Solar Energy Enterprises Co Ltd

Industrial Development of Solar Cookers in Sudan

A Private Experience

By

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The Experience of SEEC

- Solar Energy Enterprise Company
- A private Sudanese company working in the R&D of “adapted” technology products like rural water filtration units, solar thermal products and community development projects
- Started business in 1985
- Bread and butter earned from specialized work on heavy metal rolling and steel fabrication (fuel tanks and depots, hangers, steel structures, etc.)
The Experience of SEEC

• Consultancy R&D work
• As a matter of business policy, we sponsor graduate and post graduate students, plus vocational training apprenticeships. The record to date is:
• 1 Ph D; 26 M Sc’s; 120 B Sc Graduation projects and 500 Vocational training apprentices.
• Directed by Dr Salih Hamadto, former Professor of Physics (Optics)
Workshop Facilities

Graduate Students Designed Heating Unit for Petroleum Skid Tanks
Rural Water Filtration Units: A Useful Product Line
The Solar Cooker Program
1990 - 2010

Using the workshop resources and the innovation of the students sponsored, the following product lines were developed:

- Parabolic dish cookers
- Community and institutional cooking modules, based on the Scheffler reflector
- All-metal box cookers
The Three Products
The Dish Cookers
Well-trained Technicians
Good Production Capacity
Dish cooker in use
Specifications

- Aperture: (1.8 m diameter)
- Tracking: Two axis; manual
- Mirror: Stainless steel sheet
- Power to pot: 0.8 to 1.2 kW (thermal)
- Pot size: Up to 14 liters
- Carries out all cooking operations, including frying
- Cooking time: 0.5 to 2 hours
Community and Institutions
Kitchens

• Based on the Scheffler collector.

Disseminations over the past 15 years:
• A Hospital in Khartoum (5 reflectors)
• A prison in Gadarrif (3 reflectors)
• A public restaurant in Fashir (5 reflectors)
• Student hostels in outside Omdurman (4 reflectors)
• Schools in Dongola (4 reflectors)
• Demonstration units with built-in cooking place (3 modules)
Demonstration Units at Workshop
Scheffler Reflector for Community-Kitchens
Solar Kitchen Under Construction
(Gedarif Prison)
Cooking Test
Two Demonstration Units at the Africa Industrialization Day Show
Box Cookers

- Developed with UNIDO for use in Darfur
- Innovative (proprietary) all-metal design – No wood or cardboard
- Rugged - Efficient – portable – user-friendly - aesthetically pleasing
- Simple controls for opening and closing top glass window and adjusting booster mirror
- Modular design: spare parts readily replaceable
Final Designs Ready for Field Use
Serial Production
Skilled Personnel
Master sheet metal technicians
Testing the Cookers
MSc Student Conducting Test Cooking Session
Field Testing in Darfur
(UNIDO, IOM and UNDP)
Cooking for Revenue Generation
A: Jam Making
B: Baking Light Cookies
The possibilities are limitless...

• For further information and prices, please contact:
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