1st Sandia National Laboratories and University of Arizona Symposium

Sponsored by Sandia National Laboratories, The UA College of Engineering, and The Renewable Energy Network

February 21, 2012
8:30AM – 5:00PM

University Marriott Hotel

Tucson, Arizona

**“Anticipatory R&D Investments for**

 **Energy-Water-Climate Change in Arid Regions**

The nexus between energy and water resource sustainability and climate change represents one of the greatest challenges facing the Southwestern US and other arid regions around the world. Finding the solution to these challenges requires expertise from numerous disciplines, involves a diversity of collaborators, and spans the technology realm from discovery R&D to immediate technology transfer to industry. The multi-disciplinary, multi-scale, highly uncertain, and non- technical /social/political aspects of these challenges are complex.

The Southwest is unique in the US because of concerns about sustainability imbalances due to large expected population and economic growth, water scarcity, existing (e.g. oil gas and coal) and potential energy resources (e.g. wind, solar, biofuel, geothermal) limitations, and climate change. The critical issue facing the realization of this growth is the need for balanced sustainability across energy-water-environmental sectors in concert with the development of the appropriate infrastructure to manage that growth far into the future, considering the uncertainties associated with the impacts of climate change.

 A new paradigm is needed to address the issues described above which encourages interdisciplinary problem solving through “anticipatory R&D investments” Building the appropriate interdisciplinary networks now to address these future challenges is essential.

This symposium will bring together thought leaders from academia, national laboratories, state and federal government, industry, and other groups to begin to develop the collaborative technical networks necessary to 1) identify and prioritize the necessary R&D, and 2) advocate for investments to anticipate how best to respond to the expected and conflicting demands.

The symposium will focus on four themes:

* Unique risks to arid regions including climate change and water quality in arid regions
* Water-energy nexus in arid regions
* Monitoring, management, and decision-making under increasingly constrained resources and varying levels of risk/uncertainty.
* Developing robust management strategies in arid regions including social and human behavior, economics, and shifting political environments.