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Water Treatment & DOE's Water Security Grand Challenge

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Water Treatment & DOE’s Water Security Grand Challenge

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PRESENTED BY

SAND Number:
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DOE Water Treatment Program Space

**Produced Water**
- Reinjection costly and linked to seismic activity

**Brackish Water**
- Potential energy and municipal application

**Sea Water**
- U.S. costs among the highest globally, energy big driver
- Potential energy and municipal application

**Waste Water**
- Industrial, energy, municipal treatment, and reuse for energy efficiency
Sandia Develops Diverse Water Treatment Technologies

Sandia has been actively working in a broad range of water treatment technical challenges for nearly 20 years.
DOE Launches Water Security Grand Challenge

on October 25, 2018

Using a coordinated suite of prizes, competitions, early-stage research and development, and other programs, the Grand Challenge has set the following goals for the United States to reach by 2030:

- **Goal 1:** Launch desalination technologies that deliver cost-competitive clean water
- **Goal 2:** Transform the energy sector’s produced water from a waste to a resource
- **Goal 3:** Achieve near-zero water impact for new thermoelectric power plants, and significantly lower freshwater use intensity within the existing fleet
- **Goal 4:** Double resource recovery from municipal wastewater
- **Goal 5:** Develop small, modular energy-water systems for urban, rural, tribal, national security, and disaster response settings
$20M/year for 5 years, total federal funding of $100M plus 20% cost share requirement.

The Hub’s focus is on early-stage research and development (R&D) for energy-efficient and cost-competitive desalination technologies, including manufacturing challenges, and for treating non-traditional water sources for multiple end-use applications.

The Energy-Water Desalination Hub is organized around four topic areas:

1) Materials Research and Development,
2) New Process R&D,
3) Modeling and Simulation Tools, and
4) Integrated Data and Analysis.

The Carlsbad, Calif., desalination plant borders Interstate 5 and the Pacific Ocean. (Lenny Ignelzi / Associated Press)
DOE Selects the National Alliance for Water Innovation

Led by Lawrence Berkeley National Laboratory, partnered with Oak Ridge National Laboratory and National Renewable Energy Laboratory. (https://www.nawihub.org/)