

PROJECT REFERENCE

Assignment Name: Business Plan and Implementation Strategy for a Large Scale Off-grid Electrification Programme		Country: Namibia
Project Location: Namibia		Professional Staff provided by your Firm (Specialisation): Rural Energy Specialists, Solar Energy Experts, Rural Electrification Specialists
Name of Client: NamPower		No of staff: 5
Address: P O Box 2846 Windhoek Namibia		No of staff months/Duration of Assignment: 15 staff months
Start Date (Month/Year): 11/2000	Completion Date (Month/Year): 12/2001	Approx value of Services (Current US\$): \$100,000
Name of Associated Consultants (if any): a) Southern Sustainable Energy Corporation b) Feather Energy c) Rural Area Power Solutions		No of Months of Professional Staff provided by Associated Consultants: a) 1 b) 4 c) 3
Name of Senior Staff Involved and Functions Performed: Detlof von Oertzen – Project Team Leader, international approaches, off-grid service delivery models, implementation and co-ordinating strategies Ralf Tobich – Policy, legal and regulatory aspects, resource requirements, partnership options Robert Schultz – Needs assessment, technical options Axel Scholle – Off-grid energy needs and services identification		
Narrative Description of Project: This project entailed an investigation into the modalities and feasibility of a NamPower-led off-grid electrification programme in Namibia. Local and international off-grid approaches and experiences, coupled to a rural energy needs, expenditure and awareness assessment motivate the selection of a range of off-grid technologies. Life-cycle costing calculations identify the most cost-effective of these technologies, which represent the backbone through which the envisaged energy services can be rendered in rural areas. A fee-for-service delivery is recommended, enabling widespread rural energy provision (i.e. energisation) far away from conventional grid electricity. An off-grid services delivery model, the so-called “energy store” concept, is developed, supported by an in-depth investigation into the institutional, policy and legal, partnership and resource frameworks required to successfully launch a utility-driven off-grid programme. Associated programme risks are identified, and suitable mitigation strategies formulated. Marketing recommendations, and a compendium of international funding organisations likely to assist in the financing of a large-scale Namibian off-grid programme, are presented. Monitoring and feedback mechanisms are proposed. A purpose-built financial model enables a quantitative comparison of different off-grid implementation scenarios by drawing together the multitude of monetary flows expected in such a programme. An		



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implementation strategy describing the step-by-step requirements and actions is developed, guiding the initial off-grid electrification on a pilot basis of some 400 rural households in the first 12 to 18 months, and thereafter a rapid regional, and ultimately national expansion of the off-grid programme, resulting in the energisation of some 7,500 rural households within ten years.

The financial model indicates that a viable utility-driven programme can be established and operated. It is possible to deliver the envisaged energy services to rural communities at tariffs that seem fair in comparison to other frequently used household energy options, provided that a capital subsidy of the order of N\$ 3,400 per benefiting household can be raised, which is low in comparison to the usual subsidies made available for grid electrification at present.

Description of Actual Services provided by Your Staff:

EMCON consultants were responsible for the following aspects of this project:

- **Evaluation of international approaches in off-grid energy service provision**
- **Off-grid energy needs identification**
- **Range of services identification**
- **All technical aspects**
- **Consideration of policy, legal and regulatory aspects**
- **Identification of partnership options and modalities**
- **Determination of resource requirements for a large scale off-grid programme**
- **Development of off-grid service delivery options**
- **Development of implementation and coordinating strategies**

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