Regional Test Centers
Differentiating PV Quality
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U.S. Department of Energy

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Regional Test Centers for Emerging Solar Technologies Program Overview

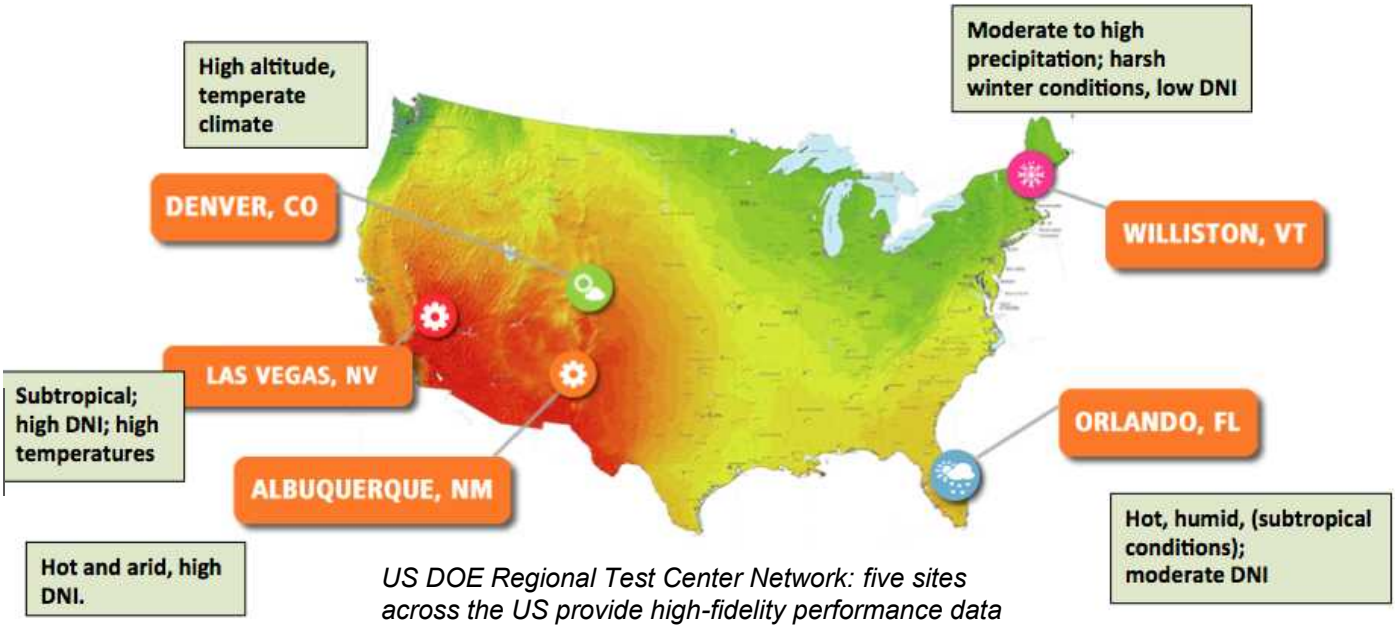
Validating Solar Innovation to Power Our Future

The US Department of Energy has established five Regional Test Centers (RTCs) in NM, CO, FL, NV, and VT to demonstrate bankability of new technologies. Funded by DOE's SunShot Initiative, the RTCs are part of a broad national effort to make solar energy cost-competitive with other forms of electricity by 2020.

The RTCs validate new solar technologies and systems configurations, demonstrating performance and reliability under field conditions over time. Managed by Sandia National Laboratories and the National Renewable Energy Laboratory (NREL), the goal is to demonstrate how a technology performs in a particular climate:

- Verify that output power can be accurately predicted
- Quantify system performance stability
- Identify climate-specific performance and reliability factors

The performance analysis provided by the national laboratories in turn supports the bankability of emerging technologies, and thus helps draw the investment dollars needed to bring innovation to the marketplace.



US DOE Regional Test Center Network: five sites across the US provide high-fidelity performance data across a range of climates, from hot and dry to cold

The exacting validation standards of the RTCs support bankability of emerging products and help increase investor confidence in novel technical approaches.

The RTCs can accommodate multiple solar technologies, including crystalline and thin-film modules: fixed-tilt and tracker systems and advanced (UL and non-UL) electronics. They can also support PV systems ranging in size from 10 to 300 kW and can monitor performance at both the system and component levels.

The RTC program is a collaborative effort:

- Industry partners provide and install prototype technologies that align with RTC goals.
- The RTCs provide grid-tied installation sites and state-of the-art monitoring and data-acquisition systems. The RTCs also provide operations and maintenance support.

The RTC team (made up of solar experts from Sandia and NREL) works with industry partners to design and execute a validation plan, and provides experimental and analytical expertise throughout the life of the project.

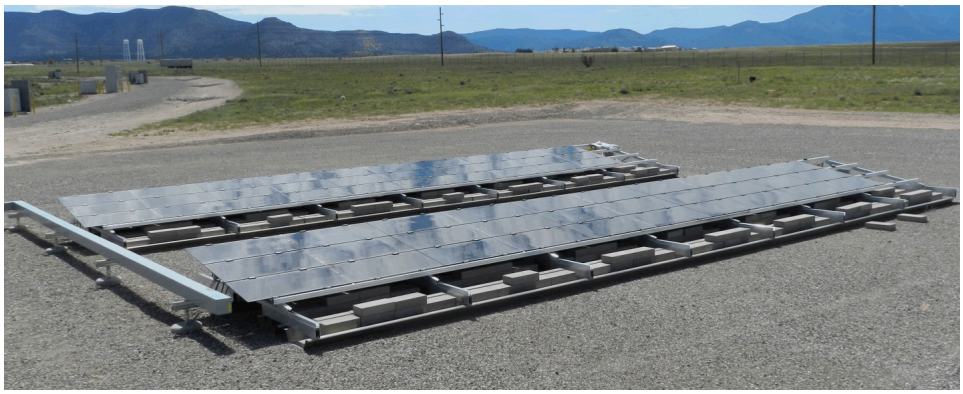
The RTC Validation Plan is customized for each partnered project to reflect the partner's technological objectives and describes:

- System Design
- Field-Based Monitoring
- Baseline Testing and Characterization
- Performance Modeling
- Performance Data Collection and Analysis

All data collected from a partner-installed system is considered proprietary and protected by legal agreement.

The RTCs support technological innovation and market acceptance in the US solar sector in multiple ways:

- Bankability – The RTC team collects, analyzes and validates the field-performance data that manufacturers need



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Sandia National Laboratories

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