

TEP Seeks Federal Stimulus Funding for "Bright Tucson" Solar Project

TUCSON, Ariz., Sep 01, 2009 (BUSINESS WIRE) -- Tucson Electric Power (TEP) and a team of energy industry leaders are seeking federal stimulus funding for an innovative demonstration project intended to boost the effectiveness of Tucson's solar energy resources.

TEP has requested \$25 million in stimulus funds from the U.S. Department of Energy to help fund the "Bright Tucson" project, which would employ energy storage systems and a "demand response" program to optimize the output of a new 1.6-megawatt (MW) photovoltaic (PV) array.

"We're looking for the best way to get the most out of the solar energy that surrounds us here in Tucson," said Paul Bonavia, Chairman, President and CEO of TEP and its parent company, UniSource Energy Corporation (NYSE: UNS).

"Solar energy is going to play a big part in TEP's future, so we need to find some bright solutions to the challenges that currently limit its utility and cost-effectiveness," Bonavia said. "The Bright Tucson project will help us develop a strategy to make the sun an even more valuable resource for our community."

If funding is approved, project team members would develop a lithium battery bank and a compressed air energy storage (CAES) system adjacent to the new PV array on a 20-acre site leased from the Tucson Airport Authority. The batteries would store solar energy as direct current (DC) power. The CAES system, meanwhile, would use solar power to create pressurized air that could be used later to drive a turbine, creating electric power on demand.

The project team also would recruit TEP customers to participate in a newly developed demand response program that would allow the utility to shut down their air conditioners and other equipment when additional power is needed elsewhere. Like batteries and the CAES system, such programs could help utilities manage the intermittent nature of solar energy.

Unlike the output of traditional, fossil-fueled generators, solar power is subject to frequent fluctuations due to weather conditions and other variables. Utilities must immediately compensate for those fluctuations - typically with energy from other resources - to avoid brownouts, blackouts and equipment damage. Solar energy also would be more valuable to utilities if it could be stored and deployed as needed.

"We cannot allow the challenges associated with solar energy to eclipse its potential as a clean, green energy source," said David G. Hutchens, Vice President of Energy Efficiency and Resource Planning for TEP and UniSource Energy. "Bright Tucson will help utilities find the best way to let the sun shine a little brighter in their resource mix."

Bright Tucson team members will develop software, communication and control systems and analytical tools to gauge the effectiveness of the various strategies employed as part of the five-year project. Performance data from the project will be available on a real-time display at Tucson International Airport and posted online at tep.com.

In addition to TEP, the Bright Tucson team includes the following partners:

- The University of Arizona's Arizona Research Institute for Solar Energy (AzRISE), the co-lead partner, will lead the economic and operational research to test system results and develop specifications for the control and communications systems.
- Burns & McDonnell, a Kansas City-based engineering, architecture, construction, environmental and consulting firm, will build the CAES system and commission the development of the battery storage system.
- Solon, a Tucson-based solar manufacturer, will develop the tracking PV array.
- EnerNOC, a Boston-based provider of energy management solutions, will develop a demand response program with large commercial and industrial customers.
- Tendril, a Boulder, Colo.-based provider of integrated energy management systems, will develop a demand response program involving residential and small commercial and industrial customers.
- Ventyx, an Atlanta-based provider of software, data and advisory services to the energy industry, will provide resource optimization software for the project.
- Raytheon, a defense technology company that ranks as Southern Arizona's largest employer, will provide security systems and systems modeling.

- Itron, a leader in utility meter data management based in Liberty Lake, Washington, will provide assistance in simulation modeling.
- Summit Blue, an energy industry consulting company based in Boulder, will provide data measurement, verification and evaluation assistance.

"With a remarkable team of energy industry leaders pledging significant resources to this project, Bright Tucson will pave the way for utilities across the country and around the world to reap greater benefits from solar energy at a lower cost to customers," Bonavia said.

Joe Simmons and Ardeth Barnhart, co-directors of AzRISE, said the project represents a big step forward in the development of both utility-scale and distributed solar energy systems. "It combines the most effective components that would go into such systems: components like single-axis tracking photovoltaic panels, lithium-based batteries, underground compressed air energy storage and demand-response load management," they said. "The project, the first of its kind in the world, will be evaluated for technical performance and economic value, cost and benefit, and it will serve as a model for future solar energy developments."

Bright Tucson's success depends on securing a \$25 million share of \$615 million in Smart Grid Demonstration Grants that will be awarded by the U.S. Department of Energy beginning in November under the federal stimulus legislation approved by Congress earlier this year.

The federal funds would be supplemented by significant in-kind contributions from project partners and resources provided by TEP, including the proceeds of surcharges approved by the Arizona Corporation Commission (ACC) to help utilities fund energy efficiency and renewable power programs.

Tucson Electric Power provides safe, reliable power to more than 400,000 customers in southern Arizona. For more information, visit tep.com. For more information about UniSource Energy, TEP's parent company, visit tep.com.

SOURCE: Tucson Electric Power

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