NYC ENERGY STORAGE SYSTEMS ZONING GUIDE

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SMART DG HUB

A PROGRAM OF

CUNY Office of Facilities Planning, Construction and Management
Sustainability & Energy Conservation

NYC Energy Storage Systems (ESS) Zoning Guide

The City of New York is actively pursuing its ambitious climate resilience agenda through a comprehensive, multi-agency effort that includes policy changes, local mandates, carbon reduction goals, and more. One aspect of these wide-ranging efforts includes updating the City's zoning regulations and zoning enforcement pertaining to Energy Storage Systems (ESS).

This ***NYC ESS Zoning Guide*** was developed by the Sustainable CUNY Smart DG Hub with input and support from the NYC Department of City Planning and the NYC Mayor's Office of Climate & Environmental Justice. The Smart DG Hub is a strategic initiative of Sustainable CUNY, an integral program of the Office of Sustainability and Energy Conservation in the City University of New York's Department of Facilities Planning, Construction, and Management. The DG Hub works in collaboration with City and State agencies, industry, utilities, and other stakeholders to address market barriers to widespread deployment of distributed generation technologies. This document is intended to serve as a high-level navigational guide to understanding zoning provisions applicable to ESS, and to provide a comprehensive summary of ESS-related zoning changes to date.

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NOTE: The information supplied here is for high-level guidance only – it is not intended to, nor should it be used for the purposes of, replacing the professional zoning analysis that is required for ESS permit applications. Zoning regulations may have multiple exceptions or unique applications in a given district type or lot. Additionally, this Zoning Guide is limited in scope to zoning provisions unique to energy storage equipment – it does not provide a thorough treatment of zoning provisions that may apply as part of general construction as associated with energy storage installations. Always consult with a registered design professional to provide the requisite zoning analysis required for NYC DOB permit applications and to ensure compliance.

I. PRIOR NYC ZONING REGULATIONS FOR ESS

Prior to the ***City of Yes Zoning Amendments*** adopted by the NYC City Council in 2023 and 2024, there had been three prior developments in zoning pertaining to ESS:

Bulletin 2019-007	**Bulletin 2020-023**	**Zoning for Coastal Flood Resiliency**
Clarified the zoning use groups for Non-Accessory battery energy storage systems. Has been superseded by the Dec. 2023 *City of Yes for Carbon Neutrality* zoning amendment.	Provided a determination to classify ESS as Accessory vs. Non-Accessory, and established allowable siting for Accessory units. All zoning-related provisions in this Bulletin have been superseded by the Dec. 2023 *City of Yes for Carbon Neutrality* amendment. This Bulletin also contained non-zoning related provisions concerning certain filing procedures, which are still applicable.	Amended the NYC Zoning Resolution (ZR) text to include provisions that promote long-term resiliency and support post-disaster recovery. Key provisions pertaining specifically to ESS have been largely carried over or superseded by the Dec. 2023 *City of Yes for Carbon Neutrality* amendment.

II. CITY OF YES ZONING AMENDMENTS

The City of Yes for Carbon Neutrality zoning amendment was adopted by the NYC City Council in December 2023 as part of a broader three-pronged effort to modernize zoning regulations in furtherance of the City's climate and resilience goals, along with amendments aimed at economic opportunity (adopted June 2024), and amendments aimed at housing development (adopted December 2024).

These zoning reforms have significantly changed the NYC Zoning Resolution (ZR). The changes adopted via City of Yes for Carbon Neutrality support broader siting of distributed energy resources (DERs) including but not limited to solar, wind, and energy storage. Key new provisions pertaining to energy storage systems (ESS) are highlighted in the sections below, along with other zoning provisions pertinent to general construction/development projects that are also applicable to some ESS projects.

A. Permitted Obstruction Classifications of ESS

All ESS are now treated as one of two types of Permitted Obstructions (PO) for the purposes of siting within a zoning-required yard, court, open space, or rooftop, as categorized below. These are subject to various screening and enclosure requirements depending on the PO type, district type, and location of the installation.

Accessory Mechanical Equipment (AME): is by definition "accessory" to the principal use of the lot, and refers to any ESS installation with a kWh capacity that does not exceed 24x the peak electrical load of the principal use on the lot. This allows ESS of larger kWh capacity to be classified as Accessory use.

- AME ESS units of a size less than 18" depth from an exterior wall, which encompasses many "Residential" ESS products with an energy capacity of <20 kWh per unit, are granted key allowances and exceptions which are not applicable to AME larger than 18" depth; for example exemption from screening requirements.

Energy Infrastructure Equipment (EIE): refers to non-accessory ESS installations that are the principal use on a lot, with a kWh capacity greater than 24x the total peak electrical load of the lot (this applies to all standalone ESS on vacant lots). EIE ESS fall under the recently revised Use Group IV(C) "Renewable Energy And Green Infrastructure".

- EIE is generally as-of-right in all zoning districts, but in all Residential districts EIE is limited to an aggregate area of the lot up to 10,000 ft^2. Exceeding this size limit would require special permit by the Board of Standards and Appeals (see page 6).

B. Regulations for ESS Siting – Ground Level Installations

When located at grade, not in a required yard/court/open space:
Where ESS of any type is installed at grade in an area that is not a zoning-required yard, court, or open space, it is not considered a 'Permitted Obstruction' but instead is within the 'zoning envelope' and need only abide by the zoning requirements of the district that would apply to any building or other structure.

When located in a required yards/courts/open space:
Permitted obstruction regulations pertaining to height limits, size/footprint of the installation, screening requirements, and distances from lot lines apply to both AME (accessory) ESS and EIE (non-accessory) ESS.

Basic zoning-prescribed design requirements for both AME and EIE ESS are summarized in the table below, but these may vary in areas where special zoning rules apply such as low-density growth management zones, overlays, Flood Hazard Areas, Special Purpose Districts, etc.

Ground-Mount ESS Installation		
	R-Districts	**C- and M-Districts**
Size/square footage	▪ The ESS installation footprint area, (including any required screening) must not exceed 25% of required yard or open space area. ▪ In front yard locations ESS footprint is limited to 25 ft^2 total area. ▪ EIE ESS >10,000 ft^2 require BSA approval. ▪ AME ESS ≤18" depth may encroach on any required yard with no screening needed.	No limit to size/area of ESS installation.
Screening/ Planted buffers	▪ AME ESS ≤18" depth from an exterior wall do not require screening. ▪ AME and EIE equipment exceeding 25 ft^2 area require screening by fence. ▪ AME and EIE located in a front yard or facing a street line must be screened by vegetation. ▪ EIE located within 15 feet of a lot line must be fully screened from all adjoining zoning lots by fence, wall, or 4' strip of vegetated buffer. ▪ Most non-accessory ESS will require street tree plantings.	▪ Screening is required in all C-districts except C8 if ESS installation exceeds 25 ft^2. ▪ No screening is required in M-districts. ▪ Additional tree planting buffers are required within Lower Density Growth Management Areas in Staten Island (*37-12*). ▪ Most non-accessory ESS will require street tree plantings.
Height limits	▪ 5' above grade for front yard locations in R1-5 districts. ▪ 10' above grade in R1-R5 districts, all other yard areas. ▪ 15' above grade in R6-R12 districts.	C- and M-districts – height allowance of 23' above curb level.
Enclosure/ Lot Line Distance	Minimum 5' distance from lot line*, except if: ▪ ESS is fully enclosed in a building/indoors, or ▪ An AME ESS ≤18" depth from an exterior wall.	In C-districts except C8, a 5' minimum distance from lot line* applies except when: ▪ ESS is fully enclosed in a building/indoors, or ▪ An AME ESS ≤18" depth from an exterior wall In M-districts (and C8 districts) have no zoning-based minimum distance from lot lines*.

** Lot line separation distance is also subject to FDNY limitations and may require 10' separation*

C. Regulations for ESS Siting – Rooftop Installation:

Regulations pertaining to height limits, screening requirements, and setbacks apply to both PO types. Most districts allow AME ESS as a rooftop PO with some exceptions such as pitched roofs in R-districts. Some requirements may vary for a given specific zoning lot/building, but the provisions in the table below generally apply to rooftop ESS installations:

Rooftop ESS Installations		
	R-Districts	**C- and M-Districts**
Setback from street wall	10’ setback from street wall (with some variations e.g. for narrow & wide lots).	10’ setback from street wall (with some variations e.g. for narrow & wide lots).
Screening	ESS must be screened on all sides, regardless of whether it exceeds height limits or sky exposure planes, except for: ▪ Equipment with a depth less than 18” from an exterior wall, or ▪ Equipment that does not exceed the height of the rooftop parapet, or a height of six feet as measured from the roof level.	ESS must be screened on all sides, regardless of whether it exceeds height limits or sky exposure planes, except for: ▪ Equipment with a depth less than 18” from an exterior wall, or ▪ Equipment that does not exceed the height of the rooftop parapet, or a height of six feet as measured from the roof level.
Height limits & Lot area coverage	▪ If the height of the ESS installation does not exceed the zoning height limit, there is no limit to the aggregate ESS footprint area. ▪ If the ESS exceeds the zoning height limit by up to 15’, the aggregate footprint area of the ESS installation including any screening must not exceed 50% of the lot coverage of the building. ▪ If the ESS exceeds the zoning height limit more than 15’, then the allowable lot area coverage is variably reduced depending on zoning district type as per ZR 23-412.	▪ If the height of the ESS installation does not exceed the zoning height limit, there is no limit to the aggregate ESS footprint area. ▪ If the ESS exceeds the zoning height limit by up to 15’, the aggregate footprint area of the ESS installation including any screening must not exceed 50% of the lot coverage of the building. ▪ If the ESS exceeds the zoning height limit more than 15’, then the allowable lot area coverage is reduced as per ZR 33-42.

D. Other Key ESS Related Provisions

- **Non-conforming uses**: Structural alterations are generally disallowed on an existing non-conforming use, but it is permitted where improving energy performance, including where adding ESS.
- **Non-complying buildings**: Any project comprised exclusively of adding AME or EIE, whether to a building or an open area, may create a new non-compliance or increase non-compliance.
- **Waterfront areas:** ESS installations (both AME and EIE) are exempt from extra waterfront regulations.
- **Flood Zones:** For POs in yards/courts/open space, PO regulations can be modified (lot line distance, height, area).
- **Special Purpose Districts (SPD):** several SPDs have adopted allowances for EIE & AME to be rooftop POs & some allowances to exceed SPD height limits.

E. Special Permits – Board of Standards & Appeals

In all Residential districts, the Board of Standards and Appeals (BSA) may permit EIE exceeding 10,000 ft^2 lot area, provided that the Board finds that:

1. Such use will serve the residential area within which it is proposed to be located; and
2. There are serious difficulties in locating it in a district wherein it is permitted as of right and from which it could serve the residential area, which make it necessary to locate such use within the residential area.

The Board may prescribe appropriate conditions or safeguards to minimize adverse effects on the character of the surrounding area.

For general information on the BSA, visit https://www1.nyc.gov/site/bsa/index.page.

ABOUT | The Smart Distributed Generation (DG) Hub, established by Sustainable CUNY of the City University of New York in 2013, is a comprehensive effort to develop a strategic pathway to safe and effective solar and storage installations in New York City. The work of the DG Hub is supported by the U.S. Department of Energy, the New York State Energy Research & Development Authority (NYSERDA), the New York Power Authority (NYPA), and the City of New York. The DG Hub's Solar and Storage Ombudsmen are available as a technical assistance resource for stakeholders – reach out for assistance with your solar or storage project.

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