



Arizona State University (Tempe, Arizona)



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Area of Discussion: Water-Energy Nexus in the Southwest



COLORADO SCHOOL OF MINES



Western Area
Power Administration



THE UNIVERSITY of
NEW MEXICO



Utah State
University



NATIONAL RENEWABLE ENERGY LABORATORY



Southern Nevada
Water Authority

Major Takeaways: Arizona State University

Event Overview

- September 8, 2016: ASU hosted the Southwestern Regional Water-Energy Nexus Event in Tempe, AZ to address the water-energy megachallenge. Speakers and attendees included stakeholders from six states (AZ, CA, CO, NM, NV, and UT); 3 tribal entities (Gila River Indian Community, Fort Mojave Indian Tribe, and the Navajo Nation); 4 national labs (Lawrence Livermore, Los Alamos and Sandia National Labs, and the National Renewable Energy Laboratory); 2 utilities (Southern Nevada Water Authority and Western Power Administration); 7 universities (Arizona State University, New Mexico Tech, University of Arizona, University of California – Irvine, University of Colorado – Boulder, University of New Mexico, and Utah State University); as well as major industry leaders such as Coca Cola and Intel in addition to hydropower startup Natel Energy. Leaders from the U.S. Department of Energy attended and U.S. Senator Flake (R-AZ) prepared a welcome video.

Key Takeaways

- The greatest threat to southwestern regional sustainability is at the intersection of water and energy– the use of water in energy generation via coal, fracking/natural gas, hydropower, nuclear, biofuels, etc., and the use of energy for water – most notably represented by the energy being used to deliver water, especially for municipal use, agriculture, and irrigation across the region.
- The southwest regional ecosystem has everything needed to innovate at the water-energy nexus:
 - advanced technological expertise via our national labs and universities;
 - regulatory knowledge via our advanced partnerships with utilities and regulatory agencies; and
 - major industry centers with an interest in water-energy, especially for manufacturing.

Major Takeaways: Arizona State University (continued)

Key Takeaways (continued)

- Opportunities & Priorities
 - Wastewater and desalination are major R&D goal areas to address water supply challenges in the future
 - In addition to continued effort to use existing infrastructure more efficiently, evidenced-based reports indicate citizens in the region are willing to adjust troubling use trends to address demand changes in the future, but this must be done locally and in collaborative, community-based discussion
 - Integrated low water use-clean energy testbed opportunities should be leveraged to streamline the connection between ideation and market-readiness
 - Given advances in solar and related micro-grids, innovation in energy storage is critical to minimize the intermittency often associated with renewable energy deployment (including wind, solar, etc)
- Challenges
 - Industry is making progress in water-neutral use policies related to manufacturing, but progressive water and carbon programs are often isolated even within sustainability offices of the same company
 - Governance systems for utilities must evolve to support increasing decentralization; the boundaries that formerly governed utilities are no longer relevant for future needs
- Next Steps
 - Real change is possible at the municipal and tribal jurisdictional level
 - Regional participants are convening again around three important forward leaning steps: data sharing, shared technology development opportunities and regional testbed assets