

SOUTHWEST CLEAN POWER SUMMIT

December 4-5, 2017
Sheraton Tucson
Tucson, AZ

FEATURING:

**TEP's Iron Horse
Energy Storage Project
Tour and Lunch**

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OVERVIEW

Virtually every state in the United States can produce its own energy from clean, renewable sources such as solar, geothermal, biomass, landfill gas and wind. However, some states have more natural resources than others. This is particularly true in the southwest U.S. — Texas, Colorado, Arizona, New Mexico, Utah, Nevada, and California — where renewable energy options abound. The greatest solar resources are located in the region, where sufficient solar energy falls on an area of 100 miles by 100 miles to provide all of the nation's electricity requirements. Some of the best wind resources are available in this area, as is geothermal. This region also has an abundance of conventional, baseload generation resources including hydropower, nuclear, combined cycle and coal.

Energy storage has become big news and a valuable contributor to the energy sector. As utilities continue to add renewables to the grid, storing electrons and releasing them as needed is a key ingredient to solving the intermittency problem, particularly with wind and solar. Secondly, evolving technology now gives consumers more control of their energy use, and companies have formed to take advantage of that. The southwest region is pursuing market and regulatory changes to integrate more storage. As the southwest and other regions plan for a system that is more dependent on variable renewable resources, energy storage will play an important role in providing cost-effective and reliable electricity.

This conference will feature experts from throughout the Southwest and other parts of the U.S. examining how emerging industry forces continue to transform the power landscape. They will discuss current trends and initiatives and what they're likely to mean for utilities, regulatory commissions, project developers, renewable energy advocates and other stakeholders in the region. They will also consider whether capitalizing on their own renewable energy sources and energy storage will bring the bonanza of millions of energy dollars, new jobs and new sources of income that advocates proclaim.

LEARNING OUTCOMES

- Discuss best practices in renewable energy development and implementation
- Discuss the process of permitting for clean energy projects
- Evaluate the impacts of increased community solar capacity on the overall solar market
- Identify the ways in which solar development is having a meaningful impact on the SW region
- Discuss the unique challenges and benefits of developing and constructing a renewable project on a property formerly used to support a nuclear generation station
- Discuss the central role that storage is playing for some utilities
- Review the latest programs that utilities are using to spur the adoption of electric vehicles (EVs) and how utilities are experimenting with EVs as a resource
- Discuss the permitting process on federal lands and the changes for the new rules on solar and wind permitting

WHO SHOULD ATTEND

- Utility professionals involved with generation and procurement of power
- Independent power producers
- Federal, state, county, and local regulatory agencies
- ISO/RTO professionals
- Financial and legal professionals interested in cleantech development
- Energy consultants, project managers, and engineers
- Cleantech developers, manufacturers, and distributors
- Permitting and siting professionals
- Academia involved with renewable energy R&D
- Energy service companies
- Renewable energy trade associations

AGENDA

MONDAY, DECEMBER 4, 2017

- 8:00 – 8:30 am** **Registration & Continental Breakfast**
- 8:30 – 8:45 am** **Opening Remarks**
- 8:45 – 9:30 am** **Welcome Address from Host Utility Tucson Electric Power (TEP)**
On behalf of TEP, a company that delivers safe, reliable power to more than 417,000 customers in the Tucson metropolitan area, Director of Renewables Ted Burhans will welcome his power industry colleagues to “sunny Tucson”. Mr. Burhans will describe the central role that storage and clean power are playing for TEP as the company continues to expand its renewable portfolio.
Ted Burhans, Director Renewables, Tucson Electric Power (TEP)
- 9:30 – 10:15 am** **Environmental Permitting for the Clean Power Industry**
While the clean power industry has many advantages over carbon-based power in terms of environmental impacts, construction of facilities including wind farms, solar farms, and energy storage facilities often require environmental permitting related to floodplains, wetlands, and/or stormwater. To successfully plan, design and implement clean energy projects, owners, engineers and planners need to have an understanding of when different types of environmental permits may be required, how long the process for obtaining permits may be, and what is required to successfully comply with the terms and conditions of permits.

This presentation will provide an overview of permitting for floodplains, wetlands, and stormwater for clean energy projects. Mr. Earles will draw on experience working on traditional and clean energy projects for a major utility in the western U.S. The presentation will provide the latest regulatory requirements for each of these types of permits and will use examples from real-world projects to discuss different strategies for cost effective ways to obtain and comply with permits and pitfalls to avoid that can extend the time and effort required to obtain permits
Andrew Earles, Ph.D., P.E., D.WRE, Vice President, Wright Water Engineers, Inc.
- 10:15 – 10:45 am** **Networking Break**
- 10:45 – 11:30 am** **Community Solar Markets**
Community solar is now enabled by legislation in more than 15 states, and over 85% of utilities are considering or offering utility-led community solar programs. With this critical momentum, variations can be seen in program effectiveness and adoption. This session will explore the impacts of increased community solar capacity on the overall solar market, how programs are evolving, and the next generation of ideas being put forth by utilities and policy-makers.
Tom Hunt, SVP, Corporate Development/Chief of Staff, Clean Energy Collective



“EUCI provides a high quality product that is very useful in better understanding the energy market and increasing business acumen.”

Sr. Director – Office of Clean Energy, Florida Power & Light (FPL)

AGENDA

MONDAY, DECEMBER 4, 2017 (CONTINUED)

11:30 am – 12:30 pm **Creative Reuse for Renewables: The Unique Challenges and Benefits of Developing a Solar Project at a Decommissioned Nuclear Facility**

In 2016, the Sacramento Municipal Utility District (SMUD), a community owned, not for profit electric utility, commissioned the Rancho Seco Solar PV project, a nearly 11MW project sited on ~60 acres of property formerly used to support the Rancho Seco Nuclear Generation Station. In addition, the Rancho Seco site has a significant solar legacy as it hosted one of the first utility-scale solar arrays in the world when it was built in 1984. The first Rancho Seco solar arrays had a capacity of 3.2 MW. Five of the six arrays were decommissioned in 2013 as the technology reached its end of life.

The Rancho Seco Solar PV project was developed by SMUD to help power the California State Capitol and other downtown Sacramento buildings operated by the California Department of General Services (DGS) as well as to help power the Golden 1 Center, home of the NBA Sacramento Kings, making it one of the greenest sports arenas in the world. The power generated is split, with each customer utilizing about half the array's output. DGS and SMUD agreed to a 20-year Commercial SolarShares partnership to serve the state's buildings with renewable energy, with the "green" or solar energy being generated at SMUD's Rancho Seco facility.

In this session, the speakers will discuss the unique challenges and benefits of developing and constructing a project on a property formerly used to support a nuclear generation station and a solar site. In addition, they will discuss the economic considerations used to assess renewable energy projects at a not for profit utility.

Amanda Beck, Senior Project Manager, Sacramento Municipal Utility District (SMUD)

Matthew Seitzler, Senior Electrical Engineer, Sacramento Municipal Utility District (SMUD)

12:30 – 1:30 pm **Group Luncheon**

1:30 – 2:15 pm **Grid-Connected Battery Projects and Developments**

In early 2017, APS commissioned two 2 MW / 2 MWH batteries installed on two different 12 kV feeders in the Metro Phoenix area. Since that installation, APS has conducted research with EPRI into the ability of the batteries to do local feeder peak shaving, voltage and power factor regulation through coordinated real and reactive power output. This presentation will present a summary of the research findings and lessons learned thus far.

In addition, an update will be provided on APS's Punkin Center 2 MW / 8 MWH project, set to go live in 1st quarter 2018, which will defer the construction of a 16-mile distribution line in the Punkin Center Valley for at least 5 years.

Erik Ellis, Manager, Technology Assessment, Arizona Public Service



"This conference is very enlightening and extremely useful. If you are an energy industry professional, you will find this conference very educational."

Resource Planning Analyst, Entergy New Orleans

AGENDA

MONDAY, DECEMBER 4, 2017 (CONTINUED)

2:15 – 3:00 pm

The California and CAISO Experience

- Operational needs with increasing renewable energy
- Market features for renewable integration
- Regional Integration and what the CAISO is hoping to achieve with other balancing authorities

James Price, Senior Advisor – Market Analysis & Development, Renewable Integration, CAISO

3:00 – 3:30 pm

Networking Break

3:30 – 4:15 pm

The ERCOT Grid: Flexible Tools for Renewable Integration

This session will review some features and characteristics of the ERCOT grid and the ERCOT markets that are contributing to flexibility in an era of high renewable penetration.

- Development of a framework for wholesale market participation by distributed energy resources (DERs), including fast-acting demand response and storage
- Retail dynamic pricing (enabled by millions of smart meters), direct load control via smart thermostats, and other economic demand response
- Ancillary services markets and continuing discussions over the integration of flexible, non-traditional resources

Paul Wattles, Senior Analyst – Market Design & Development, ERCOT

4:15 – 5:00 pm

Panel Discussion on Clean Energy

Can clean energy technologies provide the grid with all the services it needs? It's a good question, especially when you consider that renewables are often targeted by detractors as the cause of many problems with frequency control and voltage stability. If clean energy technology can solve some of these problems, the transition to greater reliance on energy storage, solar and wind generation should happen at a faster pace. In this interactive panel discussion, panelists will respond to audience questions and provide their perspectives on how renewable energy continues to change the energy landscape.

Erik Ellis, Manager, Technology Assessment, Arizona Public Service

Ted Burhans, Director Renewables, Tucson Electric Power (TEP)

James Price, Senior Advisor – Market Analysis & Development, Renewable Integration, CAISO

5:00 – 6:00 pm

Networking Reception



“Great job. Very informative and a good group of attendees.”

SVP, Development, SoCore Energy

AGENDA

TUESDAY, DECEMBER 5, 2017

- 8:00 – 8:30 am** **Continental Breakfast**
- 8:30 – 9:15 am** **Utility Engagement on Electric Vehicles**
Electric utilities across the country and in the Southwest are becoming more engaged with the electrification of the transportation sector. This presentation will review the latest and most innovative programs that utilities are using to spur the adoption of electric vehicles and discuss how utilities are experimenting with EVs as a resource. Topics will include:
- Utility investment in EV charging stations
 - How to address demand charges
 - Grid integration of EVs
- Mike Salisbury, Senior Transportation Associate, Southwest Energy Efficiency Project**
- 9:15 – 10:00 am** **Processing Renewable Energy Rights-of-Way on BLM Land**
The BLM will present a broad overview on applying for a right-of-way on BLM land, from siting, the plan of development, National Environmental Policy Act, the right-of-way grant, to construction monitoring. We will also provide an update on the recent changes to the right-of-way process under the new rule for solar and wind actions. The overview will highlight the importance of having a solid well defined proposal and outline the pro-active work the BLM has done to narrow locations with low resource conflicts, such as Designated Leasing Areas. A well defined proposal is also key to producing an environmental analysis that meets the disclosure criteria for NEPA which leads (if approved) into a right-of-way grant that clearly defines what is approved yet provides processes that allow some flexibility for minor unforeseen adjustments.
- Eddie Arreola, Supervisory Project Manager, BLM AZ Renewable Energy Coordination Office**
- 10:00 – 10:15 am** **Morning Break**
- 10:15 – 10:45 am** **Southwest State Policies**
In this session, an overview of state level policies in the Southwest for energy storage and distributed energy resources, and lessons learned from other states outside that region that could be applicable to the southwest will be provided. The discussion will also include Regulatory policies related to transmission, generation interconnection and risk assessment.
- Kiran Kumaraswamy, Director, Market Development, AES Energy Storage**
- 10:45 – 11:30 am** **Tucson Electric Power's Iron Horse Storage Project**
Iron Horse is a co-located 10 MW / 2.5 MWh energy storage and 2 MW-AC / 2.4 MW-DC solar photovoltaic project built by E.ON and located in Tucson, Arizona, near E.ON's existing Tech Park and Valencia solar projects. E.ON will own and operate the project through its life, with Tucson Electric Power purchasing the energy and capacity. In this session, Mark Frigo, the Head of Energy Storage, North America with E.ON will discuss the project details.
- Mark A. Frigo, Vice President, Head of Energy Storage, North America, E.ON**
- 11:30 am** **Load Bus and Leave for TEP's Energy Storage Tour and Lunch**
Tour of Tucson Electric Powers (TEP) Iron Horse Battery Energy Storage Project
Join us for this interesting tour of TEP's new energy storage system at the University of Arizona Science and Technology Park. This storage project illustrates the growing trend of programmable battery storage replacing fossil generation as the least-cost solution for grid reliability services. The system also provides integration for a new 2-MW solar array. Iron Horse supports TEP's goal of delivering at least 30 percent of its power from renewable resources by 2030, doubling Arizona's 2025 statewide benchmark.
- 1:45 pm** **Return to Hotel and Conference Adjourns**

INSTRUCTIONAL METHODS

Case Studies, PowerPoint presentations, and panel discussions will be used in the program.

REQUIREMENTS FOR SUCCESSFUL COMPLETION

Participants must sign in/out each day and be in attendance for the entirety of the conference for continuing education credit.

IACET CREDITS



EUCI has been accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET). In obtaining this accreditation, EUCI has demonstrated that it complies with the ANSI/IACET Standard which is recognized internationally as a standard of good practice. As a result of their Authorized Provider status, EUCI is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET Standard.

EUCI is authorized by IACET to offer 1.0 CEUs for the conference.

REGISTER 3, SEND THE 4TH FREE

Any organization wishing to send multiple attendees to this event may send 1 FREE for every 3 delegates registered. Please note that all registrations must be made at the same time to qualify.

EVENT LOCATION

A room block has been reserved at the Sheraton Tucson – 5151 East Grant Road, Tucson, AZ 85712, for the nights of December 3-4, 2017. Room rates are US \$89 plus applicable tax. Call **1-520-323-6262** for reservations and mention the EUCI event to get the group rate. The cutoff date to receive the group rate is November 3, 2017 but as there are a limited number of rooms available at this rate, the room block may close sooner. ***Please make your reservations early.***

REGISTRATION
to register [CLICK HERE](#) or

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PLEASE REGISTER

- SOUTHWEST CLEAN POWER SUMMIT CONFERENCE**
 DECEMBER 4-5, 2017: US \$1395
 Early bird on or before November 17 2017: US \$1195

- YES, I WOULD LIKE TO ATTEND THE OPTIONAL TOUR**
 TEP's Energy Storage Tour and Lunch
 DECEMBER 5, 2017: US \$50

How did you hear about this event? (direct e-mail, colleague, speaker(s), etc.)

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OR Enclosed is a check for \$ _____ to cover _____ registrations.

Please make all checks payable to EUCI, 4601 DTC Blvd. Suite 800, Denver, CO 80237

Substitutions & Cancellations

Your registration may be transferred to a member of your organization up to 24 hours in advance of the event. Cancellations must be received on or before November 3, 2017 in order to be refunded and will be subject to a US \$195.00 processing fee per registrant. No refunds will be made after this date. Cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI event. This credit will be good for six months from the cancellation date. In the event of non-attendance, all registration fees will be forfeited. In case of course cancellation, EUCI's liability is limited to refund of the event registration fee only. For more information regarding administrative policies, such as complaints and refunds, please contact our offices at (201) 871-0474.