00	368.6	1000	36.86	7.93	2.92	29.82	10.99	32.13	48	1542.17
15.00	461.7	1000	46.17	7.93	3.66	29.82	13.77	50.41	48	2419.59
16.00	136	1000	13.6	7.93	1.08	29.82	4.06	4.37	48	209.94
17.00	19.53	1000	1.953	7.93	0.15	29.82	0.58	0.09	48	4.33
6.00	35.81	1000	3.581	7.93	0.28	29.82	1.07	0.30	48	14.56
7.00	140.2	1000	14.02	7.93	1.11	29.82	4.18	4.65	48	223.11
8.00	401.8	1000	40.18	7.93	3.19	29.82	11.98	38.18	48	1832.49
Jumlah	**4620.84**	**12000**	**462.08**	**95.16**	**36.64**	**357.84**	**137.79**	**621.85**	**576.00**	**29848.60**
Rata-rata	**385.07**	**1000**	**38.51**	**7.93**	**3.05**	**29.82**	**11.48**	**51.82**	**48.00**	**2487.38**
Max	**793**	**1000**	**79.3**	**7.93**	**6.29**	**29.82**	**23.65**	**148.71**	**48.00**	**7137.87**
Min	**19.53**	**1000**	**1.953**	**7.93**	**0.15**	**29.82**	**0.58**	**0.09**	**48**	**4.33**

Daya Optimal Modul PV 4kW/48 V Grup IV										
Waktu	**G_{ukur} (W/m^2)**	**G_{STC} (W/m2)**	**% G (W/m2)**	**I_{mp} (A)**	**I_{hitung} (A)**	**V_{mp} (V)**	**V_{hitung} (V)**	**P_{hitung} (W)**	**N_{PV} (Unit)**	**P_{max} PV (W)**
9.00	334	1000	33.4	2.93	0.98	34.2	11.42	11.18	40	447.14
10.00	390.1	1000	39.01	2.93	1.14	34.2	13.34	15.25	40	609.97
11.00	790.6	1000	79.06	2.93	2.32	34.2	27.04	62.63	40	2505.34
12.00	793	1000	79.3	2.93	2.32	34.2	27.12	63.01	40	2520.58
13.00	749.5	1000	74.95	2.93	2.20	34.2	25.63	56.29	40	2251.63
14.00	368.6	1000	36.86	2.93	1.08	34.2	12.61	13.61	40	544.58
15.00	461.7	1000	46.17	2.93	1.35	34.2	15.79	21.36	40	854.42
16.00	136	1000	13.6	2.93	0.40	34.2	4.65	1.85	40	74.14
17.00	19.53	1000	1.953	2.93	0.06	34.2	0.67	0.04	40	1.53
6.00	35.81	1000	3.581	2.93	0.10	34.2	1.22	0.13	40	5.14
7.00	140.2	1000	14.02	2.93	0.41	34.2	4.79	1.97	40	78.79
8.00	401.8	1000	40.18	2.93	1.18	34.2	13.74	16.18	40	647.10
Jumlah	**4620.84**	**12000**	**462.08**	**35.16**	**13.54**	**410.4**	**158.03**	**263.51**	**480.00**	**10540.36**
Rata-rata	**385.07**	**1000**	**38.51**	**2.93**	**1.13**	**34.2**	**13.17**	**21.96**	**40.00**	**878.36**
Max	**793**	**1000**	**79.3**	**2.93**	**2.32**	**34.2**	**27.12**	**63.01**	**40.00**	**2520.58**
Min	**19.53**	**1000**	**1.95**	**2.93**	**0.057**	**34.2**	**0.67**	**0.04**	**40**	**1.53**

Daya Optimal Turbin Angin 1kW/48 V						
Waktu	**v (m/s)**	**ρ (kg/m^3)**	**A (m^2)**	**P_{maks} (W)**	**N_{TA} (unit)**	**P_{max} TA (W)**
9.00	2.5	1.293	7.12	39.38	4	157.53
10.00	0	1.293	7.12	0.00	4	0.00
11.00	0.2	1.293	7.12	0.02	4	0.08
12.00	1.6	1.293	7.12	10.32	4	41.30
13.00	2.5	1.293	7.12	39.38	4	157.53
14.00	3.3	1.293	7.12	90.58	4	362.31
15.00	2.7	1.293	7.12	49.61	4	198.44
16.00	1.2	1.293	7.12	4.36	4	17.42
17.00	0	1.293	7.12	0.00	4	0.00
18.00	0.6	1.293	7.12	0.54	4	2.18
19.00	0.6	1.293	7.12	0.54	4	2.18
20.00	0.2	1.293	7.12	0.02	4	0.08
21.00	0	1.293	7.12	0.00	4	0.00
22.00	0	1.293	7.12	0.00	4	0.00
23.00	0	1.293	7.12	0.00	4	0.00
24.00	0	1.293	7.12	0.00	4	0.00
1.00	0	1.293	7.12	0.00	4	0.00
2.00	0	1.293	7.12	0.00	4	0.00
3.00	0	1.293	7.12	0.00	4	0.00
4.00	0	1.293	7.12	0.00	4	0.00
5.00	0	1.293	7.12	0.00	4	0.00
6.00	0	1.293	7.12	0.00	4	0.00
7.00	1.3	1.293	7.12	5.54	4	22.15
8.00	1.8	1.293	7.12	14.70	4	58.80
Jumlah	**18.5**	**31.03**	**170.88**	**255.00**	**96**	**1020.00**
Rata-rata	**0.77083**	**1.29**	**7.12**	**10.62**	**4**	**42.50**
Max	**3.3**	**1.29**	**7.12**	**90.58**	**4**	**362.31**
Min	**0**	**1.29**	**7.12**	**0**	**4**	**0**

Perhitungan Daya Optimal PLTH Bayu Baru

(Sistem 240 V)

Hari Pertama (Kamis-Jum'at/28-29 Desember 2017)

Daya Optimal Modul PV 15kW/240 V										
Waktu	**G_{ukur} (W/m^2)**	**G_{STC} (W/m^2)**	**% G (W/m^2)**	**I_{mp} (A)**	**I_{hitung} (A)**	**V_{mp} (V)**	**V_{hitung} (V)**	**P_{hitung} (W)**	**N_{PV} (Unit)**	**P_{max} PV (W)**
9.00	431.6	1000	43.16	5.82	2.51	17.24	7.44	18.69	150	2803.59
10.00	410.3	1000	41.03	5.82	2.39	17.24	7.07	16.89	150	2533.70
11.00	430.6	1000	43.06	5.82	2.51	17.24	7.42	18.60	150	2790.61
12.00	573.8	1000	57.38	5.82	3.34	17.24	9.89	33.04	150	4955.33
13.00	671.5	1000	67.15	5.82	3.91	17.24	11.58	45.24	150	6786.46
14.00	517	1000	51.7	5.82	3.01	17.24	8.91	26.82	150	4022.84
15.00	378.1	1000	37.81	5.82	2.20	17.24	6.52	14.34	150	2151.62
16.00	239.7	1000	23.97	5.82	1.40	17.24	4.13	5.76	150	864.74
17.00	37.44	1000	3.744	5.82	0.22	17.24	0.65	0.14	150	21.10
6.00	32.22	1000	3.222	5.82	0.19	17.24	0.56	0.10	150	15.62
7.00	220.1	1000	22.01	5.82	1.28	17.24	3.79	4.86	150	729.11
8.00	324.9	1000	32.49	5.82	1.89	17.24	5.60	10.59	150	1588.73
Jumlah	**4267.26**	**12000**	**426.73**	**69.84**	**24.84**	**206.88**	**73.57**	**195.09**	**1800.00**	**29263.45**
Rata-rata	**355.61**	**1000**	**35.56**	**5.82**	**2.07**	**17.24**	**6.13**	**16.26**	**150.00**	**2438.62**
Max	**671.5**	**1000**	**67.15**	**5.82**	**3.91**	**17.24**	**11.58**	**45.24**	**150.00**	**6786.46**
Min	**32.22**	**1000**	**3.22**	**5.82**	**0.19**	**17.24**	**0.56**	**0.10**	**150**	**15.62**

Daya Optimal Turbin Angin 1kW/240 V						
Waktu	**v (m/s)**	**ρ (kg/m^3)**	**A (m^2)**	**P_{maks} (W)**	**N_{TA} (unit)**	**P_{max} TA (W)**
9.00	1.9	1.293	7.12	17.29	4	69.15
10.00	0	1.293	7.12	0.00	4	0.00
11.00	0.6	1.293	7.12	0.54	4	2.18
12.00	1.8	1.293	7.12	14.70	4	58.80
13.00	3.4	1.293	7.12	99.06	4	396.26
14.00	0.6	1.293	7.12	0.54	4	2.18
15.00	2.3	1.293	7.12	30.67	4	122.67
16.00	0	1.293	7.12	0.00	4	0.00
17.00	0.6	1.293	7.12	0.54	4	2.18
18.00	0.5	1.293	7.12	0.32	4	1.26
19.00	0	1.293	7.12	0.00	4	0.00
20.00	1.3	1.293	7.12	5.54	4	22.15
21.00	2.9	1.293	7.12	61.47	4	245.89
22.00	1.1	1.293	7.12	3.35	4	13.42
23.00	0	1.293	7.12	0.00	4	0.00
24.00	0	1.293	7.12	0.00	4	0.00
1.00	1.8	1.293	7.12	14.70	4	58.80
2.00	0	1.293	7.12	0.00	4	0.00
3.00	1.3	1.293	7.12	5.54	4	22.15
4.00	1.1	1.293	7.12	3.35	4	13.42
5.00	2.7	1.293	7.12	49.61	4	198.44
6.00	1.5	1.293	7.12	8.51	4	34.03
7.00	1.2	1.293	7.12	4.36	4	17.42
8.00	0.9	1.293	7.12	1.84	4	7.35
Jumlah	**27.5**	**31.03**	**170.88**	**321.93**	**96**	**1287.73**
Rata-rata	**1.15**	**1.29**	**7.12**	**13.41**	**4**	**53.66**
Max	**3.4**	**1.29**	**7.12**	**99.06**	**4**	**396.26**
Min	**0**	**1.29**	**7.12**	**0**	**4**	**0**

Hari Kedua (Jum'at-Sabtu/29-30 Desember 2017)

Daya Optimal Modul PV 15kW/240 V										
Waktu	**G_{ukur} (W/m^2)**	**G_{STC} (W/m2)**	**% G (W/m2)**	**I_{mp} (A)**	**I_{hitung} (A)**	**V_{mp} (V)**	**V_{hitung} (V)**	**P_{hitung} (W)**	**N_{PV} (Unit)**	**P_{max} PV (W)**
9.00	624.9	1000	62.49	5.82	3.64	17.24	10.77	39.18	150	5877.23
10.00	620.9	1000	62.09	5.82	3.61	17.24	10.70	38.68	150	5802.23
11.00	767.4	1000	76.74	5.82	4.47	17.24	13.23	59.09	150	8863.29
12.00	651.5	1000	65.15	5.82	3.79	17.24	11.23	42.59	150	6388.23
13.00	700.1	1000	70.01	5.82	4.07	17.24	12.07	49.18	150	7376.86
14.00	610.5	1000	61.05	5.82	3.55	17.24	10.53	37.40	150	5609.48
15.00	181.5	1000	18.15	5.82	1.06	17.24	3.13	3.31	150	495.80
16.00	49.27	1000	4.927	5.82	0.29	17.24	0.85	0.24	150	36.54
17.00	0.87	1000	0.087	5.82	0.01	17.24	0.01	0.00	150	0.01
6.00	122.8	1000	12.280	5.82	0.71	17.24	2.12	1.51	150	226.96
7.00	58.44	1000	5.844	5.82	0.34	17.24	1.01	0.34	150	51.40
8.00	103.2	1000	10.32	5.82	0.60	17.24	1.78	1.07	150	160.29
Jumlah	**4491.38**	**12000**	**449.14**	**69.84**	**26.14**	**206.88**	**77.43**	**272.59**	**1800.00**	**40888.32**
Rata-rata	**374.28**	**1000**	**37.43**	**5.82**	**2.18**	**17.24**	**6.45**	**22.72**	**150.00**	**3407.36**
Max	**767.4**	**1000**	**76.74**	**5.82**	**4.47**	**17.24**	**13.23**	**59.09**	**150.00**	**8863.29**
Min	**0.87**	**1000**	**0.09**	**5.82**	**0.01**	**17.24**	**0.01**	**0.00**	**150**	**0.01**

Daya Optimal Turbin Angin 1kW/240 V						
Waktu	**v (m/s)**	**ρ (kg/m^3)**	**A (m^2)**	**P_{maks} (W)**	**N_{TA} (unit)**	**P_{max} TA (W)**
9.00	1.5	1.293	7.12	8.51	4	34.03
10.00	1.1	1.293	7.12	3.35	4	13.42
11.00	3.9	1.293	7.12	149.51	4	598.05
12.00	2.3	1.293	7.12	30.67	4	122.67
13.00	2.3	1.293	7.12	30.67	4	122.67
14.00	0.2	1.293	7.12	0.02	4	0.08
15.00	0.5	1.293	7.12	0.32	4	1.26
16.00	0.5	1.293	7.12	0.32	4	1.26
17.00	0.2	1.293	7.12	0.02	4	0.08
18.00	0	1.293	7.12	0.00	4	0.00
19.00	0.8	1.293	7.12	1.29	4	5.16
20.00	1.5	1.293	7.12	8.51	4	34.03
21.00	0.4	1.293	7.12	0.16	4	0.65
22.00	0	1.293	7.12	0.00	4	0.00
23.00	1.9	1.293	7.12	17.29	4	69.15
24.00	0	1.293	7.12	0.00	4	0.00
1.00	0	1.293	7.12	0.00	4	0.00
2.00	0	1.293	7.12	0.00	4	0.00
3.00	1.5	1.293	7.12	8.51	4	34.03
4.00	1.2	1.293	7.12	4.36	4	17.42
5.00	0	1.293	7.12	0.00	4	0.00
6.00	0	1.293	7.12	0.00	4	0.00
7.00	0	1.293	7.12	0.00	4	0.00
8.00	0	1.293	7.12	0.00	4	0.00
Jumlah	**19.8**	**31.03**	**170.88**	**263.49**	**96**	**1053.94**
Rata-rata	**0.83**	**1.29**	**7.12**	**10.98**	**4**	**43.91**
Max	**3.9**	**1.29**	**7.12**	**149.51**	**4**	**598.05**
Min	**0**	**1.29**	**7.12**	**0**	**4**	**0**

Hari Ketiga (Sabtu-Minggu/30-31 Desember 2017)

Daya Optimal Modul PV 15kW/240 V										
Waktu	**G_{ukur} (W/m^2)**	**G_{STC} (W/m2)**	**% G (W/m2)**	**I_{mp} (A)**	**I_{hitung} (A)**	**V_{mp} (V)**	**V_{hitung} (V)**	**P_{hitung} (W)**	**N_{PV} (Unit)**	**P_{max} PV (W)**
9.00	334	1000	33.4	5.82	1.94	17.24	5.76	11.19	150	1678.98
10.00	390.1	1000	39.01	5.82	2.27	17.24	6.73	15.27	150	2290.36
11.00	790.6	1000	79.06	5.82	4.60	17.24	13.63	62.72	150	9407.30
12.00	793	1000	79.3	5.82	4.62	17.24	13.67	63.10	150	9464.50
13.00	749.5	1000	74.95	5.82	4.36	17.24	12.92	56.36	150	8454.63
14.00	368.6	1000	36.86	5.82	2.15	17.24	6.35	13.63	150	2044.85
15.00	461.7	1000	46.17	5.82	2.69	17.24	7.96	21.39	150	3208.27
16.00	136	1000	13.6	5.82	0.79	17.24	2.34	1.86	150	278.37
17.00	19.53	1000	1.953	5.82	0.11	17.24	0.34	0.04	150	5.74
6.00	35.81	1000	3.581	5.82	0.21	17.24	0.62	0.13	150	19.30
7.00	140.2	1000	14.02	5.82	0.82	17.24	2.42	1.97	150	295.83
8.00	401.8	1000	40.18	5.82	2.34	17.24	6.93	16.20	150	2429.80
Jumlah	**4620.84**	**12000**	**462.08**	**69.84**	**26.89**	**206.88**	**79.66**	**263.85**	**1800.00**	**39577.95**
Rata-rata	**385.07**	**1000**	**38.51**	**5.82**	**2.24**	**17.24**	**6.64**	**21.99**	**150.00**	**3298.16**
Max	**793**	**1000**	**79.3**	**5.82**	**4.62**	**17.24**	**13.67**	**63.10**	**150.00**	**9464.50**
Min	**19.53**	**1000**	**1.95**	**5.82**	**0.11**	**17.24**	**0.34**	**0.04**	**150**	**5.74**

Daya Optimal Turbin Angin 1kW/240 V						
Waktu	**v (m/s)**	**ρ (kg/m^3)**	**A (m^2)**	**P_{maks} (W)**	**N_{TA} (unit)**	**P_{max} TA (W)**
9.00	2.5	1.293	7.12	39.38	4	157.53
10.00	0	1.293	7.12	0.00	4	0.00
11.00	0.2	1.293	7.12	0.02	4	0.08
12.00	1.6	1.293	7.12	10.32	4	41.30
13.00	2.5	1.293	7.12	39.38	4	157.53
14.00	3.3	1.293	7.12	90.58	4	362.31
15.00	2.7	1.293	7.12	49.61	4	198.44
16.00	1.2	1.293	7.12	4.36	4	17.42
17.00	0	1.293	7.12	0.00	4	0.00
18.00	0.6	1.293	7.12	0.54	4	2.18
19.00	0.6	1.293	7.12	0.54	4	2.18
20.00	0.2	1.293	7.12	0.02	4	0.08
21.00	0	1.293	7.12	0.00	4	0.00
22.00	0	1.293	7.12	0.00	4	0.00
23.00	0	1.293	7.12	0.00	4	0.00
24.00	0	1.293	7.12	0.00	4	0.00
1.00	0	1.293	7.12	0.00	4	0.00
2.00	0	1.293	7.12	0.00	4	0.00
3.00	0	1.293	7.12	0.00	4	0.00
4.00	0	1.293	7.12	0.00	4	0.00
5.00	0	1.293	7.12	0.00	4	0.00
6.00	0	1.293	7.12	0.00	4	0.00
7.00	1.3	1.293	7.12	5.54	4	22.15
8.00	1.8	1.293	7.12	14.70	4	58.80
Jumlah	**18.5**	**31.03**	**170.88**	**255.00**	**96**	**1020.00**
Rata-rata	**0.77**	**1.29**	**7.12**	**10.62**	**4**	**42.50**
Max	**3.3**	**1.29**	**7.12**	**90.58**	**4**	**362.31**
Min	**0**	**1.29**	**7.12**	**0**	**4**	**0**

Rekapitulasi Perhitungan Daya Optimal PLTH Bayu Baru

1. Daya Optimal Sistem 48 V

Daya Optimal Sistem 48 V			
Waktu	**Hari Pertama**	**Hari Kedua**	**Hari Ketiga**
9.00	2930.19	6031.69	8970.88
10.00	2585.61	5934.54	8530.15
11.00	2849.97	9642.96	12503.93
12.00	5115.67	6641.8	11769.47
13.00	7321.78	7650.69	14985.47
14.00	4107.45	5724.51	9845.96
15.00	2318.38	507.22	2840.6
16.00	882.47	38.54	937.01
17.00	23.71	0.09	40.8
18.00	1.26	0	19.26
19.00	0	5.16	24.16
20.00	22.15	34.03	76.18
21.00	245.89	0.65	267.54
22.00	13.42	0	35.42
23.00	0	69.15	92.15
24.00	0	0	24
1.00	58.8	0	59.8
2.00	0	0	2
3.00	22.15	34.03	59.18
4.00	13.42	17.42	34.84
5.00	198.44	0	203.44
6.00	49.97	231.61	287.58
7.00	761.47	52.46	820.93
8.00	1628.64	163.58	1800.22
Jumlah	**31150.84**	**42780.13**	**74230.97**
Rata-rata	**1297.95**	**1782.51**	**3092.96**
Max	**7321.78**	**9642.96**	**14985.47**
Min	**0**	**0**	**2**

2. Daya Optimal Sistem 240 V

Daya Optimal Sistem 240 V			
Waktu	**Hari Pertama**	**Hari Kedua**	**Hari Ketiga**
9.00	2872.74	5911.26	1836.51
10.00	2533.7	5815.65	2290.36
11.00	2792.79	9461.34	9407.38
12.00	5014.13	6510.9	9505.8
13.00	7182.72	7499.53	8612.16
14.00	4025.02	5609.56	2407.16
15.00	2274.29	497.06	3406.71
16.00	864.74	37.8	295.79
17.00	23.28	0.09	5.74
18.00	1.26	0	2.18
19.00	0	5.16	2.18
20.00	22.15	34.03	0.08
21.00	245.89	0.65	0
22.00	13.42	0	0
23.00	0	69.15	0
24.00	0	0	0
1.00	58.8	0	0
2.00	0	0	0
3.00	22.15	34.03	0
4.00	13.42	17.42	0
5.00	198.44	0	0
6.00	49.65	226.96	19.3
7.00	746.53	51.4	317.98
8.00	1596.08	160.29	2488.6
Jumlah	**30551.2**	**41942.28**	**40597.93**
Rata-rata	**1272.97**	**1747.595**	**1691.580417**
Max	**7182.72**	**9461.34**	**9505.8**
Min	**0**	**0**	**0**

Perhitungan Efisiensi PLTH Bayu Baru

(Sistem 48 V)

Hari Pertama (Kamis-Jum'at/28-29 Desember 2017)

Efisiensi PV 10kW/48 V Grup I						
Waktu	**Tegangan DC (V)**	**Arus DC (I)**	**Pout**	**G (W/m²)**	**A (m²)**	**η (%)**
9.00	50.7	17.96	910.572	1000	29.0124	3.14
10.00	50.9	18.56	944.704	1000	29.0124	3.26
11.00	53	19.83	1050.99	1000	29.0124	3.62
12.00	51.3	26.65	1367.145	1000	29.0124	4.71
13.00	51.8	24.51	1269.618	1000	29.0124	4.38
14.00	53.5	21.91	1172.185	1000	29.0124	4.04
15.00	51.7	16.54	855.118	1000	29.0124	2.95
16.00	51	8.46	431.46	1000	29.0124	1.49
17.00	49	1.21	59.29	1000	29.0124	0.20
6.00	46.4	1.84	85.376	1000	29.0124	0.29
7.00	50.4	11.45	577.08	1000	29.0124	1.99
8.00	51.6	19.75	1019.1	1000	29.0124	3.51
Jumlah	**611.30**	**188.67**	**9742.64**	**12000.00**	**348.15**	**33.58**
Rata-rata	**50.94**	**15.72**	**811.89**	**1000**	**29.0124**	**2.80**
Max	**53.5**	**26.65**	**1367.145**	**1000**	**29.0124**	**4.71**
Min	**46.4**	**1.21**	**59.29**	**1000**	**29.0124**	**0.20**

Efisiensi PV 10kW/48 V Grup II						
Waktu	**Tegangan DC (V)**	**Arus DC (I)**	**Pout**	**G (W/m²)**	**A (m²)**	**η (%)**
9.00	50.7	19.62	994.734	1000	29.0124	3.43
10.00	50.9	20.4	1038.36	1000	29.0124	3.58
11.00	53	20.95	1110.35	1000	29.0124	3.83
12.00	51.3	22.76	1167.588	1000	29.0124	4.02
13.00	51.8	27.07	1402.226	1000	29.0124	4.83
14.00	53.5	24.52	1311.82	1000	29.0124	4.52
15.00	51.7	24.43	1263.031	1000	29.0124	4.35
16.00	51	17.22	878.22	1000	29.0124	3.03
17.00	49	1.29	63.21	1000	29.0124	0.22
6.00	46.4	2.35	109.04	1000	29.0124	0.38
7.00	50.4	15.22	767.088	1000	29.0124	2.64
8.00	51.6	22.08	1139.328	1000	29.0124	3.93
Jumlah	**611.30**	**217.91**	**11245.00**	**12000.00**	**348.15**	**38.76**
Rata-rata	**50.94**	**18.16**	**937.08**	**1000**	**29.0124**	**3.23**
Max	**53.5**	**27.07**	**1402.226**	**1000**	**29.0124**	**4.83**
Min	**46.4**	**1.29**	**63.21**	**1000**	**29.0124**	**0.22**

Efisiensi PV 10kW/48 V Grup III						
Waktu	**Tegangan DC (V)**	**Arus DC (I)**	**Pout**	**G (W/m²)**	**A (m²)**	**η (%)**
9.00	50.7	21.72	1101.204	1000	29.0124	3.80
10.00	50.9	22.04	1121.836	1000	29.0124	3.87
11.00	53	22.47	1190.91	1000	29.0124	4.10
12.00	51.3	27.49	1410.237	1000	29.0124	4.86
13.00	51.8	25.51	1321.418	1000	29.0124	4.55
14.00	53.5	24.75	1324.125	1000	29.0124	4.56
15.00	51.7	16.97	877.349	1000	29.0124	3.02
16.00	51	9.53	486.03	1000	29.0124	1.68
17.00	49	1.28	62.72	1000	29.0124	0.22
6.00	46.4	2.45	113.68	1000	29.0124	0.39
7.00	50.4	15.06	759.024	1000	29.0124	2.62
8.00	51.6	21.25	1096.5	1000	29.0124	3.78
Jumlah	**611.30**	**210.52**	**10865.03**	**12000.00**	**348.15**	**37.45**
Rata-rata	**50.94**	**17.54**	**905.42**	**1000**	**29.0124**	**3.12**
Max	**53.5**	**27.49**	**1410.237**	**1000**	**29.0124**	**4.86**
Min	**46.4**	**1.28**	**62.72**	**1000**	**29.0124**	**0.22**

Efisiensi PV 4kW/48 V Grup IV						
Waktu	**Tegangan DC (V)**	**Arus DC (I)**	**Pout**	**G (W/m²)**	**A (m²)**	**η (%)**
9.00	50.7	12.97	657.579	1000	29.0124	2.27
10.00	50.9	12.86	654.574	1000	29.0124	2.26
11.00	53	13.03	690.59	1000	29.0124	2.38
12.00	51.3	15.49	794.637	1000	29.0124	2.74
13.00	51.8	16.26	842.268	1000	29.0124	2.90
14.00	53.5	16.15	864.025	1000	29.0124	2.98
15.00	51.7	12.48	645.216	1000	29.0124	2.22
16.00	51	7.5	382.5	1000	29.0124	1.32
17.00	49	0.8	39.2	1000	29.0124	0.14
6.00	46.4	1.49	69.136	1000	29.0124	0.24
7.00	50.4	8.56	431.424	1000	29.0124	1.49
8.00	51.6	12.01	619.716	1000	29.0124	2.14
Jumlah	**611.30**	**129.60**	**6690.87**	**12000.00**	**348.15**	**23.06**
Rata-rata	**50.94**	**10.80**	**557.57**	**1000**	**29.0124**	**1.92**
Max	**53.5**	**16.26**	**864.025**	**1000**	**29.0124**	**2.98**
Min	**46.4**	**0.8**	**39.2**	**1000**	**29.0124**	**0.14**

Efisiensi Turbin Angin 1kW/48 V						
Waktu	**v (m/s)**	**Vout DC**	**Iout DC**	**Pout (W)**	**Pangin (W)**	**η (%)**
9.00	1.9	50.7	0	0	17.29	0.00
10.00	0	50.9	0	0	0.00	-
11.00	0.6	53	0	0	0.54	0.00
12.00	1.8	51.3	0	0	14.70	0.00
13.00	3.4	51.8	0	0	99.06	0.00
14.00	0.6	53.5	0	0	0.54	0.00
15.00	2.3	51.7	0	0	30.67	0.00
16.00	0	51	0	0	0.00	-
17.00	0.6	49	0	0	0.54	0.00
18.00	0.5	47.5	0	0	0.32	0.00
19.00	0	47.2	0	0	0.00	-
20.00	1.3	47	0	0	5.54	0.00
21.00	2.9	46.3	0	0	61.47	0.00
22.00	1.1	48.1	0	0	3.35	0.00
23.00	0	46.6	0	0	0.00	-
24.00	0	46.4	0	0	0.00	-
1.00	1.8	46.4	0	0	14.70	0.00
2.00	0	46.4	0	0	0.00	-
3.00	1.3	46.4	0	0	5.54	0.00
4.00	1.1	46.4	0	0	3.35	0.00
5.00	2.7	46.4	0	0	49.61	0.00
6.00	1.5	46.4	0	0	8.51	0.00
7.00	1.2	50.4	0	0	4.36	0.00
8.00	0.9	51.6	0	0	1.84	0.00
Rata-rata	**1.15**	**48.85**	**0.00**	**0.00**	**13.41**	**0.00**

Hari Kedua (Jum'at-Sabtu/29-30 Desember 2017)

Efisiensi PV 10kW/48 V Grup I						
Waktu	**Tegangan DC (V)**	**Arus DC (I)**	**Pout**	**G (W/m²)**	**A (m²)**	**η (%)**
9.00	51.7	22.8	1178.76	1000	29.0124	4.06
10.00	51.3	24.39	1251.207	1000	29.0124	4.31
11.00	52	25.08	1304.16	1000	29.0124	4.50
12.00	52.3	24.41	1276.643	1000	29.0124	4.40
13.00	53.3	23.27	1240.291	1000	29.0124	4.28
14.00	53.2	21.29	1132.628	1000	29.0124	3.90
15.00	53.2	7.28	387.296	1000	29.0124	1.33
16.00	48.8	1.66	81.008	1000	29.0124	0.28
17.00	47.7	0.22	10.494	1000	29.0124	0.04
6.00	48.9	4.48	219.072	1000	29.0124	0.76
7.00	47.7	2.4	114.48	1000	29.0124	0.39
8.00	49.4	3.34	164.996	1000	29.0124	0.57
JUMLAH	**609.50**	**160.62**	**8361.04**	**12000.00**	**348.15**	**28.82**
RATA-RATA	**50.79**	**13.39**	**696.75**	**1000**	**29.0124**	**2.40**
MAX	**53.3**	**25.08**	**1304.16**	**1000**	**29.0124**	**4.50**
MIN	**47.7**	**0.22**	**10.494**	**1000**	**29.0124**	**0.04**

Efisiensi PV 10kW/48 V Grup II						
Waktu	**Tegangan DC (V)**	**Arus DC (I)**	**Pout**	**G (W/m²)**	**A (m²)**	**η (%)**
9.00	51.7	28.13	1454.321	1000	29.0124	5.01
10.00	51.3	25.23	1294.299	1000	29.0124	4.46
11.00	52	26.75	1391	1000	29.0124	4.79
12.00	52.3	26.38	1379.674	1000	29.0124	4.76
13.00	53.3	25.28	1347.424	1000	29.0124	4.64
14.00	53.2	22.86	1216.152	1000	29.0124	4.19
15.00	53.2	8.3	441.56	1000	29.0124	1.52
16.00	48.8	2.08	101.504	1000	29.0124	0.35
17.00	47.7	0.16	7.632	1000	29.0124	0.03
6.00	48.9	6.07	296.823	1000	29.0124	1.02
7.00	47.7	2.79	133.083	1000	29.0124	0.46
8.00	49.4	4.25	209.95	1000	29.0124	0.72
JUMLAH	**609.50**	**178.28**	**9273.42**	**12000.00**	**348.15**	**31.96**
RATA-RATA	**50.79**	**14.86**	**772.79**	**1000**	**29.0124**	**2.66**
MAX	**53.3**	**28.13**	**1454.321**	**1000**	**29.0124**	**5.01**
MIN	**47.7**	**0.16**	**7.632**	**1000**	**29.0124**	**0.03**

Efisiensi PV 10kW/48 V Grup III						
Waktu	**Tegangan DC (V)**	**Arus DC (I)**	**Pout**	**G (W/m²)**	**A (m²)**	**η (%)**
9.00	51.7	28.56	1476.552	1000	29.0124	5.09
10.00	51.3	26.19	1343.547	1000	29.0124	4.63
11.00	52	26.79	1393.08	1000	29.0124	4.80
12.00	52.3	26.91	1407.393	1000	29.0124	4.85
13.00	53.3	24.47	1304.251	1000	29.0124	4.50
14.00	53.2	22.16	1178.912	1000	29.0124	4.06
15.00	53.2	8.77	466.564	1000	29.0124	1.61
16.00	48.8	1.96	95.648	1000	29.0124	0.33
17.00	47.7	0.24	11.448	1000	29.0124	0.04
6.00	48.9	6.11	298.779	1000	29.0124	1.03
7.00	47.7	3.11	148.347	1000	29.0124	0.51
8.00	49.4	4.47	220.818	1000	29.0124	0.76
JUMLAH	**609.50**	**179.74**	**9345.34**	**12000.00**	**348.15**	**32.21**
RATA-RATA	**50.79**	**14.98**	**778.78**	**1000**	**29.0124**	**2.68**
MAX	**53.3**	**28.56**	**1476.552**	**1000**	**29.0124**	**5.09**
MIN	**47.7**	**0.24**	**11.448**	**1000**	**29.0124**	**0.04**

Efisiensi PV 4kW/48 V Grup IV						
Waktu	**Tegangan DC (V)**	**Arus DC (I)**	**Pout**	**G (W/m²)**	**A (m²)**	**η (%)**
9.00	51.7	16.58	857.186	1000	29.0124	2.95
10.00	51.3	15.05	772.065	1000	29.0124	2.66
11.00	52	16.12	838.24	1000	29.0124	2.89
12.00	52.3	15.15	792.345	1000	29.0124	2.73
13.00	53.3	12.77	680.641	1000	29.0124	2.35
14.00	53.2	13.34	709.688	1000	29.0124	2.45
15.00	53.2	5.74	305.368	1000	29.0124	1.05
16.00	48.8	1.15	56.12	1000	29.0124	0.19
17.00	47.7	0.13	6.201	1000	29.0124	0.02
6.00	48.9	3.74	182.886	1000	29.0124	0.63
7.00	47.7	1.99	94.923	1000	29.0124	0.33
8.00	49.4	2.9	143.26	1000	29.0124	0.49
JUMLAH	**609.50**	**104.66**	**5438.92**	**12000.00**	**348.15**	**18.75**
RATA-RATA	**50.79**	**8.72**	**453.24**	**1000**	**29.0124**	**1.56**
MAX	**53.3**	**16.58**	**857.186**	**1000**	**29.0124**	**2.95**
MIN	**47.7**	**0.13**	**6.201**	**1000**	**29.0124**	**0.02**

Efisiensi Turbin Angin 1kW/48 V						
Waktu	**v (m/s)**	**Vout DC**	**Iout DC**	**Pout (W)**	**Pangin (W)**	**η (%)**
9.00	1.5	51.7	0	0	8.51	0.00
10.00	1.1	51.3	0	0	3.35	0.00
11.00	3.9	52	0	0	149.51	0.00
12.00	2.3	52.3	0	0	30.67	0.00
13.00	2.3	53.3	0	0	30.67	0.00
14.00	0.2	53.2	0	0	0.02	0.00
15.00	0.5	53.2	0	0	0.32	0.00
16.00	0.5	48.8	0	0	0.32	0.00
17.00	0.2	47.7	0	0	0.02	0.00
18.00	0	46.9	0	0	0.00	-
19.00	0.8	46.6	0	0	1.29	0.00
20.00	1.5	44.8	0	0	8.51	0.00
21.00	0.4	49	0	0	0.16	0.00
22.00	0	46.4	0	0	0.00	-
23.00	1.9	46.7	0	0	17.29	0.00
24.00	0	45.7	0	0	0.00	-
1.00	0	46.2	0	0	0.00	-
2.00	0	46.2	0	0	0.00	-
3.00	1.5	46.2	0	0	8.51	0.00
4.00	1.2	46.1	0	0	4.36	0.00
5.00	0	46.1	0	0	0.00	-
6.00	0	48.9	0	0	0.00	-
7.00	0	47.7	0	0	0.00	-
8.00	0	49.4	0	0	0.00	-
Rata-rata	**0.83**	**48.60**	**0.00**	**0.00**	**10.98**	**0.00**

Hari Ketiga (Sabtu-Minggu/30-31 Desember 2017)

Efisiensi PV 10kW/48 V Grup I						
Waktu	**Tegangan DC (V)**	**Arus DC (I)**	**Pout**	**G (W/m²)**	**A (m²)**	**η (%)**
9.00	50.5	15.01	758.005	1000	29.0124	2.61
10.00	51.8	32.57	1687.126	1000	29.0124	5.82
11.00	50.8	28.25	1435.1	1000	29.0124	4.95
12.00	51.6	24.96	1287.936	1000	29.0124	4.44
13.00	51.2	26.28	1345.536	1000	29.0124	4.64
14.00	50.8	16.77	851.916	1000	29.0124	2.94
15.00	52.1	16.56	862.776	1000	29.0124	2.97
16.00	48.3	5.44	262.752	1000	29.0124	0.91
17.00	47.4	0.77	36.498	1000	29.0124	0.13
6.00	46.4	3.18	147.552	1000	29.0124	0.51
7.00	48.8	5.14	250.832	1000	29.0124	0.86
8.00	51.1	17.57	897.827	1000	29.0124	3.09
JUMLAH	**600.80**	**192.50**	**9823.86**	**12000.00**	**348.15**	**33.86**
RATA-RATA	**50.07**	**16.04**	**818.65**	**1000**	**29.0124**	**2.82**
MAX	**52.1**	**32.57**	**1687.126**	**1000**	**29.0124**	**5.82**
MIN	**46.4**	**0.77**	**36.498**	**1000**	**29.0124**	**0.13**

Efisiensi PV 10kW/48 V Grup II						
Waktu	**Tegangan DC (V)**	**Arus DC (I)**	**Pout**	**G (W/m²)**	**A (m²)**	**η (%)**
9.00	50.5	18.84	951.42	1000	29.0124	3.28
10.00	51.8	34.26	1774.668	1000	29.0124	6.12
11.00	50.8	29.76	1511.808	1000	29.0124	5.21
12.00	51.6	27.46	1416.936	1000	29.0124	4.88
13.00	51.2	27.82	1424.384	1000	29.0124	4.91
14.00	50.8	18.43	936.244	1000	29.0124	3.23
15.00	52.1	17.86	930.506	1000	29.0124	3.21
16.00	48.3	6.5	313.95	1000	29.0124	1.08
17.00	47.4	0.65	30.81	1000	29.0124	0.11
6.00	46.4	4.74	219.936	1000	29.0124	0.76
7.00	48.8	6.47	315.736	1000	29.0124	1.09
8.00	51.1	20.4	1042.44	1000	29.0124	3.59
JUMLAH	**600.80**	**213.19**	**10868.84**	**12000.00**	**348.15**	**37.46**
RATA-RATA	**50.07**	**17.77**	**905.74**	**1000**	**29.0124**	**3.12**
MAX	**52.1**	**34.26**	**1774.668**	**1000**	**29.0124**	**6.12**
MIN	**46.4**	**0.65**	**30.81**	**1000**	**29.0124**	**0.11**

Efisiensi PV 10kW/48 V Grup III						
Waktu	**Tegangan DC (V)**	**Arus DC (I)**	**Pout**	**G (W/m²)**	**A (m²)**	**η (%)**
9.00	50.5	18.98	958.49	1000	29.0124	3.30
10.00	51.8	33.98	1760.164	1000	29.0124	6.07
11.00	50.8	29.97	1522.476	1000	29.0124	5.25
12.00	51.6	27.09	1397.844	1000	29.0124	4.82
13.00	51.2	29.18	1494.016	1000	29.0124	5.15
14.00	50.8	18.87	958.596	1000	29.0124	3.30
15.00	52.1	16.95	883.095	1000	29.0124	3.04
16.00	48.3	6.95	335.685	1000	29.0124	1.16
17.00	47.4	0.85	40.29	1000	29.0124	0.14
6.00	46.4	4.79	222.256	1000	29.0124	0.77
7.00	48.8	6.4	312.32	1000	29.0124	1.08
8.00	51.1	14.75	753.725	1000	29.0124	2.60
JUMLAH	**600.80**	**208.76**	**10638.96**	**12000.00**	**348.15**	**36.67**
RATA-RATA	**50.07**	**17.40**	**886.58**	**1000**	**29.0124**	**3.06**
MAX	**52.1**	**33.98**	**1760.164**	**1000**	**29.0124**	**6.07**
MIN	**46.4**	**0.85**	**40.29**	**1000**	**29.0124**	**0.14**

Efisiensi PV 4kW/48 V Grup IV						
Waktu	**Tegangan DC (V)**	**Arus DC (I)**	**Pout**	**G (W/m²)**	**A (m²)**	**η (%)**
9.00	50.5	11.19	565.095	1000	29.0124	1.95
10.00	51.8	17.68	915.824	1000	29.0124	3.16
11.00	50.8	15.97	811.276	1000	29.0124	2.80
12.00	51.6	15.9	820.44	1000	29.0124	2.83
13.00	51.2	16.63	851.456	1000	29.0124	2.93
14.00	50.8	11.81	599.948	1000	29.0124	2.07
15.00	52.1	12.68	660.628	1000	29.0124	2.28
16.00	48.3	4.62	223.146	1000	29.0124	0.77
17.00	47.4	0.48	22.752	1000	29.0124	0.08
6.00	46.4	2.75	127.6	1000	29.0124	0.44
7.00	48.8	4.06	198.128	1000	29.0124	0.68
8.00	51.1	7.64	390.404	1000	29.0124	1.35
JUMLAH	**600.80**	**121.41**	**6186.70**	**12000.00**	**348.15**	**21.32**
RATA-RATA	**50.07**	**10.12**	**515.56**	**1000**	**29.0124**	**1.78**
MAX	**52.1**	**17.68**	**915.824**	**1000**	**29.0124**	**3.16**
MIN	**46.4**	**0.48**	**22.752**	**1000**	**29.0124**	**0.08**

Efisiensi Turbin Angin 1kW/48 V						
Waktu	**v (m/s)**	**Vout DC**	**Iout DC**	**Pout (W)**	**Pangin (W)**	**η (%)**
9.00	2.5	50.5	0	0	39.38	0.00
10.00	0	51.8	0	0	0.00	-
11.00	0.2	50.8	0	0	0.02	0.00
12.00	1.6	51.6	0	0	10.32	0.00
13.00	2.5	51.2	0	0	39.38	0.00
14.00	3.3	50.8	0	0	90.58	0.00
15.00	2.7	52.1	0	0	49.61	0.00
16.00	1.2	48.3	0	0	4.36	0.00
17.00	0	47.4	0	0	0.00	-
18.00	0.6	46.3	0	0	0.54	0.00
19.00	0.6	46.7	0	0	0.54	0.00
20.00	0.2	46.1	0	0	0.02	0.00
21.00	0	48.8	0	0	0.00	-
22.00	0	47.7	0	0	0.00	-
23.00	0	47.8	0	0	0.00	-
24.00	0	47.8	0	0	0.00	-
1.00	0	47.3	0	0	0.00	-
2.00	0	46.5	0	0	0.00	-
3.00	0	46.4	0	0	0.00	-
4.00	0	46	0	0	0.00	-
5.00	0	45.9	0	0	0.00	-
6.00	0	46.4	0	0	0.00	-
7.00	1.3	48.8	0	0	5.54	0.00
8.00	1.8	51.1	0	0	14.70	0.00
Rata-rata	**0.77**	**48.50**	**0.00**	**0.00**	**10.62**	**0.00**

Perhitungan Efisiensi PLTH Bayu Baru

(Sistem 240 V)

Hari Pertama (Kamis-Jum'at/28-29 Desember 2017)

Efisiensi PV 15kW/240 V						
Waktu	**Tegangan DC (V)**	**Arus DC (I)**	**Pout**	**G (W/m²)**	**A (m²)**	**η (%)**
9.00	246.1	4.32	1063.152	1000	79.06	1.34
10.00	245.2	4.35	1066.62	1000	79.06	1.35
11.00	252.4	4.61	1163.564	1000	79.06	1.47
12.00	260.9	7.09	1849.781	1000	79.06	2.34
13.00	274	8.09	2216.66	1000	79.06	2.80
14.00	276.3	6.14	1696.482	1000	79.06	2.15
15.00	273.3	3.3	901.89	1000	79.06	1.14
16.00	269.8	1.98	534.204	1000	79.06	0.68
17.00	261.9	0.39	102.141	1000	79.06	0.13
6.00	12.16	0.45	5.472	1000	79.06	0.01
7.00	46.4	3.08	142.912	1000	79.06	0.18
8.00	232.8	4.42	1028.976	1000	79.06	1.30
Jumlah	**2651.26**	**48.22**	**11771.85**	**12000.00**	**948.72**	**14.89**
Rata-rata	**220.94**	**4.02**	**980.99**	**1000**	**79.06**	**1.24**
Max	**276.3**	**8.09**	**2216.66**	**1000**	**79.06**	**2.80**
Min	**12.16**	**0.39**	**5.472**	**1000**	**79.06**	**0.01**

Efisiensi Turbin Angin 1kW/240 V						
Waktu	**v (m/s)**	**Vout DC**	**Iout DC**	**Pout (W)**	**Pangin (W)**	**η (%)**
9.00	1.9	246.1	0	0	17.29	0.00
10.00	0	245.2	0	0	0.00	-
11.00	0.6	252.4	0	0	0.54	0.00
12.00	1.8	260.9	0	0	14.70	0.00
13.00	3.4	274	0	0	99.06	0.00
14.00	0.6	276.3	0	0	0.54	0.00
15.00	2.3	273.3	0	0	30.67	0.00
16.00	0	269.8	0	0	0.00	-
17.00	0.6	261.9	0	0	0.54	0.00
18.00	0.5	244.3	0	0	0.32	0.00
19.00	0	240.4	0	0	0.00	-
20.00	1.3	236.4	0	0	5.54	0.00
21.00	2.9	232.4	0	0	61.47	0.00
22.00	1.1	229.3	0	0	3.35	0.00
23.00	0	226.4	0	0	0.00	-
24.00	0	223.8	0	0	0.00	-
1.00	1.8	221.9	0	0	14.70	0.00
2.00	0	218.4	0	0	0.00	-
3.00	1.3	213.3	0	0	5.54	0.00
4.00	1.1	209.3	0	0	3.35	0.00
5.00	2.7	206.8	0	0	49.61	0.00
6.00	1.5	12.16	0	0	8.51	0.00
7.00	1.2	46.4	0	0	4.36	0.00
8.00	0.9	232.8	0	0	1.84	0.00
Rata-rata	**1.15**	**223.08**	**0.00**	**0.00**	**13.41**	**0.00**

Hari Kedua (Jum'at-Sabtu/29-30 Desember 2017)

Efisiensi PV 15kW/240 V						
Waktu	**Tegangan DC (V)**	**Arus DC (I)**	**Pout**	**G (W/m²)**	**A (m²)**	**η (%)**
9.00	255.8	8.6	2199.88	1000	79.06	2.78
10.00	264.2	8.96	2367.232	1000	79.06	2.99
11.00	269.3	5.08	1368.044	1000	79.06	1.73
12.00	274.4	4.07	1116.808	1000	79.06	1.41
13.00	278.4	3.98	1108.032	1000	79.06	1.40
14.00	280.7	3.07	861.749	1000	79.06	1.09
15.00	269.4	1.02	274.788	1000	79.06	0.35
16.00	262.7	0.14	36.778	1000	79.06	0.05
17.00	244.8	0.03	7.344	1000	79.06	0.01
6.00	230.9	0.78	180.102	1000	79.06	0.23
7.00	232.2	0.38	88.236	1000	79.06	0.11
8.00	240.5	0.54	129.87	1000	79.06	0.16
Jumlah	**3103.30**	**36.65**	**9738.86**	**12000.00**	**948.72**	**12.32**
Rata-rata	**258.61**	**3.05**	**811.57**	**1000**	**79.06**	**1.03**
Max	**280.7**	**8.96**	**2367.23**	**1000**	**79.06**	**2.99**
Min	**230.9**	**0.03**	**7.344**	**1000**	**79.06**	**0.01**

Efisiensi Turbin Angin 1kW/240 V						
Waktu	**v (m/s)**	**Vout DC**	**Iout DC**	**Pout (W)**	**Pangin (W)**	**η (%)**
9.00	1.5	255.8	0	0	8.51	0.00
10.00	1.1	264.2	0	0	3.35	0.00
11.00	3.9	269.3	0	0	149.51	0.00
12.00	2.3	274.4	0	0	30.67	0.00
13.00	2.3	278.4	0	0	30.67	0.00
14.00	0.2	280.7	0	0	0.02	0.00
15.00	0.5	269.4	0	0	0.32	0.00
16.00	0.5	262.7	0	0	0.32	0.00
17.00	0.2	244.8	0	0	0.02	0.00
18.00	0	244	0	0	0.00	-
19.00	0.8	243.1	0	0	1.29	0.00
20.00	1.5	239.6	0	0	8.51	0.00
21.00	0.4	238.6	0	0	0.16	0.00
22.00	0	233.9	0	0	0.00	-
23.00	1.9	232.5	0	0	17.29	0.00
24.00	0	231.3	0	0	0.00	-
1.00	0	229.3	0	0	0.00	-
2.00	0	227.9	0	0	0.00	-
3.00	1.5	225.5	0	0	8.51	0.00
4.00	1.2	222.5	0	0	4.36	0.00
5.00	0	19.32	0	0	0.00	-
6.00	0	230.9	0	0	0.00	-
7.00	0	232.2	0	0	0.00	-
8.00	0	240.5	0	0	0.00	-
Rata-rata	**0.83**	**237.12**	**0.00**	**0.00**	**10.98**	**0.00**

Hari Ketiga (Sabtu-Minggu/30-31 Desember 2017)

Efisiensi PV 15kW/240 V						
Waktu	**Tegangan DC (V)**	**Arus DC (I)**	**Pout**	**G (W/m²)**	**A (m²)**	**η (%)**
9.00	243.2	1.84	447.488	1000	79.06	0.57
10.00	245	2.15	526.75	1000	79.06	0.67
11.00	260.5	5.44	1417.12	1000	79.06	1.79
12.00	264.1	5.45	1439.345	1000	79.06	1.82
13.00	266.1	3.77	1003.197	1000	79.06	1.27
14.00	265.1	1.91	506.341	1000	79.06	0.64
15.00	268.2	2.42	649.044	1000	79.06	0.82
16.00	262.3	0.78	204.594	1000	79.06	0.26
17.00	244	0.1	24.4	1000	79.06	0.03
6.00	238.1	0.91	216.671	1000	79.06	0.27
7.00	245.5	3.06	751.23	1000	79.06	0.95
8.00	256.8	7.48	1920.864	1000	79.06	2.43
Jumlah	**3058.90**	**35.31**	**9107.04**	**12000.00**	**948.72**	**11.52**
Rata-rata	**254.91**	**2.94**	**758.92**	**1000**	**79.06**	**0.96**
Max	**268.2**	**7.48**	**1920.86**	**1000**	**79.06**	**2.43**
Min	**238.1**	**0.1**	**24.4**	**1000**	**79.06**	**0.03**

Efisiensi Turbin Angin 1kW/240 V						
Waktu	**v (m/s)**	**Vout DC**	**Iout DC**	**Pout (W)**	**Pangin (W)**	**η (%)**
9.00	2.5	243.2	0	0	39.38	0.00
10.00	0	245	0	0	0.00	-
11.00	0.2	260.5	0	0	0.02	0.00
12.00	1.6	264.1	0	0	10.32	0.00
13.00	2.5	266.1	0	0	39.38	0.00
14.00	3.3	265.1	0	0	90.58	0.00
15.00	2.7	268.2	0	0	49.61	0.00
16.00	1.2	262.3	0	0	4.36	-
17.00	0	244	0	0	0.00	-
18.00	0.6	240	0	0	0.54	0.00
19.00	0.6	233.6	0	0	0.54	-
20.00	0.2	240	0	0	0.02	0.00
21.00	0	233.6	0	0	0.00	-
22.00	0	231.7	0	0	0.00	-
23.00	0	229.6	0	0	0.00	-
24.00	0	216.8	0	0	0.00	-
1.00	0	212.1	0	0	0.00	-
2.00	0	180.3	0	0	0.00	-
3.00	0	160.8	0	0	0.00	-
4.00	0	146.7	0	0	0.00	-
5.00	0	124.9	0	0	0.00	-
6.00	0	238.1	0	0	0.00	-
7.00	1.3	245.5	0	0	5.54	0.00
8.00	1.8	256.8	0	0	14.70	0.00
Rata-rata	**0.77**	**229.54**	**0.00**	**0.00**	**10.62**	**0.00**

Rekapitulasi Perhitungan Efisiensi PLTH Bayu Baru

1. Efisiensi Sistem 48 V

Efisiensi Sistem 48 V			
Waktu	**Hari Pertama**	**Hari Kedua**	**Hari Ketiga**
9.00	12.63	17.12	11.14
10.00	12.96	16.07	21.16
11.00	13.93	16.98	18.2
12.00	16.34	16.74	16.97
13.00	16.67	15.76	17.63
14.00	16.1	14.61	11.54
15.00	12.55	5.52	11.5
16.00	7.51	1.15	3.91
17.00	0.77	0.12	0.45
18.00	0	-	0
19.00	-	0	0
20.00	0	0	0
21.00	0	0	-
22.00	0	-	-
23.00	-	0	-
24.00	-	-	-
1.00	0	-	-
2.00	-	-	-
3.00	0	0	-
4.00	0	0	-
5.00	0	-	-
6.00	1.3	3.44	2.47
7.00	8.74	1.69	3.71
8.00	13.36	2.55	10.63
Jumlah	**132.85**	**111.74**	**129.32**
Rata-rata	**6.64**	**6.21**	**8.62**
Max	**16.67**	**17.12**	**21.16**
Min	**0**	**0**	**0**

2. Efisiensi Sistem 240 V

Efisiensi Sistem 240 V			
Waktu	**Hari Pertama**	**Hari Kedua**	**Hari Ketiga**
9.00	1.34	2.78	0.57
10.00	1.35	2.99	0.67
11.00	1.47	1.73	1.79
12.00	2.34	1.41	1.82
13.00	2.8	1.4	1.27
14.00	2.15	1.09	0.64
15.00	1.14	0.35	0.82
16.00	0.68	0.05	0.26
17.00	0.13	0.01	0.03
18.00	0	-	0
19.00	-	0	-
20.00	0	0	0
21.00	0	0	-
22.00	0	-	-
23.00	-	0	-
24.00	-	-	-
1.00	0	-	-
2.00	-	-	-
3.00	0	0	-
4.00	0	0	-
5.00	0	-	-
6.00	0.01	0.23	0.27
7.00	0.18	0.11	0.95
8.00	1.3	0.16	2.43
Jumlah	**14.89**	**12.31**	**11.52**
Rata-rata	**0.74**	**0.68**	**0.82**
Max	**2.8**	**2.99**	**2.43**
Min	**0**	**0**	**0**

LAMPIRAN C

Data Teknis Komponen PLTH Bayu Baru

1. Data Teknis Panel Surya

SY-100P	
STC	
Irradiance	1000 W/m²
AM	1.5 Spectrum
Temperature	25°C
Maximum Power	100 W
Optimum Operating Voltage (V_{mp})	18 V
Open Operating Current (I_{mp})	5.56 A
Open Circuit Voltage (V_{oc})	22.36 V
Short Circuit Current (I_{sc})	6.17 A
Nominal Operating Cell Temperature	45±2°C
Temperature coofecience of P_m(%)	-0.47
Temperature coofecience of V_{oc} (%)	-0.37
Temperature coofecience of I_{sc} (%)	0.045
Operating Temperature (°C)	Minus 40 to 80
Maximum System Voltage	1000 V DC
Power Tolerance	>0%
Surface Maximum Load Capacity	60 m/s
Dimension	1180 x 670 x 35 (mm)

SY-100P	
Peak Circuit Voltage (V_{oc})	40.2 V
Max Power Voltage (V_{mp})	34.2 V
Short Circuit Current (I_{sc})	3.6 A
Max Power Current (I_{mp})	2.93 A
Power Allowance Range	Positive Allowance
Maximum System Voltage	DC 1000 V
Wind Resistance	2400 Pa
Temperature Range	Minus 40°C to 85°C
Weigth	15 kg
Dimension (mm)	1580 x 808 x 35
STC	AM-1.5 E-1000 W/m²

Skytech lar SIP-220	
STC	AM = 1.5
	E = 1000 W/m²
	Temp = 25°C
Rated Power (P_{max})	220 W

Open Circuit Voltage (V_{oc})	36.24 V
Short Circuit Current (I_{sc})	7.93 A
Max Power Voltage (V_{mp})	28.82 V
Max Power Current (I_{mp})	7.39 A
System Voltage	12 V
Maximum System Voltage	1000 V
Weight	19 kg
Dimension	1637 x 987 x 45 (mm)

eLsol eS100236-P	
STC	AM = 1.5
	E = 1000 W/m²
	Temp = 25°C
Maximum Power	100 W_p
Open Circuit Voltage (V_{oc})	21.75 V
Short Circuit Current (I_{sc})	6.5 A
Max Power Voltage (V_{mp})	17.24 V
Max Power Current (I_{mp})	5.82 A
Operating Temperature	Minus 40°C to 50°C
Dimension	1180 x 670 x 35 (mm)

2. Data Teknis Turbin Angin

Turbin Angin 1kW/240V	
P_{rated}	**1000 W**
P_{max}	1500 W
V_{max}	240 V
I_{max}	4.17 A
Kecepatan Angin Cut In	3.5 m/s < V_{angin}< 25 m/s
Kecepatan Angin Cut Off	V_{angin}< 3.5 m/s dan V_{angin}> 25 m/s
Kecepatan Rotasi	375 rpm
Generator 3 Phase	1500 Watt
Sifat Magnet Generator	Magnet Permanen
Tinggi Menara	15 m
Jumlah Sudu	3 Buah
Panjang Sudu	1450 mm
Berat Sudu	2.45 kg
Bahan Sudu	Fiber Reinforced
Pengarah Turbin	Plat Ekor

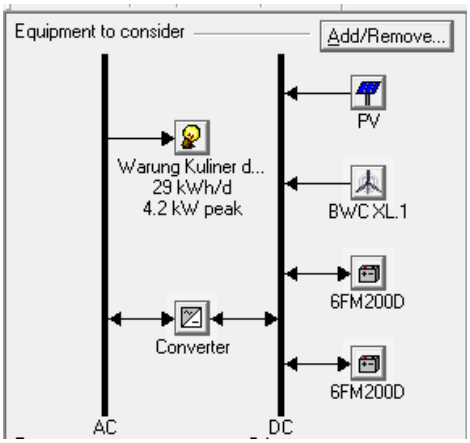
Turbin Angin 1kW/48V		
Item	Description	Parameter
Generator	P_{rated}	1 kW
	V_{out}	48 V
	Kecepatan Rotasi	400 rpm
	P_{max}	
	Kecepatan Angin Start-up	3 m/s
	Rated Kecepatan Angin	10 m/s
	Bekerja Pada Kecepatan Angin	3-25 m/s
	Batas Kecepatan Angin Aman	40 m/s
Blade	Panjang	1450 mm
	Bahan	Fiber Rainforced
	Jumlah Sudu	3 Buah
	Pengarah Turbin	Plat Ekor
	Tinggi Tower	15 m

LAMPIRAN D

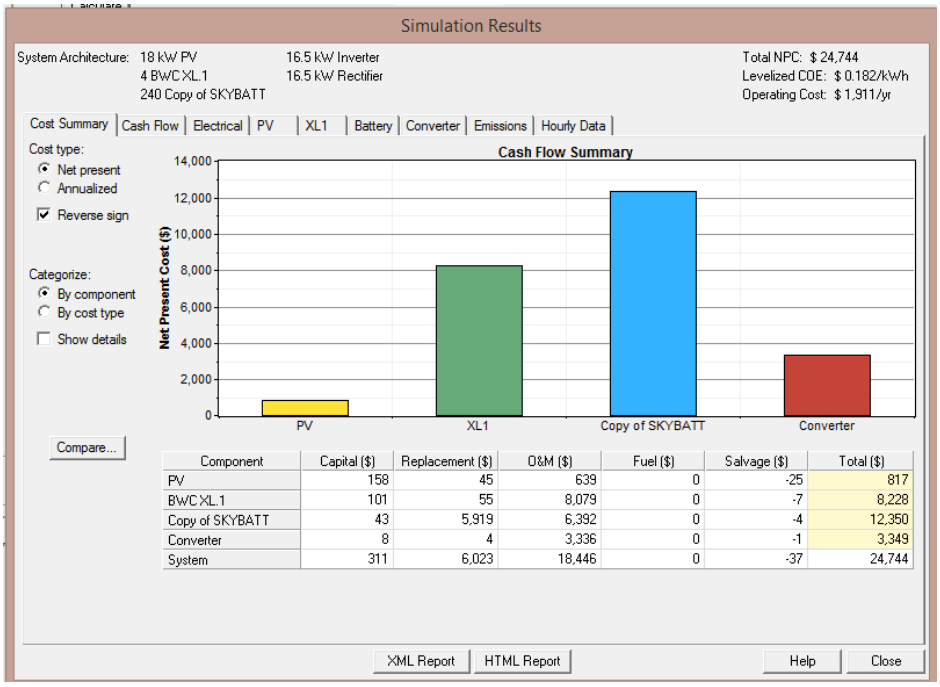
Hasil Simulasi *Software* HOMER

1. Simulasi HOMER dengan Beban Warung Kuliner Barat, Tengah, Timur dan Kantor.

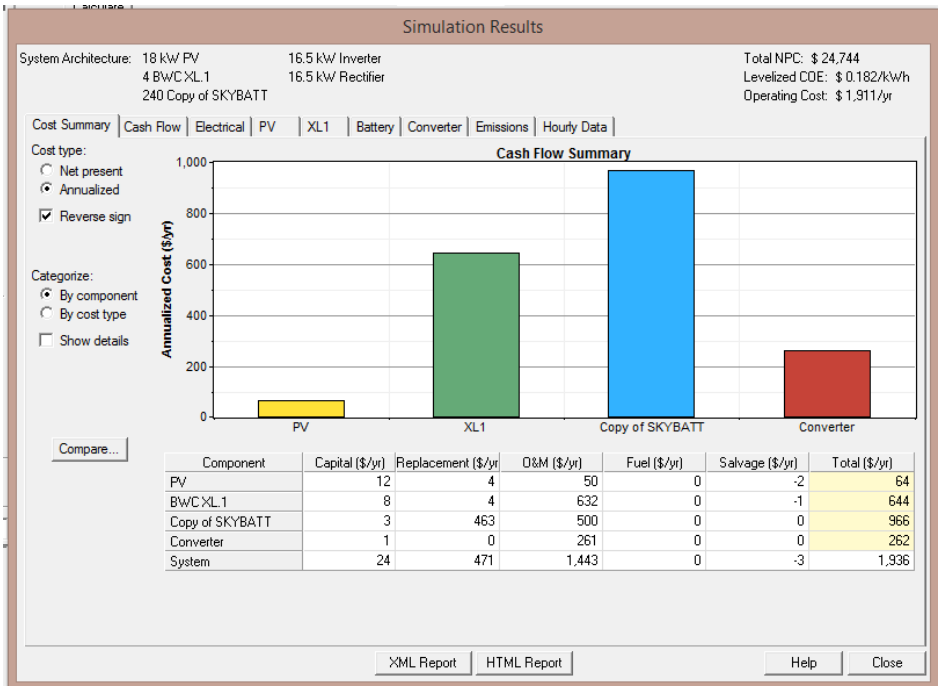
- Diagram Skematik



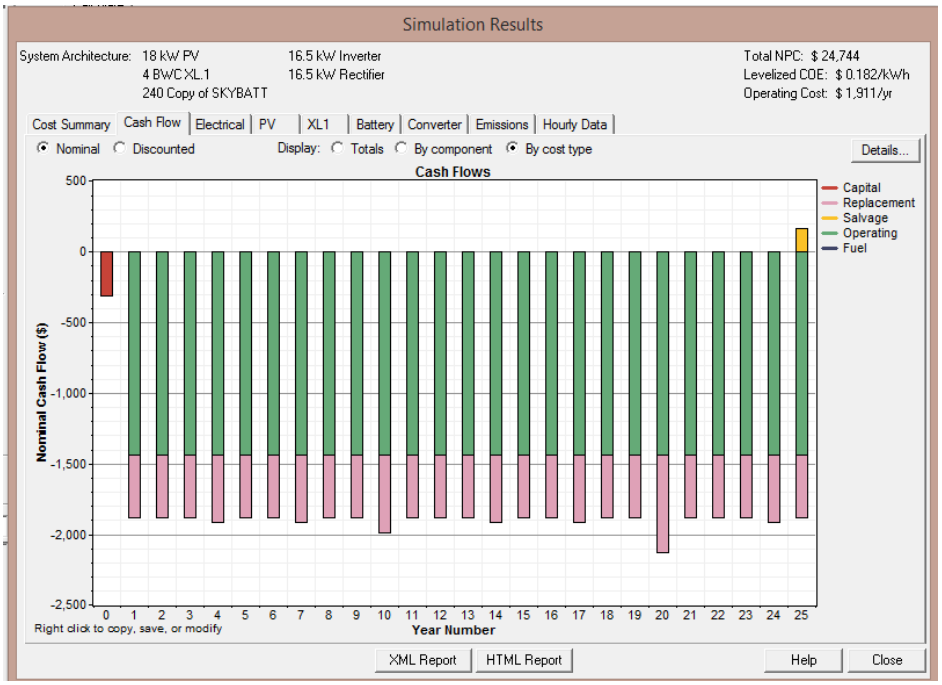
- NPC Summary



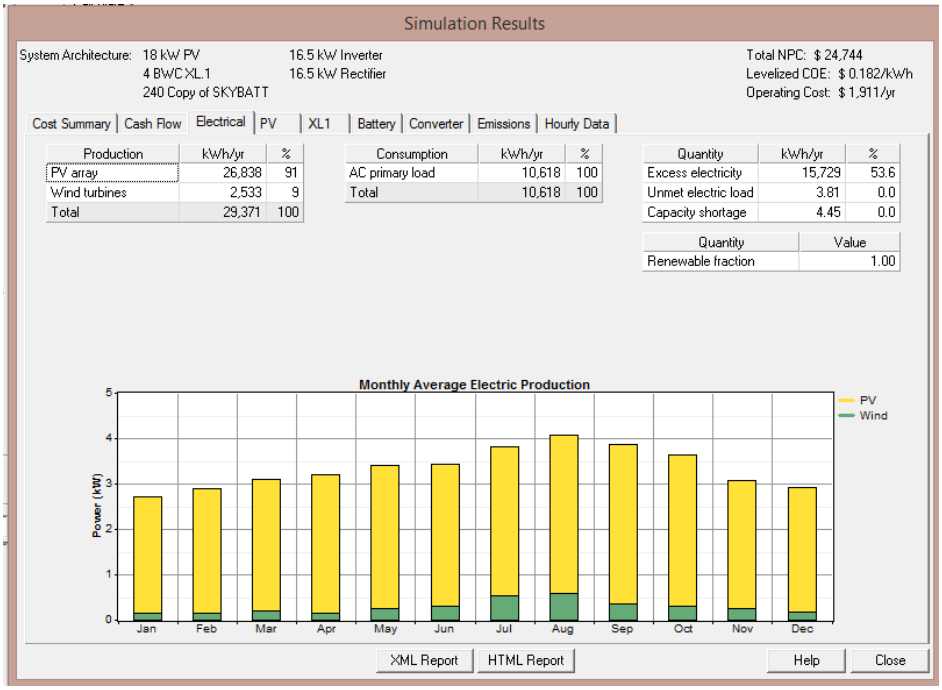
- Annualized Summary



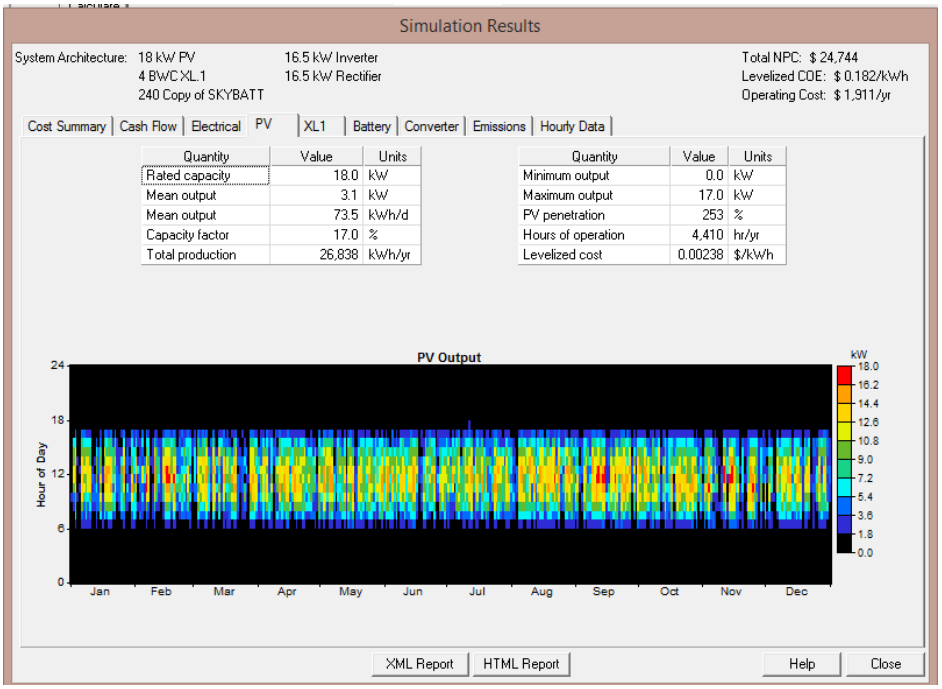
- Cash Flows



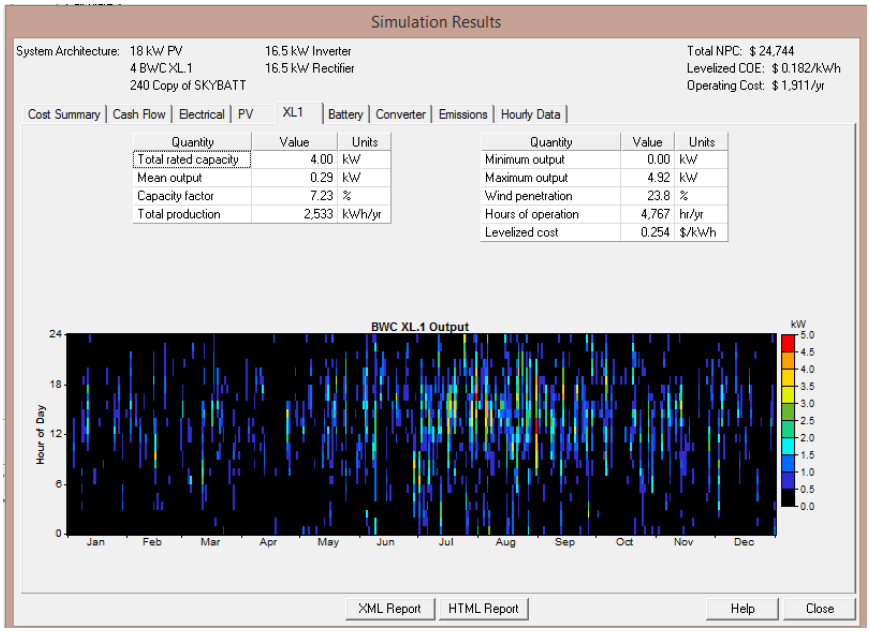
- Hasil Energi Listrik



- Hasil Energi Listrik Panel Surya

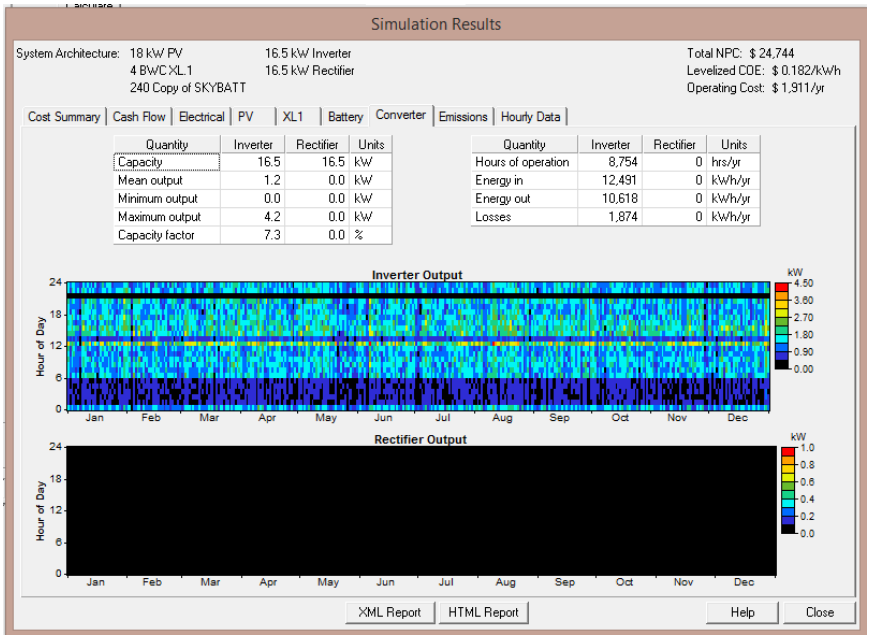


- Hasil Energi Listrik Turbin Angin



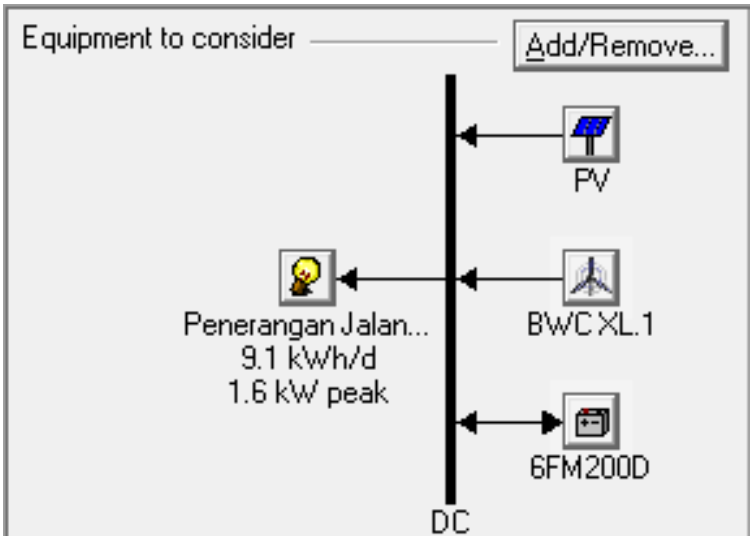
- Baterai

- Inverter/Converter

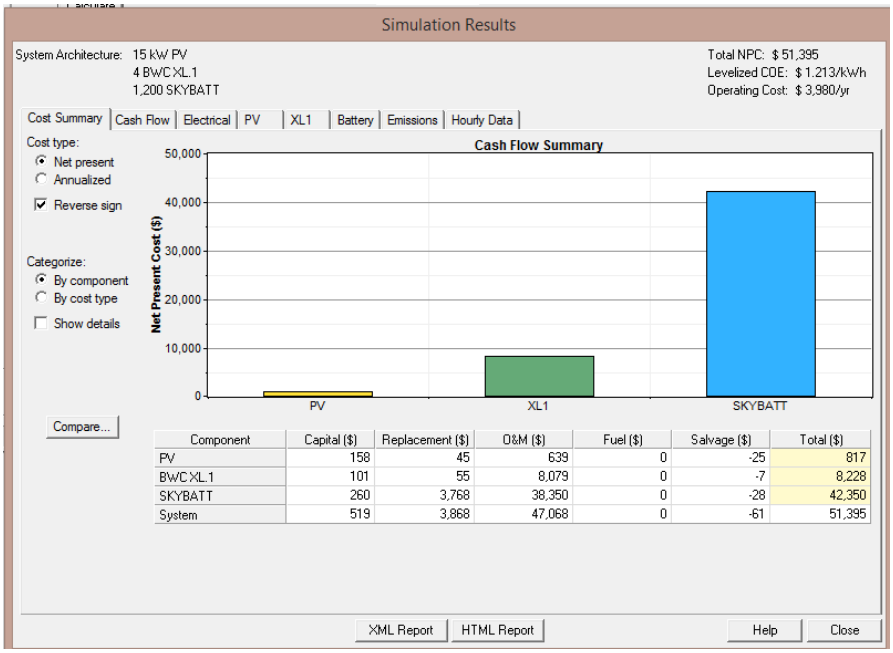


2. Simulasi HOMER dengan Beban Penerangan Jalan Umum.

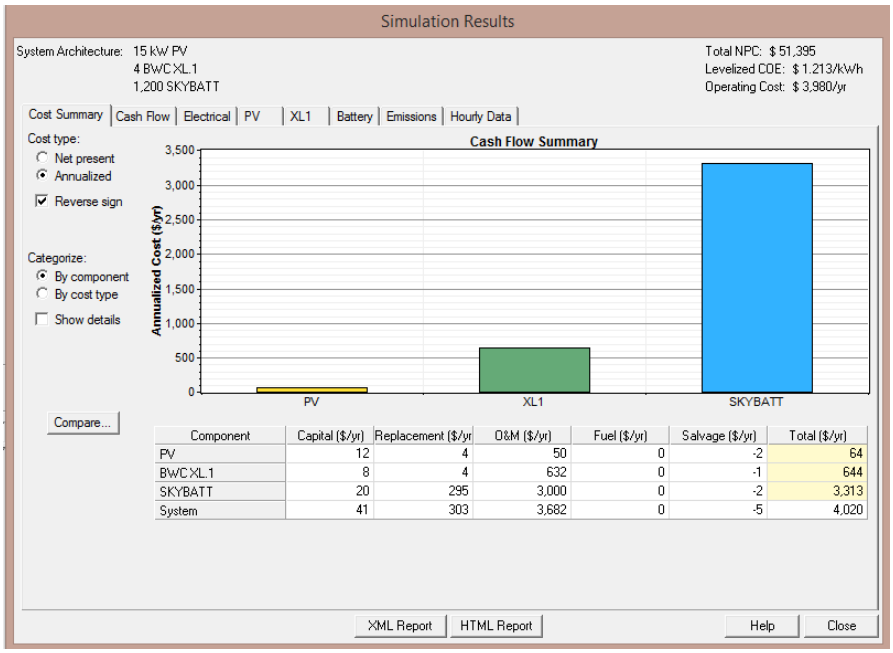
- Diagram Skematik



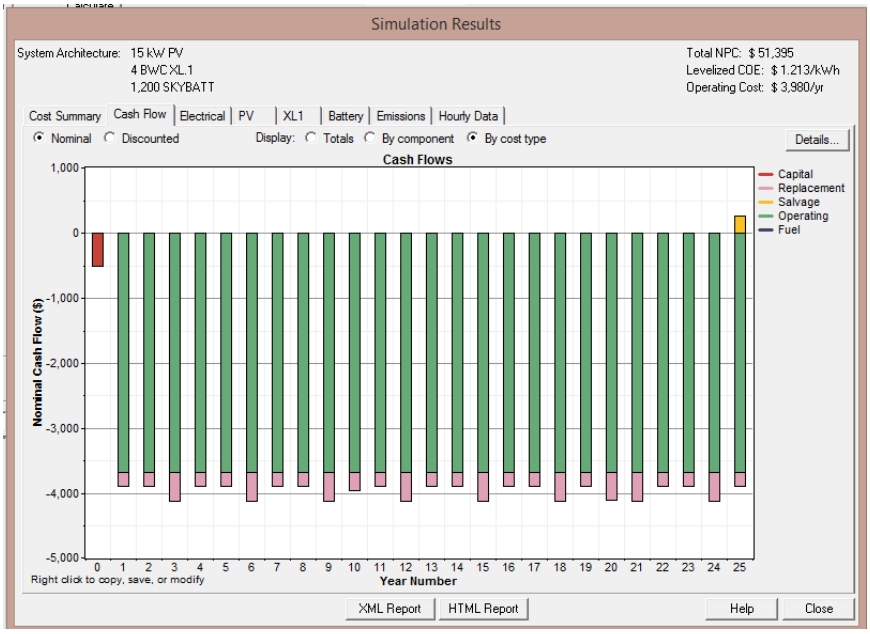
- NPC Summary



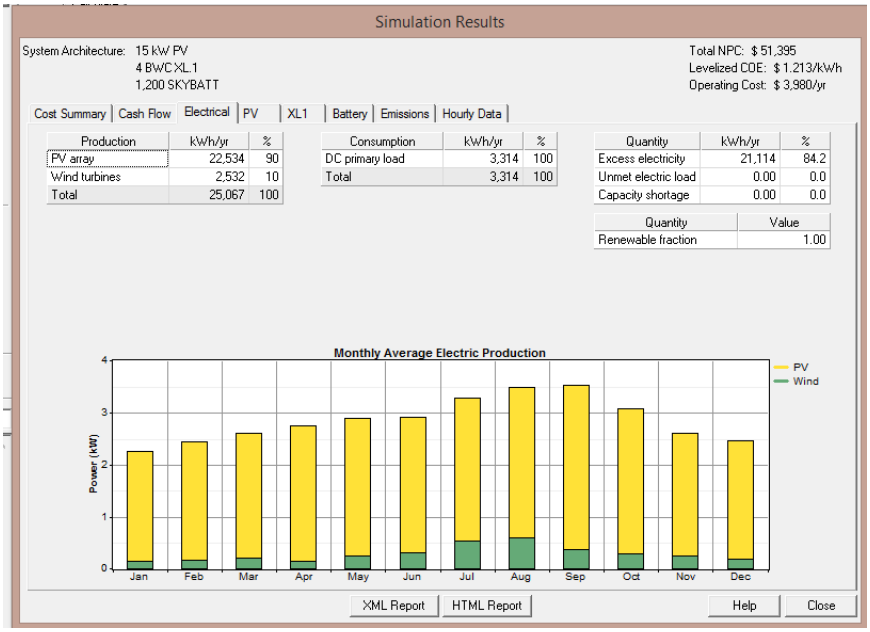
- Annualized Summary



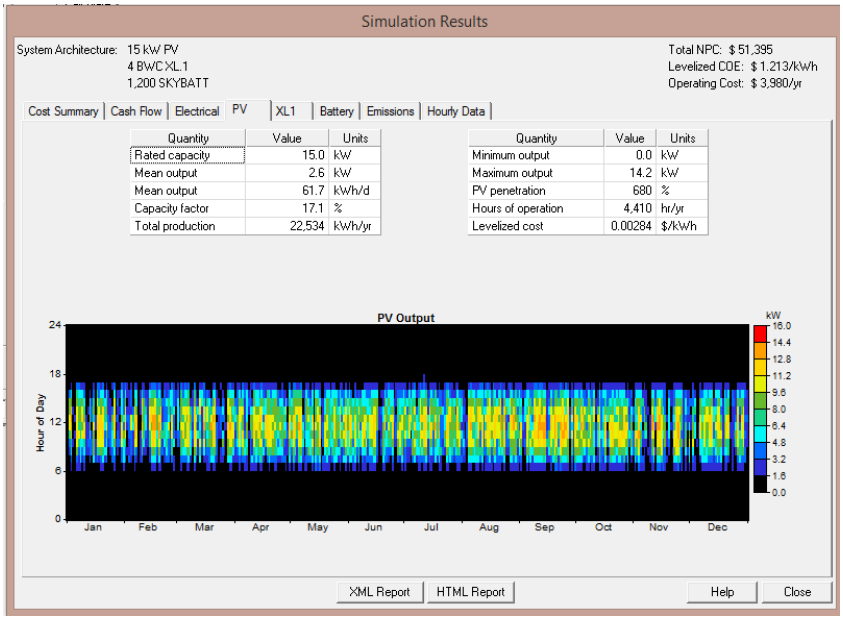
- Cash Flows



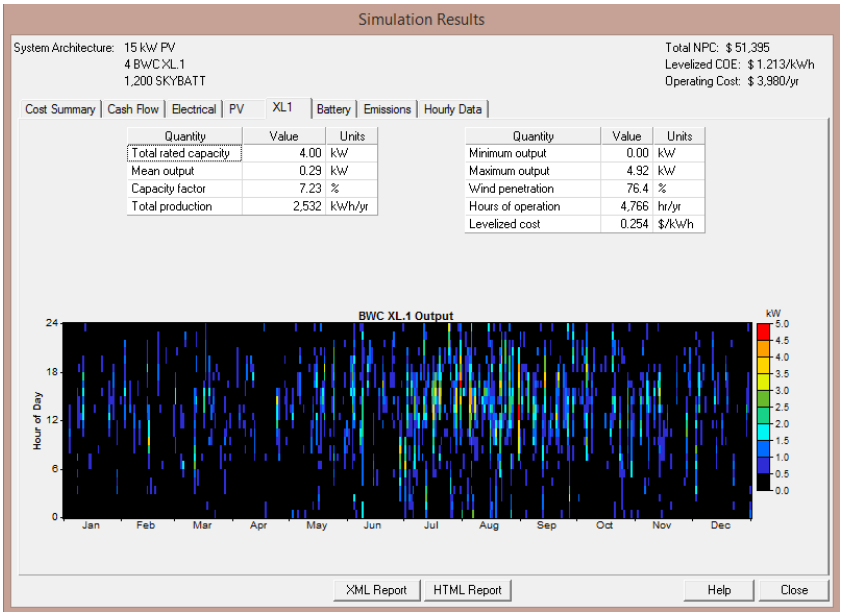
- Hasil Energi Listrik



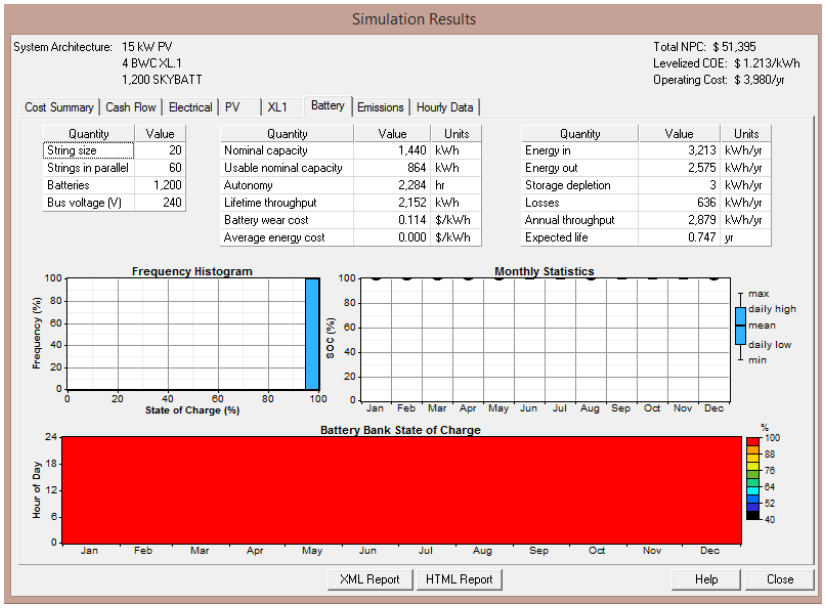
- Hasil Energi Listrik Panel Surya



- Hasil Energi Listrik Turbin Angin

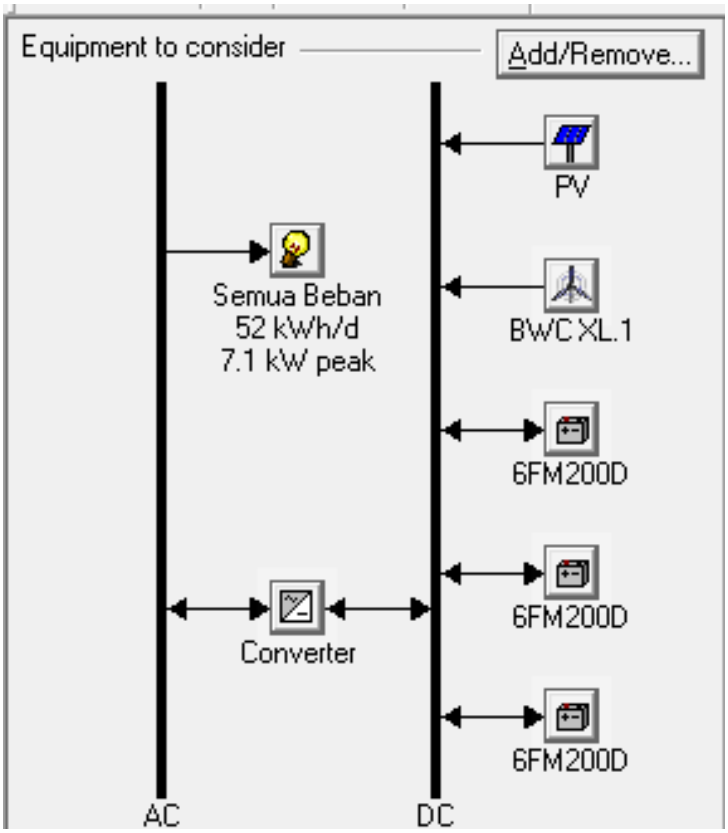


- Baterai

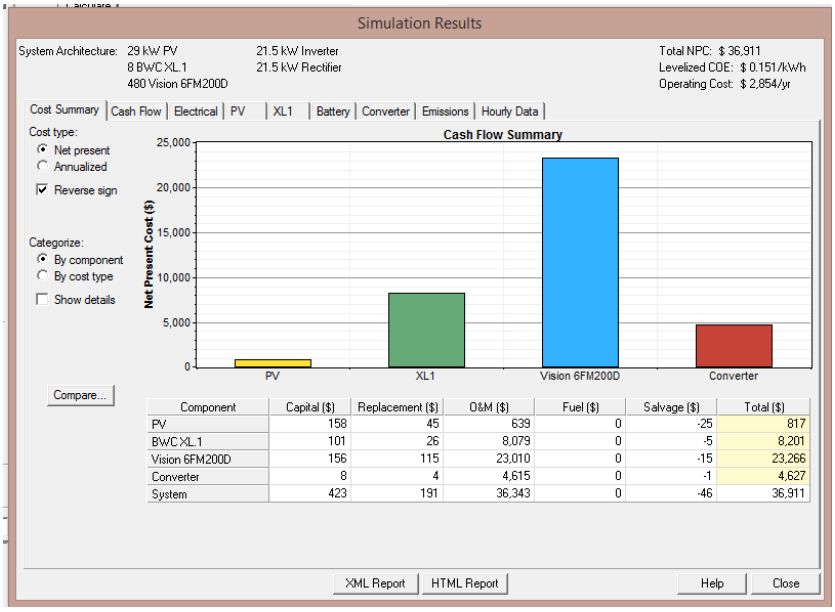


3. Simulasi HOMER dengan Beban Keseluruhan PLTH Bayu Baru.

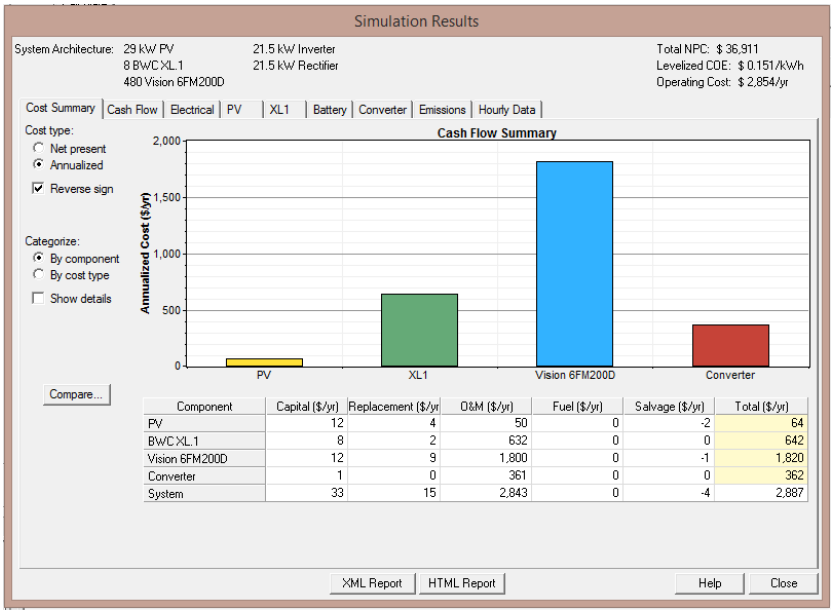
- Diagram Skematik



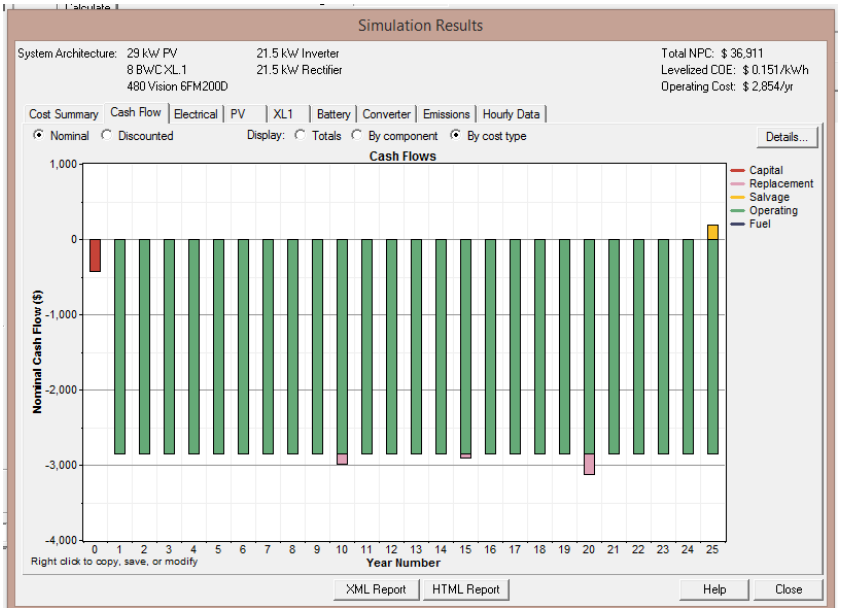
- NPC Summary



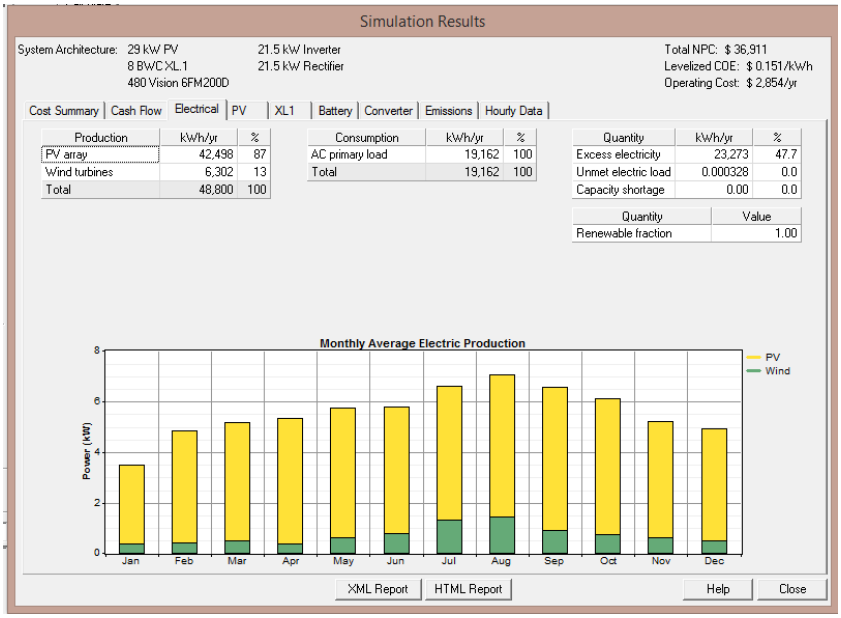
- Annualized Summary



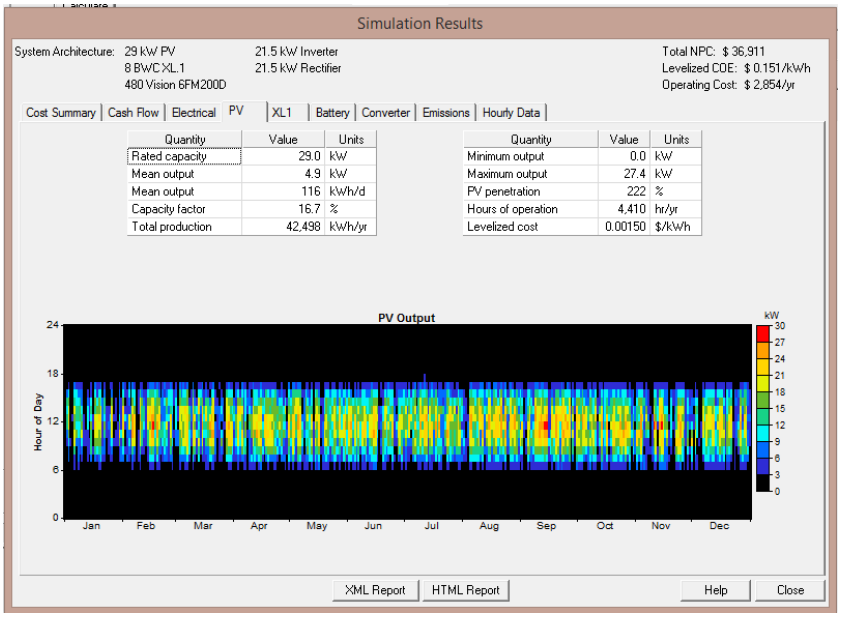
- Cash Flows



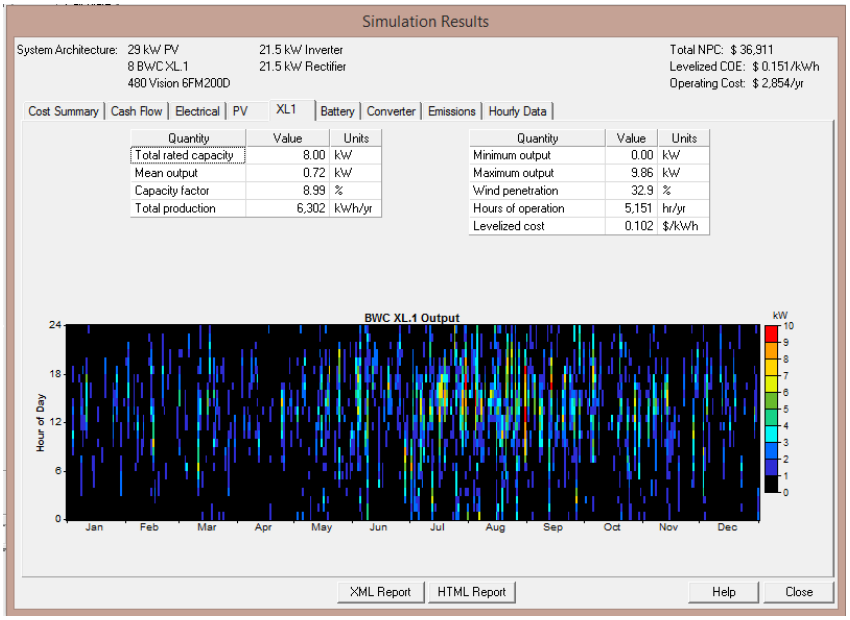
- Hasil Energi Listrik



- Hasil Energi Listrik Panel Surya



- Hasil Energi Listrik Turbin Angin



- Baterai


Simulation Results
System Architecture: 29 kW PV
8 BWC XL.1
480 Vision 6FM200D
21.5 kW Inverter
21.5 kW Rectifier
Total NPC: $ 36,911
Levelized COE: $ 0.151/kWh
Operating Cost: $ 2,854/yr
Cost Summary | Cash Flow | Electrical | PV | XL1 | Battery | Converter | Emissions | Hourly Data
Quantity | Value
String size | 20
Strings in parallel | 24
Batteries | 480
Bus voltage (V) | 240
Quantity | Value | Units
Nominal capacity | 1,152 | kWh
Usable nominal capacity | 691 | kWh
Autonomy | 316 | hr
Lifetime throughput | 440,160 | kWh
Battery wear cost | 0.000 | $/kWh
Average energy cost | 0.000 | $/kWh
Quantity | Value | Units
Energy in | 15,208 | kWh/yr
Energy out | 12,226 | kWh/yr
Storage depletion | 69 | kWh/yr
Losses | 2,914 | kWh/yr
Annual throughput | 13,669 | kWh/yr
Expected life | 10.0 | yr
Frequency Histogram
Frequency (%)
State of Charge (%)
Monthly Statistics
SOC (%)
max
daily high
mean
daily low
min
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Battery Bank State of Charge
Hour of Day
%
XML Report
HTML Report
Help
Close