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The Regional Test Centers

Field Validation of New PV Technologies

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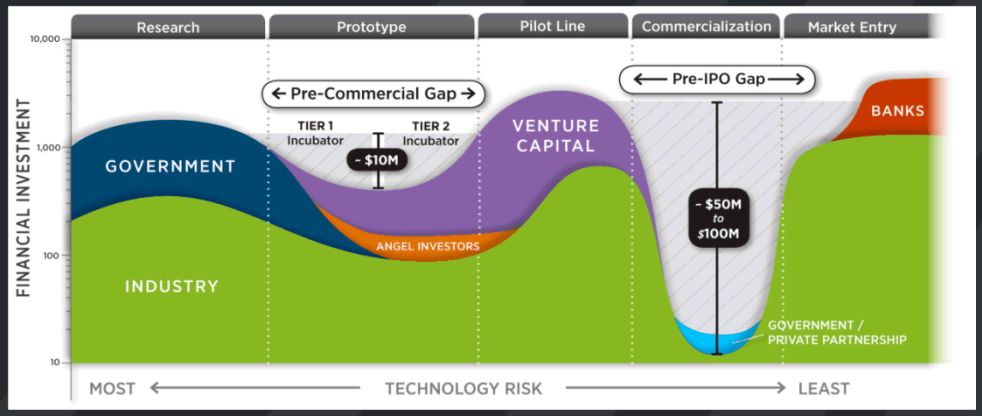
RTC History

- Established by U. S. Department of Energy (DOE) to independently validate performance and reliability of photovoltaic (PV) systems
- Intended to supplement SunShot program to help advance DOE's production goals and build stakeholder confidence in new/existing PV technologies
- Sunshot Initiative's Goal – LCOE of 6¢/kWh by 2020
- Intent - help US PV manufacturers overcome "Valley of Death"



- Utilized to validate performance of PV systems, verify and validate models used to predict performance, collect detailed operations and maintenance (O&M) data, and investigate the role of various environmental (climatic) factors on reliability, durability, and safety of PV technologies.

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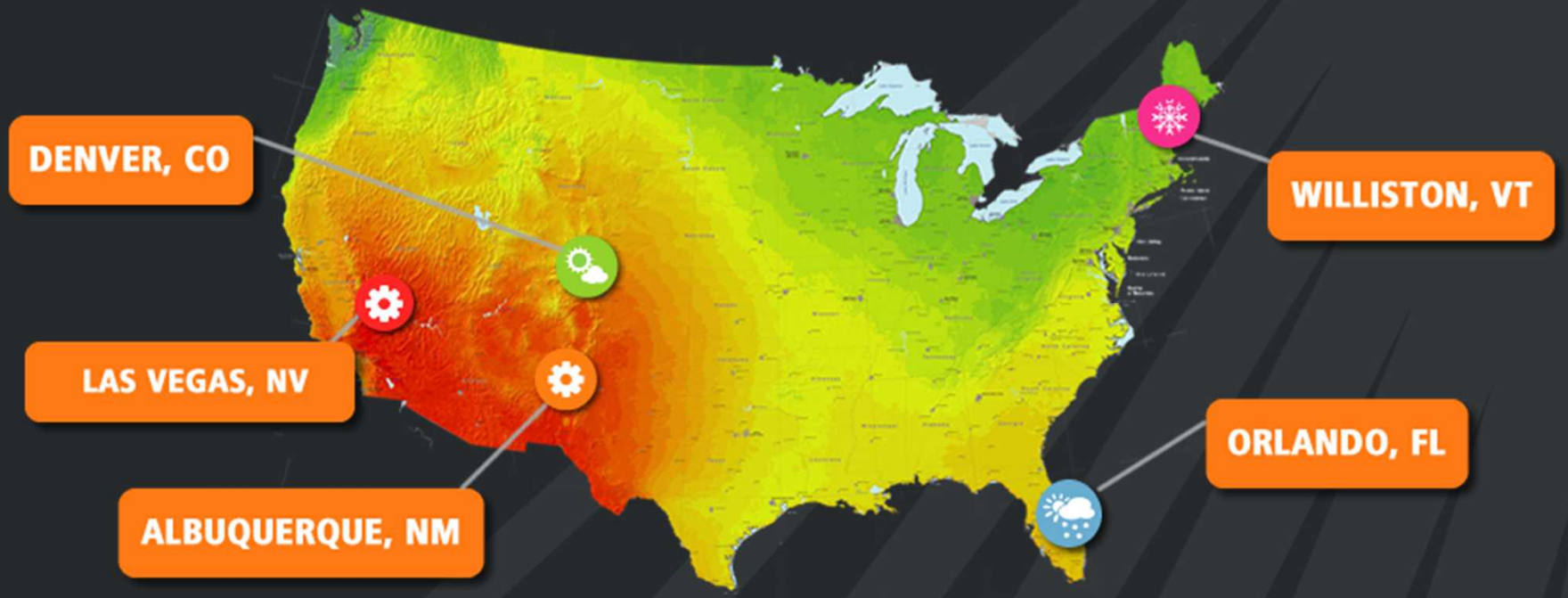
Regional Test Center Sites



- Standard, high accuracy meteorological and performance monitoring equipment is used at each site.
- Coordinated, partner-specific validation plans
- Data protection and secure transfer processes
- Performance and reliability analysis and modeling
- Access to advanced capabilities within DOE's national laboratories (NREL and Sandia)

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New Mexico Regional Test Center

National Solar Thermal Test Facility Site (Sandia National Laboratories)

- Intended for larger sized systems (>50kW)
- Flexible plan site allowing the RTC Team to combine or split lots to accommodate testing criteria
- Supports 1.2 MW of PV plus baseline test equipment, labor and data analysis.

Photovoltaic Systems Evaluation Laboratory Site

- Hot, dry climate, High UV
- Intended for smaller PV systems (5-50kW)
- Available in the Fall of 2014
- Collocated with Sandia's indoor and outdoor PV module and system laboratories

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Colorado Regional Test Center

Solar TAC Site

- Managed by the National Renewable Energy Laboratory (NREL)
- Located at the SolarTAC facility (in Aurora, CO, near Denver International Airport), this eight-acre RTC site has >1 MW DC capacity. SolarTAC, which has a steppe (i.e., arid, high altitude) climate, is already home to multiple test sites and RTC systems.

NREL Outdoor Test Facility Site and Other Campus Locations

- Small systems can also be hosted on NREL's campus, either at the Outdoor Test Facility (see photo above) or integrated into NREL's campus, providing a variety of deployment environments, including rooftop.

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Florida Regional Test Center

Florida Solar Energy Center, University of Central Florida

- Managed by Sandia National Laboratories
- Hot tropical (wet) climate
- The present site can accommodate approximately 250kW of PV installations, with systems ranging in size from 10 to more than 100kW. Room for expansion.
- Onsite PV system expertise and equipment
- Indoor PV module characterization laboratory

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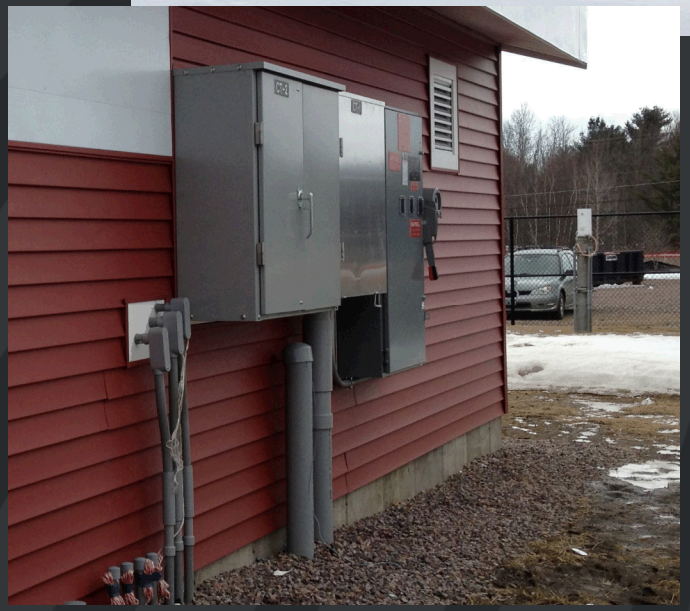
Vermont Regional Test Center

IBM, Williston, VT

- Managed by Sandia National Laboratories
- Northern climate, cold, wet, diffuse
- Seven acre site, four of which are enclosed by a security fence. The remaining acres are available for future expansion.
- 300 kW capacity with installed conduit, and junction boxes to allow for the easy installation of PV systems.
- Accommodates both fixed-array PV systems and tracker systems
- Non-UL equipment is permissible per terms of the “Certificate of Public Good” permit issued by the Vermont Public Service Board.
- A building exists onsite to house inverters and monitoring systems, as needed.
- The building roof, which is pitched at 18.4°, can support rooftop PV installations.



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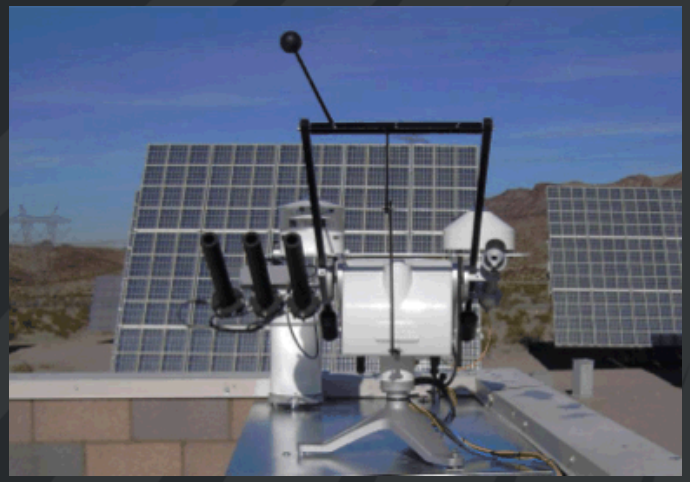
Nevada Regional Test Center

River Mountains Site, Southern Nevada Water Authority, Henderson, NV

- Managed by Sandia National Laboratories
- Hot, Dry, High DNI
- Ideal site for CPV (84 kW already installed)
- MOU with Univ. of Las Vegas (expansion)
- Onsite technical support from UNLV



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Regional Test Center Partnership Opportunities

The RTCs invite manufacturers and integrators of PV and CPV modules, power electronics and other system components, to apply for technical support from the RTC to conduct a validation study for their product or service

Visit ***rtc.sandia.gov*** for more information

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