Water Projects and Lab Research

Ron D. White (NREL)

Wind-Electric Water Pumping

- Quintana Roo, Mexico
- Bergey 1500 on Rohn 25 m tower
- 1.0-HP Grundfos submersible
- Expect 10 m^3 per typical day
- Connects to existing water distribution system
- Design by Ecoturismo y Nuevas Technologias s.a.
- Installation Assistance by NREL and Sandia (September 1998)
- Funding from USAID.

Pump house and turbine provide clean water in Quintana Roo, Mexico

Wellhead, Panels, and RO Unit

PV-Powered Pumping and Desalination

- Sadous (near Riyahd), Saudi Arabia
- 1680 W_p for Reverse Osmosis (RO); 980 W_p for submersible pump
- 600 liters/hour of drinkable water
- Installed in the Fall of 1994
- Design and performance papers presented December 1995 (available on request).

Analysis of Water Treatment Systems

- Matching energy needs and usage patterns
- Current research on UV disinfection units
- Cycle testing of UV bulb lifetime/output
- Evaluation of system integration issues: small wind turbines and electrodialysis reversal water desalination and UV water works disinfection unit.

Reports Available

- An Overview of Water Disinfection in Developing Countries and the Potential for Solar Thermal Water Pasteurization (NREL/TP/550-23110)
- Opportunities for Renewable Energy Technologies in Water Supply in Developing Country Villages (NREL/SR-430-22359)
- Overview of Village Scale, Renewable Energy Powered Desalination (NREL/TP-440-22083)
- Other Technical Papers available as well.

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