Session 3: The Next Generation – Opportunities at the water-energy nexus
in partnership with:

Description: Water and energy resource systems are inextricably linked. At all scales of resource development and use, water and energy systems are intertwined and interdependent. Water is required for the production of fuels and electricity and energy is required for the treatment, transport and heating of water— a coupled relationship known as the water-energy nexus. The scale of this overlap in California is significant. It is estimated that 20% of electricity, 30% of natural gas and 88 million gallons of diesel fuel use within the State is consumed by water systems. The aggregate carbon footprint of this energy use is estimated at more than 100 million metric tons of CO2-equivalent greenhouse gases (or roughly 20% of total State emissions). Research from the UC Davis Center for Water-Energy Efficiency (CWEE) and others is necessary to advancing this field in concept and application by: identifying, developing, and testing water-energy efficient technologies and practices; designing policies and outreach activities to facilitate market access and penetration of innovative water-energy conservation methods and technologies; and serving as a collaborative hub for research, technology development and policy assessment between university, industry and public partners.

This policy forum will ask the following key questions

1. What is the potential for energy savings (EE) in the California water sector?
2. How has EE been achieved historically in the water sector and how is it changing?
3. What are the greatest obstacles to improving energy efficiency in the water sector?
4. How are water efficiency programs similar to EE programs? How do they differ?

Key Insights: Session 3

- Water use including pumping/conveyance, heating, and treatment is responsible for a large fraction of the state’s electricity and natural gas demand.
- Large opportunities exist for energy and water savings in this sector. However, existing programs only tap a fraction of this opportunity due to several challenges including: multiple actors making decisions, complex water system, and lack of alignment of policy goals and funding programs.
- Significant gains are not likely with the existing policy structure. Therefore, a new approach is necessary to jointly realize the full benefits of water-energy efficiency. This includes having an accepted methodology for estimating and valuing the embedded energy in delivered water.
The UC Davis Policy Institute for Energy, Environment and the Economy is part of a bold new campus-wide initiative to dramatically increase the value of UC research to the policy-making process by identifying priority policy information needs, facilitating diverse collaborations, and translating science into policy-relevant products. If you would like to hear about future Policy Institute events such as this, please sign up HERE.

Links to Presentations

**Anthony Eggert** - Executive Director, Policy Institute
**Frank Loge** - Director, UC Davis Center for Water Energy Efficiency
**Frank Spasaro** - Southern California Gas Company
**Grant Davis** - Sonoma County Water Agency
**Fran Spivy-Weber** - Public Member, State Water Resources Control Board

Speakers and panelists:

**Anthony Eggert (Moderator)** is the executive director of the UC Davis Policy Institute for Energy, Environment and the Economy which is dedicated to leveraging university expertise to inform better policy. From 2007 through 2012 Eggert served as an appointee of Governors' Brown and Schwarzenegger in several senior policy positions overseeing clean energy and environmental policy development for California including Science and Technology Policy Advisor to the Chair of the Air Resources Board, Commissioner for the California Energy Commission, and Deputy Secretary for Energy Policy of the California Environmental Protection Agency. Prior positions include advising the University of California on federal energy and climate policy, directing research on low-carbon fuels and vehicles at UC Davis' Institute of Transportation Studies, and as an engineer and then manager for Ford Motor Company.

**Frank Loge** is a professor in the Department of Civil and Environmental Engineering and Director of the Center for Water Energy Efficiency at the University of California, Davis. Research and teaching interests include water and wastewater treatment; water resource system optimization; nexus between water and energy and water and health; and water conservation and wastewater reuse. He currently serves on the US Environmental Protection Agency's Science Advisory Board Drinking Water Subcommittee. He is a licensed Civil Engineer in California.

**Frank Spasaro** is currently responsible for managing the local government and institutional energy efficiency partnerships for Southern California Gas Company. He is also responsible for developing and implementing their “on-bill” financing program, as well being the lead to develop “statewide” financing pilots. Since joining Southern California Gas Company in 1981, he has spent the majority of his career working on energy efficiency, including several policy and oversight positions. He has been responsible for the development of many programs to promote energy efficiency and he has managed the Gas Company’s Energy Resource Center.

**Grant Davis** - Mr. Davis is responsible for management activities related to the Water Agency’s core functions of water delivery, wastewater management, flood protection, and environmental sustainability. An emerging focus of the Water Agency’s operations is the development of a secure, clean and renewable energy portfolio through Carbon Free Water by 2015. The Water Agency is working to expand their portfolio of renewables to offset their own energy use and to build an enterprise. Mr. Davis currently serves on the Board of the California Utility Executive Management Foundation and is Vice Chair of the Association of California Water Agencies Energy Committee.
Fran Spivy-Weber was re-appointed as the Public Member of the State Water Resources Control Board on March 1, 2009. She serves as Vice Chair of the Board and is the Board liaison to the Los Angeles, San Diego, Central Coast, and Lahontan Regional Boards and the Ocean Protection Council Steering Committee. She represents the Secretary of CalEPA on the Santa Monica Bay Restoration Commission. Ms. Spivy-Weber has served as convener and on the Board of the California Urban Water Conservation Council, co-convener of the Southern California Water Dialogue, and on the Boards of the Water Education Foundation, California Council of Land Trusts, and Clean Water Action/Clean Water Fund. Fran has a BA from the University of Texas in history and political science and an MA from Johns Hopkins University School of Advanced International Studies. She has four years of graduate coursework in biology from Sacramento and San Francisco State Universities.

Sponsored by Wells Fargo

In 2012, Wells Fargo officially joined as a member of the UC Davis Energy Efficiency Center working together to accelerate the development and commercialization of energy efficiency technologies.

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