

Large Scale Battery Storage Project

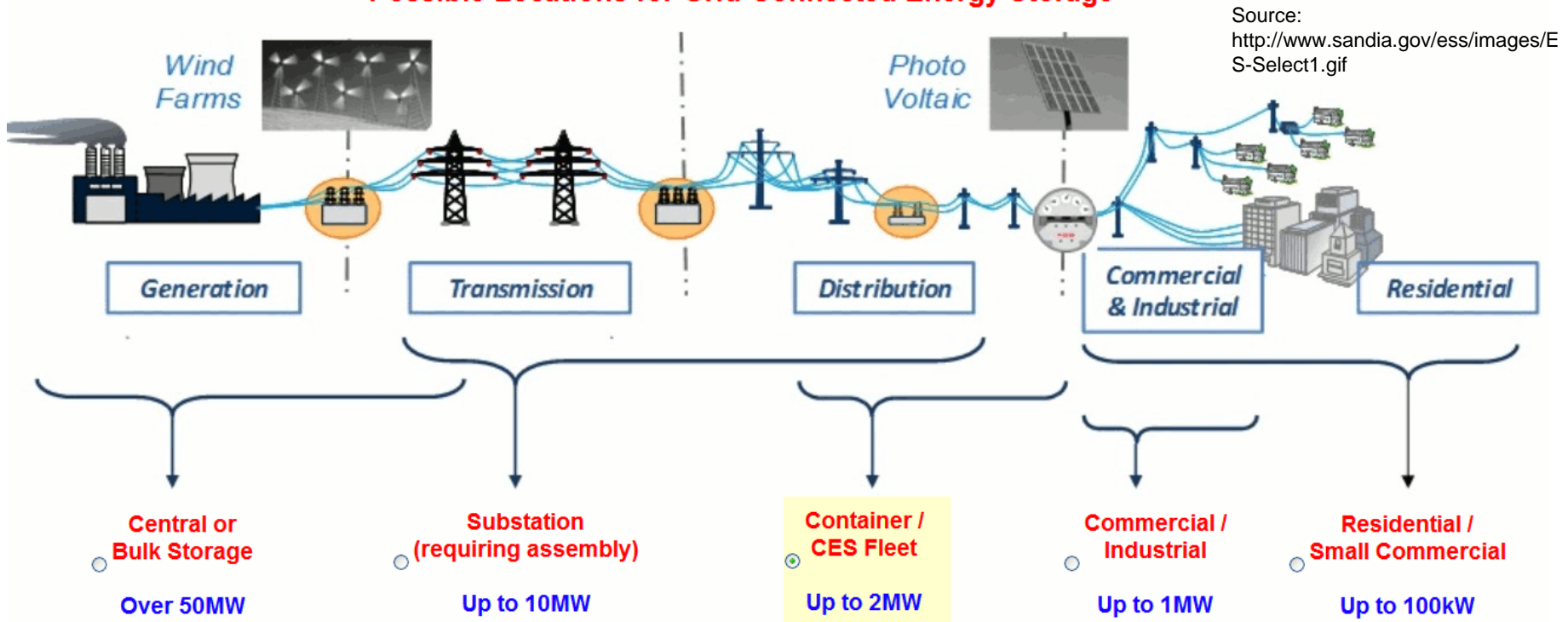


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Why Storage? (Storage Technologies)

Answer: Energy Storage Provides Value Across Power Grid

Possible Locations for Grid-Connected Energy Storage



Advantage:

Energy Storage System has greater efficiency and response time with reduced energy cost compared to Traditional Generation such as coal fire. Building a new plant costs more money, takes more time.

Challenges:

How to make the economics work on each Application (=how to monetize).

Application Examples of Energy Storage System

(1) Micro Grid (Los Alamos County, NM)



LL1500-W-8 192unit (2.3MWh)



PCS

(2) Power Grid stabilization (Maui, HI)



CH-75-6 120 units (153kWh)

(3) Peak Shift at building
(Brooklyn, NY)



Brooklyn Army
Terminal, NY



LL1500-W-8 60unit
(720kWh)

(4) Output power stabilization system for wind farm (Shiura, Japan)






Shiura wind farm
(15MW)



LL1500-W-8 864 units
(10MWh)

1 MW Lithium-Ion all-in-one Package Energy Storage





- Hitachi can offer everything necessary for Power Grid with global top class Quality.

 <p>Hitachi Group's Material Products</p> <p>Advance Technology Materials</p>	 <p>Battery Cell Production Line</p> <p>Components</p>	 <p>Applications</p> <p>System Solutions</p>
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- Concept of “CrystEna”; 1MW BESS package



CrystEna = Crystal (Crystal of Hitachi's state-of-art technology) + Energy

 <p>Information & Telecommunication</p> <p>INFORMATION & TELECOMMUNICATION SYSTEMS COMPANY</p>	 <p>Control System</p> <p>POWER SYSTEMS COMPANY</p>	 <p>Power Electronics</p> <p>INFRASTRUCTURE SYSTEMS COMPANY</p>	 <p>Lithium-ion Battery</p> <p>HITACHI CHEMICAL CO.,LTD.</p>
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Hitachi has developed “1MW Lithium-Ion all-in-one Package Energy Storage System” for FR market.

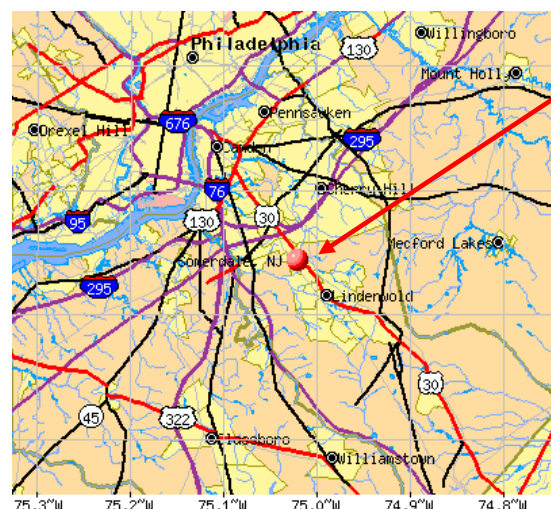
Hitachi started a pilot project in 2014.

Battery Storage for PJM Frequency Regulation Market

- Pilot project in Somerdale NJ.
- 1MW Lithium-Ion Battery Containerized System (“CrystEna “)
- All-In-One package includes A/C, fire suppression etc
- Use Demansys Software “Grid Daemon.”



Somerdale NJ



Please watch the VIDEO

This video is on YouTube

<https://www.youtube.com/watch?v=eHBhRJS2bQQ>

Thank You!

Questions?

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