



Energy  
Storage  
Association

# FERC Action on Energy Storage: Where We've Come From, Where We're Going

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[www.energystorage.org](http://www.energystorage.org)

1

## Energy storage is flexibility

Supplying the precise amount of electricity exactly when and where you need it

## Optimize the electric grid & enable system transformation

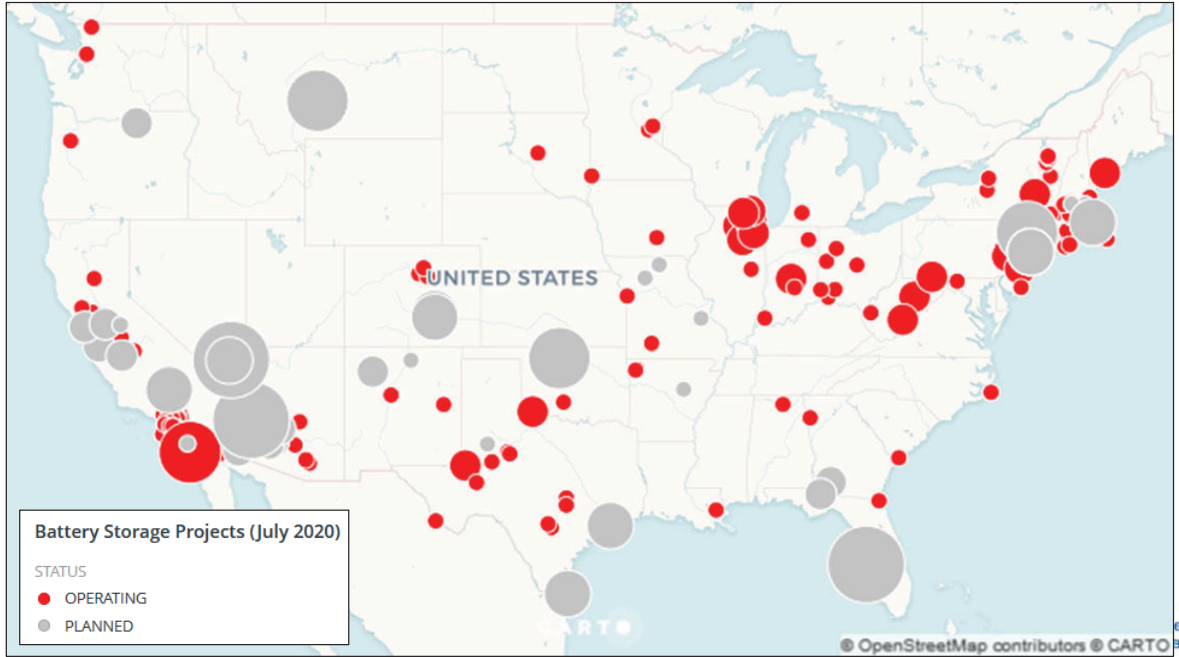
1. **Efficiency** // save households & businesses money
2. **Resilience** // make service more disruption-proof
3. **Adaptability** // integrate diverse, changing resource mix



2

# Grid Battery Projects

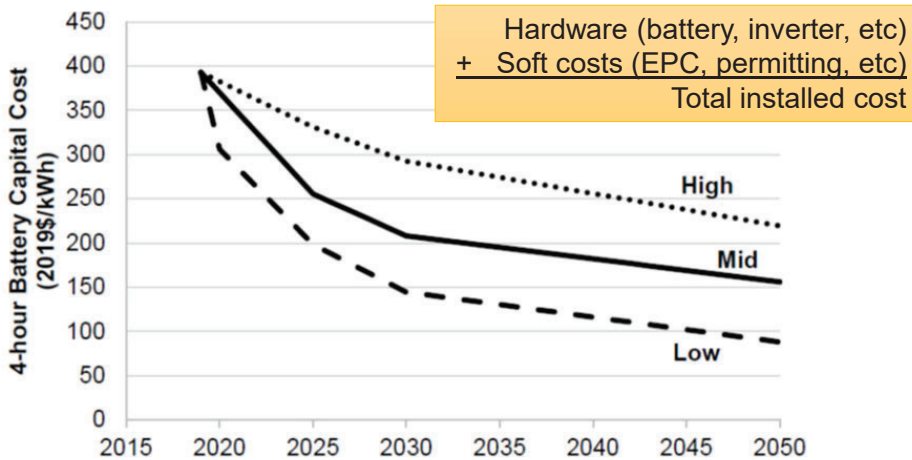
EIA 860m Series - July 2020



3

# Trend: Battery storage installed costs continue to decrease

Bulk-scale 4-hour lithium-ion grid battery installed cost (\$/kWh)



Annual Cost Decline Rates from 2018

	2025	2030	2040
Low Cost	-10%	-9%	-6%
Mid Cost	-6%	-5%	-3%
High Cost	-1%	-1%	-1%

Source: Bloomberg New Energy Finance (2018) and NREL (2019b) with Brattle analysis.

SOURCE: NREL 2020



4

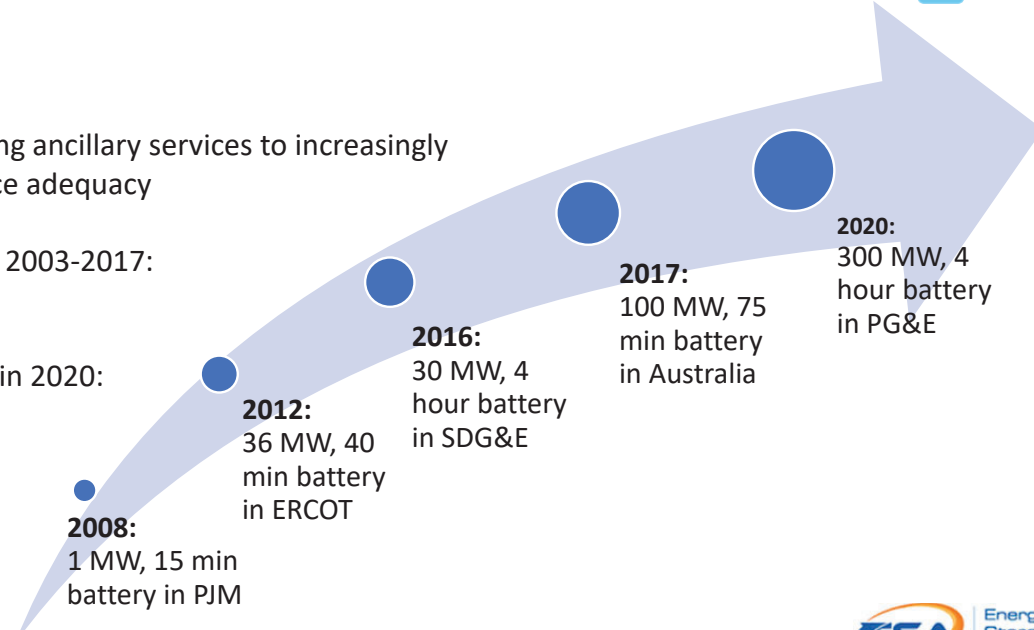
# Sizes and durations rising

Shift from primarily providing ancillary services to increasingly providing capacity / resource adequacy

All battery storage installed 2003-2017:  
800 MW / 1200 MWh

Single PG&E battery online in 2020:  
300 MW / 1200 MWh

DER storage aggregations  
Will follow  
(largest today ~20 MW)



**2008:**  
1 MW, 15 min  
battery in PJM

**2012:**  
36 MW, 40  
min battery  
in ERCOT

**2016:**  
30 MW, 4  
hour battery  
in SDG&E

**2017:**  
100 MW, 75  
min battery  
in Australia

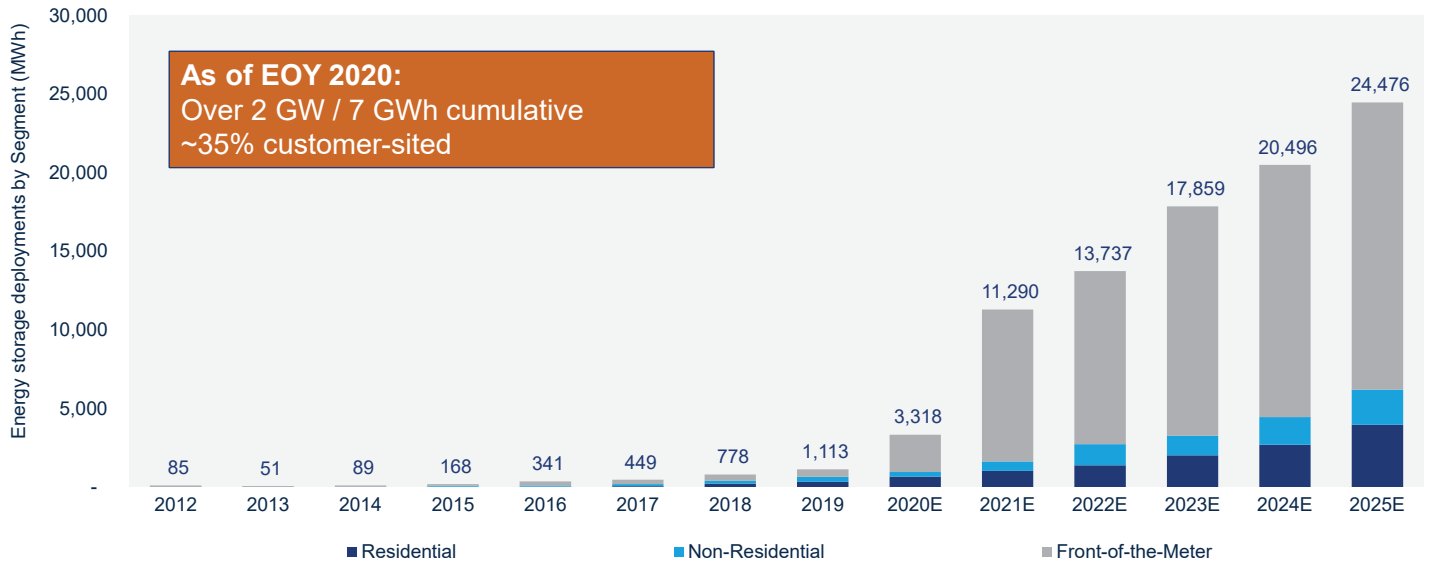
**2020:**  
300 MW, 4  
hour battery  
in PG&E



## U.S. market will reach 24 GWh annually by 2025

Longer durations for standalone and solar-paired projects will drive 7x market growth compared to 2020

U.S. energy storage annual deployment forecast, 2012-2025E (MWh)



**As of EOY 2020:**  
Over 2 GW / 7 GWh cumulative  
~35% customer-sited

Source: Wood Mackenzie Power & Renewables

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[2021 Renewable Energy Law eConference](#)

First appeared as part of the conference materials for the  
16<sup>th</sup> Annual Renewable Energy Law Institute session

"FERC Action on Energy Storage: Where We've Come From, Where We're Going"