

## **AESP 2006 Renewables Panel Session:**

### ***An Unforgettable Renewable Energy Demonstration Experience in California's Chino Basin:***

#### ***From Enhanced Biogas Generation via European Ultrasound Technology to Building-Integrated Solar PV System Performance Evaluation Testing***

Addressing the technical and market barriers of implementing several types of biogas resources combined with building-integrated photovoltaic (BI-PV) applications to maximize the total benefits to project developers, their host customers and electric utilities in order to lead to additional development of a sustainable market for renewable generation. Based on one California RD&D Programmatic effort and its experiences to date, how can the electric grid benefits resulting from targeted renewable DG be more fully quantified and improved? Will the application of ultrasound technology (applying high levels of sonic energy) improve waste activated sludge solids destruction and biogas generation in wastewater facilities? How can side-by-side photovoltaic system testing and evaluation of thirteen different systems lead to a recommendation for an independent *Consumer Reports* type evaluation of the solar industry's leaders in BI-PV applications? These and other key questions regarding the benefits and costs of renewable resources implemented within the 500 MVA Commerce Energy mini-grid in the Chino Basin is explored in this AESP 2006 Panel Session.

#### **Session Speakers/Contact:**

Patrick Lilly (Panel Chair) – Director, Renewables and Supply-side Services, Consulting & Analysis Unit, Itron Inc.

1104 Main Street, Suite 630

Vancouver, WA 98660

E-mail: [patrick.lilly@itron.com](mailto:patrick.lilly@itron.com)

Phone: (360) 906-0616

Fax: 360-906-0622

#### **Panel Members:**

- Max Carpenter, Director of Power Marketing, Commerce Energy Group
- Bill Kitto and Fred Soroushian, Project Directors, CH<sub>2</sub>MHill, Inc.
- Chuck Whitaker, President, BEW Engineering, Inc.
- David Hanna, Director of Integrated Services, Consulting & Analysis Unit, Itron Inc.

#### **Session Objectives/Topics to be Addressed:**

The key objectives of this Renewables market development session include: 1) openly discussing the challenges and opportunities of developing a public/private partnership with the goal of involving the affected electric and gas utilities to identify both the benefits and costs of renewable DG to their distribution system, 2) review the process employed to identify and prioritize over 20 biogas and PV project development opportunities, and 3) addressing important technical, institutional and market barriers to improve the market development efficiency and perceptions of affordability of renewable

distributed generation applied to a mini-grid, so that others may benefit from the experiences gained in this ongoing implementation of the Commerce Energy RD&D Program.

In addition to utility bill savings, energy efficiency and renewable energy technologies receive substantial cash and tax incentives that make projects economically viable for those that are able to use the incentives. Other than the initial costs, "ownership issues" such as maintenance, repairs and reliability of the technologies many times inhibit the implementation of energy projects. Third party Energy Services contracts can address these issues by combining public sector clients with private investors that are willing to take the ownership risks in exchange for the financial incentives and a share of the energy savings. Commerce Energy (CE), a private electricity service provider, recently negotiated an Energy Services Agreement with the Inland Empire Utilities Agency, a public agency, for the installation of a 60 kW (AC) photovoltaic (PV) system in southern California. This contracting model provides for fixed price electricity from the PV system with CE owning and operating the system and IEUA receiving a share of the savings. Public and private sector clients receive some of the benefits of energy efficiency and renewable on-site generation with none of the ownership and financing issues.

Finding approaches that can significantly improve the "affordability" of renewable electric generation is a key factor in developing a sustainable market. Program support activity is increasing in the US in response to the latest energy crisis, and from States that are instituting Renewable Portfolio Standards and demand response programs. In California, there are two fairly significant (>\$100 million per year in market support) Programs supporting Renewable distributed generation that have now been operating for five and seven years, respectively. The technical, institutional and market development issues raised by this panel of experienced renewables project implementers, program developers will help to inform others and pass along their experiences that implement Renewable Energy Programs, in response to legislation and their state-level policy decision makers.