

**PROJECT REFERENCE**

Assignment Name: <b>Gobabeb PV diesel hybrid mini-grid implementation</b>		Country: <b>Namibia</b>
Project Location: <b>Namibia</b>		Professional Staff provided by your Firm (Specialisation): <b>Off-grid Energy Expert Energy Efficiency Expert</b>
Name of Client: <b>COWI A/S (for DANIDA)</b>		No of staff: <b>3</b>
Address: <b>Paralelvej Lynby Denmark</b>		No of staff months/Duration of Assignment: <b>29 staff month</b>
Start Date (Month/Year): <b>10/2002</b>	Completion Date (Month/Year): <b>12/2004</b>	Approx value of Services (Current US\$): <b>\$150,000</b>
Name of Associated Consultants (if any): GS Fainsinger		No of Months of Professional Staff provided by Associated Consultants: <b>1 month</b>
Name of Senior Staff Involved and Functions Performed: <b>Axel Scholle – Local Senior Consultant: Coordination of local Team and activities, financial control; Design of PV Diesel Hybrid System; Design of in depth monitoring system; Contract supervision; Coordination of Outreach activities; Training; Reporting.</b> <b>Glenn Howard – Energy Efficiency assessments &amp; refurbishments; Contract supervision; Building code; Abraham Hangula: Energy Management activities; Monitoring system setup and data collection.</b>		
Narrative Description of Project: <b>The DANIDA funded project focused on the implementation, capacity building and replicability of renewable energy based hybrid mini-grids for remote areas. The project in particular entailed the implementation of Renewable Energy and Energy Efficiency at a remote location in the Namibian desert, namely Gobabeb situated at the Kuiseb river. The Research Station has operated for more then 30 years on two diesel generators to provide the main source of energy into a three phase mini-grid. The Gobabeb project was launched as a demonstration of RE and EE in terms of converting to a RE based hybrid system, powering approximately 25 mini-grid consumers. The project components can be described as:</b> <b>1) Supply: Implementation of energy hybrid supply system incorporating renewable energy technologies.</b> <b>2) Demand: Demand-side energy efficiency conversions.</b> <b>3) Monitoring and management: Monitoring system for the energy supply and demand at Gobabeb. Energy management system was established, with a financial system to charge for energy and thus pay for future maintenance and replacements.</b> <b>4) Outreach: Information on results achieved with the project disseminated to energy institutions and energy service providers in Namibia and SADC countries.</b>		
Description of Actual Services provided by Your Staff: <ul style="list-style-type: none"> <li>• <b>Project co-ordination at local level and interaction with the client and the community;</b></li> <li>• <b>Design and specifications for a solar PV hybrid mini-grid system;</b></li> <li>• <b>Design and specifications for a small PV Wind system;</b></li> <li>• <b>Design of a elaborate monitoring system;</b></li> <li>• <b>Tariff calculations</b></li> <li>• <b>Outreach activities: Posters, webpage and workshop</b></li> </ul>		

Firm's Name: **EMCON Consulting Group**