Panel 2
Modeling and Valuation

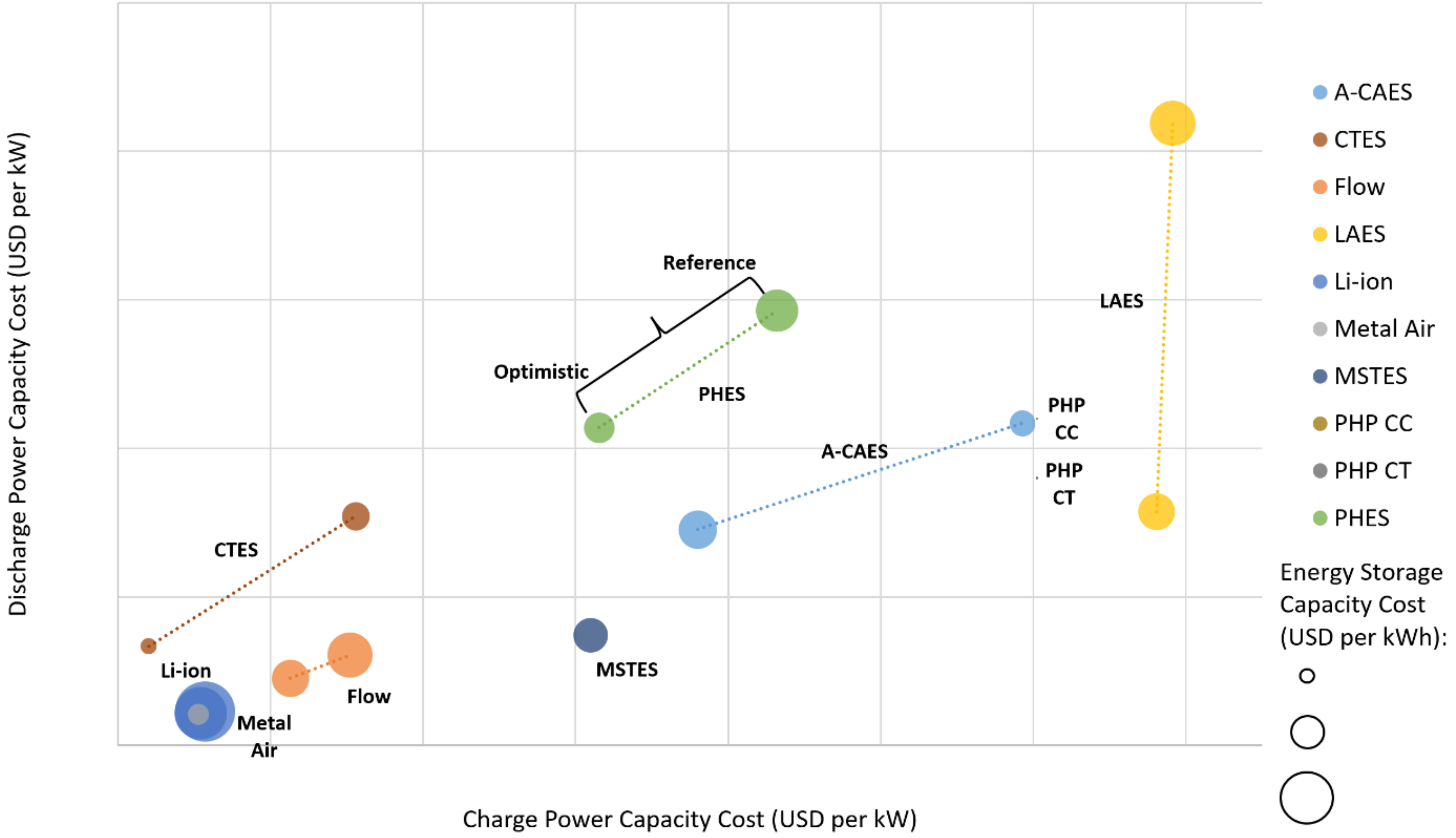
Los Angeles Fall 2024

Miles Evans | EPRI

October 9, 2024

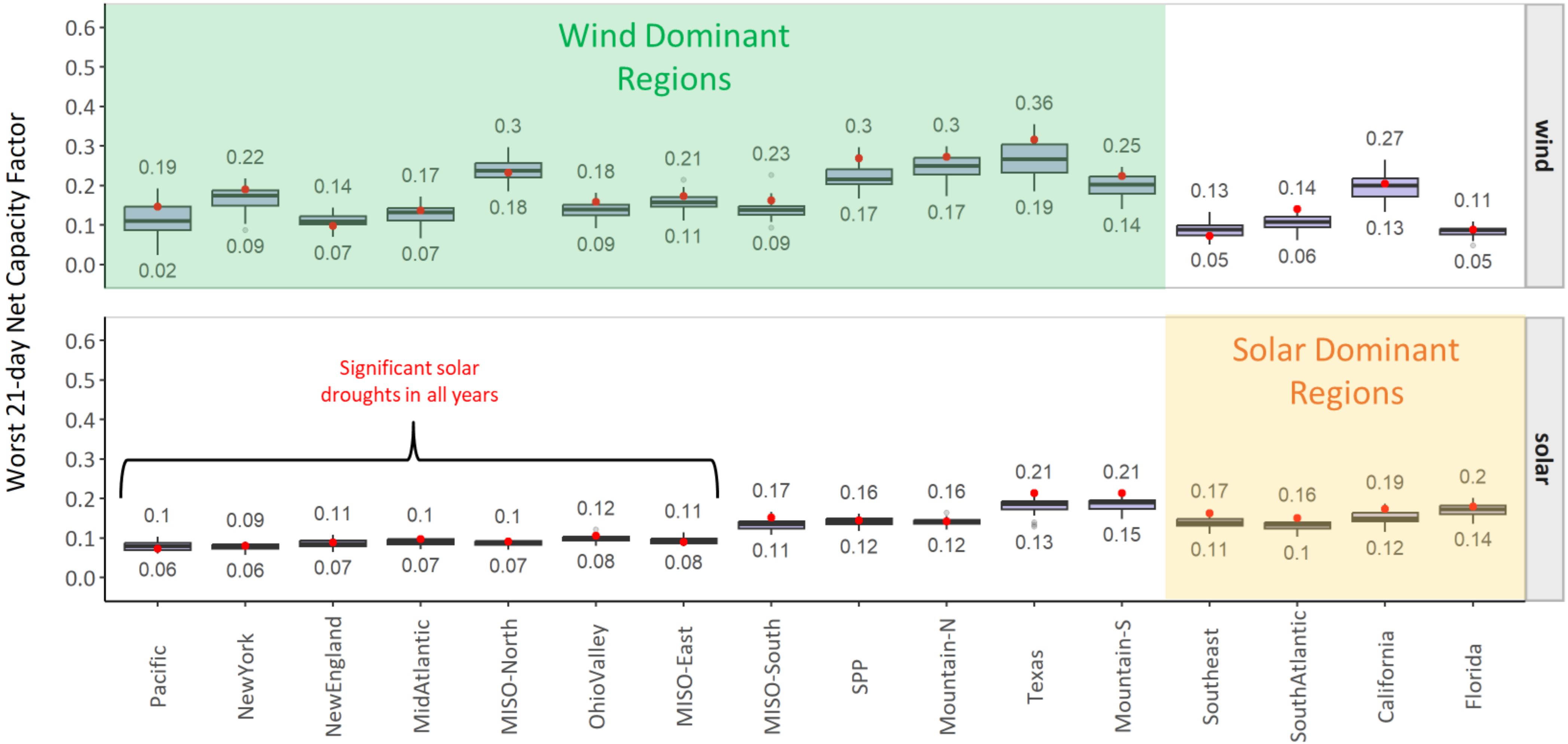
www.epri.com

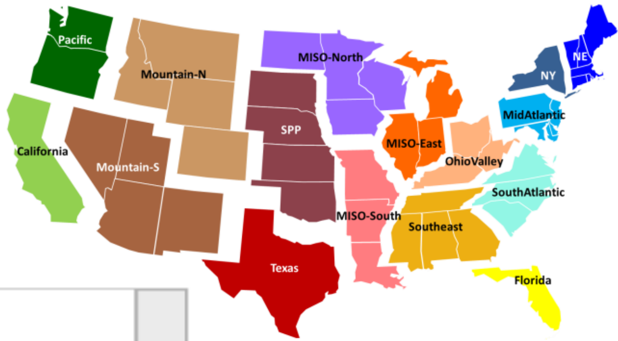
Projected Power and Energy Capacity Costs in 2035



Total Cost = Charging Power Cost + Discharging Power Cost + Energy Capacity Cost

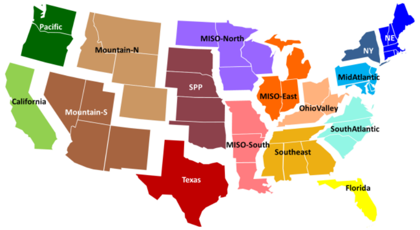
Worst 21-day CF for Wind/Solar 1980 – 2019



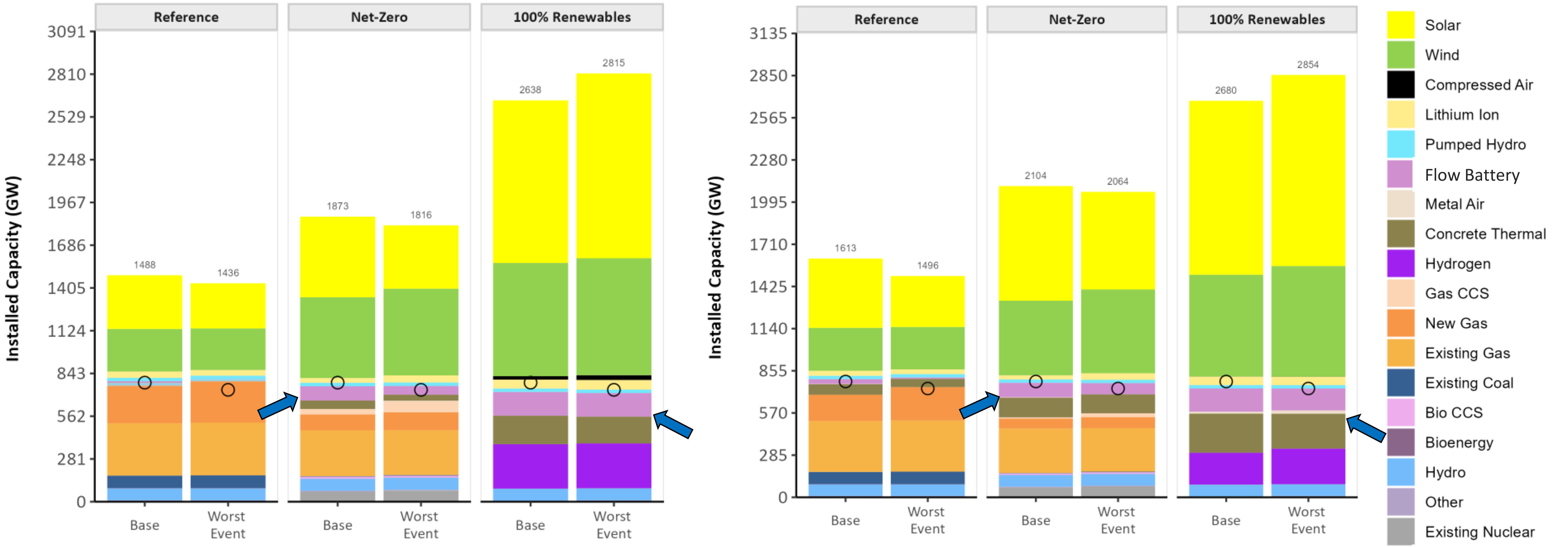


Results

US-REGEN Modeling - Key Result



Modeled US Capacity in 2035

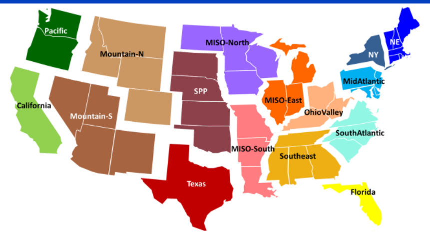


Reference Storage Costs

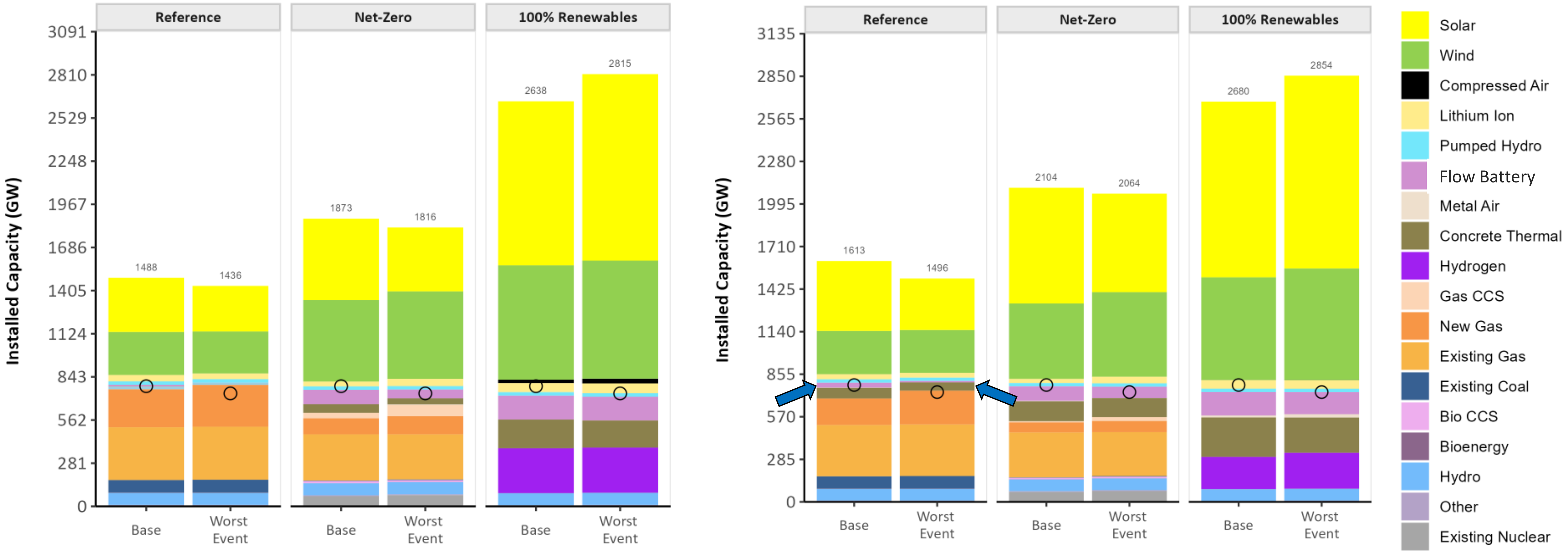
Optimistic Storage Costs

Energy storage technologies provide clear value in these results under the deep decarbonization scenarios

US-REGEN Modeling - Key Result



Modeled US Capacity in 2035



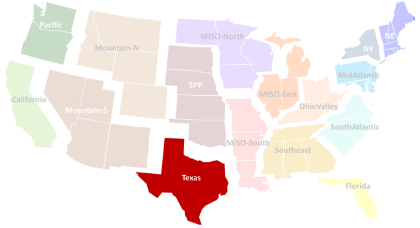
Reference Storage Costs

Optimistic Storage Costs

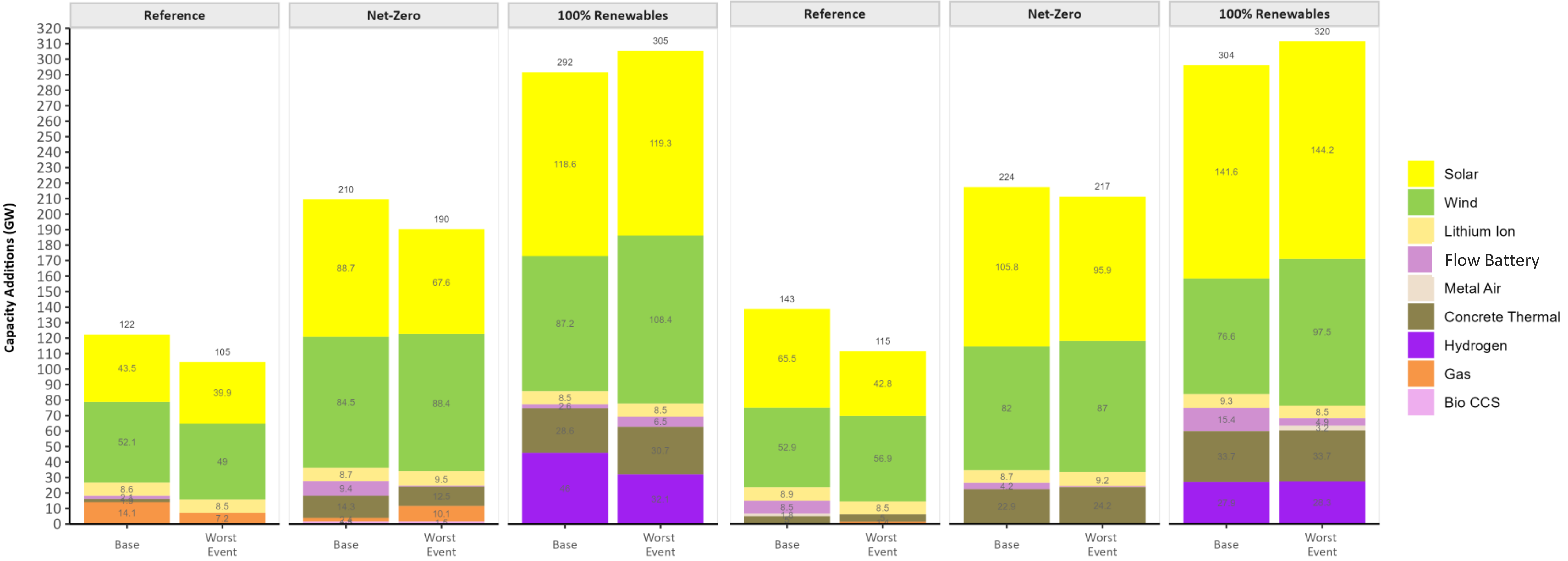
Optimistic cost projections of energy storage technologies lead to tens of GW of deployment of storage technologies under the Reference policy scenarios.

EPRI

US-REGEN Modeling - Key Result



Modeled Texas Regional Capacity Additions in 2035

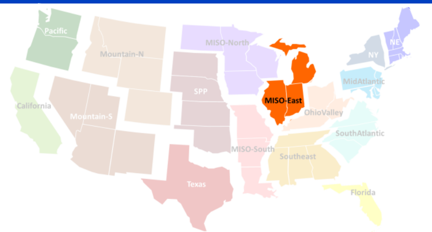


Reference Storage Costs

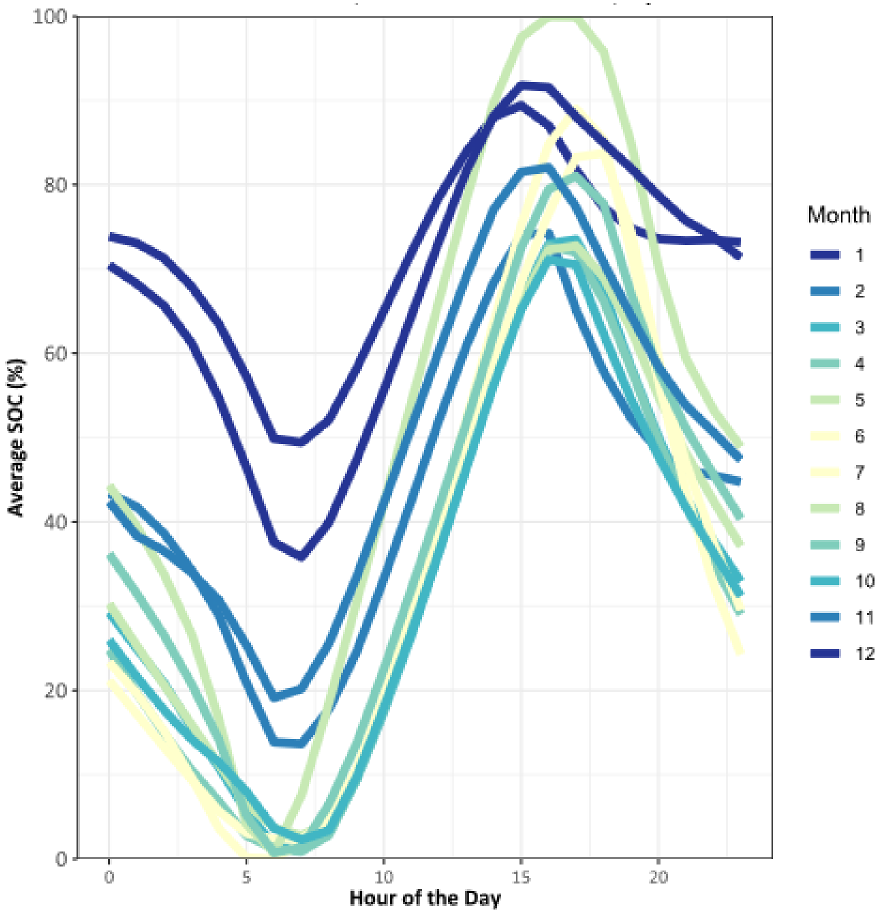
Optimistic Storage Costs

Well over half of capacity investments would be considered "no regrets" across the four modeled scenarios with the same decarbonization policy.

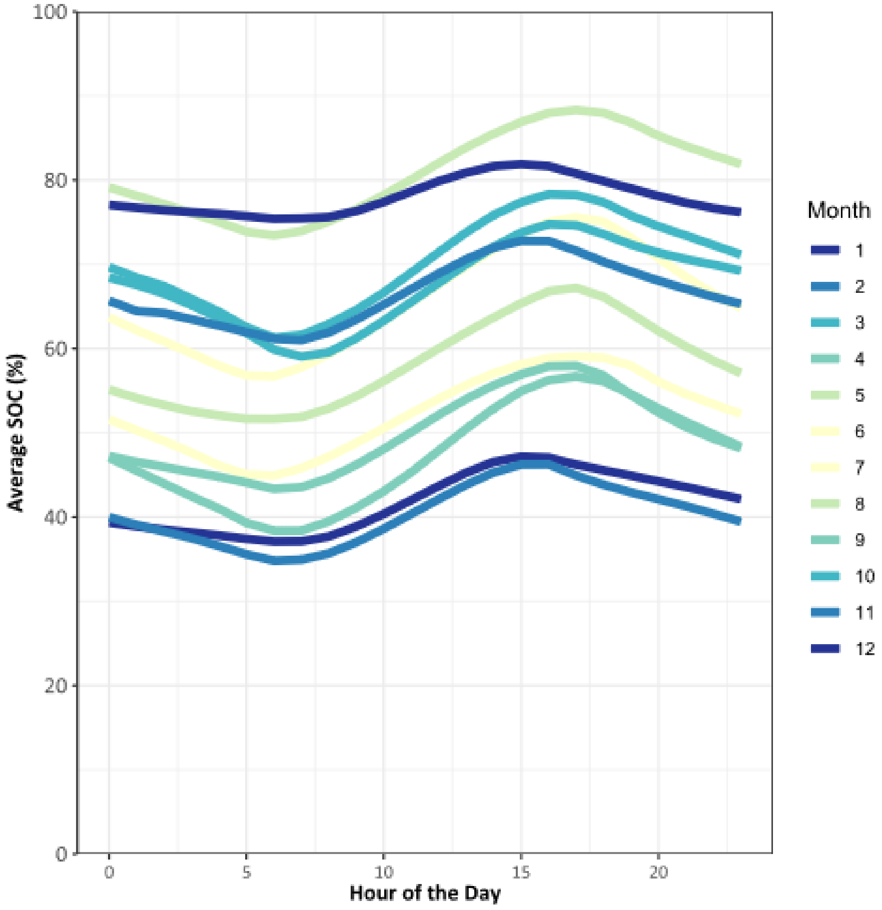
US-REGEN Modeling - Key Result



Average Daily Flow Battery Dispatch in Modeled MISO-East Region

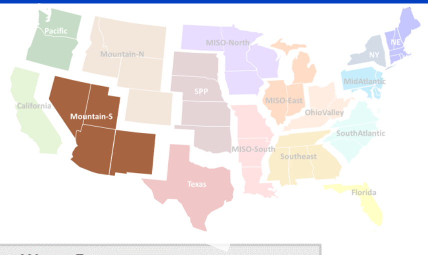


Average Daily CTES Dispatch in Modeled MISO-East Region in 2035

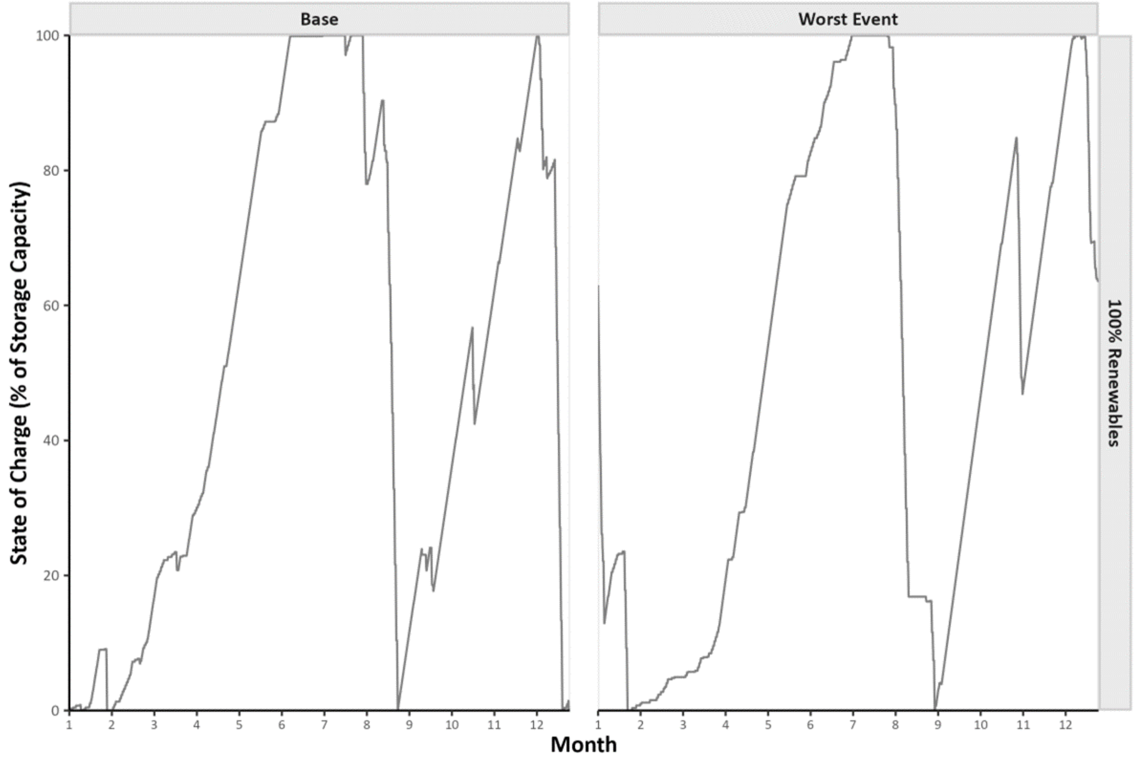


Energy storage technologies with low energy capacity costs may provide support for extended lulls of variable renewable energy in some regions.

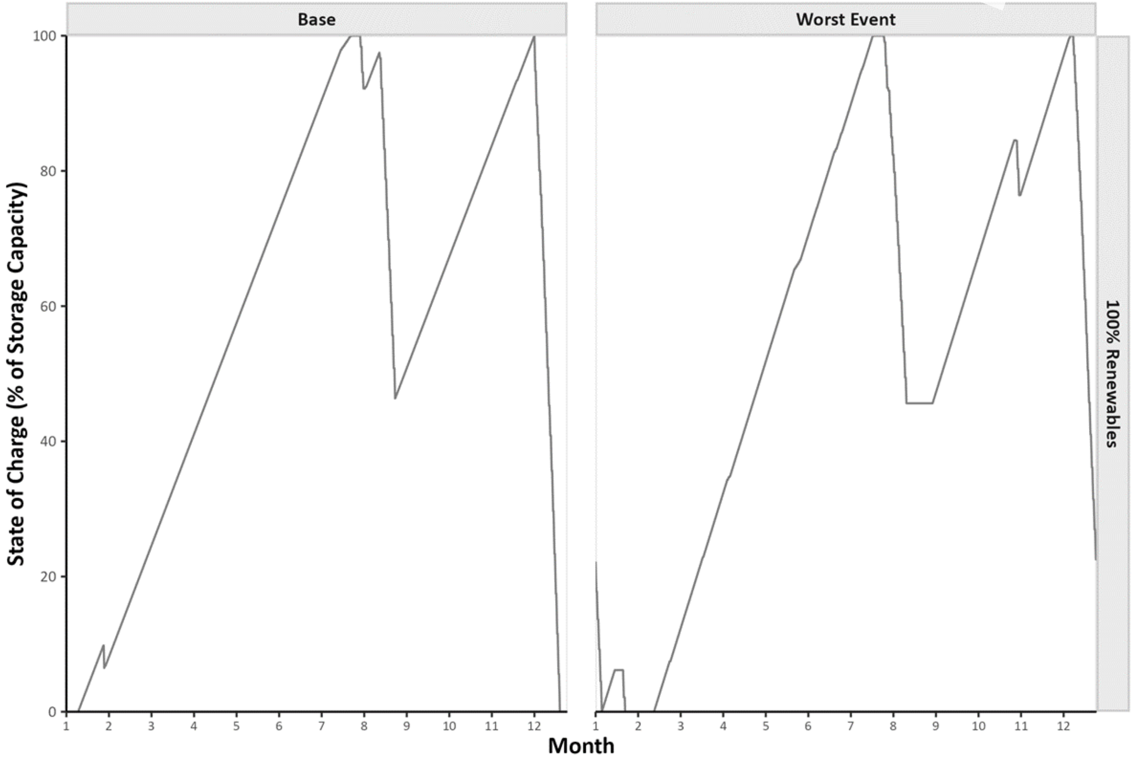
US-REGEN Modeling - Key Result



Example Hydrogen Dispatch in Modeled Mountain-South Region



Reference Storage Costs
10GW and 10GW of Installed Capacity



Optimistic Storage Costs
4GW and 6GW of Installed Capacity

The availability of energy storage technologies with very low costs of energy capacity (e.g., power-hydrogen-power storage) is important for balancing long-duration lulls in variable renewable generation.

EPRI

TOGETHER…SHAPING THE FUTURE OF ENERGY®

www.epri.com