

Battery Energy Storage Safety

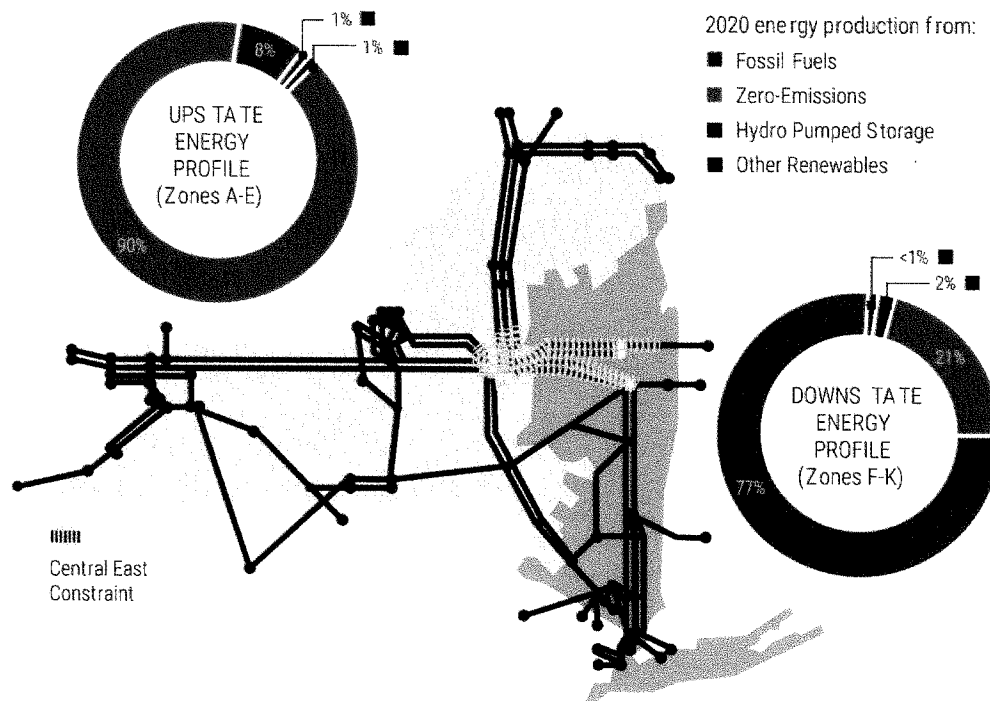
“BESS”

Informational presentation for use by
Warren County Climate Smart Community Committee

Researched by Lisa Adamson

NYS needs to electrify its grid with clean energy and battery storage.

- BESS allows us to get more than 2x the use out of our present grid. We need a lot more renewable energy to meet upcoming needs. The unsung hero is energy storage.

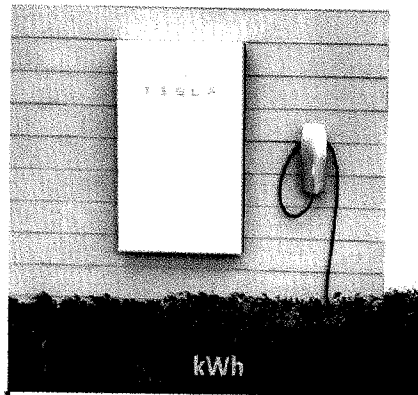


Currently NY downstate electricity is powered predominantly by fossil fuels; **not only is it critical to decarbonize by moving off of fossil fuels**, but a more capable and reliable grid, powered by clean energy such as solar will lower our utility bills.

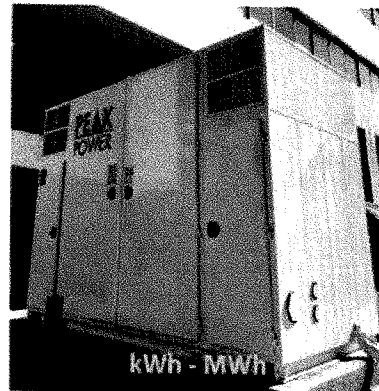
Third Act presenter Professor Seidman of Vassar College along with New Yorkers for Clean Power asserts that improved BESS technology is far safer than the fossil technology it helps to replace.

Battery Energy Storage Systems (BESS)

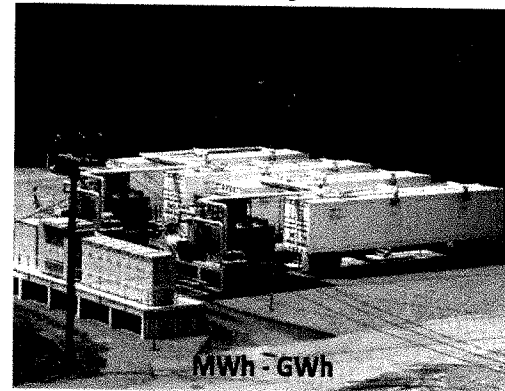
Residential



Commercial



Utility



Behind-the-meter
"Customer-side"

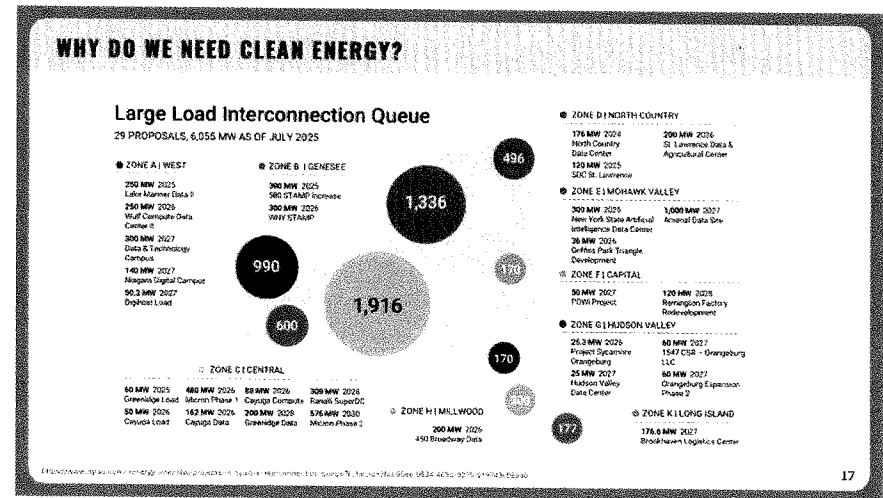
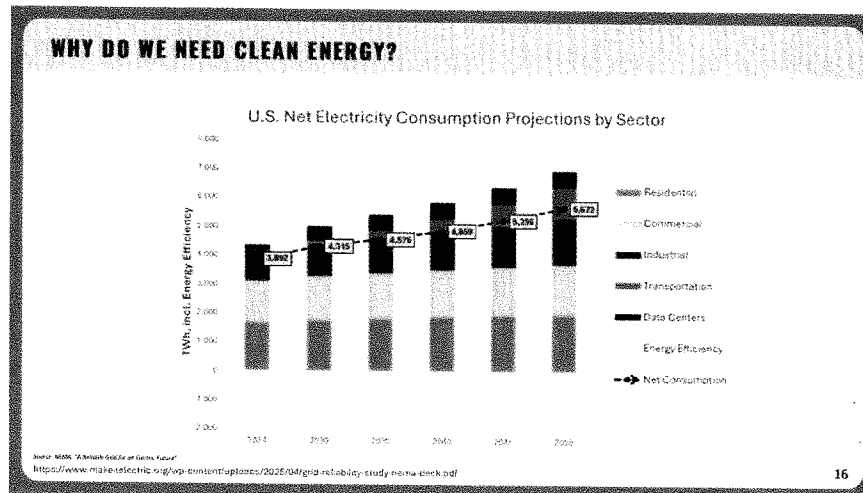
Front-of-the-meter
"Utility-side"

Dr. Jeffrey Seidman, Poughkeepsie, Third Act, June
2026 BESS presentation

WHY do we need clean energy?

LULA conference spring 2026(Land Use Leadership Alliance) Training Program is an intensive, multi-day environmental and land-use training event hosted by the Pace University Land Use Law Center. [1, 2, 3, 4]

LULA conference Spring 2026



Concern about Battery Storage fire and contamination hazards creates public and official resistance to BESS installation, resulting in moratoria or refusal of projects which could greatly increase the capacity to deliver clean electric to our towns and statewide.

Supporters say:

“Batteries support renewables! We need them to decarbonize the grid and fight climate change!”

Then from detractors:

Batteries become *coded* as an “environmentalist” issue.

Even for those who care about climate, perceived *local* risk trumps abstract global benefit. (Professor Seidman, New Yorkers for Clean Power)

An article recently in our local Glens Falls Post star typifies public and official concern about safety, which sometimes runs along partisan lines. This incident was due to reports from the leakage of a Long Island battery storage site that put contaminants into ground water from a lithium fire, posing community risk and releasing harmful gases, the clean up of which required specialized procedures.

Overall, the increased public concern around battery fires reflects the type of and increased use of these batteries in daily life (ie a bike battery overheating) and the lack of attention to proper handling and safety, experts say. (Third Act).

The batteries used in Moss Landing were lithium nickel manganese cobalt (NMC) batteries, more powerful, higher density, so more prone to ignition. It is now standard practice for grid-scale battery storage projects to use lithium iron phosphate (LFP) batteries, which are slightly less powerful but less energy dense and more stable and therefore safer.

It is also standard to house each battery in its own contained unit to prevent fire spreading between units, with ventilation to avoid build-up of explosive gases.
(prevents thermal runaway)

The NYS Grid for storage code is very strict on safety.

Current BESS, using the newer lithium ion battery and updated designs, in combination with required inspections, is a lot safer than natural gas and oil-based storage systems. A new fire code now has stricter regulations.

<https://www.youtube.com/watch?v=BN7LdGSt3sA>

Jan 30, 2026

New York's updated 2025 Fire Code established a new national benchmark for battery energy storage safety. This panel brought together fire safety experts at the Long Island Energy Storage Summit on November 18, 2025 to discuss the collaborative work of the Fire Safety Working Group, lessons from real-world site inspections, and the policies and standards now shaping safe deployment across the state and beyond. Experts included Casey Grant (Executive Director of D&S Research Associates & Engineers), Bruce Johnson (Regulatory Services Manager for Buildings and Fire Safety at UL Solutions), Joseph Loftus (Chief in Charge of HAZMAT Operations at FDNY), and Nick Petrakis (Director of Engineering at ESRG)

The most
widely recognized battery energy storage safety
standards include Underwriter
Laboratories (UL) certification and compliance with
National Fire Protection Association
(NFPA) standards.

New York State has been a national leader in
contributing to the development and early adoption of NFPA 855. NFPA 855
includes provisions that comprehensively address fire risks, including
venting (NFPA 68), explosion prevention (NFPA 69), electric code (NFPA
70), and fire alarms and signaling
(NFPA 72).

Battery and fossil fuel extraction and use:

The risk of fire is real, and when things go wrong, the fires are intense. But they are much less risky than fossil fuels (which are, after all, refined to burn).

And there's impact from extraction including mining with Indigenous and other frontline communities impacted. There's nasty chemical manufacturing, toxic and abusive working conditions.

- A Texas Peaker Plant Fire



Aligning affordability, safety and need; finding political will, implementing legislation and educating the public:
to achieve the clean energy transition and to accomplish this we have to inform out about safety to assure our officials and the public.

*3-9-26 NY-BEST+ Villar-Leeman on BESS (hosted by NYCP)
https://drive.google.com/file/d/1sTvCKk79ow13AKsvn3fudvngMijFxe-l/view?usp=drive_link
working to align with state's energy affordability goals. How it supports the grid*

HOW they work- **“Tyranny of Time- Turning night into day”**

Batteries absorb excess power generated at noon and discharge through the evening peak, stabilizing the grid in fractions of a second, and helping ride out unexpected disruptions.

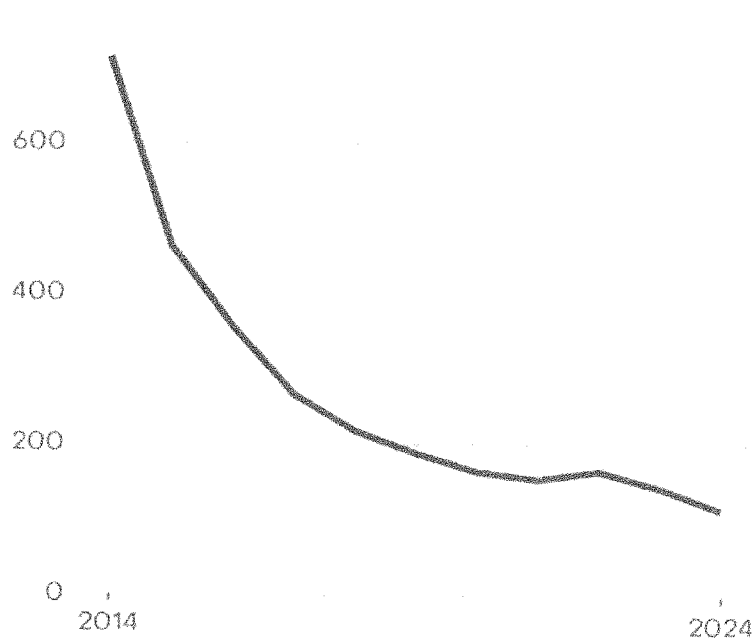
This provides increasing worldwide flexibility to count on for energy when it is needed, not just when it is generated.

Massive batteries — including the pioneering Hornsdale project have demonstrated that batteries can shift time at scale, effectively pumping out solar power at night while responding to disturbances in milliseconds, improving reliability and lowering customer bills
(Canadian Observer)

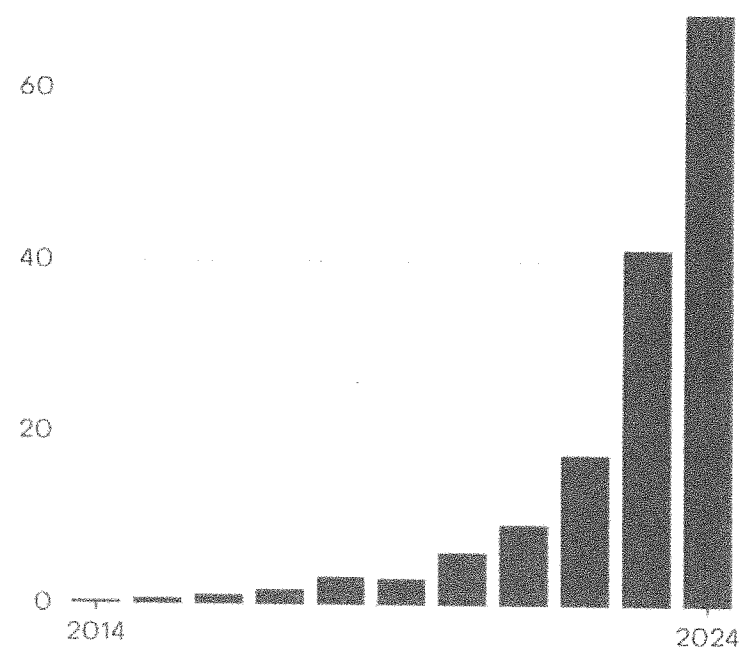
Affordability

As battery prices have fallen, installations have skyrocketed

Average battery pack cost* (\$/kWh)



Battery storage capacity additions (GW)



Source: BNEF, IEA · *Prices are volume-weighted and expressed in real terms (2024 prices)

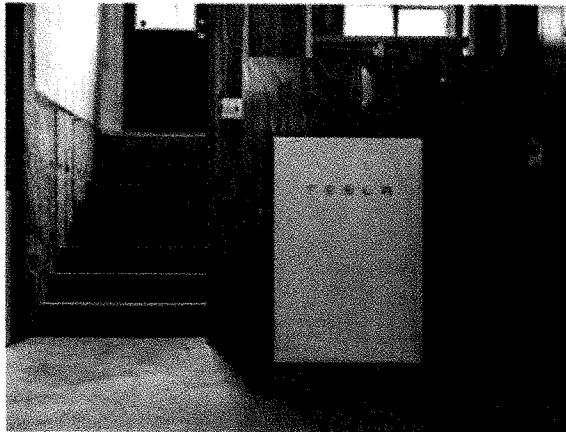
EMBER

Comparables

2025 Australia- more than 415,000 residential batteries in homes installed — roughly one for every 25 houses, estimates Steve Hanley at CleanTechnica.

Tier 1 BESS Examples

Residential BESS (Tier 1):



5 kW / 14 kWh installation: Tesla Powerwall 2
(5 kW / 14 kWh/unit); installed in utility space



9.8 kW / 20 kWh installation: SonnenCore+
(4.8 kW / 10 kWh/unit); installed in garage

LULA slide

From Dr. Jeffrey Seidman's research, Third Act, New Yorkers for Clean Power:

In California- batteries have overtaken gas and consequently their use of methane gas has plummeted; gas consumption for power generation has hit its lowest level in 25 years.

In Asia solar has surged and gas has flatlined.

Texas has tamed its gas prices using storage

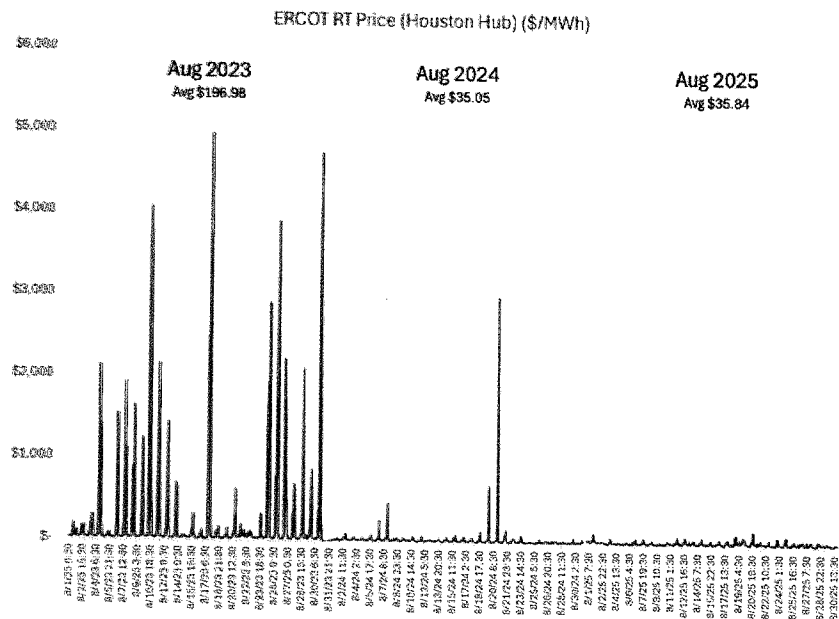
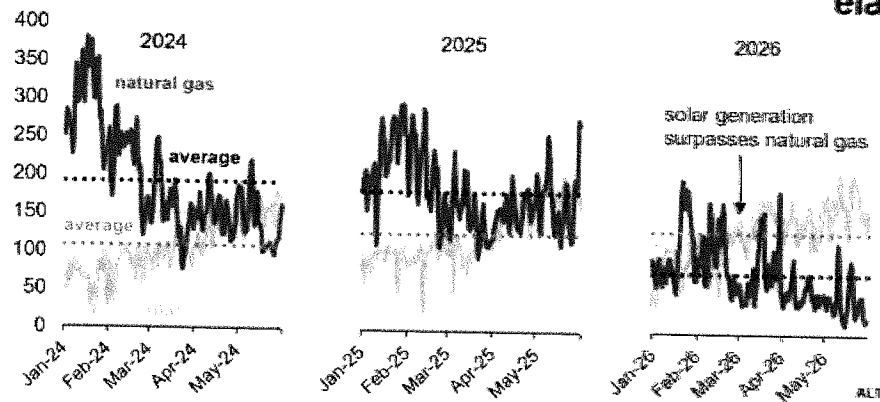


Ketan Joshi @ketanjoshi.co · 17h

Fantastic illustration of how batteries have completely overtaken gas in California

www.eia.gov/todayinenerg...

Solar and natural gas generation in CAISO (Jan 1–May 31)
gigawatt-hours



In Canada battery, storage is still subject to “old school thinking” (alarm) but nevertheless there is now 25 times more battery storage than ten years ago, according to a brief out (*June 2026 Canadian Observer*) from the Canadian Climate Institute.

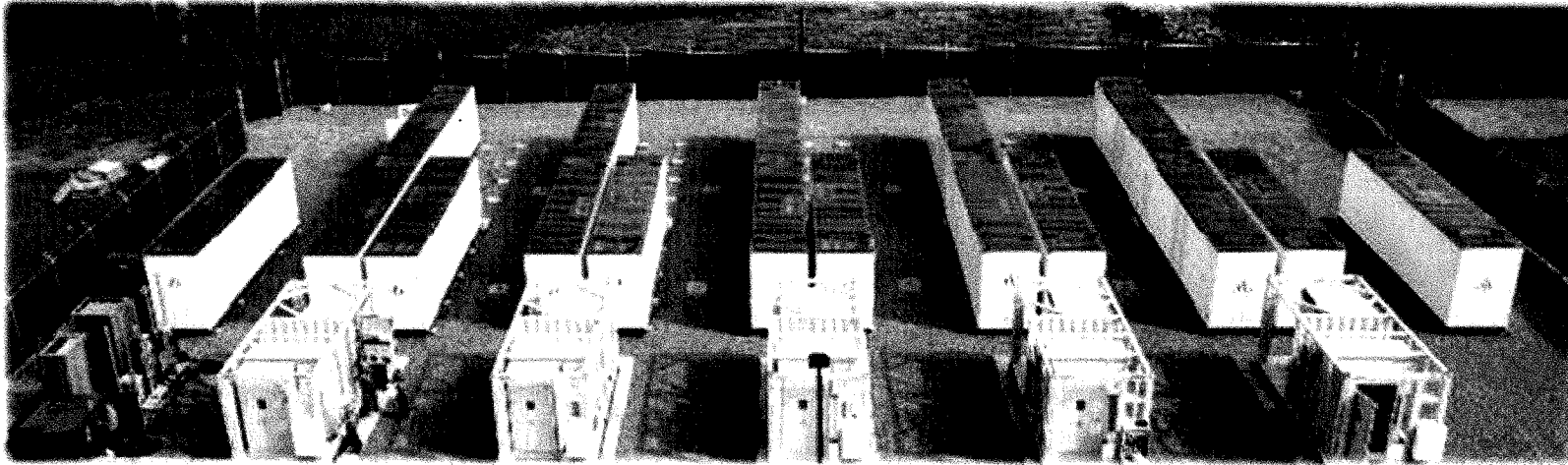
Other analysts estimate that Canada will need a 1,500 per cent increase in storage capacity by 2030 to meet growing demand.

***Local* decisions either enable critical
implementing of battery storage or
block it.**

Town and County Comprehensive planning should include:

- permitting of solar and wind.
- revisiting and refining existing Town regulations regarding location and requirements for-utility/community-and residential-scale- solar energy and battery storage facilities.
- reviewing updated NYSERDA model local laws for solar and battery storage facilities.
- customizing the recommendations to best meet Town goals.
- identifying zoning districts where utility/commercial scale solar energy and battery storage facilities would be allowed by Special Permit.
- supporting bills that encourage safe BESS and permitting

Getting a good plan:



BESS:

Primary Land Use / Planning Considerations for Clean Energy:

- Infrastructure / grid interconnection
- Appropriate location/zoning
- Bulk/area standards
- Environmental impacts
- Visual impacts
- Agricultural impacts
- Decommissioning
- Taxation
- **Fire safety**
- **Incident management training**

LULA

Good resources:

<https://ny-best.org/page/library>

(6.15) Sierra Club Hudson Valley hosted Prof. Jeff Seidman (Vassar College) on BESS. TAUNY was a co-sponsor.

<https://www.youtube.com/watch?v=XCash1iAido>

Sierra Club / Prof. Seidman <https://www.sierraclub.org/atlantic/mid-hudson/battery-energy-storage-systems-bess>

NYSERDA: Safety First: How New York's 2025 Fire Code Has Set The Standard In Energy Storage Safety

<https://www.youtube.com/watch?v=BN7LdGSt3sA>

3-9-26 NY-BEST+ Villar-Leeman on BESS (hosted by NYCP)

https://drive.google.com/file/d/1sTvCKk79ow13AKsvn3fudvngMijFxe-l/view?usp=drive_link

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