

# Electricity storage how-to guide available

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(Phys.org) —Sandia National Laboratories has released an updated handbook on energy storage, an internationally known resource for utilities, regulators and others interested in electricity storage and power generation.

The book was created in collaboration with the Electric Power Research Institute (EPRI) and the National Rural Electric Cooperative Association (NRECA) and was funded by the Department of Energy's Office of Electricity Delivery and Energy Reliability. A 10-member advisory panel representing all segments of the storage community guided the book's development, including people from electric utilities, regulators, system vendors and industry associations.

"The handbook will fill an industrywide need for a single resource representing the state of the art of [energy storage](#)," said Imre Gyuk, program manager of the energy storage program of DOE's Office of Electricity Delivery and Energy Reliability.

Gyuk said he hopes that the handbook will help put energy storage well on the road to full commercialization.

The handbook guides readers through topics based on their role, allowing utilities, system suppliers, regulators, consultants and the public to quickly find what they need to evaluate and assess energy storage options for all types of grid-connected enterprises.

Sandia project lead Georgianne Huff said the handbook reviews

available and emerging [storage technologies](#) in terms of important considerations such as cost, performance and technology maturity. It also provides [quantitative data](#) on performance, design features and life-cycle costs.

Lead author Abbas Akhil said the handbook provides detailed information on storage technologies, ways in which they're best applied and their life cycle costs. Akhil said the handbook also reviews [analytical tools](#) and describes the [regulatory framework](#) that adds incentives to the implementation of energy storage.

"Energy storage can be a valuable option in maintaining the high reliability and low cost of the modern grid. The book will be a valuable tool to utilities, regulators and others who are interested in deploying grid storage systems in a safe, reliable and cost-effective way," said Haresh Kamath, program manager for energy storage at the Electric Power Research Institute.

The previous edition of the handbook was published in 2003, when there were only a few demonstration projects and almost no commercially viable technology, so the book was limited to a survey of available storage technologies and analysis of potential applications. The current edition grew from a simple survey to becoming a thorough and comprehensive implementation guide.

"We are proud to collaborate on a tool that will spur new developments in the ongoing research on viable and economical methods of storing electricity," said Martin Lowery, NRECA's executive vice president of Member & Associate Relations.

Huff said the team hopes the handbook will help lead to improved technology, greater deployment of new and renewable power generation and a well-structured regulatory environment, all of which will help

implement a smarter and more flexible [electric power](#) grid.

**More information:**

[www.sandia.gov/ess/publications/SAND2013-5131.pdf](http://www.sandia.gov/ess/publications/SAND2013-5131.pdf)

Provided by Sandia National Laboratories

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