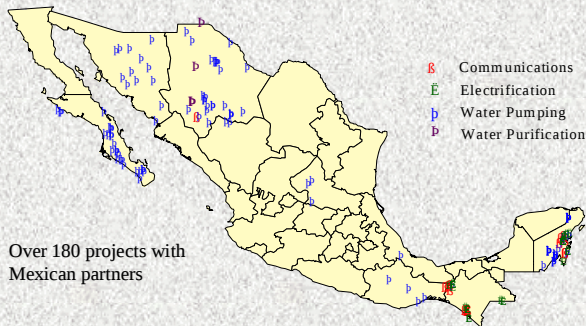


Mexico Renewable Energy Program

Charles Hanley (Sandia National Laboratories)



Over 180 projects with Mexican partners

Unelectrified rural population is more than 5 million people

Water Pumping for Productive Uses (Through Several Partnerships)

- Primary partner is FIRCO - a technical organization under the Secretary of Agriculture
- Chihuahua RE Working Group - government and private organizations (including FIRCO, DGDR, and CFM)
- Water pumping applications include livestock, irrigation, domestic, and community water systems
- 115 water pumping projects (61.5 kW) in eight Mexican states
- Focusing on nationwide replication as part of an established \$1.8 billion agricultural development program.



*Chajul Biological Station
Montes Azules Reserve
Chiapas*

1.4-kW_p PV Electrification:

- Siemens SP-75 Modules
- 5.5-kW Trace Inverter
- Condumex Controller
- Exide E125-19 Batteries
- 6.3-kW Onan Propane Generator

Other Partnerships Create a Broad Base

- National Solar Energy Association (ANES)
- Federal Electricity Commission (CFE)
- Center of Energy Research (CIE-UNAM)
- National Energy Savings Commission (CONAE)
- Universities of Chihuahua (UACH), Sonora (UNISON), and Quintana Roo (UQROO)
- U.S. and Mexican RE companies, SEIA, and AWEA
- Key SNL team partners: SW Technology Development Institute - New Mexico State University, Enersol Associates, Ecoturismo y Nuevas Tecnologías, Winrock International, and National Renewable Energy Laboratory.

DOE/USAID Mexico Renewable Energy Program

- Program has multiple objectives
 - Increase sustainable markets for U.S. and Mexican industries
 - Demonstrate renewables in combating global climate change
- Focus on off-grid productive uses
- In-country partners have established and funded programs
 - Training and technical assistance provided by Sandia team
 - Pilot projects to institutionalize renewables within existing programs
- Phase 2 focusing on replication and greater in-country management.



*Colonia Modelo Ranch
Mpo. Ascención, Chihuahua*

450-W_p PV Water Pumping:

- Siemens SP-75 Modules
- Grundfos SP2A-4/90 Pump
- Grundfos SA-400 Controller

Protected Areas Management

- Partnerships with World Wildlife Fund, The Nature Conservancy, and Conservation International
- Demonstration of RETs to facilitate reserve management and sustainable development programs
- Working with 14 non-government organizations
- 25 projects (total of 19.8 kW) in 10 reserves
- Working with the Mexican Secretariat of Environment to identify future applications and provide technical assistance
- Demonstrate feasibility and application of renewable technologies for eco-tourist facilities in Chiapas and Quintana Roo.

*Costa de Cocos
Ecotourist Hotel
Xcalak, Quintana Roo*

10-kW Wind Electrification:

- Bergey Windpower EXCEL Module
- 5.5-kW Trace Inverters (2)
- Bergey VCS Controller
- Trojan L-16 Batteries

