

Superconducting Magnet Energy Storage System with Direct Power Electronics Interface

Project Partners **ABB**

BROOKHAVEN
NATIONAL LABORATORY

SuperPower Inc.

UNIVERSITY OF
HOUSTON

- Project Goal: Competitive fast response grid-scale MWh superconducting energy storage system, demonstrated through a small scale 20 kW, 2.5 MJ demonstrator and direct connection power electronics converter

Enabling Technologies:

- Ultra-high field magnet (~ 30 T) storage coil
- Second generation high temperature superconducting (2G HTS) wire with $I_c > 600$ A
- Modular, scalable advanced converter concept for direct connection to medium voltage grid with high round trip efficiency ($> 85\%$)

