U.S. Energy Storage Market & Drivers
EIA Energy Storage Workshop

Jason Burwen
Interim CEO
November 18, 2021

www.energystorage.org
A global terawatt-hour of battery storage added by 2030

Figure 1: Global cumulative energy storage installations, 2015-30

Source: BloombergNEF. Note: MENA = Middle East & North Africa. Buffer represents markets and use-cases that we are unable to forecast due to lack of visibility.
Annual U.S. energy storage deployments by segment (MW)

Projected 2021 FTM deployments are expected to realize 3.7x growth over 2020 levels

U.S. energy storage annual deployment forecast by segment, 2012-2026E (MW)

- The U.S. energy storage market is projected to grow 3.7x from 2020 to 2021, and over 7x by 2026.
- Deployments will jump up dramatically in 2021, and to a lesser extent 2022, driven by large-scale utility procurements. The FTM segment will make up 88% of the market in 2021, before the residential market accelerates.
- FTM deployments by 2026 are projected to increase 8x over 2020, while residential deployments could see a 6x increase.

Source: Wood Mackenzie Power & Renewables
Annual U.S. energy storage deployments by segment (MWh)

By 2026, the U.S. is projected to realize 31 GWh of growth over 2020

U.S. energy storage annual deployment forecast by segment, 2012-2026E (MWh)

- By 2026, annual U.S. energy storage MWh deployments will grow 9.3x compared to 2020.
- MWh growth in the FTM segment specifically will accelerate faster than MW growth as average discharge durations increase over time due to greater focus on services such as capacity.
- The FTM segment will continue to make up the bulk of the market - 89% for 2021, driven by massive investment from utilities and developers taking advantage of wholesale market opportunities and incentives.
- The residential segment will continue its upward trend, reaching 1.1 GWh in 2021 and 4.1 GWh 2026, while the non-residential segment's annual deployments will reach half that, 2.1 GWh, in 2026.

Source: Wood Mackenzie Power & Renewables
Significant increase in project pipeline

U.S. front-of-the-meter energy storage pipeline by market, Q4 2015-Q2 2021 (MW)

Source: Wood Mackenzie Power & Renewables
Behind-the-meter storage growth anticipated

C&I market outlook (MWh)

Residential market outlook (MWh)

Source: Wood Mackenzie Power & Renewables
Driver: Battery storage installed cost declines

SOURCE: NREL 2021

High-level drivers of deployment

- **Technology**
  - Continued installed cost declines, learning-by-doing
  - RD&D investments in emerging technologies

- **Market**
  - Increasing renewables deployments
  - Increasing DER deployments
  - Utility procurement / long-term contracts
  - Electrification of transportation
  - Significant private capital provision

- **Policy**
  - Decarbonization policies
  - RTO/ISO market design reforms
  - State regulatory & planning updates
  - Federal incentives
Questions? Feedback?

Jason Burwen, Interim CEO
j.burwen@energystorage.org
202.318.5325
Policy Drivers of Energy Storage

**VALUE and compensate storage flexibility**
- Policies
  - Deployment targets
  - Incentive programs
  - Tariff/rate design
  - Wholesale market products
  - Cost-benefit studies

**Enable storage to COMPETE in all grid planning and procurements**
- Policies
  - Long-term resource planning
  - Distribution planning
  - Transmission planning
  - Renewables/clean energy standards
  - Wholesale market rules
  - Resource adequacy rules

**Enable storage ACCESS to grid and markets**
- Policies
  - Interconnection processes
  - Multiple-use frameworks
  - Ownership rules
  - Codes & standards
Policy driver: ~12.5 GW in Storage Targets

California: 1,325 MW x 2020

Oregon: Min of 10 MWh and max 1% of peak load

Massachusetts: 200 MWh x 2020; 1,000 MWh x 2025

New York: 1,500 MW x 2025; 3,000 MW x 2030

New Jersey: 600 MW x 2021; 2,000 MW x 2030

Virginia: 3,100 MW x 2035

Nevada: 1,000 MW x 2030

Maine: 300 MW x 2025; 400 MW x 2030

Connecticut: 1,00 MW x 2030

Virginia: 3,100 MW x 2035
Policy driver: Over $1B in Storage Incentives

Current Federal:
Storage paired with solar eligible for investment tax credit

California:
Self-Generation Incentive Program ($800MM)

Nevada:
$10MM solar+storage program

Massachusetts:
Clean Peak Standard; SMART incentive program for solar+storage

New York:
Bridge Incentive Program ($280MM) + NY-Sun program ($40MM)

Connecticut:
Storage grid services program

Maryland:
Onsite storage tax credit ($3MM)

Oregon:
$2MM solar+storage program

Nevada:
$10MM solar+storage program

New York:
Bridge Incentive Program ($280MM) + NY-Sun program ($40MM)

Connecticut:
Storage grid services program

Maryland:
Onsite storage tax credit ($3MM)
Policy driver: regulations on storage in planning

**NARUC & NASEO**
Resolution (2018, EL-4/ERE-1) calls for modeling “the full spectrum of services that energy storage and flexible resources are capable of providing.”

**32 states have planning requirements**
Over 22,000 MW selected to date

**Colorado:**
PUC updated all planning rules to consider storage procurement
*Docket 18R-0623E, Decision C18-1124*

**Minnesota:**
Legislation requires IRPs to include storage modeling best practices
*Cases U-15896, 18461, 18418*

**Michigan:**
PSC issued guidelines considering storage in 2019 IRPs

**Washington:**
Policy Statement and draft regs call for sub-hourly modeling and mechanism to value flexibility
*Docket U-161024*

**Arizona:**
Regulators rejected utility IRPs, called for evaluation of storage, gas moratorium
*Case E-00000V-15-0094, Decision 76632*

**New Mexico:**
Revised IRP rules require consideration of energy storage
*Case 17-00022-UT*

**State with target + IRP requirement**