

Welcome From Sandia

DOE Solar Energy Technology Program Annual Review 2007



Another Chance to Realize the Dream

- **The Sun is in Alignment**

- Industry is Doing Well and Making Large Investments
- SEIA and Others Working with Government Representatives to Get Supportive Policies in Place
- R&D Investments by DOE-OS-BES
- Technology Development and Market Transformation Investments by DOE-EERE-SETP



Sandia Will Play an Important Role

- Through the Leadership and Support of our Staff
- Through our Unique Solar Facilities
- And, Through our Heritage as a National Security Laboratory

**CURRENT
TECHNOLOGY**

**Existing
Manufacturers**

**EMERGING
TECHNOLOGY**

**Existing Industry &
Start-ups**

**R&D
OPPORTUNITIES**

**DOE Sponsor and
Industry**

Sandia's Photovoltaic Facilities

PV Systems Evaluation and Optimization Lab



Distributed Energy Technology Lab



Simulate small μ grid or community (25 homes and businesses), including PV-Storage-Fuel Cells-Generators
Grid Integration Studies and Technology Prototyping & Development Environment

Controlled Side-by-Side Component, Array and System Characterization

- *Cell to module to system characterization*
- *Energy production comparison versus module design*
- *Inverter in-situ performance testing*
- *Soiling effects for different glasses and coatings*
- *Long-term Aging and Reliability*
- *Accelerated Aging Capabilities (In Development)*

Comprehensive Data Acquisition Systems

- *All ac and dc data*
- *Meteorological data*
- *Continuous archive*
- *Protocols for others*

Inverters, Combiners, Disconnects- All Reconfigurable

- *Grid Integration studies*

National Solar Thermal Test Facility (NSTTF)

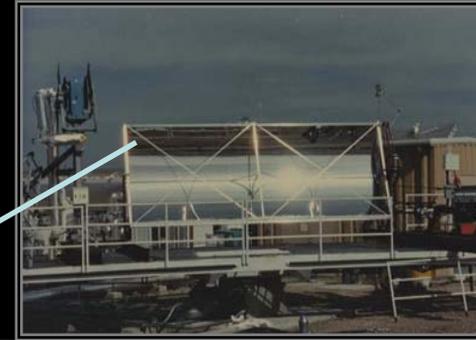
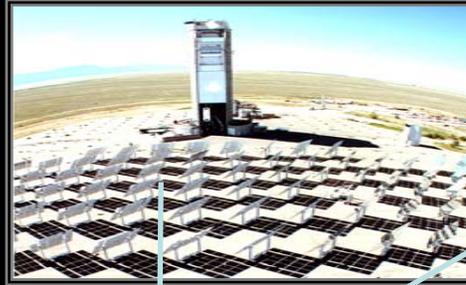
Power Tower

Trough Test Facility

Engine Test Facility

Dish Test Facility

Solar Furnace



SAI ADVANCED INTEGRATED INVERTER AND ENERGY MANAGEMENT TECHNOLOGIES WORKSHOP

Hyatt Regency Tamaya Resort

1300 Tuyuna Trail, Santa Ana Pueblo,

New Mexico, USA 87004

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