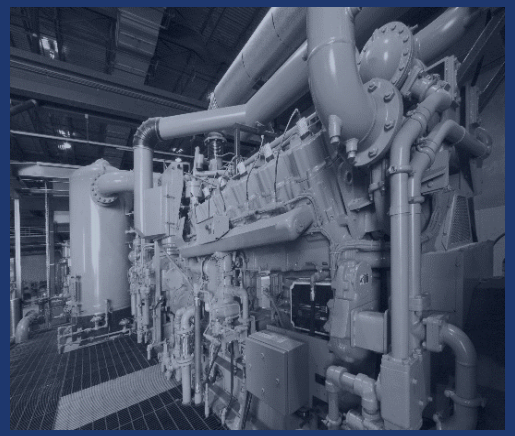
An Overview of Energy Storage in Michigan





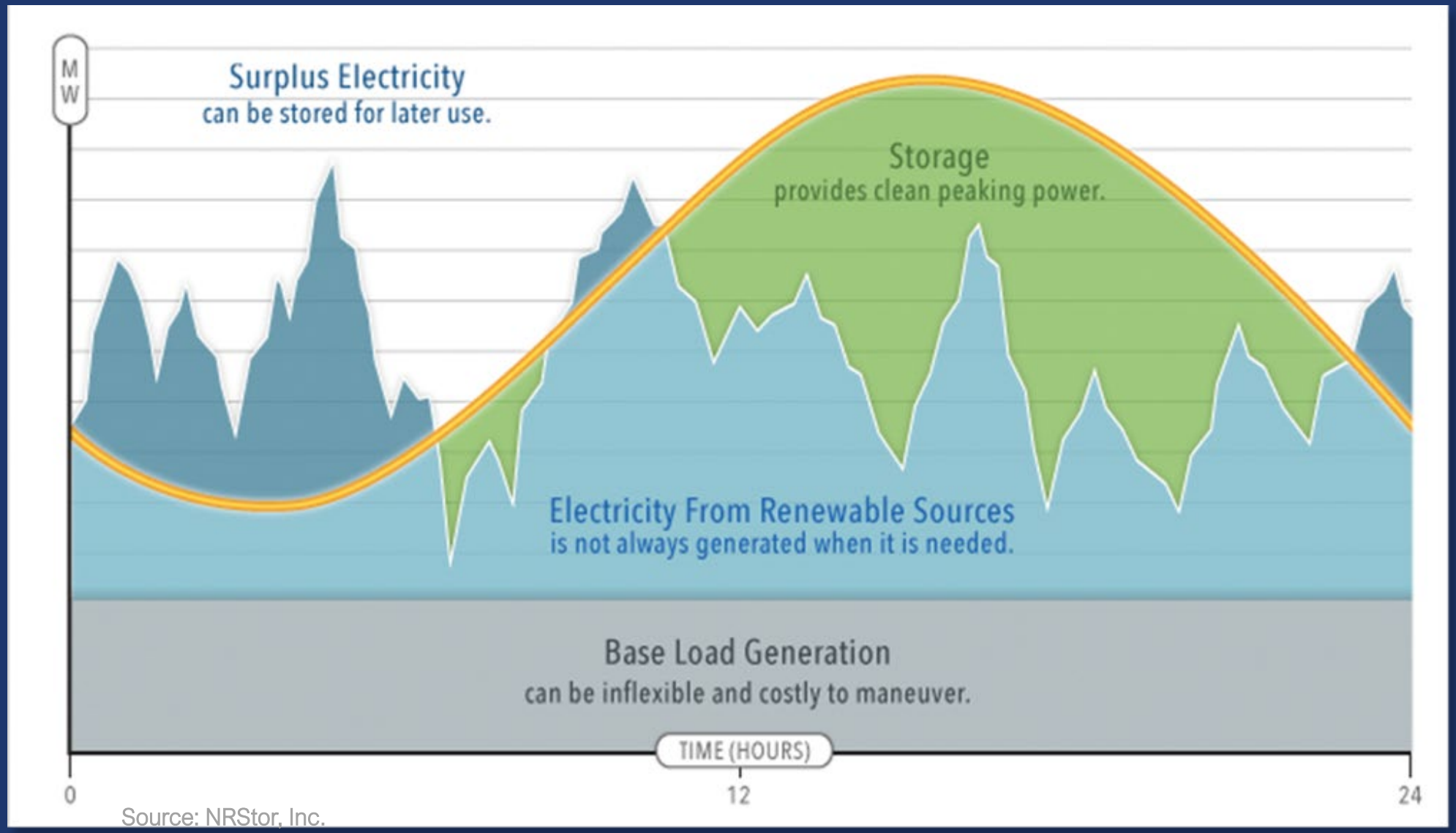

Katherine Peretick

Commissioner

February 23, 2022

MPSC
Michigan Public Service Commission

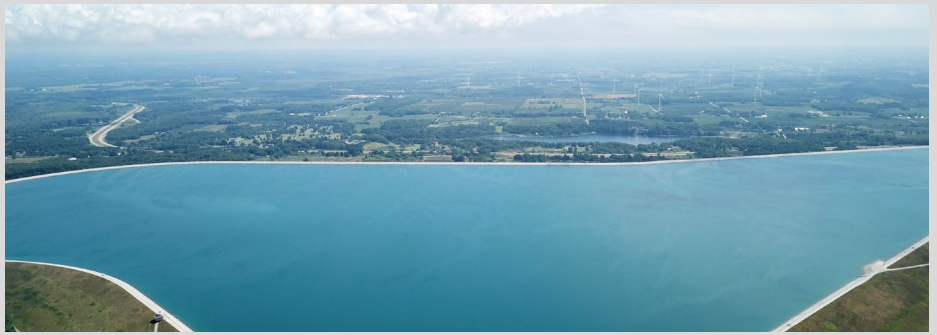
Framing Energy Storage

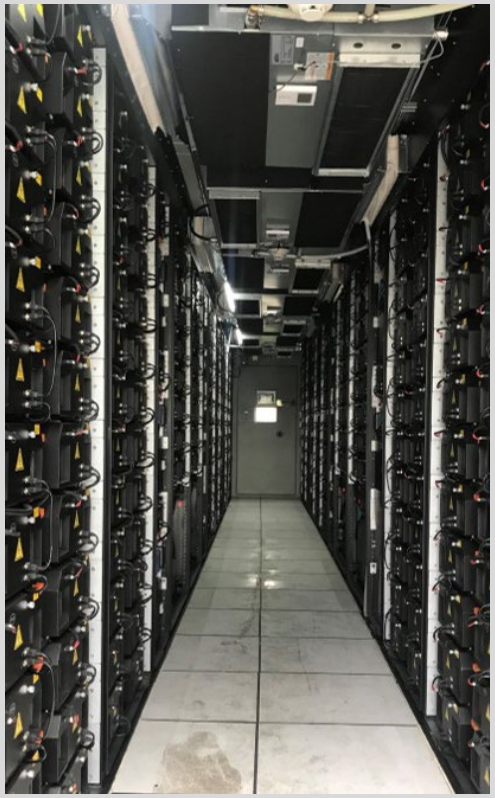


Source: NRStor, Inc.

Energy Storage Overview & Background

- Pumped hydro
- Solid state batteries
- Flow batteries
- Flywheels
- Compressed air energy storage
- Gravity storage
- Thermal storage

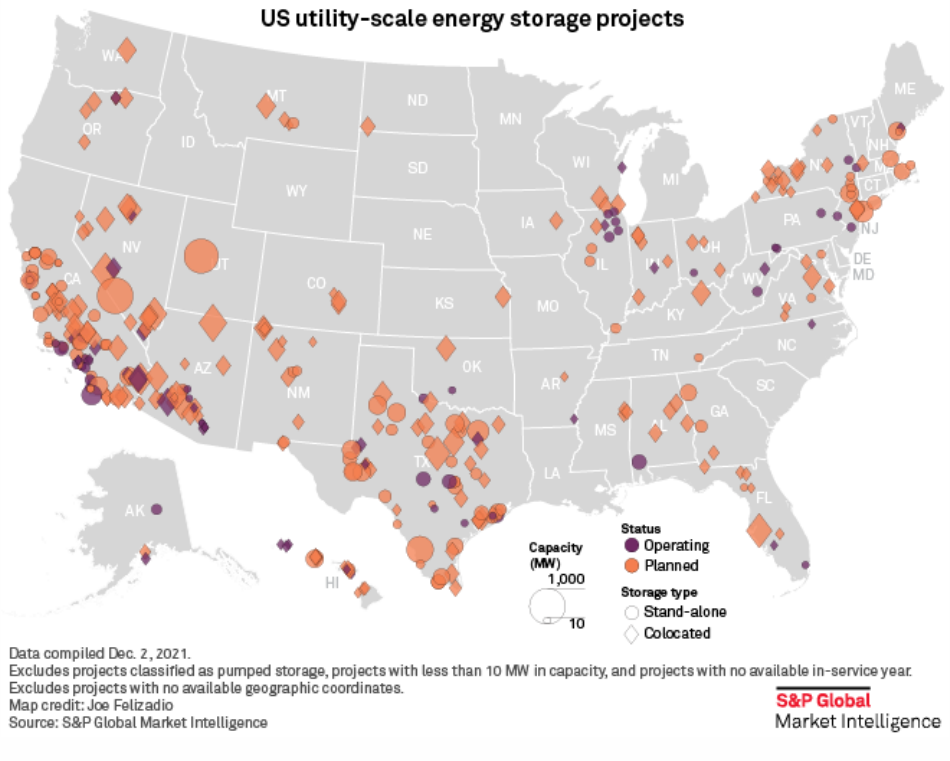





Energy Storage Examples

Project: Texas – Bat Cave
Storage Type: Li-Ion
Project Size: 100 MWh (100 MW)

Project: New York – Beacon Power
Storage Type: Flywheel
Project Size: 5 MWh (20 MW)



Total energy storage projects brought online in the United States:
2021: 5000 MW
2022: 9000 MW
2023: 10,000 MW

Project: Alabama – McIntosh
Storage Type: CAES
Project Size: 2860 MWh (110 MW)

Project: California – Moss Landing
Storage Type: Li-Ion
Project Size: 730 MWh (180 MW)

Commission's Efforts on Storage

- March 2019: The *Plugging into Storage* symposium
  Engaged more than 140 participants with energy storage experts and industry participants for conversation on energy storage in Michigan's electric market

- Oct. 2019 – Present: The *MI Power Grid* initiative
  - New Technologies and Business Models Workgroup
  - Advanced Planning Phase III Workgroup
  - Interconnection Standards & Worker Safety Workgroup
  - Other Workgroups
    - Energy Programs and Technology Pilots
    - Distributed Energy Resources Rate Design

- 2022 – Department of Energy Technical Assistance Award
  MPSC awarded technical assistance through the DOE's Grid Modernization Initiative's State Technical Assistance to Public Utility Commissions. This work, which is just getting underway, will focus on regulatory approaches to modeling and valuing grid-scale energy storage.

Energy Storage: Opportunities and Barriers

Opportunities

- Flexibility
- Decreasing price
- Renewable and baseload shaping
- Virtual power plants
- Electric vehicles

Barriers

- Value for services provided
- Regulatory
  - FERC Order 841/RTO participation
- Material sourcing
- Safety and education
- Shift in the way things have always been done

Thank you