

## EESAT Conference Covers Wide Range of Storage Topics

Attendees from all areas of energy storage were treated to an outstanding lineup of presentations at the EESAT 2003 meeting this past October in San Francisco. Talks were given from varied sources including developers, federal and state agencies, consulting firms, and utilities.

Tim DeVries from Golden Valley Electric Association (GVEA) presented the first performance data from the newly installed 27 MW/15 minute duration NiCad battery in Alaska. The system is online and reported to be performing very well. Since Mr. DeVries' presentation at EESAT, the Battery Energy Storage System (BESS) passed two benchmarks including 26.7 MW of power for 24 minutes and 46 MW for five minutes. According to GVEA's Web site, the BESS has prevented four power outages since November 2003, directly benefiting 16,000 customers.

Rolf Althaus of Alstom discussed the use of compressed air energy storage systems (CAES) equipment based on the large amount of renewables in Germany, which are causing unpredictable 400 MW swings in 15-minute intervals, made worse by the fact that the wind power is located at weak parts of the network. He sees one role of energy storage as a

portfolio management tool for owners of large generation fleets.

Nisha Desai of Ridge Energy conveyed CAES as essential to managing the increasing amount of wind in remote areas of the network with inadequate transmission. She noted that wind power in both West Texas and Wyoming is currently being curtailed by the system operator to manage congestion. Therefore an economic case for storage can be made based on 'lost energy' and production tax credits.

Several companies updated the audience on the status of their technologies including Beacon Power (flywheels), Sumitomo (Vanadium redox system) and NGK (NAS battery). Other speakers discussed progress in advanced valuation studies and EPRI announced it is producing a handbook for energy storage. The handbook includes valuation and a like-for-like comparison of the various technologies and will be distributed in February. ◀



EESAT 2003

## Keynote address by Cal-ISO highlights the need for storage

In his keynote speech opening the EESAT conference, Terry Winter, president of Cal-ISO, stated that his organization desperately needs more bulk electricity storage in the state. In California, electricity storage provided by pumped hydro comprises 16% of total generation capacity. Mr. Winter's staff uses this to its maximum capability and to his knowledge, all other proposed pumped storage projects in the state have been stymied by environmental concerns. The restructuring of the electricity markets has fundamen-

*(Continued on page 3)*



San Francisco provided a magnificent backdrop to this fall's EESAT meeting, co-sponsored by U.S. DOE and ESA. Over 160 people attended.



## Electricity Storage - The Gateway To A New World Of Reliable Power

### **TOPIC AREAS**

- Actual Electricity Storage Case Studies
- New Storage Technologies
- Economics of Storage, Making it Viable
- Power Electronics for Storage Applications
- System Integration of Storage & Renewables
- Storage and the Blackouts
- The safety Issues of Electricity Storage

### **TO SUBMIT A PRESENTATION**

Call Ali Nourai at (614) 716 1269 or e-mail [anourai@aep.com](mailto:anourai@aep.com).

### **HOTEL RESERVATIONS**

Call the Hyatt Regency at Greater Columbus Convention Center at (614) 280 3083. Mention the Electricity Storage Association to get the group rate.

### **FOR THE LATEST INFORMATION**

Visit [www.electricitystorage.org](http://www.electricitystorage.org).

Hosted by American Electric Power



## Storage could tap growing ancillary services market

(Continued from page 1)

tally changed the way the system operator works. Pre-restructuring, they could bring generation online slowly and smoothly in response to changing demand. Today, merchant generators slam hundreds or thousands of megawatts into the system as rapidly as possible in order to maximize revenues, especially when prices are high, which usually occur during periods of high grid volatility. The Cal-ISO uses pumped storage to moderate this dynamic environment.

Mr. Winter stated that his ideal storage system would be 100 MW with 10 hours duration and fast response for voltage and frequency support. He would have these facilities scattered throughout the state at strategic locations. He indicated that these systems could tap into the ancillary services market in California, which is currently valued at \$400 million p.a. and growing rapidly.

Lastly, he encouraged storage developers to work with his staff to develop compensation mechanisms for new technologies that provide benefits that old technologies can't. For example, his staff is currently considering the establishment of a market for VARs. He welcomed outside participation in this process. ◀

## CEC announces energy storage awards

The California Energy Commission has selected the recipients of funding for electric energy storage demonstration projects in California. Palmdale Water District will receive \$986,000 for the use of a 450-kW ultracapacitor as a bridging technology; ZBB Energy Corporation will receive \$1.9 million for the demonstration of a zinc bromine battery to reduce congestion in PG&E's distribution system; and Urenco Power Technologies Limited was awarded \$891,000 for a flywheel energy storage system demonstration for electrified transit networks in San Francisco. In addition to the funding from CEC and DOE, the participants will fund an additional \$4.6 million through cost-share. ◀

## Call for Presentations

**Electricity Storage Association Meeting  
May 19-20, 2004**

**Hyatt Regency Hotel at Greater Columbus  
Convention Center**

The Electricity Storage Association invites you to submit a presentation abstract or outline for this conference. The general theme for this year's meeting is:

**Electricity Storage –  
The Gateway To A New World  
Of Reliable Power**

There will be three half-day presentation sessions. Some examples of appropriate topics are:

- ▶ Actual Electricity Storage Case Studies
- ▶ New Storage Technologies
- ▶ Economics of Storage, Making it Viable
- ▶ Power Electronics for Storage Applications
- ▶ System Integration of Storage and Renewables
- ▶ Storage and the Blackout
- ▶ Safety Issues of Electricity Storage

Prospective speakers should send an abstract or outline with the presentation title, name(s) affiliation, addresses and phone numbers of all co-authors. Send your summary by **February 13, 2004** to the Meeting Chairman:

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American Electric Power  
1 Riverside Plaza  
Columbus, OH 43215  
Telephone: (614) 716 1269  
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Completed presentations are due by **May 1, 2004**.

For more information go to [www.electricitystorage.org](http://www.electricitystorage.org). To make hotel reservations contact The Hyatt Regency at Greater Columbus Convention Center, (614) 280 3083.

## Future Events

### Battcon 2004

**Fort Lauderdale, Florida, May 3-5, 2004.**

The ESA joins the IEEE Power Engineering Society as technical co-sponsors of the conference. To learn more about Battcon, visit the conference Web site: <http://www.battcon.com>, or follow the link from ESA's Web site.

### ESA 2004 and 2005

**Columbus, Ohio, May 19-20, 2004.** See page two of this newsletter for further information.

**Toronto, Ontario, May 23-25, 2005.** Details will follow in subsequent newsletters and on the ESA Web site.

### ESS\* 2004

**Antwerp, Belgium, June 21-23, 2004.**

*\*Electricity Storage Systems for Stationary Applications.* Hosted by the Technical Institute of Royal Flemish Engineers and co-organized by the European Community, this major European meeting provides an excellent venue to meet with Europe's most active companies and end-users of energy storage. ESA is a sponsor of this event and will host a reception during the meeting. Both the EPRI WorldWide European office and ESA are assisting in its organization. Deadline for abstracts is February 15. Visit <http://www.ess2004.com> for further details.



Imre Gyuk of the U. S. Department of Energy offers welcoming remarks at the EESAT meeting in October. Dr. Gyuk is the manager of the DOE's Energy Storage Program and co-hosted the meeting along with Phil Symons from ESA and John Boyes from Sandia.

## RWE Discontinues Regenesys Program

The electricity storage community was saddened to hear RWE Innogy's mid-December announcement that it was discontinuing the Regenesys program. Indicating that it had undertaken a Europe-wide review of core projects, the company decided not to commit further funding to the Regenesys electricity storage scheme, narrowing its focus on core businesses of electricity generation and gas and electricity supply, as well as investment in renewables.

Two Regenesys demonstration sites were underway, a 12-MW, 120-MWh plant at Little Barford in Cambridgeshire, UK, and a similarly sized plant in Columbus, Mississippi, US, in collaboration with the Tennessee Valley Authority (TVA). The Little Barford plant was in the process of commissioning its first 2.4 MW of capacity when the decision to cease operations was taken. The TVA plant was nearing completion, although none of the key electrochemical components from Regenesys had been installed. No further commissioning work will be undertaken by Regenesys on the two demonstration plants. Alternative uses for both sites are currently being evaluated.

RWE Innogy will retain the intellectual property rights to the technology and is in the process of re-deploying 120 people in the UK and US who have been working on the Regenesys project.

Joe Hoagland, TVA's Regenesys project manager said, "TVA is disappointed in the decision to shut down Regenesys and will be considering options for the completion of the facility. We still feel that large energy storage is an important component of the electricity infrastructure and more competitive options need to be proven practical."

Bill Hassenzahl, Chairman of the ESA noted, "While we are disappointed to lose a promising storage technology and the efforts of its personnel in supporting the ESA's objectives, we are confident that other storage technologies are emerging that will serve the needs of utility-scale customers." ◀

# EESAT 2003 San Francisco



The Sir Francis Drake Hotel provided an excellent venue for speakers and attendees.



Haresh Kamath of EPRI/PEAC presented 'Test and Evaluation of an Asymmetrical Electrochemical Capacitor.'



Nancy Clark of Sandia National Laboratory (right), host to over 160 attendees at EESAT 2003, enjoys the NGK reception with Anthony Price of Swanbarton Consultants (left) and Dan Mears of Technology Insights (center).

## About the ESA

### Our Mission

To promote the development and commercialization of competitive and reliable energy storage delivery systems for use by electricity suppliers and their customers, thereby bringing financial and technical benefits for energy storage operators.

### Membership Benefits

- ▶ Gain early knowledge of the latest developments in energy storage technology and field/customer applications of new/innovative storage technologies, and information on how these can be used for member's business advantage
- ▶ Early notification of upcoming business leads in US and abroad
- ▶ Enhanced exposure to potential customers for energy storage products and services
- ▶ Ability to network with users, manufacturers, and researchers in the energy storage field
- ▶ Access to ESA contact list of more than 800 names of industry leaders interested in energy storage
- ▶ Ability to actively interface with key representative from government and industry to receive insights into energy storage markets and strategic directions of key industrial firms

### Join Now

General Membership is \$750 per year which includes attendance at meetings, conference proceedings, special tours, and social events.

To join the ESA, complete our on-line membership form. You will be asked to provide credit card information over our secure transaction server.

For questions about membership in the ESA, contact Brad Roberts at (262) 642 7200 x109 or [membership@electricitystorage.org](mailto:membership@electricitystorage.org).