

## Emerging Grid-Scale Energy Storage: A Key to Unlocking a Resilient Energy Future

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#### Abstract

The transformational electrification of both domestic and global energy infrastructure is presenting unprecedented and daunting challenges to resilience and efficiency of aging electrical grids. Grid-scale energy storage offers a wide range of potential solutions to many of these challenges. Dr. Spoerke will provide a highlighted overview of a wide range of current and emerging energy storage technologies including mechanical, thermal, chemical, and battery-based storage technologies. He will introduce these technologies and discuss the opportunities and limitations of each class of systems, identifying how different technologies may be best applied to address particular needs on the grid.

#### Biography

Dr. Erik D. Spoerke is the Energy Storage Materials Lead in Sandia National Laboratories' Grid Energy Storage Program and a Principal R&D Materials Scientist in the Energy Storage Technologies and Systems Department at Sandia. He recently served on the DOE Energy Storage Grand Challenge National Laboratory Coordination Team, co-leading the Technology Transitions Track National Laboratory working group. In addition, he is looking forward to a new appointment as a National Laboratory Technical Advisor for the DOE Office of Energy Storage, where he will be working with the DOE to support domestic grid-scale energy storage deployment. Though he has a broad, widely published background in multidisciplinary materials scientist, Erik has a passion for energy-related research, including a wide range of battery-based and other energy storage technologies, particularly for grid-scale and long-duration applications. With a focus on connecting technical innovation with market needs and priorities, Erik works to support the advance and deployment of reliable and sustainable domestic energy storage.

