

July 26, 2024

**VIA ELECTRONIC FILING**

Ms. Shonta Dunston  
Chief Clerk  
North Carolina Utilities Commission  
430 North Salisbury Street  
Raleigh, North Carolina 27603

**RE: Docket No. E-100, Sub 190A SACE, et al., Cross Examination**  
Exhibit Index and Copy of Exhibits moved into the Record on July 25, 2024, in  
connection with the testimony of Renewables & Energy Storage Direct & Rebuttal  
Panel

Dear Ms. Dunston:

On behalf of the Southern Alliance for Clean Energy, Sierra Club, and Natural  
Resources Defense Council (SACE *et al.*) please find attached for filing in the above-  
referenced docket the Exhibit Index of Cross Renewables & Energy Storage Direct and  
Rebuttal Exhibits.

Also attached for filing, please find *SACE, et al., Cross Renewables & Energy  
Storage Panel Direct & Rebuttal Ex. 1* (as listed in the attached Index) entered on July 25,  
2024, following the conclusion of the Renewables & Energy Storage Panel testimony as  
part of the evidentiary hearing in the above-referenced matter.

If you have any questions, please do not hesitate to contact me. Thank you for your  
assistance with this matter.

Sincerely,



David L. Neal  
Senior Attorney

Enclosures

cc: Parties of Record

SACE et al.,  
Cross Renewables & Energy Storage Panel Direct & Rebuttal Exhibits  
(E-100, Sub 190A)  
July 25, 2024 Hearing

SACE, et al. Potential Cross Exhibit No.	Exhibit Description	Exhibit Name	Witness/Panel Name
3	“Booming U.S. energy storage installation grows 90% year-over-year,” PV Magazine USA (March 20, 2024)	SACE, et al., Cross Renewables & Energy Storage Panel Direct & Rebuttal Ex 1	Renewables & Energy Storage Panel

# Booming U.S. energy storage installation grows 90% year-over-year

Lowered costs, easing supply chains and steady demand continued the energy storage boom, said a report from Wood Mackenzie.

MARCH 20, 2024 **RYAN KENNEDY**

ENERGY STORAGE INSTALLATIONS UNITED STATES



Borrego Solar and storage installation

Image: Greg M. Cooper, Borrego Solar

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In its latest Energy Storage Monitor [report](#), Wood Mackenzie outlined the continued trend of rapidly increasing battery energy storage deployments across the U.S., with data through Q1 2024.

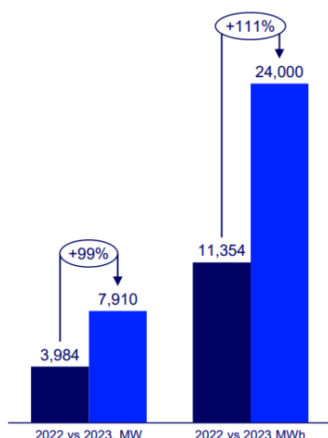
Across all segments, the U.S. energy storage industry deployed 8.7 GW, a record-breaking growth of 90% year-over-year. The nation deployed 4.2 GW in Q4, 2023, and California and Texas installations accounted for 77% of Q4 additions, said Wood Mackenzie.

The U.S. grid-scale storage market shattered previous quarterly installation records in Q4 2023, deploying 3,983 MW / 11,769 MWh, leading to an average duration of 2.95 hours. A combination of short-duration energy storage serving acute peak electricity demand times, and four-hour grid-scale batteries are common configurations in today's market.

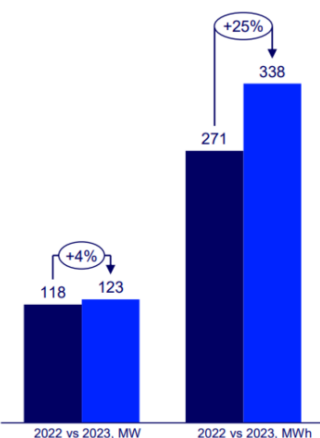
The residential energy storage market reached a marginal record quarter in Q4, 2023, deploying 218.5 MW, beating the record set by Q3 of 210.9 MW. The community, commercial, and industrial (CCI) segment deployed 33.9 MW, with the most deployment occurring in California, Massachusetts, and New York, said Wood Mackenzie.

### Annual comparison of energy storage deployments

Grid-scale segment, yoy changes



CCI segment, yoy changes



Residential segment, yoy changes

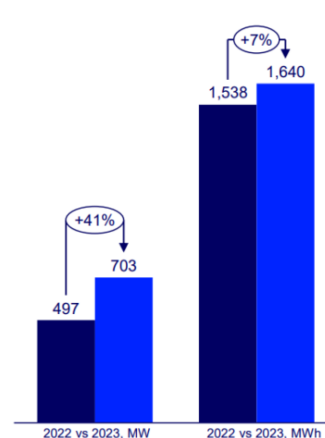


Image: Wood Mackenzie

"Q4 2023 was extremely strong for the U.S. energy storage market, helped by easing supply chain challenges and system price declines," said Vanessa Witte, senior analyst, Wood Mackenzie.

The storage boom has been supported in part by drastically lowering costs. In Q4, battery prices declined rapidly, in large part due to lower-than-expected EV demand in the U.S. and EU, and due to an oversupply of battery grade lithium raw material.

"Chinese OEMs (original equipment manufacturers) are selling DC blocks at aggressively low prices, undercutting competitors in order to gain market share," said the Wood Mackenzie report.



solution of a more traditional integrator.”

Since last summer, lithium battery cell pricing has [plummeted by approximately 50%](#), according to Contemporary Amperex Technology Co. Limited (CATL), the world’s largest battery manufacturer. In early summer 2023, publicly available prices ranged from \$0.11 to \$0.13 /Wh, or about \$110 to \$130 per kWh. Goldman Sachs predicts that these price reductions will make electric vehicles as affordable as gasoline-powered vehicles, leading to increased demand.

While the grid-scale segment grew 98% year-over-year in terms of capacity deployment, Wood Mackenzie warns this growth curve is not likely to continue.

“Growth flattens in 2025 and 2026 as project capacity is pushed into later years of the forecast largely due to early-stage development challenges such as permitting and siting difficulties, and interconnection queue timelines,” said the report.

Meanwhile, Wood Mackenzie expects the residential segment to grow to 2.1 GW per year in 2024, while CCI is expected to install 1.2 GW annually. It said that the emergence of storage incentive programs and the transition to NEM 3.0 in California will support distributed storage growth in the coming years. It also highlighted strong distributed energy storage growth in Puerto Rico.

“Energy storage has unique capabilities to address grid resilience, with the ability to serve as generation, load, and transmission. These benefits to the grid have been evident, especially in recent years, as storage has provided reliability and stability during critical moments like historic heatwaves. With a robust pipeline, the future for energy storage deployment is strong,” said John Hensley, vice president of markets and policy analysis, American Clean Power.

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