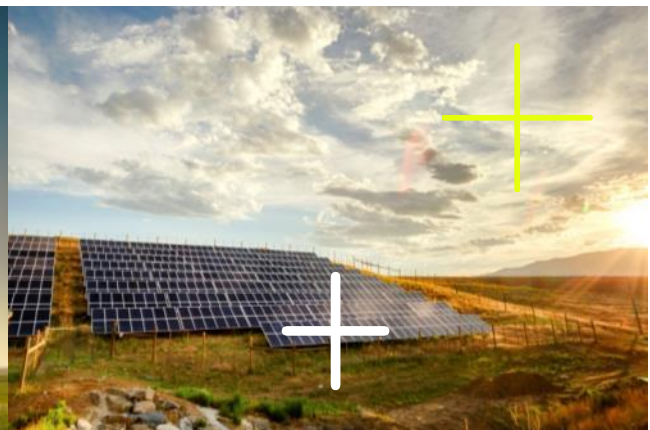




Large Scale BESS Challenge



Michel Carreau - May 27, 2025

Largest BESS in Operation in Canada (<20 MW)

- Yukon Energy
 - 20 MW/40 MWh (2025)
- SaskPower
 - 20 MW/20 MWh (July 2024)
- Prince Edward Island Summerside Bank
 - 10 MW/20 MWh (Jan. 2024)



Oneida – Ontario BESS: 250 MW/1,000 MWh (May 2025)



Large Scale Battery - Crimson BESS in California

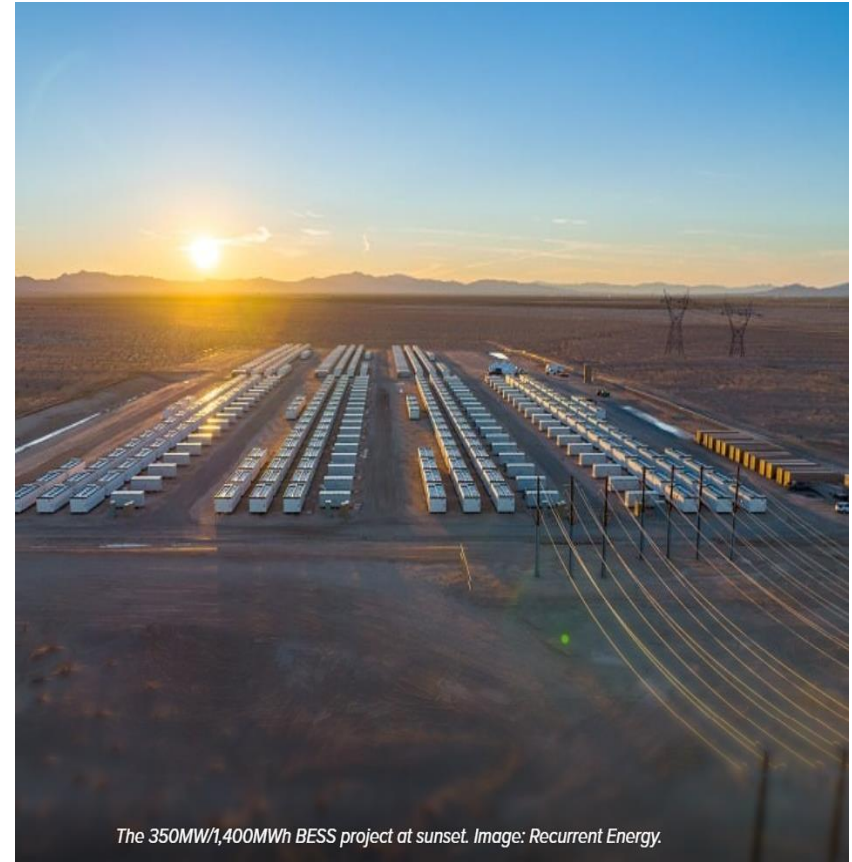
350MW/1,400MWh (4-hours Storage)

- In California, 13,391 MW of BESS installed, (started from 500 MW in 2018)
- In Ontario, 3,585 MW BESS awarded in development
- Utilization:
 - Grid stability & resiliency
 - Renewable power integration
 - Peak shaving



Large Scale Challenges

- Identify Quality Product
 - Proven technology ever changing year to year
- Logistics – 400 containers
- Maintenance
 - 14,000 battery modules
 - ~1 millions battery cells (cathodes and anodes)
 - Risk of thermal run-away
- Noise from 2000 fans for cooling and heating (BESS and Inverters)
- Investment 800 Million\$ for 350 MW



The 350MW/1,400MWh BESS project at sunset. Image: Recurrent Energy.

Moss Landing BESS – 750 MW/3,000 MWh (Monterey California)



Moss Landing BESS – Phase 1 – 300 MW/1,200 MWh



Battery Container within the Building



Battery racks provided by LG Energy Solution sit in former turbine halls at Moss Landing Energy Storage Facility, California. Image: LG Energy Solution.

Catastrophic BESS Fire at MOSS Landing Plant (commissioned December 2020)

- Fire started Jan. 16th, 2025
- Done Jan. 21st, 2025
- Population evacuated
- Highway closed
- Fire suppression did not work as planned. Plant was not compliant with latest safety standard (UL9540a) that prevents propagation of thermal run away
- That was the 4th fire incident and the worse ever BESS fire with flames 100 feet high.



Conclusion

- BESS needed for Grid Stabilization
 - Provide Spinning Reserves
 - Provide Frequency and Voltage Support
 - Smooth out wind and solar power variability
- Modular and Fast to Implement
- Safety is an important concern
 - Follow safety standards
 - More than one battery fire per month globally.



Thank You

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