

# Advanced Manufacturing Office

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[manufacturing.energy.gov](http://manufacturing.energy.gov)

**Energy Storage Grand Challenge: Manufacturing Workshop**  
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# Energy Storage Grand Challenge Overview



Accelerate the development, commercialization, and utilization of next-generation energy storage technologies and sustain American global leadership in energy storage

U.S. DEPARTMENT OF  
**ENERGY**

**ENERGY STORAGE GRAND CHALLENGE**  
FIVE INTEGRATED TRACKS

**TECHNOLOGY  
DEVELOPMENT**  
Office of Electricity

**TECHNOLOGY  
TRANSITION**  
Office of Technology  
Transitions

**POLICY AND  
VALUATION**  
Office of Energy  
Efficiency and  
Renewable Energy

**DOMESTIC  
MANUFACTURING AND  
SUPPLY CHAIN**  
Office of Energy Efficiency  
and Renewable Energy

**WORKFORCE  
DEVELOPMENT**  
Office of Science

# Use Case Families

Facilitating an Evolving Grid



Serving Remote Communities



Electrified Mobility



Interdependent Network Infrastructure



Resilience and Recovery



Facility Flexibility, Efficiency, and Value Enhancement

# Domestic Manufacturing and Supply Chain

GOAL

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

DOE  
FOCUS

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

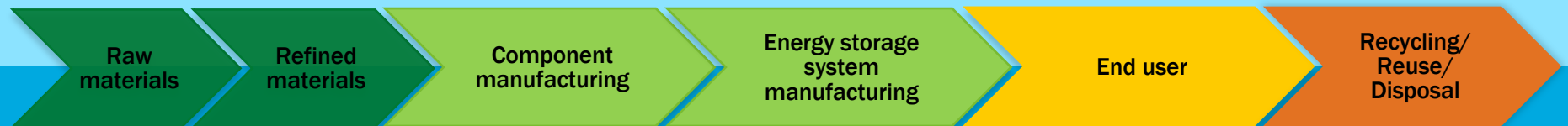


Improve **critical materials supply chain resilience**

Address **technical barriers** in production and manufacturing

# Technologies and Supply Chains

Meeting the Energy Storage Grand Challenge goal will require a combination of research and technology development across the manufacturing supply chain.



## R&D AREAS

- Manufacturing process intensification
- Critical materials use & sourcing
- Roll-to-roll manufacturing capabilities
- Membrane manufacturing processes
- New materials & manufacturing processes for harsh service environments
- Water desalination & purification
- Combined Heat & Power systems

## POTENTIAL TECHNOLOGIES

- Flow batteries
- Thermal energy storage
- Lithium-based batteries
- Non-lithium-based solid state batteries
- Hydrogen generation & storage
- Compressed air energy storage
- Pumped hydro
- Synthetic fuels (e.g. synbiogas)
- And others



## Soliciting Stakeholder Feedback

DOE is looking to:

- share information about various storage technologies
- learn more about manufacturing related challenges and barriers
- help shape the work that will bring technologies to market

This work will inform the development a coordinated R&D roadmap to 2030 for a broad suite of storage and flexibility technologies.

For additional information go to:

<https://www.energy.gov/energy-storage-grand-challenge/energy-storage-grand-challenge>.

*Please send questions, comments, or suggestions to*

[energystorage@anl.gov](mailto:energystorage@anl.gov)

