



INSTALLATION REPORT

Site name: **Ine Primary School**

Atoll: **Arno**

Beneficiary: **Ministry of Education**

PV System Rating: **6.12kWp** System DC Voltage (nom.): **48V** AC output: **110V / 60 Hz**

GPS site coordinates:

Installation dates: 26 June – 6th July 2009 PV system Commissioning date: 3 July 2009

Contracted installer: **Marshall's Energy Company**

Equipment supplied by: **I.F.E.**

- **Solar Charge Controllers**

Make	Model	Qty	Serial numbers	Rating per unit
OutBack Power Systems	FLEXmax 80	2	FM8000414 FM8001434	80 Amp continuous at 40°C ambient

- **Charge Controller Set points**

	V _{PC}	V _{SYSTEM}	Duration	Interval
Float	2.30 V	55.2 V	N/A	N/A
Absorb	2.46 V	59 V	60 minutes	N/A
Equalisation	2.5 V	60 V	1 hour	30 days

- **Inverters**

Make	Model	Qty	Serial numbers	Rating per unit
SMA	Sunny Island SI 5048U	2 Master Slave	1260002867	Continuous output at 45°C: 4000W

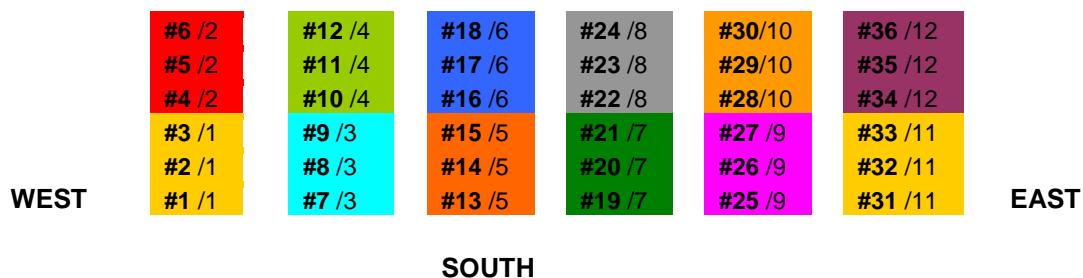
- **Battery Bank**

Make	Model	Qty	Serial numbers	Rating per unit
Exide France	Opzs Solar 3100 NVSL023100DCOFA	24	N/A	2100 Ah at C 20

• PV Modules

Make	Model	Qty	Serial numbers	Rating per unit
Conergy	SC 170 MA	36	See below	170 W at STC

ID#	String#	Serial Number	ID#	String#	Serial Number
1	1	SF1604M0810AN 0094	19	7	SF1605M0810AO 0430
2	1	SF1604M0810AN 0128	20	7	SF1605M0810AO 0086
3	1	SF1604M0810AN 0148	21	7	SF1605M0810AN 0480
4	2	SF1604M0810AN 0150	22	8	SF1605M0810AN 0704
5	2	SF1604M0810AN 0134	23	8	SF1605M0810AN 0764
6	2	SF1605M0810AN 0092	24	8	SF1605M0810AN 0553
7	3	SF1604M0810AN 0029	25	9	SF1604M0810AN 0107
8	3	SF1604M0810AN 0089	26	9	SF1604M0810AN 0088
9	3	SF1604M0810AN 0053	27	9	SF1604M0810AN 0149
10	4	SF1604M0810AN 0015	28	10	SF1605M0810AO 0301
11	4	SF1604M0810AN 0142	29	10	SF1605M0810AO 0306
12	4	SF1604M0810AN 0010	30	10	SF1605M0810AO 0433
13	5	SF1605M0810AO 0403	31	11	SF1605M0810AO 0333
14	5	SF1605M0810AO 0373	32	11	SF1605M0810AO 0371
15	5	SF1605M0810AO 0187	33	11	SF1605M0810AO 0126
16	6	SF1605M0810AO 0405	34	12	SF1605M0810AO 0249
17	6	SF1604M0810AN 0133	35	12	SF1604M0810AN 0093
18	6	SF1604M0810AN 0130	36	12	SF1605M0810AO 0279



PV arrangement showing string number and module number in **bold**

• Battery Data:

Nominal Battery Voltage: **48 V**

Nominal Cell Voltage: **2V / cell**

Nominal Battery Acid SG: **1.230**

Volume of acid used: **910 litres**

The battery bank was charged with the solar system until the chargers indicated a Float condition was reached. The following readings were then taken:

Date: **3 July 2009** Time: **Noon** Temp: **32°C** SOC (as per inverter meter): **92%**

Battery Readings at Commissioning					
Cell #	Specific Gravity	Cell Voltage	Cell #	Specific Gravity	Cell Voltage
1	1.230	2.31	13	1.230	2.16
2	1.230	2.31	14	1.230	2.14
3	1.230	2.31	15	1.230	2.30
4	1.230	2.32	16	1.230	2.15
5	1.230	2.32	17	1.235	2.18
6	1.230	2.33	18	1.235	2.14
7	1.220	2.32	19	1.230	2.32
8	1.235	2.32	20	1.230	2.32
9	1.230	2.15	21	1.235	2.18
10	1.230	2.33	22	1.235	2.32
11	1.230	2.14	23	1.230	2.15
12	1.230	2.29	24	1.230	2.32

General Notes

- Battery voltages at Commissioning show greater variation than expected. Will check after one week to see if differences have closed.
- Strings 1 to 6 are connected to combiner box located in second school room from the East end of the main school block. Combiner box is located to the left of the door, under the ceiling.
- Strings 7 to 12 are connected to combiner box located above charge controllers.
- Right hand inverter is Master, left hand Slave.
- Array frames are earthed through a single cable which enters square conduit at left end via conduit. Bonded to all equipment earths at right end of square conduit, single cable going to earth rod.
- Breaker on String #6 faulty, needs replacing.
- Spare battery fuses provided in cupboard in Battery room.
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