付属資料
## FULL REGISTRATION

<table>
<thead>
<tr>
<th>COMPANY DETAILS</th>
<th>Contact details</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIG Electrical Services</strong>&lt;br&gt;PO Box 113&lt;br&gt;Ghanzi, Ghanzi District</td>
<td>Nsakalimba, John&lt;br&gt;Tel: 596749&lt;br&gt;Fax: 596749</td>
<td>X</td>
</tr>
<tr>
<td><strong>Electrical Reticulation Systems</strong>&lt;br&gt;PO Box 260&lt;br&gt;Francistown</td>
<td>Katz, AG&lt;br&gt;Tel: 212732&lt;br&gt;Fax: 215531</td>
<td>X</td>
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<tr>
<td><strong>GMS Electronics</strong>&lt;br&gt;PBag F179&lt;br&gt;Francistown</td>
<td>Kogoluski, Z.&lt;br&gt;Tel: 221556</td>
<td>X X X</td>
</tr>
<tr>
<td><strong>Solahart</strong>&lt;br&gt;PO Box 20076&lt;br&gt;Gaborone</td>
<td>Walker, Ian&lt;br&gt;Tel: 323042&lt;br&gt;Fax: 324923</td>
<td>X X</td>
</tr>
<tr>
<td><strong>Solar West</strong>&lt;br&gt;PO Box 149&lt;br&gt;Gaborone</td>
<td>West, Allan&lt;br&gt;Tel: 374597</td>
<td>X X X</td>
</tr>
<tr>
<td><strong>Sunkist Botswana</strong>&lt;br&gt;PO Box 1282&lt;br&gt;Gaborone</td>
<td>Grant, M.&lt;br&gt;Tel: 312915&lt;br&gt;Fax: 314557</td>
<td>X X X</td>
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<tr>
<td><strong>Omega Electricals</strong>&lt;br&gt;PO Box 401866&lt;br&gt;Gaborone</td>
<td>Vashi, Ajay&lt;br&gt;Tel: 375480&lt;br&gt;Fax: 314429</td>
<td>X</td>
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<tr>
<td><strong>Sharps Electrical</strong>&lt;br&gt;PO Box 603&lt;br&gt;Gaborone</td>
<td>Rossi, Claude&lt;br&gt;Tel: 352341&lt;br&gt;Fax: 351416</td>
<td>X</td>
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<tr>
<td><strong>Electroflex</strong>&lt;br&gt;PO Box 40315&lt;br&gt;Gaborone</td>
<td>Aarse, Bart&lt;br&gt;Tel: 356660&lt;br&gt;Fax: 356650</td>
<td>X X</td>
</tr>
<tr>
<td><strong>Technical Systems</strong>&lt;br&gt;Private Bag 0055&lt;br&gt;Gaborone</td>
<td>Akabondo, Joe&lt;br&gt;Tel: 324795&lt;br&gt;Fax: 324856</td>
<td>X X</td>
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<tr>
<td><strong>Keimce Co. Pty Ltd</strong>&lt;br&gt;PO Box M568&lt;br&gt;Kanye</td>
<td>Masoka, H</td>
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<thead>
<tr>
<th>COMPANY DETAILS</th>
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<tr>
<td><strong>Supreme Aerials</strong></td>
<td>Rakola, France</td>
<td>X</td>
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<tr>
<td>P/Bag BR109</td>
<td>Tel: 300461</td>
<td></td>
</tr>
<tr>
<td>Gaborone</td>
<td>Fax: 300966</td>
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<td><strong>Sharps Electrical</strong></td>
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<td>Gaborone</td>
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<tr>
<td><strong>Mangana Enterprises</strong></td>
<td>Mpati, Bakanuki Gibson</td>
<td>X</td>
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<tr>
<td>PO Box 20573</td>
<td></td>
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<tr>
<td>Mahalapye</td>
<td></td>
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<tr>
<td><strong>Universal Stores &amp; Services</strong></td>
<td>Bhattacharyya, Su...</td>
<td>X</td>
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<tr>
<td>PBag 104</td>
<td>Tel: 422129</td>
<td></td>
</tr>
<tr>
<td>Palapye</td>
<td>Fax: 422138</td>
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<tr>
<td><strong>Madiba Electrical Brigade</strong></td>
<td>Kenozi, J.</td>
<td>X</td>
</tr>
<tr>
<td>Private Bag 17</td>
<td>Tel: 410285</td>
<td></td>
</tr>
<tr>
<td>Mahalapye</td>
<td>Fax: 410383</td>
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</tbody>
</table>
Solar Home System (System Voltage DC12V, Load Output AC220V)
System Design: Gaborone,
Load Consumption / Day (At PV 110W, Inverter Efficiency 70%-95%)
(Inverter Output AC220V) 1Ah/Day~1.36Ah/Day(TYP)
Solar Module 55W (55W~75W) * 2Pcs
PV Module Type: Monocrystal Multi Crystal
PV Module Parallel Connection (System Voltage DC 12V)

CONTROLLER, INVERTER AND BATTERY BOX

Breaker 10A MCB
Charge Controller For DC 12V Max Charging ≥ 10A
(VRLA Sealed /Flooding Selector)
(Constant Voltage Charging)
Inverter 500W(DC12V→AC220V)
OR
Inverter 250W(DC12V→AC220V)
Low Voltage Disconnection
Over Voltage Protection
Open Load Automatically
-Save Self Consumption

Battery (DC12V 120Ah * 2Pcs)
Deep Cycle Long Life Flooded Type
or
Deep Cycle Long Life VRLA Sealed Type

Outlet With Switch for AC220V
13A Fuse

Fluorescent Lamp With Switch 7Pcs (12W Energy Save Type)
Solar Battery Charge Station
For Flooded And VRLA Sealed Battery (40Ah~100Ah, DC12V Battery)

Solar Module  220W~250W

PV Module Type Mono or Multi Crystal
System Voltage DC12V
(PV Module Parallel Connection)

Solar Module Attachment

30A MCB Breaker

Charge Controller DC12V
Max Charging ≥ 30A
Flooded/VRLA Sealed Battery Selector
Constant Voltage Charge

Breaker 30A MCB

Battery Crocodile Clip

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Solar Water Pumping System (Hybrid With Engine Generator)

Specification
Deep: 50m, 0.6 ml

Solar Module Array (700W~1KW)
System Voltage DC 120V
(Series Connection)
Mono or Multi Crystal Type

Solar Module Attachment
Inverter And Switches Box

Input AC 220V

Transformer

Pump Inverter
With Max Power
Point Tracking
System (MPPT)

Breaker
20A MCB
30A ELCB

Breaker 30A ELCB
Select SW

Reservoir
Over Flow Switch
50m Deep

Pump Unit
<table>
<thead>
<tr>
<th>Component</th>
<th>1-Monthly</th>
<th>6-Monthly</th>
<th>Responsibility</th>
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<tbody>
<tr>
<td>Module</td>
<td>• Clear dust or dirt on panel surface.</td>
<td>• Check power output.</td>
<td>• End-User</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check orientation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check rigidity of frame.</td>
<td></td>
</tr>
<tr>
<td>Battery</td>
<td>• Check battery status indicators.</td>
<td>• Check battery status indicators.</td>
<td>• End-User</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check condition of battery boxes.</td>
<td>• NPVREP</td>
</tr>
<tr>
<td>Charge Controller</td>
<td>• Regularly observe charge level indicators.</td>
<td>• Tighten up mounting screws.</td>
<td>• End-User</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check cable connections.</td>
<td>• NPVREP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check ventilation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Observe charge level indicators.</td>
<td></td>
</tr>
<tr>
<td>Inverter</td>
<td>• Regularly observe charge level indicators.</td>
<td>• Check Ventilation.</td>
<td>• End-User</td>
</tr>
<tr>
<td></td>
<td>• Remove dust or dirt on heat sink.</td>
<td>• Check Output Voltage.</td>
<td>• NPVREP</td>
</tr>
<tr>
<td>Wiring</td>
<td></td>
<td>• Check Earth Leakage.</td>
<td>• NPVREP</td>
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<tr>
<td></td>
<td></td>
<td>• Check Lightning Arrester/Conductor.</td>
<td></td>
</tr>
</tbody>
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1. 経済社会関係
STATISTICAL BULLETIN March 1998 Vol.23 No.1, Central Statistic Office, June 1998
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Registered PV Companies, December 9, 1999, BOTEC
Conditions of Registration for PV Contractors, October 1998, BOTEC

3. 地図 (Department of Surveys and Lands)
Republic of Botswana, 1: 1,000,000
Republic of Botswana, 1: 1,500,000
Republic of Botswana, 1: 2,000,000
Population in Botswana 1991, 1: 2,000,000
Primary Schools in Botswana, 1: 2,000,000
Secondary Schools in Botswana, 1: 2,000,000
Vegetation Map of the Republic of Botswana, 1: 2,000,000
Land System Map of the Republic of Botswana, 1: 2,000,000
Botswana Energy Distribution Map, 1: 2,000,000
Groundwater Resources Map of the Republic of Botswana (eastern part) 1: 1,000,000
Population in Botswana 1991, map, scale 1:2,000,000

4. その他
Air Pollution Control 1998 Annual Report, March 1999, Department of Mines
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December 1997, Ministry of Labour and Home Affairs
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