Advanced Clean Energy Storage (ACES):
In Partnership with Magnum Development

Michael T. McManus, NEXT
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Mitsubishi Hitachi Power Systems Worldwide

- 150 years of heritage
- 57 group companies
- 21,000 employees
- US$13.1B orders in 2017
- US$20B orders in 2020
- Goal: #1 in power generation
“...delivering aggregated clean energy and distributed generation solutions.”

MHPS

Utility Scale Zero Carbon Energy Solutions

Next Generation Energy Storage Technologies

Renewables Development and Distributed Generation
Why the ACES project is important

Super bulk storage

Monthly Curtailment totals (MWh)

Strategic Placement

One day in April

Wind and solar curtailment totals by month (MWh). CAISO system.

Wind and solar curtailment totals by hour on April 20, 2019 (MWh). CAISO system.
One cavern can hold approx. 5 million kg H2
A Single Cavern Stores a Massive Amount of Energy

1 Cavern → 5 million kg of H₂
Used in an efficient Gas Turbine Combined Cycle → 100,000 MWh

That is equivalent to...

775 X
Tesla’s Hornsdale project
100 MW/129 MWh

128 X
Energy storage capacity deployed in the US in 2018 (777 MWh)