







*Description:* Many utilities and related organizations perform assessment projects to validate emerging technologies' performance. These projects always provide learning experiences—some positive and some challenging. Whether the results are positive or not, these experiences provide opportunities: for us to expand our understanding of technology performance and customer acceptance; to improve technologies for the next round of assessment and accelerate commercialization; and to avoid mistakes in future solution development. This session will explore the successes and failures that program managers have experienced with emerging technology assessment projects. During discussion, audience members and panelists will be invited to share their real-world experience with emerging technology assessment projects, commercialization, and evaluation.

**SPECIAL KEYNOTE**  
*Regency Ballroom ABCH*  
**12:00 to 12:30**

*Dian Grueneich, Commissioner, California Public Utility Commission*

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**LUNCH**  
*Regency Ballroom ABCH*  
**12:30 to 2:00**

**Luncheon Address: How Could Climate Changes Affect Summer Weather in Western North America?**

*Speaker:* Dan Cayan, Scripps Institution of Oceanography, UC San Diego

*Description:* Warming to significantly greater levels above present-day climatological temperatures is quite certain due to accumulations, present and future, of greenhouse gases (GHG) in the atmosphere from fossil fuel burning. Climate models, accounting for the projected GHG increases, suggest an increasingly frequent, more intense, and more persistent occurrence of summer hot spells as global warming progresses over the next century. Interestingly, from historical observations over the western United States, there is little evidence for such an increase in daytime temperature extremes, but an increase does show up in nighttime temperatures. Historical observations and climate models both indicate that summer heat spells will be more intense during periods of prolonged dryness, suggesting that continental droughts may be periods when we are most vulnerable to severe heat waves.



*Technologies and Practices Track 3*

*Regency Ballroom F*

**Demand Response: Utility-Side Technologies (Meter to Grid)**

*Facilitator:* Jim Parks, Sacramento Municipal Utility District

*Presenters:* [Erich Gunther, EnerNex Corporation](#)  
[Paul De Martini, Southern California Edison](#)

*Description:* There are many missed opportunities for demand response upstream of the customer meter, and these opportunities are rarely used by utilities. This session will provide examples of demand response initiatives that utilities can use to reduce peak load and improve grid reliability. Presenters will provide information on the latest advanced metering infrastructure (AMI) technologies, including one-way and two-way communication devices, and discuss how AMI meshes with the way utilities would like to do business.

*Policy and Process Track*

*Shoreline A*

**Seed and Early Stage Financing: Investing to Advance Innovation**

*Facilitator:* Andy Hargadon, UC Davis Energy Efficiency Center

*Presenters:* [Carol Sands, Angel's Forum, LLC](#)  
[Zach Gentry, Adura](#)

*Description:* The purpose of this session is to describe recent trends in early stage financing and to offer a dialogue around alternative mechanisms for obtaining early stage support for emerging technologies. Presentations will inform participants about Angel financing, early stage technology transfer, obtaining government research, development and demonstration support, and how to determine which companies are good candidates for incubation. Participants will have the opportunity to discuss these topics within the context of their own states and technology programs.

*Strategies and Tactics Track*

*Shoreline B*

**Creating New Potential: How the Evaluation of Utility Programs Can Help or Hinder the Search for New Technologies**

*Facilitator:* Carol Yin, Yinsight

*Presenters:* [Steve Grover, ECONorthwest](#)  
[Rafael Friedmann, Pacific Gas and Electric Company](#)

*Description:* The potential for energy savings in California is decreasing due to market saturation of currently available technologies. This session will engage the audience in a discussion of the current goals of California utility ET programs and how the evaluation of those goals may be tuned to help or hinder the overall goal of assessing candidate technologies. Two

expert speakers will familiarize the audience with the context in which California utility evaluations are taking place and current evaluation activities. The discussion will address the following questions: If program managers "study to the test," or manage ET programs with the goal of receiving a positive evaluation, what are the consequences for program implementation and effectiveness? What are some of the challenges of evaluating utility ET programs, and how can they be overcome? Which metrics are appropriate for evaluating utility ET programs?

### **WORKING SESSION III** **4:00 to 5:30 pm**

*Technologies and Practices Track 1*

*Regency Ballroom D*

#### **Designing New Homes to Provide 50% Energy Savings**

*Facilitator: Danny Parker, Florida Solar Energy Center*

*Presenters: David Springer, Davis Energy Group  
Ren Anderson, National Renewable Energy Laboratory*

*Description:* The purpose of this session is to illustrate how to design new homes in the U.S. to produce a 50% whole house energy savings in a variety of climates, a key requirement to achieving zero energy homes. Presentations will describe recent experiences around the U.S. with innovative systems. The session will explore insulation, high performance windows, reflective roofing, duct and HVAC systems, and lighting and appliances. Multiple foundation schemes will also be considered, as well as adding photovoltaic systems, including solar water-heating systems, to realize zero energy homes. Participants will also discuss alternatives for HVAC and water heating systems, and the potential for feedback devices to help control miscellaneous loads. The presentations will provide examples of how to analyze the various options using software tools as well as experiences with highly innovative buildings.

*Technologies and Practices Track 2*

*Regency Ballroom E*

#### **LED Lighting Today and Tomorrow**

*Facilitator: Don Aumann, California Lighting Technology Center*

*Presenters: Waqidi Falicoff, LPI  
Bob Steele, Strategies Unlimited*

*Description:* This session will take a close look at why there is so much interest and activity in LEDs. Presentations will focus on where LED technology stands currently (cost, efficacy, color) and where it is projected to go in the future. Speakers identify key niches (and products) in which LEDs have already seen market success and highlight promising new markets for LEDs over the next five years. Participants will also discuss what potential barriers obstruct LED market growth, what LED markets are most interesting for ET programs, what types of ET programs



**ENERGY STAR® and Golden Carrot: Rethinking Roles for Emerging Technology**

**Introduction**

*Facilitator:* Harvey Sachs, American Council for an Energy-Efficient Economy

*Presenters:* Marc Ledbetter, Pacific Northwest National Laboratory  
*Martha Brook, California Energy Commission*

*Description:* ENERGY STAR has traditionally been used to guide buyers to higher performing products within established technology categories. In contrast, Golden Carrot (or technology procurement) programs have been used to help introduce new technologies and products to the market. The purpose of this session is to explore these program models with a focus on how they might better work together, and how ENERGY STAR might play a more active role in supporting emerging technology introduction. We will discuss the ideal conditions for a Golden Carrot program to feed an emerging technology into ENERGY STAR, and whether ENERGY STAR can support emerging technology introduction on its own, without the assistance of a Golden Carrot or similar program. We will also look at past emerging technology introduction failures to see how ENERGY STAR might help avoid these failures in the future.

**Emerging Technologies Showcase and Cocktail Reception**

*Beacon Ballroom*

**5:30 to 8:00 pm**

This exciting event will feature hands-on displays of up-and-coming technologies, including advances in lighting, controls, air conditioning, ventilation, motors, and pumps in an atmosphere that promises to facilitate lively interactions. Researchers from leading technology development centers as well as representatives from manufacturers will be on hand to describe their innovations.

**Friday, October 27**

**PLENARY SESSION II**  
**8:30 to 10:00 am**

**Emerging Technology Activities Beyond Ecotopia**

*Regency Ballroom ABCH*

*Moderator: Steven Nadel, Executive Director, American Council for an Energy-Efficient Economy*

*Presenters: Paul DeCotis, Director of Energy Analysis, New York State Energy Research and Development Authority*

*David Terry, Executive Director, Association of State Energy Research and Technology Transfer Institutions*

*Jacques Beaudry-Losique, Program Director, U.S. Department of Energy*

*Julia McNally, Manager of Planning, Coordinating and Reporting, Ontario Power Authority*

*Description:* This session will survey emerging technology activities nationally and in several regions of North America. Speakers will represent the New York State Energy Research & Development Authority (a leader in energy efficiency R&D for more than 25 years), the Association of State Energy Research and Technology Transfer Institutions (a coalition of state organizations), the U.S. Department of Energy (with major programs on R&D in the buildings, industrial, and transportation sectors) and the Ontario Power Authority (identifies and promotes promising technologies). Following initial presentations, discussion will compare and contrast the different approaches being used around the continent and identify some particularly promising initiatives.

**WORKING SESSION IV**  
**10:30 to noon**

*Technologies and Practices Track 1*

**Emerging Industrial Energy Efficiency Technologies**

*Regency Ballroom D*

*Facilitator: Pramod Kulkarni, California Energy Commission*

*Presenters: Donald Erickson, Energy Concepts Co.  
John Sullivan, Alzeta Corporation*

*Description:* ThermoSorber\* is a new technology that uses a novel thermodynamic design that enables extracting waste heat thus increasing system efficiency and improving economics. The technology has been successfully demonstrated in industrial settings to co-produce hot and chilled water with half the energy required for normal hot water production. A currently

operating application at a food processing facility and other potential applications in other industries will be discussed. The session will also discuss the use of an innovative burner control technology for meeting stringent NOx emissions standards without the corresponding increase in high horsepower motors commonly used for flue gas recirculation. Recent applications of the control technology in an industrial facility in California will be presented.

\* Registered trademark of Energy Concepts Co.

*Technologies and Practices Track 2*

*Regency Ballroom E*

**Wireless Building Controls: Energy-Saving Opportunities**

*Facilitator: Michael Kintner-Meyer, Pacific Northwest National Laboratory*

*Presenters: Jim Benya, Benya Lighting Controls  
Clifford Federspiel, Federspiel Controls*

*Description:* This session will present the energy and demand saving opportunities for wireless sensors and controls in buildings. Emerging technologies for wireless lighting and HVAC control applications will be introduced. The session will also discuss impediments to the broader market penetration of wireless sensors and controls in buildings and identify potential paths to overcome them.

*Technologies and Practices Track 3*

*Regency Ballroom F*

**Serving Up Efficiency to Data Centers**

*Facilitator: Jay Stein, E Source*

*Presenters: Bill Tschudi, Lawrence Berkeley National Laboratory  
Lorie Wigle, Intel Corporation*

*Description:* This session will cover technological advances—DC power distribution, better HVAC systems, more efficient back-up power systems, more efficient servers—that have the potential to improve the efficiency of data centers. We will discuss the barriers that are obstructing the diffusion of these technologies into the data center sector, and the public and corporate policies that would help overcome them.

*Policy and Process Track*

*Beacon Ballroom A*

**State-Based Commercialization Assistance Funds—More than Money**

*Facilitator: David Terry, Association of State Energy Research and Technology Transfer Institutions*

*Presenters: Preston Schutt, CleanTech Partners  
Dan Adler, California Clean Energy Fund*

*Description:* Demonstrations are often the end of public programs that assist clean energy technology developers. However, moving technologies through commercialization usually requires a combination of business mentoring, marketing and outreach assistance, and financial risk sharing arrangements with the vendor or the technology adopter. To aid clean energy technology developers in meeting these challenges a number of state-funded organizations are demonstrating various commercial assistance models that go beyond simple funding arrangements. In this session, presentations will describe the unique services being offered by two state-based commercialization assistance funds. Participants will explore the challenges facing clean energy technology vendors in moving technologies from demonstration to commercialization, and the role of state-based investment organizations in providing not only funding but business development and technical resources.

*Strategies and Tactics Track*

*Beacon Ballroom B*

**Building Benchmarking in California**

*Facilitator:* Panama Bartholomy, California Energy Commission

*Presenters:* Roy McBrayer, Department of General Services Green Team  
Steven Long, Southern California Edison

*Description:* The purpose of this session is to discuss benchmarking applications in California. First, we will explore the Governor's Green Buildings Initiative: what are its requirements and goals? What are the obstacles to successfully implementing these goals? How will state buildings use benchmarking to identify potentials for efficiency improvements? Second, we will investigate the role of utilities in facilitating the benchmarking of private sector buildings. The discussion will provide an opportunity to discuss how California's efforts and progress inform and/or compare to other green building and benchmarking efforts across the country.

**LUNCH**

*Regency Ballroom ABCH*

**12:00 to 1:30**

**Luncheon Presentation**

*Wayne Nastri, U.S. Environmental Protection Agency*

The U.S. Environmental Protection Agency will make a brief presentation to kick-off the Responsible Appliance Disposal Program and to recognize leading California participants.

**WORKING SESSION V**  
**1:30 to 3:00 pm**

*Technologies and Practices Track 1*  
**Electricity Storage for Customer-Side Load Management**

*Regency Ballroom D*

*Facilitator:* Mike Gravely, California Energy Commission

*Presenters:* Dan Mears, Technology Insights, Inc.  
*Matthew Johnson, GAIA Power Technologies*

*Description:* Advances in material sciences, control technologies and power electronics has enabled cost-effective electricity storage for certain applications. This session will look at electricity storage systems for peak load reduction and load shifting for both industrial and commercial customers. For industrial application, the speaker will examine the Peak Load Reduction Demonstration project at a Long Island bus depot facility, which uses a sodium-sulfur (NAS) battery system that shifts compressor peak load to off-peak capacity and provides emergency backup power. For the commercial application, the speaker will present three currently operating demonstration sites in New York that use integrated electricity storage systems, allowing load shifting and providing demand response capabilities.

*Technologies and Practices Track 2*  
**What's Cool in Commercial HVAC**

*Regency Ballroom E*

*Facilitator:* Steven Nadel, American Council for an Energy-Efficient Economy

*Presenters:* Mark Hydeman, Taylor Engineering  
*John Proctor, Proctor Engineering*

*Description:* This panel will present an overview of recent advances in equipment, controls and design techniques for large and small commercial HVAC systems. Topics include: automated fault detection and diagnostics; new chiller designs (variable speed screw chillers and the Turbocor compressor); variable condenser water flow controls; variable air volume (VAV) box controls and stability; single-zone VAV systems; packaged TES for small commercial systems; and improved packaged systems for hot-dry climates. The discussion session will address what's working to fuel advances and barriers to further advancement.

*Technologies and Practices Track 3*  
**New Technologies for Conserving Water and Saving Energy**

*Regency Ballroom F*

*Facilitator: Nancy Jenkins, California Energy Commission*

*Presenters: John Koeller, California Urban Water Conservation Council  
Gerry Hamilton, Pacific Gas and Electric Company*

*Description:* In this session, speakers will introduce new innovations that will both save energy and conserve water and discuss program perspectives. The session will investigate new devices that have been developed for residential, commercial, and industrial and agricultural applications. Participants will get up-to-date information on the current status of CPUC water energy policy considerations and discuss utility perspectives regarding possible program opportunities. The discussion will also provide an opportunity to discuss work on combined energy and water savings technologies outside of California.

*Policy and Process Track*  
**Demand Response: Tariffs, Rates, Incentives**

*Beacon Ballroom A*

*Facilitator: David Nemtzow, Energy Consultant and former President of the Alliance to Save Energy*

*Presenters: Peter Douglas, New York State Energy Research and Development Authority  
Roger Levy, Demand Response Research Center*

*Description:* This session will review trends of demand response products offered by utilities and their convergence with retail time-based utility rates (real time, time of use). Time-based retail utility rates had been demonstrated by regulated utilities as long as twenty years ago. Over the last half-decade, peak demand-related events in some partially deregulated markets have spurred the introduction of wholesale demand response products (load curtailment). In these same markets, time-based retail products are now re-emerging (starting with large customers) to continually address the same issue for which demand response was intended. We will discuss how application of demand response has evolved in New York and California under different regulatory regimes. In doing so, we will look at differences in how the products are offered, the effect on load curtailment business models, and the effect on retail customers.

*Strategies and Tactics Track*  
**Commercialization of Energy-Efficient Technologies: Partnerships with Labs, Universities, and the Public Sector**

*Beacon Ballroom B*

*Facilitator: Andrew Hargadon, UC Davis Energy Efficiency Center*

*Presenters: Karl Johnson, California Institute for Energy and the Environment  
Charlie Huizunga, Center for the Built Environment, Adura Technologies*

*Description:* The purpose of this session is to explore how partnerships can accelerate the commercialization and adoption of energy-efficient technologies and strategies in the marketplace. Creative collaboration with research centers, universities and private companies can speed the adoption of energy efficiency innovations. Participants will discuss a multidisciplinary approach to commercialization, including using the UC/CSU system to demonstrate emerging technologies and practices, and partnering to commercialize wireless lighting controls. The session will also provide an update about the latest from the UC Davis Energy Efficiency Center.

