

Storing Electrical Energy

- The How's, What's, Where's & Why's

2018 Alaska Rural Energy Conference
Technical Session 3
11 April 2018

Agenda

- Introductions & logistics
- “The How’s”... introducing the technology
 - Babu Chalamala, Sandia National Laboratory
- “The What’s” ... reducing it to practice
 - Rob Roys, ABB America
- “The Where’s and Why’s” ... getting it to the field
 - Chuck Huntley, Huntley and Associates, LLC
- Discussion

Energy storage technologies

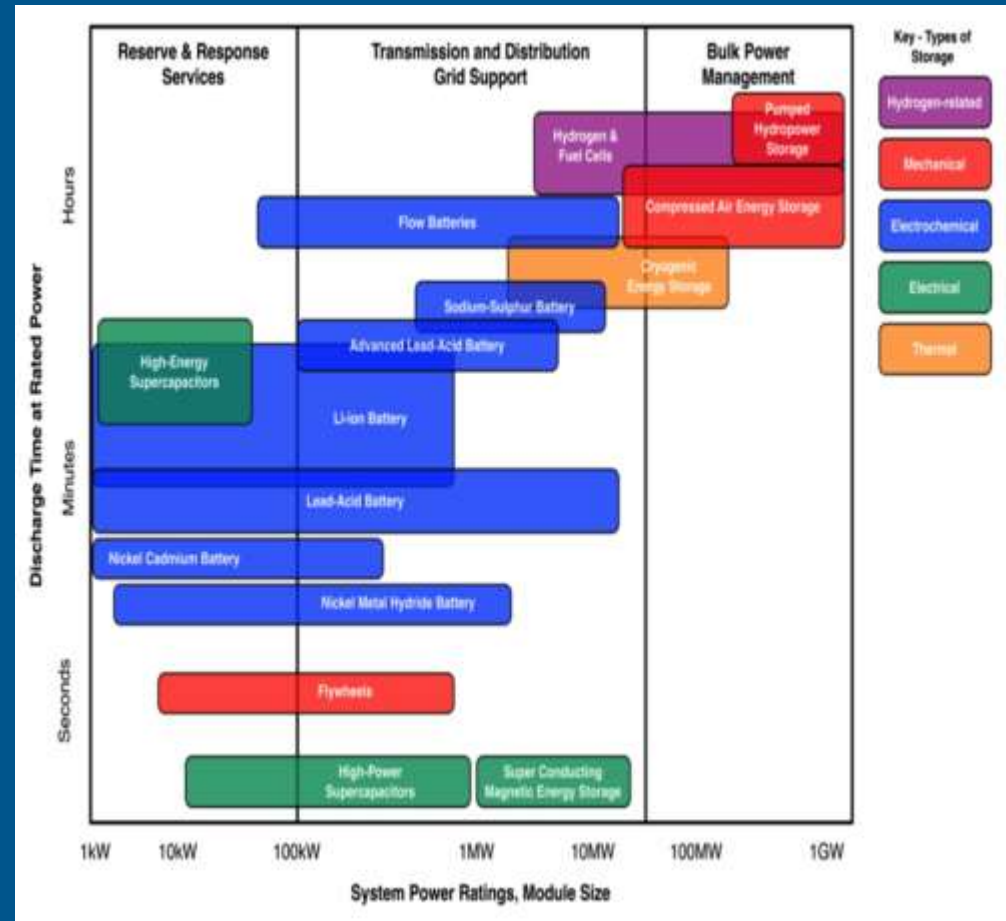
Pumped hydro

- Compressed gas

Batteries

Capacitors

Flywheels



Credit: Richard Williams

<http://theconversation.com/the-missing-link-why-australia-needs-energy-storage-10846>

Electrical Energy Storage in Alaska

Flywheels: Legacy & Modern



Capacitors Installed



Flow Battery Research



Anchorage



Utility Battery Energy Storage Systems Online



Fairbanks



Kodiak



Metlakatla



Wales

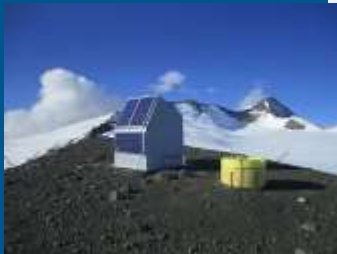


Kotzebue

Alaska & Electrical Energy Storage Opportunities

- Utility – large & small
- Geophysical sensors
- Border security
- Communication systems
- Tools & displays
- Off-grid renewable energy
- Diesel-use optimization
- Uninhabited vehicles
- Transportation

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Alaska Affordable Energy Strategy Technology Needs

- Biomass
- Diesel Generator
- Energy Storage
- Heat Pump
- Hydroelectric Power
- Integration
- Organic Rankine Cycle
- Solar Photovoltaic
- Electrical Transmission
- Wind Power

- Summary
- Technology trends
- Gaps and Barriers to Successful Project Development & Operation
- Recommendations



<http://www.akenergyauthority.org/Policy-Planning/AlaskaAffordableEnergyStrategy>

AK Center for Microgrid Technologies Commercialization (ACMTC)

- Economic Development Administration i6 Challenge award
- 500K\$ EDA / 500K\$ UA
- Providing technical and business assistance to accelerate commercialization, and implementation, of technologies for affordable and reliable microgrid energy systems.



Facilitating technology transition



Discussion ...

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