

# First Western Forum on Energy & Water Sustainability

Bren School of Environmental Science & Management  
University of California, Santa Barbara

Schedule for March 22, 2007

<i>Time</i>	<i>Title</i>
8:30	<b>Welcome</b>
	<b>Session 1: Looking into the Future</b>
	<b>Keynote Speaker:</b>
8:40	Water availability and power plant siting in California, Commissioner John Geesman (CA Energy Comm.)
9:20	Future Population Growth Trends in California, Mary Heim (CA Dept. of Finance)
9:50	California Energy Sources/Consumption Projections and Economic Analysis 2005 to 2050, Gary Matteson (Matteson and Associates)
10:20	Climate Change and Water Supplies in the West, Michael Dettinger (USGS, Scripps)
<b>10:50</b>	<b>Break</b>
11:00	Energy and Water: A Growing and Increasingly Important Partnership, Tony Fellow (Vice-Chairman of the Board, Metropolitan Water District of Southern California)
11:30	Estimating Freshwater Needs to Meet Future Thermoelectric Generation Requirements in Western US, Thomas Feeley III (Natl. Energy Technology Lab, DOE)
<b>12:00</b>	<b>Lunch</b>
	<b>Session 2: Regional "Hot Spots"</b>
13:00	Climate Change and California Water Management, John Andrew (CA DWR)
13:25	Planning for a Sustainable Water Future - Tucson's Challenge, Ralph Marra (Tucson Water)
13:50	Energy Boom and Groundwater Bust: Mexico's Water-Energy Nexus with Implications for the U.S. Border Region, Christopher A. Scott (U Arizona)
14:15	Planning for Arizona's Electricity Future: The Demand for Water, Ed Fox (APS)
14:40	Summer water availability in the Cascades and Sierras: Assessing spatial patterns of sensitivity to climate change, Christina Tague (Bren School, UCSB)
<b>15:05</b>	<b>Break</b>
	<b>Session 3: Increasing Water Use Efficiency</b>
15:20	Resource use efficiency, Ernst von Weizsäcker (Dean, Bren School, UCSB)
15:45	New Materials and Separations Science for Sustainable Water, William Bourcier, Elizabeth A. Burton, Robin L. Newmark (LLNL)
16:10	Life Cycle Assessment of Two Water Supply Systems: Importation vs. Reclamation, John Crittenden, Erin Lyons, Peng Zhang, Miles Costanza, Ke Li (Arizona State U)
16:35	Increasing Thermoelectric Generation Water Use Efficiency, Chuck McGowin, Robert Goldstein (EPRI), and John Maulbetsch (Maulbetsch Consulting)
17:00	Water Reuse an Integral Aspect of Sustainability: The Role of Advanced Oxidation Processes – Chemistry and Economics, William J. Cooper (Urban Water Research Center, UCI)
17:25	The Last Water-Cooled Thermoelectric in CA? SCE's New Mt View Generating Station, Craig Eaker (So. Cal. Edison) and Michael DiFilippo
18:00	Reception and Poster Session
	<i>Poster Session (from 18:00 to 19:00)</i>
	Climate Change Assessments for the Rocky Mountain West: Impacts on Future Natural Resources and Regional Economies, Matthew K. Reuer, Gregory Zimmerman, Caitlin O'Brady, and Walter Hecox (Colorado College)
	Outdoor water consumption in Tucson: is preserved open space a substitute? Rosalind Bark-Hodgins, Eve Halper, and Bonnie G. Colby (U Arizona)
	Regional Assessment of Wind-Powered Desalination Opportunities in the Southwestern U.S., James Androwski, Tom Acker, Abe Springer, Jan Theron, Grant Brummels, and Susan Williams (Northern Arizona U.)

Assessment of Climate Variability on Water Resource Availability for Oil Shale Development, Cathy Wilson <sup>1</sup> , J. Foster <sup>3</sup> , J. Herr <sup>2</sup> , R. Middleton <sup>1</sup> , W. Tsai <sup>2</sup> , L. Weintraub <sup>2</sup> , M. Witkowski <sup>1</sup> ( <sup>1</sup> LANL, <sup>2</sup> Systech Engineering, <sup>3</sup> Oxford University)
Groundwater management in two California coastal groundwater basins, Norman N Brown (independent consultant)
Irrigated agriculture, energy, and endangered species in the Upper Klamath Basin: evaluating trade-offs and interconnections, William Jaeger, Brent Boehlert (Oregon State Univ.)
Energy Efficient Wastewater Treatment at Delhi, California: A Case Study, Franklin Bailey Green (LBNL, UCB)
Water-use intensity of renewable energy vs. conventional sources, Stacy Tellinghusen, Bliss Dennen, Cheryl Lee, James Lee, Dana Larson (UCSB)
Municipal Water Pricing for Scarcity and Cost Recovery, Edna Loehman (Purdue University)
Climate Warming & Adaptability of High-Elevation Hydropower Generation in California, Kaveh Madani & Jay Lund (UC Davis)
Optimal Operation of Hydropower Systems with Ecosystem Considerations, Marcelo Olivares (UC Davis)
Spatial Dynamics of Water Management in Irrigated Agriculture, Daya Muralidharan, Keith C. Knapp (UCR)

## Schedule for March 23, 2007

<i>Time</i>	<i>Title</i>
8:25	<b>Welcome</b>
	<b>Session 4: Increasing Energy Use Efficiency</b>
8:30	Energy savings effects of artificial recharge and increased storage in groundwater basins, Jordan Kear (Daniel B. Stephens & Associates, Inc.)
8:50	Nutrient Removal and Biofuel Production through Microalgae-Based Wastewater Treatment, Tryg Lundquist & John R. Benemann (Cal Poly, SLO)
9:15	Energy Management Program at Metropolitan Water District of Southern California, Gordon Johnson (MWD)
9:40	Monitoring and control systems for energy smart homes, Eric Williams, H. Scott Matthews (Arizona State U)
<b>10:05</b>	<b>Break</b>
	<b>Session 5: Energy/Water Interactions</b>
10:15	Studies on the interaction of Energy and Water: Insights & Evaluations from Mathematical Methods, Jay Lund (UCD)
10:40	Energy Implications of Alternative Water Futures, Heather Cooley (Pacific Institute)
11:05	Advanced Water Treatment Impacts on Energy-Water Linkages, Richard Kottenstette, Patrick Brady, Mike Hightower (Sandia Natl Lab) and Christopher Rayburn (AWWRF)
11:30	Framework to Analyze the Risk of Climate Change on Water and Energy Sustainability, Denis Aelbrecht (EdF), R. A. Goldstein (EPRI), C. W. Chen, J. W. Herr, L. Weintraub, L. Chen (Systech Engineering)
<b>12:20</b>	<b>Lunch</b>
	<b>Session 6: Policy Approaches</b>
13:00	Building Public/Private Partnerships in Energy/Water Sustainability Research, Mike Hightower (Sandia Natl Lab), Robert Goldstein (EPRI)
13:25	Electric Power and Water Resource Sustainability, John Wolfe (LimnoTech)
13:50	Integrated planning for water and energy systems, Bob Wilkinson (UCSB)
14:15	Decision Support for Integrated Water-Energy Planning, Vincent Tidwell, Len Malczynski, Peter Kobos, Bill Hart, Mike Baca, and Sean McKenna (Sandia Natl Lab)
14:40	Water Markets as a Mechanism for Sustainable Re-allocation to Meet New Water Demands, Gary Libecap (Bren School, UCSB)
<b>15:05</b>	<b>Break</b>
15:20	Towards an Economic Rationale for Sustainable Groundwater Management, Siwa Msangi, Richard Howitt (UCD)
15:45	Negotiated Transactions as a Water/Energy Supply Reliability Tool, Bonnie G. Colby (U Arizona)
16:10	Forecasting Water Demand Using Cluster and Regression Analysis, Bruce Bishop & Veerender Garg (Utah State U)
16:35	Data & Modeling Conflation Issues in Energy & Water Systems, Noah Goldstein, Robin Newmark, Liz Burton (LLNL) and Jim McMahon, Camilla Dunham Whitehead, Girish Ghatikar (Lawrence Berkeley National Laboratory)
17:00	Efficient Use of Water through Financial Incentive Programs, Baryohay Davidoff (CA DWR)
17:25	Final Discussion & Summary
<b>18:00</b>	<b>Reception</b>