Hualapai Tribal Energy Program

DOE-BIA Peer Review
October 26, 2006
Hualapai Reservation
Solar Water Pipeline 1997 to Present

- USDA Water Project
- Upgraded to provide water to Grand Canyon West Tourism area
- Currently being upgraded for increased flow and domestic water quality improvements
Earthship Project - 1999

- Funded by DOL Jobs in Recycling program
- Built by WIA workers
- Solar PV
- Water Catchment system
Guano Point 2000

- Off Grid 7 kilowatt PV and wind system
- Power for lights, kitchen, and cooling
GCW Power Project

- Solar Hybrid Power System for GCW
- Base for Centralized Solar-Wind-Hybrid
- BIA-MAP Wind Assessment

Grand Canyon West Residential Solar Arrays
Hualapai Tribal Utility
Feasibility Study
DOE First Steps 2005

Objectives

1. Feasibility of Stand Alone Utility Providing Service at Grand Canyon West

2. Feasibility of Take-over of Reservation Electric Service from Local Co-op

3. Feasibility of integrating Hualapai Wind Resource to meet tribal load
Participants

- Daystar Consulting, LLC
  - Project Management
- Utility Strategies Consulting Group
  - Load Forecast and Financial analysis
- KR Saline & Associates
  - Infrastructure & Wind Interface
- Glenn Reddick, PE
  - System Valuation Study
- Dean Suagee, Attorney
  - Tribal Utility Plan of Operations - Legal Issues
Accomplishments

- Progress without help from Co-op
  - System Mapping
  - Load Forecasts
- Intervention in BIA -MEC Dispute
  - Dispute over Responsibility for power line to Havasupai affects relationship between MEC and Hualapai
  - ACC Settlement in Process
Issues

• Uncooperative existing Co-op
  – To allow success in acquisition, maintenance & new renewable commercial energy project
  – No Information
  – Refused Access to Facilities
  – Delays and refusal to participate
  – ACC Action
Hualapai Wind Assessment Project
BIA-MAP 2005 - 2006

Overview

• Assess Wind Resources
  – Grand Canyon West - 50 meter up
  – Peach Springs Area - 2 years data
  – Blue Mountain - 9- months data
  – Nelson - NEW Resources area -50m Tower up

• Feasibility Study
  – Interconnection
  – Market
  – Environmental Impact
Wind Resource Areas
Objectives

• Wind Assessment
  – Grand Canyon West Stand Alone Centralized Power System
  – Community Scale Demonstration Turbine
  – Wind Farm

• Feasibility Study
  – Make as much progress toward implementation as possible on a limited budget
Participants

- **Daystar Consulting, LLC**
  - Project Management, Data Collection
- **Windots**
  - Resource Assessment
  - Turbine Type and Placement
- **KR Saline and Associates**
  - Interconnection Study
- **West Inc.**
  - Avian Assessment
- **Two Riders**
  - Community Compatibility Assessment
Accomplishments

• Progress Despite Problem with Contractor DisGen
  – Self Management is more flexible
• Discovery of New Resource Area
• 1 Year of Wind Data Collected
  – Resource “As good as any in Arizona”
• Relationship with Local Wind Developer-International
  – Donation of 65kW Turbine and Tower
• Broadened concept to have accomplishments
• Great sense of importance to native theme of environmental justice, harmony & economics
Future Plans

- Construction of GCW Power System
- Installation of 65kW Demonstration Turbine
- Completion of Tribal Utility Assessment
- Implementation of GCW Utility Service
- Development of Hualapai Wind Farm Business Plan
- 2007 Application for Biomass Feasibility Study BIA or DOE
- 2007 Application for Large Scale Solar Feasibility Study BIA or DOE
Supply & Demand

• Population growth and power demand will increase 3 times faster than supplies.
• Dependence on current sources will have a devastating affect.