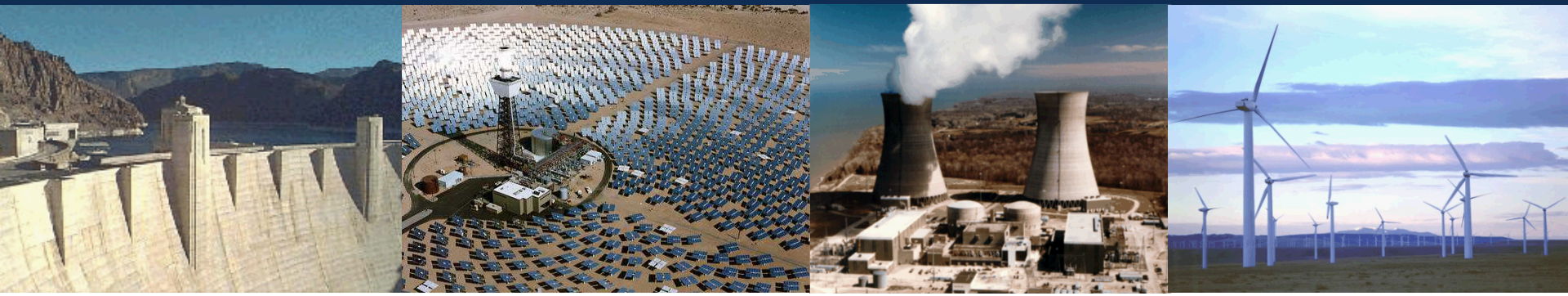
SAND2014-15260PE

Exceptional service in the national interest

Sandia National Laboratories



Los Alamos and Sandia National Laboratories Water Energy Strategy Meeting - Opening Remarks

Marianne Walck
Director Geoscience, Climate and Consequence Effects

Santa Fe, New Mexico - June 24, 2014

U.S. DEPARTMENT OF ENERGY | NNSA National Nuclear Security Administration

Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

Sandia's Mission

Our unique mission responsibilities in the nuclear weapons (NW) program create a foundation from which we leverage capabilities, enabling us to solve complex national security problems.

Sandia accomplishes tasks integral to the mission and operation of our sponsoring agencies by:

- anticipating and resolving emerging national security challenges
- innovating and discovering new technologies to strengthen the nation's technological superiority
- creating value through products and services that solve important national security challenges
- informing the national debate where technology policy is critical to preserving security and freedom throughout our world

Sandia's Energy Mission

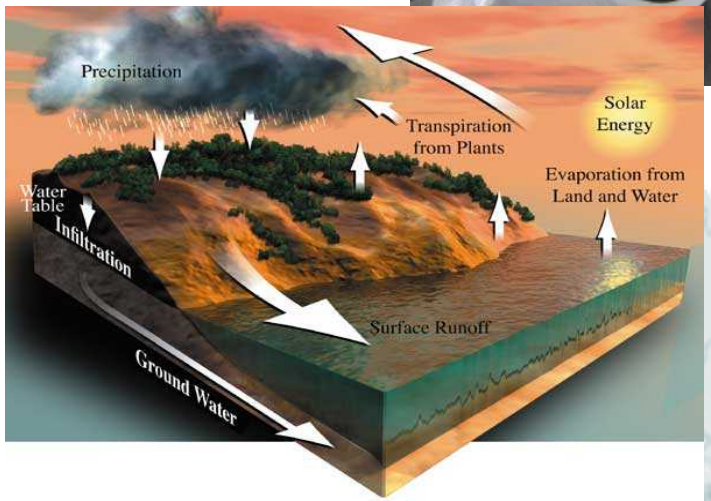
A Sustainable energy future is central to the nation's security.

Sandia, by drawing on its foundational capabilities will provide or enable solutions to these energy challenges and support US government objectives to, secure, affordable and environmentally sound energy systems.

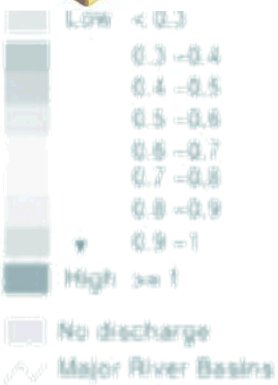
Sandia Key Water Focus Areas

Treatment Technologies

Security Systems

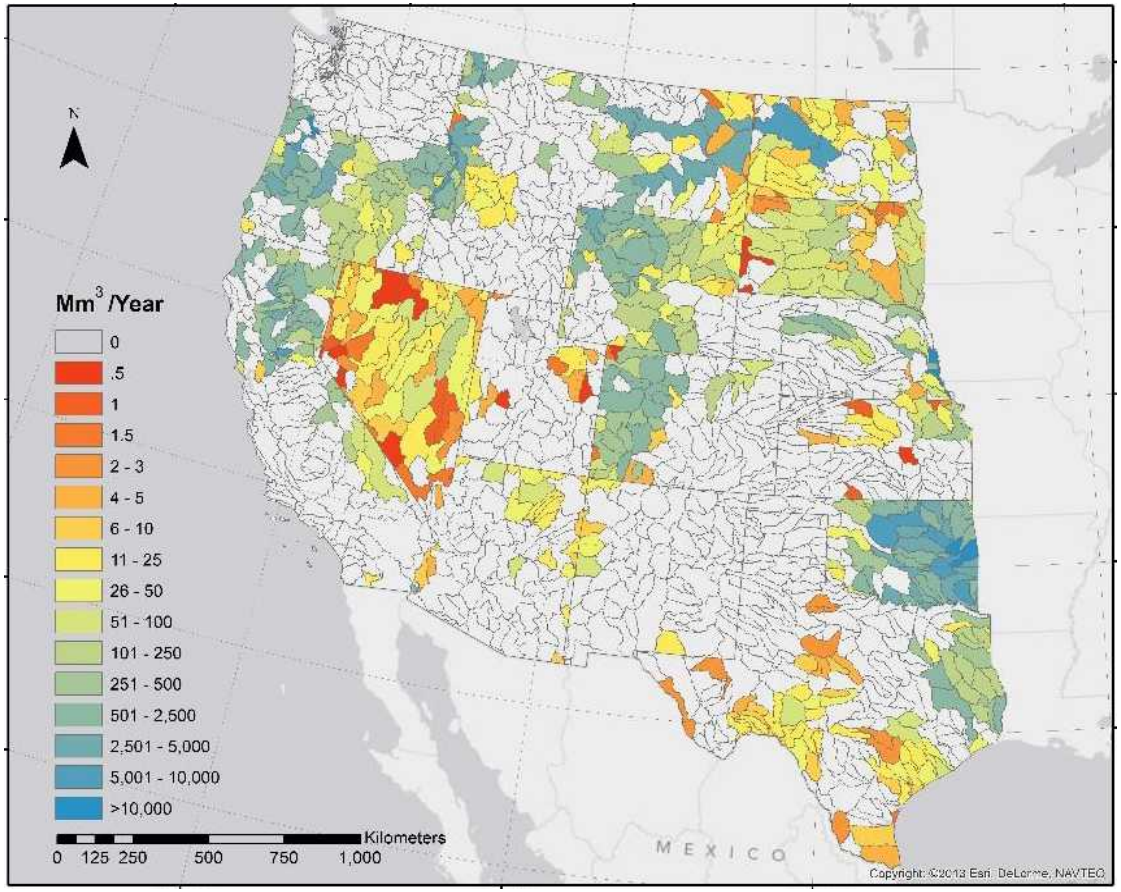


Integrated Natural Resource Modeling



Energy-Water

Sandia –Los Alamos Water Energy History



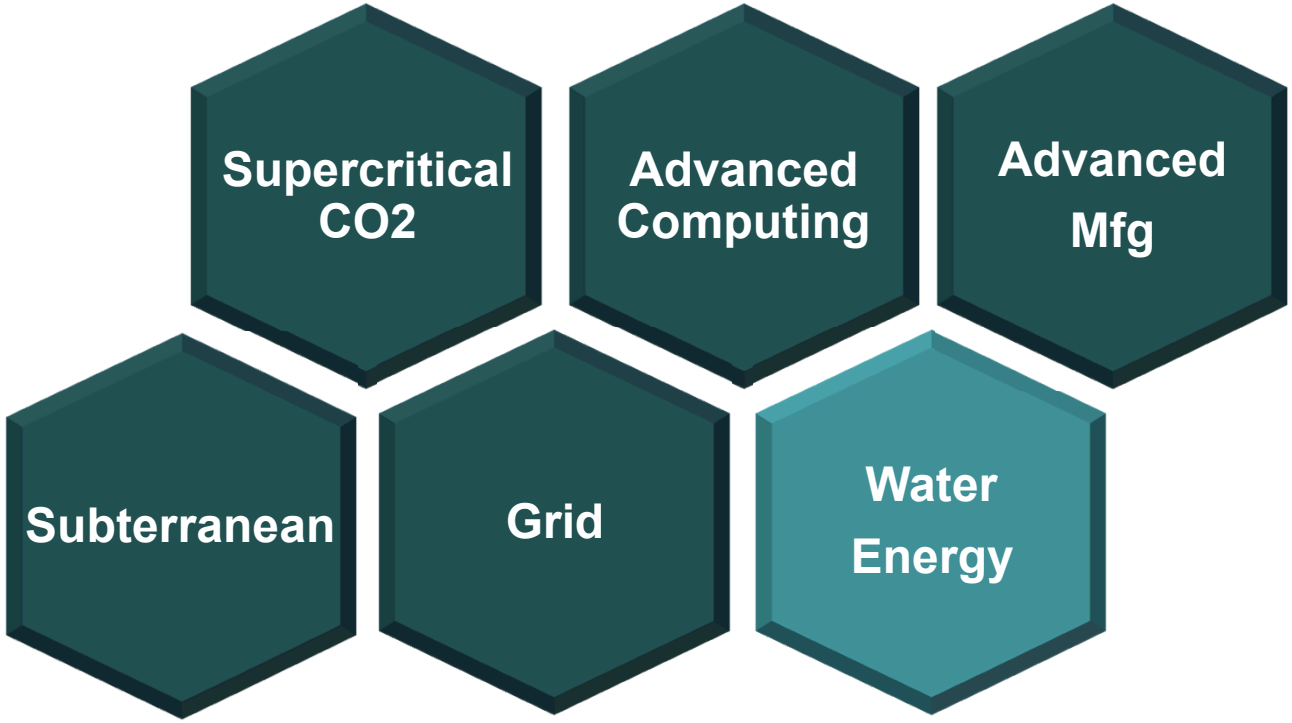
Since 2001 Water-Energy central focus

Worked for many years on the roadmap for energy-water technology development with multiple national labs, EPRI, industry

Authored with NETL and EPRI first Report to Congress: Energy Demands on Water Resources (2006)

Sandia led (multiple labs, EPRI and universities) Integrated Energy Water Planning for Western Electric Coordinating Council, Western Governors Association: **DOE/OE**

New DOE Focus Areas Provide Opportunities



"Flows of energy and water are intrinsically interconnected, in large part due to the characteristics and properties of water that make it so useful for producing energy and the energy requirements to treat and distribute water for human use."

DOE Report June 2014 The Water Energy Nexus: Challenges and Opportunities

Why now, why the National Labs?

DOE recognizes:

The National Lab Network has already been working together for over a decade specifically on the emerging issues of improving energy and water sustainability and reliability.

The national laboratories have already developed deep regional partnerships and broad geographic coverage on energy and water science that can be used to help accelerate technology development and more importantly technology demonstration.

The Labs have unique multi-scale, multi-physics skill-sets required to develop solutions to the Water-Energy challenges: from nanostructured materials design through large scale analysis and engineering of system.