BESS Committee
Initial Recommendations

BESS Committee Members

Steve Vescio – Mayor, VBM

Josh Ringel – Manager, VBM

Kevin P. Leddy, P.E. – Village Engineer, VBM

Greg McCann – DPW Superintendent, VBM

Josh Subin – Village Counsel

Lauren Gualdino – VBM

Carl LaBruzzo – Deputy Chief, FD

Dominick Bueti – Chief, PD

Seth Leitman – SAC

David Morkel – FD

Definition

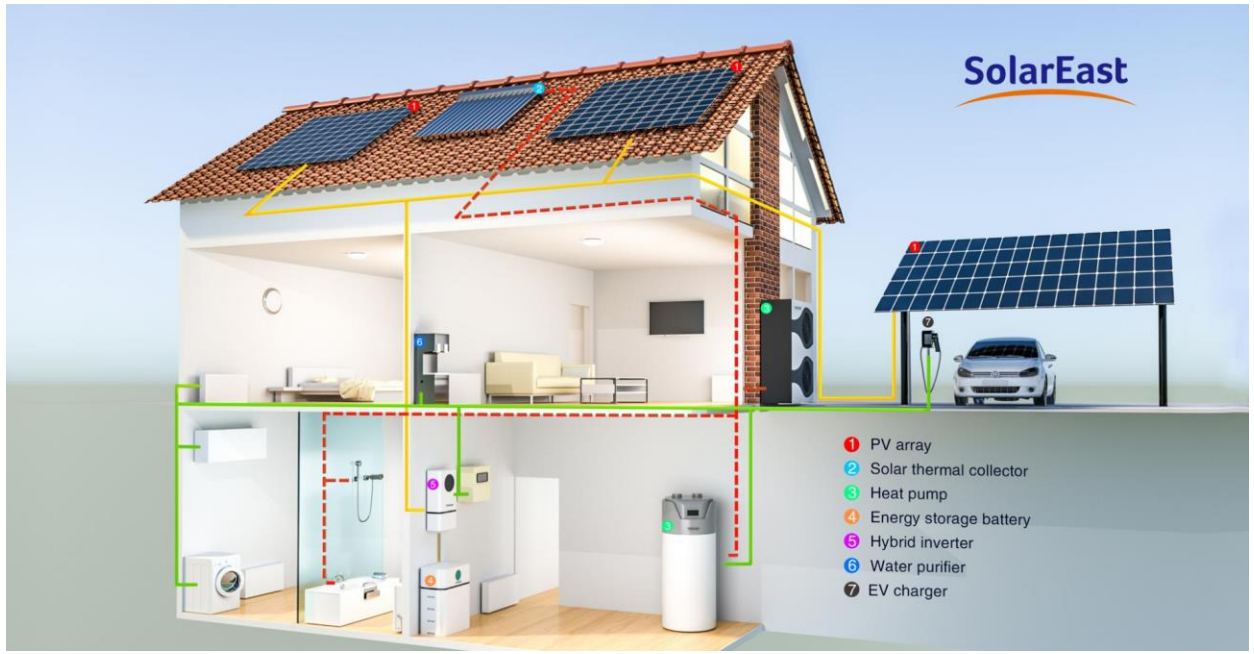
Village of Briarcliff Manor Code 178-9:

- **BATTERY ENERGY STORAGE SYSTEM** One or more devices, assembled together, capable of storing energy in order to supply electrical energy at a future time, not to include a standalone twelve-volt car battery or an electric motor vehicle. A battery energy storage system is classified as a Tier 1 or Tier 2 battery energy storage system as follows:
- **A.** Tier 1 battery energy storage systems have an aggregate energy capacity less than or equal to 600kWh and, if in a room or enclosed area, consist of only a single energy storage system technology.
- **B.** Tier 2 battery energy storage systems have an aggregate energy capacity greater than 600kWh or are comprised of more than one storage battery technology in a room or enclosed area.

Tier 1 Systems (<600 kWH)

- Found in both Residential and Commercial Setting
- Can be used to support Microgrids leading to better grid resiliency
- With or Without Solar or Other Renewable Energy
- With or Without Battery Backup
- One Technology

Source: https://www.solareastess.com/article/best-wall-mounted-residential-ess-system.html



Tier 1 Policy Recommendations

- Systems should be installed outside where practicable
  - Side and Rear Yards only
  - Adhere to principal setbacks
  - Maximum of 255 sf per ESS
- House should affix a placard in a readily viewable place for First Responders
- Fire Department to be notified of issued permits for ESS and Renewable Energy Systems
- Maximum of one (1) system per parcel; preferably owner-operated

Tier 1 Legislative Recommendations

- Exterior Requirements
  - Side and Rear Yards only
  - Adhere to principal setbacks
  - Maximum of 255 sf per ESS
  - ESS cannot exceed 25% of the side or rear yard
  - Draft Fire Code recommends ten (10) foot setback
  - R10B One Side Yard is twelve (12) foot setback (least restrictive)

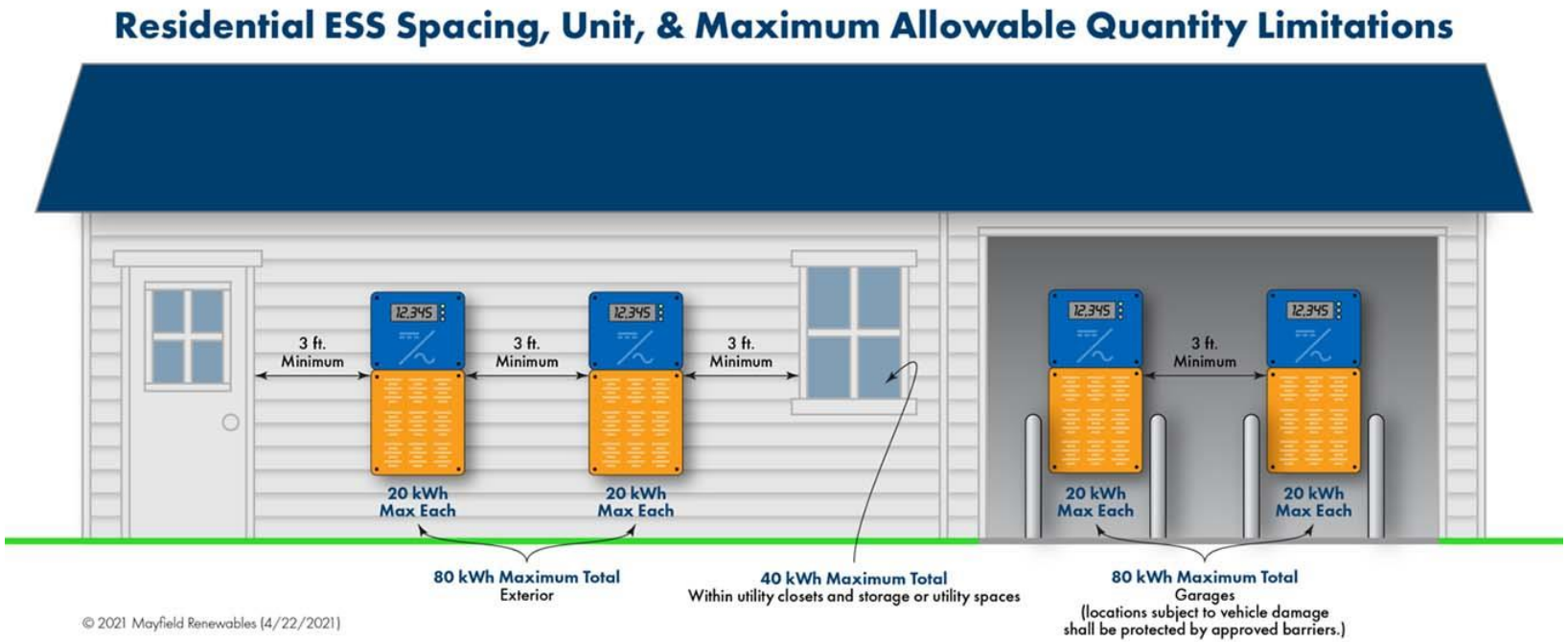
- Draft Fire Code 1207.8.4
  - Maximum Capacity of an Individual unit is 20 kWh
  - Separation between ESS of at least three (3) feet
  - Separation from doors, windows, operable openings, HVAC inlets by five (5) feet*
  - *Refer to Draft Fire Code for more information

Tier 1 Legislative Recommendations

- Interior Requirements
  - Encourage Applicants to submit exterior applications
  - Adhere to Draft Fire Code 1207 requirements
  - Placard the structure
  - Electric Vehicle's battery does NOT count as part of an ESS
- Draft FCNYS 1207.11.3
  - Attached and Detached garages
  - Enclosed Utility Rooms, Basements, Storage spaces
  - NOT in sleeping rooms or spaces opening directly to sleeping rooms
- Draft FCNYS 1207.11.4 for Energy Limits
  - Maximum of 80 kWH in exterior applications

*Refer to Draft Fire Code for more information

Tier 1 Residential Example

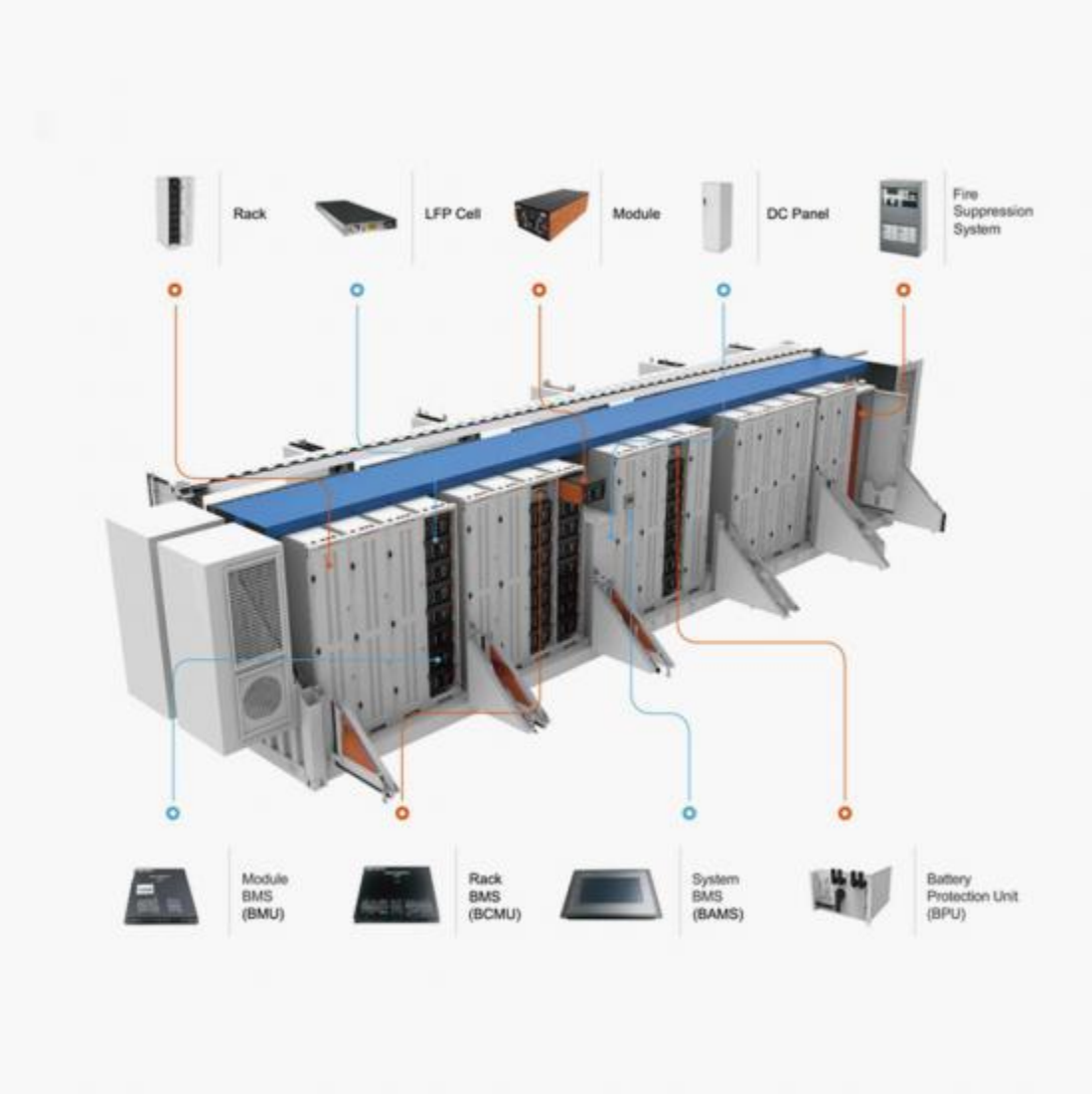


Source: https://www.mayfield.energy/technical-articles/fire-codes-and-nfpa-855-for-energy-storage-systems/

Tier 2 Systems (>600 kWh)

- Found in both Residential and Commercial Setting
- One or more storage technologies
- With or Without Solar or Other Renewable Energy

Source: https://www.sunpalsys.com/2-mwh-bess-solar-panel-electricity-battery-storage-device_p273.html



Tier 2 Permitting Recommendations

- Regulated as a Special Use Permit via Board of Trustees
- Site Plan via Planning Board
- Fire Department Referral by above boards
- Peer Review by industry professionals for above boards
- Building and Electrical Permit by the Building Department

Tier 2 Use Recommendations

- NOT a principal use in Residential Zones*
- *MAY be accessory to a principal use of energy generation
- Principal and Accessory Use in Non-Residential Zones

Tier 2 Siting Recommendations

- Residential Zoned: Via SUP;
  - Requires 5-acre site
  - Requires 100’ setback
- Non-Residential Zones to be 40,000 sf lots or greater
- Allowable on Rooftops and Open Parking Garages
- 15’ Maximum Height
- Spacing between units to be based upon NFPA 855 Live Fire Testing or approved equal

Tier 2 Setbacks

- 50’ from all Property Lines
- 100’ From all principal on-site and off-site buildings*
- *Not to be less than 20’ from another structure
- Adjustments made to setbacks based upon a Hazard Mitigation Analysis

Tier 2 Avoidance Areas (0.1 miles)

- Senior Living Facilities
- Schools
- Healthcare Facilities
- Municipal Facilities
- Educational Facilities
- Pharmacies

Tier 2 Awareness Areas (0.5 miles)

- Avoidance Areas
- Places of Worship
- Age-Restricted Apartment Complexes
- Supermarkets
- Dentists
- Other sensitive areas determined by dispersion analysis

NYS Fire Code and Working Group

- FCNYS 1206.8 Peer Review
- FCNYS 1206.13.3 Explosion Control
- FCNYS 1206.7.1 Fire Mitigation Personnel
  - Require that qualified personnel are available for dispatch within 15 minutes and able to arrive on scene within four hours to provide support to local emergency responders.
- FCNYS 1206.11.8 Signage
- FCNYS 1206.9.2.1 Systems Monitoring
  - Update the Fire Code to ensure that Battery Management System (BMS) data incorporates high resolution sensor data, including voltage, state of charge, and temperature measurement of each cell or each series-connected cell group, and is monitored by a 24/7 staffed Network Operations Center (NOC). Critical failure notifications should be immediately communicated to the site owner/operator to take corrective actions as necessary.
- FCNYS 1206.11.9 Security of Installations

Per Review Report Requirements (Draft FCNYS 1207.12.3)

- Site plan
- Emergency operations plan
- UL 9540A report
- Hazard mitigation analysis
- Manufacturer specifications
- UL listings and associated documentation
- NFPA standards and associated documentation
- Electrical drawings
- Explosion control verification
- Monitoring procedures
- Alarm activation criteria
- Fire protection system
- Other project application documents

Tier 2 Submission Requirements

- Hazard Mitigation Plan (Draft FCNYS 1207.1.5)
- Commissioning Plan and Report (Draft FCNYS 1207.2.2)
- Operation and Maintenance Plan (Draft FCNYS 1207.2.2)
- Decommissioning Plan and Surety (Draft FCNYS 1207.2.3)
- Confirmation of System Monitoring (Draft FCNYS 1207.3.4)
- Dispersion Analysis (Plume Modeling)
- Traffic Safety Circulation Plan – As required
- Emergency Operations Plan
- Noise and Lighting Plan

Tier 2 Emergency Access Recommendations

- Adequate water supply within 400’ of the ESS to the discretion of the Fire Code Official
- Fire Apparatus Access Roads to the facility to the discretion of the Fire Code Official
- Qualified Hazard Support Personnel are available for dispatch within fifteen (15) minutes and be able to arrive on scene within four (4) hours to provide Support to local emergency responders

Tier 2 Training Requirements

- Preparation of an Emergency Response Plan by ESS Developer
- Initial Site Familiarization with Fire, Police, and Public Works
- Supplemental 1-hour annual training by developer for Fire, Police, and Public Works

Works Consulted

Governor's Summary on FSWP's Implemented Recommendations

NYS Inter-Agency Fire Safety Working Group

DRAFT 2024 NYS Fire Code (Section 1207)

NFPA 855 Standard for the Installation of Stationary Energy Storage Systems 2020

Whitepaper: The Evolution of Battery Energy Stor4age Safety Codes and Standards

Whitepaper: Fire Suppression for BESS

Works Consulted

Town of Greenburgh Zoning Code 285-37.1

Town of Southampton Zoning Code 330-162.21