



DOE

Energy Storage Grand Challenge

Introduction and Overview

April 23, 2020

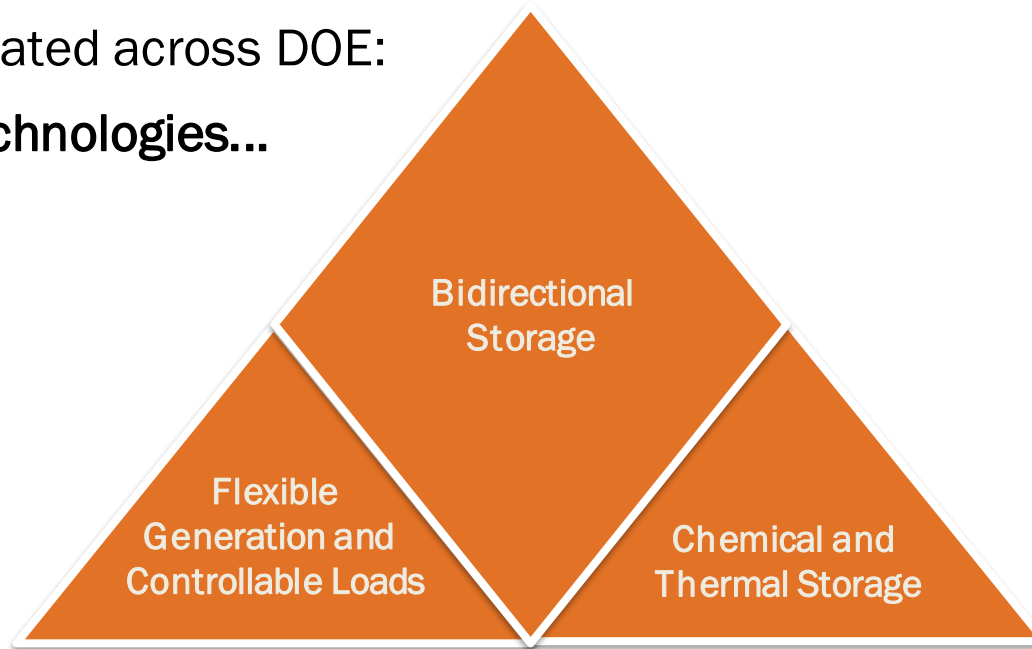


DOE

The Energy Storage Grand Challenge

DOE-wide strategy to accelerate US leadership in energy storage technologies

Coordinated across DOE:
technologies...



...offices...

- Office of Electricity
- Energy Efficiency and Renewable Energy
- Office of Science
- Office of Technology Transitions
- Nuclear Energy
- Fossil Energy
- ARPA-E
- Loan Programs Office

...and functions





Energy Storage Grand Challenge Focus Areas

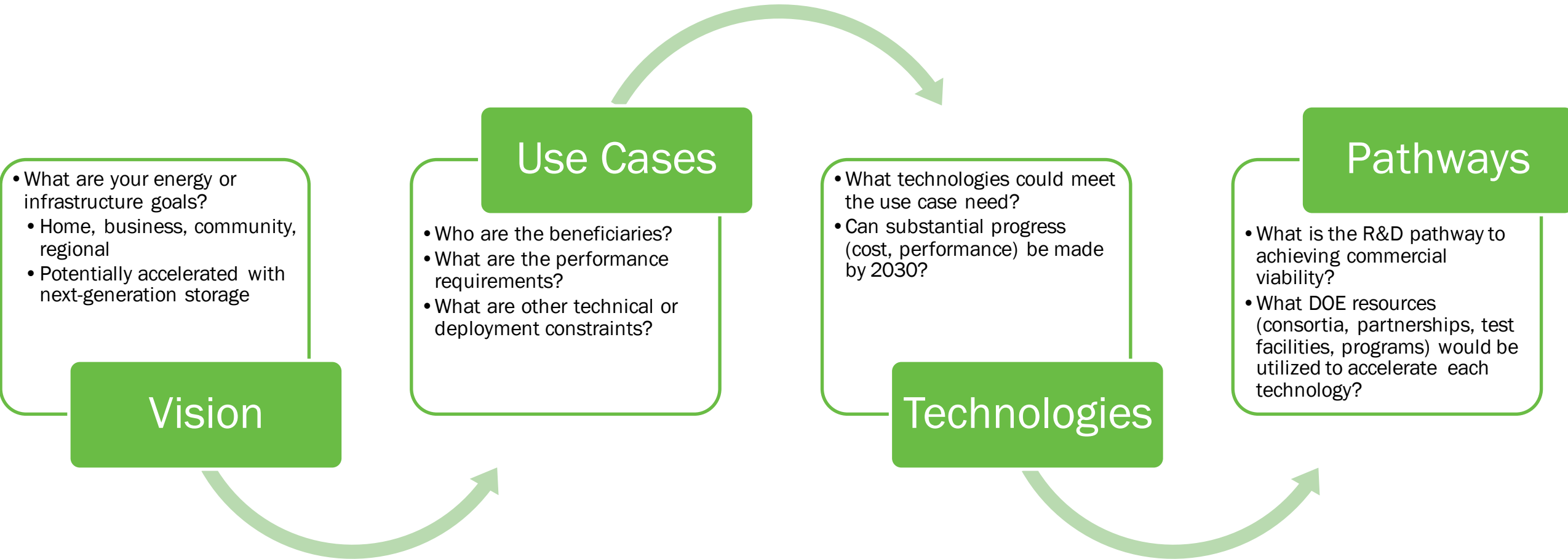
Vision: By 2030, the U.S. will be the world leader in energy storage utilization and exports, with a secure domestic manufacturing supply chain independent of foreign sources of critical materials

The Storage Grand Challenge focuses on five complimentary pillars:

Technology Development	Technology Transition	Policy and Valuation	Domestic Manufacturing and Supply Chain	Workforce Development
<ul style="list-style-type: none">Establish ambitious, achievable performance goals, and a comprehensive R&D portfolio to achieve them.	<ul style="list-style-type: none">Accelerate the technology pipeline from research to system design to private sector adoption through rigorous system evaluation, performance validation, siting tools, and targeted collaborations	<ul style="list-style-type: none">Develop best-in-class models, data, and analysis to inform the most effective value proposition and use cases for storage technologies.	<ul style="list-style-type: none">Design new technologies to strengthen U.S. manufacturing, recyclability, and reduce dependence on foreign sources of critical minerals	<ul style="list-style-type: none">Train the next generation of American workers to meet the needs of the 21st century grid and energy storage value chain



Technology Development: A Use Case-Informed R&D Strategy





Policy and Valuation: Purpose and Rationale

Proposed revised mission statement:

Provide data, tools and analysis that maximize the value of energy storage to the electric and transportation systems and drive U.S. leadership

Data

Tools/Models

Analysis

- What can different kinds of storage do?
- What is the most effective way to plan for and operate storage?
- How can storage be fairly valued and compensated?

PUCs

ISO/RTOs

States

Utilities

Developers

Consumers

Manufacturers

DOE



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Energy Storage Grand Challenge: Technology Transition Track

Develop Collaborative Relationships
and Knowledge-sharing Tools

- Market Analysis

Pursue Demonstration Projects

- Interagency/External Engagement

Ensure Bankable Projects via
Predictable Revenue Streams

- Request for Information (RFI)

Manufacturing's Role in the ESGC

U.S. global leadership in energy storage utilization and exports with a **secure domestic manufacturing supply chain independent of foreign sources of critical materials**

Accelerate
scale-up
of **emerging
manufacturing
processes**



Improve **critical
materials
supply chain
resilience**

Address **technical barriers** in
production and manufacturing

DOE Education & Workforce Development Efforts

GOAL

Develop training and education programs to ensure a sufficient pipeline of workers who can **research, design, develop, manufacture, and operate energy storage systems**

FOCUS

- Broaden awareness of existing programs
- Perform a needs assessment to determine gaps
- Develop new programs modeled on existing, successful DOE activities



How Can You Engage?

Upcoming events:

- ESGC Overview: May 1
- ESCG Use Case Deep Dive + 3 Regional Webinars: May TBD
- ESGC Live workshop (conditions permitting): June 26, Arlington, VA
- Request for Information: planned May - June



Please send questions, comments, or suggestions to RTICstorage@hq.doe.gov