



# INSTALLATION REPORT

Site name: **Mejit Elementary School**

Atoll: **Mejit**

Beneficiary: **Ministry of Education**

PV System Rating: **9.2kWp** System DC Voltage (nom.): **48V** AC output: **110V / 60 Hz**

GPS site coordinates:

Installation dates: October 2009 PV system Commissioning date: Oct. 16<sup>th</sup>, 2009.

Contracted installer: **Marshalls Energy Company**

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

- **Solar Charge Controllers**

Make	Model	Qty	Serial numbers	Rating per unit
OutBack Power Systems	FLEXmax 80	3	FM8000429 FM8001429 FM8001422	80 Amp continuous at 40°C ambient

- **Charge Controller Set points**

	V <sub>PC</sub>	V <sub>SYSTEM</sub>	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 1260002561A Slave 1260002735A	Continuous output at 45°C: 4000W

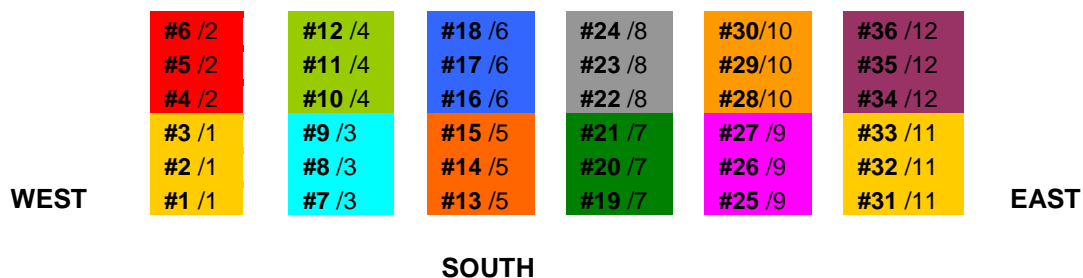
- **Battery Bank**

Make	Model	Qty	Serial numbers	Rating per unit
Exide France	Opzs Solar 3850 NVSL023850DCOFA	24	N/A	3100 Ah at C 20

- PV Modules**

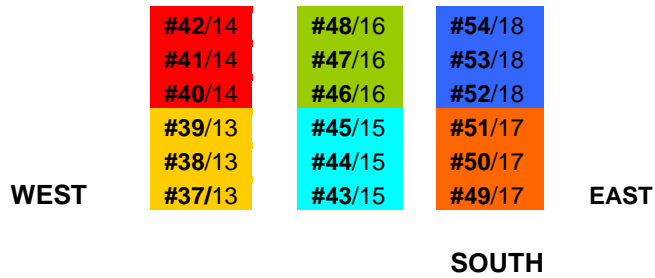
Make	Model	Qty	Serial numbers	Rating per unit
Conergy	SC 170 MA	<b>54</b>	See below	170 W at STC

ID#	String#	Serial Number	ID#	String#	Serial Number
1	1	SF1605M0810AN0439	19	7	SF1605M0810AO0424
2	1	SF16055M0810AN0323	20	7	SF1605M0810AO0365
3	1	SF1605M0810AN0333	21	7	SF1605M0810AN0180
4	2	SF1605M0810AN0021	22	8	SF1605M0810AN0456
5	2	SF1605M0810AN0426	23	8	SF1605M0810AN0358
6	2	SF1605M0810AN0251	24	8	SF1605M0810AN0153
7	3	SF1605M0810AN0330	25	9	SF1605M0810AN0316
8	3	SF1605M0810AN0441	26	9	SF1605M0810AN0415
9	3	SF1605M0810AO0155	27	9	SF1605M0810AN0388
10	4	SF1605M0810AO0335	28	10	SF1605M0810AN0076
11	4	SF1605M0810AO0431	29	10	SF1605M0810AN0166
12	4	SF1605M0810AO0465	30	10	SF1605M0810AN0099
13	5	SF1605M0810AN0283	31	11	SF1605M0810AN0101
14	5	SF1605M0810AN0336	32	11	SF1605M0810AN0385
15	5	SF1605M0810AN0283	33	11	SF1605M0810AN0364
16	6	SF1605M0810AO0311	34	12	SF1605M0810AN0217
17	6	SF1605M0810AO0338	35	12	SF1605M0810AN0149
18	6	SF1605M0810Y02989	36	12	SF1605M0810AN0006



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

ID#	String#	Serial Number	ID#	String#	Serial Number
37	13	SF1605M0810AN0381	46	16	SF1605M0810AO0363
38	13	SF1605M0810AN0157	47	16	SF1605M0810AO0276
39	13	SF1605M0810AN0068	48	16	SF1605M0810AN0198
40	14	SF1605M0810AN0463	49	17	SF1605M0810AO0041
41	14	SF1605M0810AN0072	50	17	SF1605M0810AN0014
42	14	SF1605M0810AN0183	51	17	SF1605M0810AN0438
43	15	SF1605M0810AN0013	52	18	SF1605M0810AN0169
44	15	SF1605M0810AN0197	53	18	SF1605M0810AN0307
45	15	SF1605M0810AO0286	54	18	SF1605M0810AN0322



## • Battery Data:

Nominal Battery Voltage: **48 V**

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

Nominal Battery Acid SG: **1.230**

Volume of acid used:       **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:           **2009**           Time:           Temp:   **°C**   SOC (as per inverter meter):   **%**

Battery Voltage at time of check:   (system at Float of 55.2V temperature compensated voltage).

<b>Battery Readings at Commissioning</b>					
<b>Cell #</b>	<b>Specific Gravity</b>	<b>Cell Voltage</b>	<b>Cell #</b>	<b>Specific Gravity</b>	<b>Cell Voltage</b>
<b>1</b>	1.21	2.04	<b>13</b>	1.19	2.02
<b>2</b>	1.21	2.04	<b>14</b>	1.2	2.03
<b>3</b>	1.21	2.04	<b>15</b>	1.21	2.04
<b>4</b>	1.21	2.04	<b>16</b>	1.21	2.04
<b>5</b>	1.21	2.04	<b>17</b>	1.205	2.04
<b>6</b>	1.21	2.04	<b>18</b>	1.21	2.04
<b>7</b>	1.21	2.04	<b>19</b>	1.21	2.04
<b>8</b>	1.21	2.04	<b>20</b>	1.21	2.04
<b>9</b>	1.21	2.04	<b>21</b>	1.21	2.04
<b>10</b>	1.21	2.04	<b>22</b>	1.21	2.04
<b>11</b>	1.21	2.04	<b>23</b>	1.21	2.04
<b>12</b>	1.21	2.04	<b>24</b>	1.21	2.04

## General Notes

### Note.

The initial battery voltage and specific gravity readings (above) were taken under the following situation.

1. The readings were taken at 6 am on the morning of October 17<sup>th</sup>. 2009.
2. All lights of the school were switched on. In fact the lights remained on all night, so the draw of 26.5 amperes has been constant for past 10 hours.
3. The charge controllers were temporally isolated so as to not influence the battery voltage with any possible early morning charging.
4. The battery was indicating 100% charge at 5 pm the day before.
5. At 6 am that morning the battery charge was reading 89.9% charge.
6. The cells with differing readings such as in cell numbers 13, 14, and 17, these cells were found to have their top off upon opening the crates when the batteries first arrived. The marking we made were still very visible.

Billy Schutz.