NYC ENERGY STORAGE SYSTEMS ZONING GUIDE, 2ND ED.

April 2024

SMART DG HUB

A PROGRAM OF

CUNY THE GREATEST URBAN UNIVERSITY IN THE WORLD | 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*** has been 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 or lot. 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 for Carbon Neutrality zoning amendment*** adopted by the NYC City Council in December 2023, there were three developments in zoning as relates 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 Has been superseded by the Dec. 2023 City of Yes for Carbon Neutrality zoning amendment.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 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 amendment.

II. CITY OF YES FOR CARBON NEUTRALITY ZONING AMENDMENT

City of Yes for Carbon Neutrality, adopted by the NYC City Council on December 6, 2023 is a comprehensive amendment to the NYC Zoning Resolution (ZR) with provisions that modernize zoning regulations in further support of the City's climate and resilience goals. These changes support broader siting of distributed energy resources (solar, wind, and energy storage) at multiple points throughout the grid. Key new provisions are highlighted in the sections below.

A. New and Revised Definitions Pertaining to ESS

Accessory Mechanical Equipment (AME): by definition, "accessory" use; refers to any ESS installation with a kWh capacity less than or equal to 24x the total electrical load of the lot in kWh. This allows ESS of larger kWh capacity to be considered Accessory use.

- AME ESS units of less than 18" depth in terms of physical size, which encompasses most "Residential" ESS with an energy capacity of <20 kWh per unit, are granted some

allowances and exceptions which may not be applicable to AME larger than 18" depth; for example exemption from lot line distance requirements.

Energy Infrastructure Equipment (EIE): describes any ESS installation with a kWh capacity greater than 24x the total electrical load of the lot (including standalone ESS on empty lots).

- EIE ESS are considered "non-accessory" and classified under the applicable Use Groups depending on the area of the physical footprint of the installation;
- UG 4C "Special Infrastructure" for ESS where the aggregate lot coverage (footprint) of all such equipment on the zoning lot (property) does not exceed 10,000 square feet. The total lot area occupied by such equipment does not exceed 10,000 square feet. UG 4 is generally as-of-right in all zoning districts.
- UG 6F or UG 14C "Special Infrastructure" for ESS without size limitation – UG 6 is generally as-of-right in all C- and M-districts. UG 14C is specifically applicable to boating-related uses in select C-districts.

Permitted Obstruction status for ESS: All ESS installations – including both AME (accessory) ESS and EIE (non-accessory) ESS are now classified as Permitted Obstructions (PO) for the purposes of siting within a zoning-required yard, court, open space, or rooftop. These POs are subject to certain screening and enclosure requirements depending on the location of the installation.

B. Regulations for ESS Siting – Ground Level

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 height limits 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. When an open space is part of a yard or court, those respective regulations apply.

Specific design requirements may vary depending on factors such as the zoning sub-district, type of facility (e.g. Residential Facilities versus Community Facilities), space type (e.g. Yards, Courts, Open Space), or other special provisions such as Flood Hazard Areas, but the provisions in the table below generally apply within required yard/court/open space siting:

	R-Districts	C- and M-Districts
Height limits	▪ 5’ above grade for front yard locations in R1-5 zones. ▪ 10’ above grade in R1-R5 zones. ▪ 15’ above grade in R6-R10 zones.	23’ above curb level.
Size/square footage	▪ ESS installation must be <25% of the respective area when located in required yards/rear yard equivalents or open space. ▪ ESS installation must be <25 ft^2 total for front yard locations. ▪ EIE ESS >10,000 ft2 are classified as UG 6F and would require BSA approval. ▪ AME ESS ≤18” depth are allowed to encroach on any required yard *(23-441(a)(1))*	No limit to size/area of ESS installation.
Screening	Required if ESS installation: ▪ Exceeds 25 ft^2 area *(26-61(c))*, or ▪ Sited within a required front yard within 15’ of any lot line (*26-61(d)*, which includes additional planted buffer requirements)	Required if ESS installation exceeds 25 ft^2 area *(37-21(c))*. However, no screening is required in C8 or M Districts. Additional tree planting strips are applicable within Lower Density Growth Management Areas in Staten Island *(37-12)*.
Distance to Lot Line	5’ distance from lot line, except if: ▪ ESS is fully enclosed in a building/indoors, or ▪ An AME ESS ≤18” depth	C-districts except C-8: 5’ distance from lot line except if: ▪ ESS is fully enclosed in a building/indoors, or ▪ An AME ESS ≤18” depth C-8 and all M-districts: No minimum distance from lot lines.

C. Regulations for ESS Siting – Located on Rooftops:

Permitted obstruction regulations pertaining to height limits, screening requirements, and setbacks apply to both AME (accessory) ESS and EIE (non-accessory) ESS. Most districts allow AME ESS as a rooftop PO except for several select R-districts *(R2A, R2X, R3 except R3-2, R4-1, R4A, R4B, R5A)* as denoted in *23-623*.

Some requirements may vary depending on the zoning sub-district, building type, facility type (e.g. Residential Facilities versus Community Facilities), Special Districts, Flood Hazard Areas, etc. but the provisions in the table below generally apply to rooftop siting:

	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	All ESS must be screened.	All ESS must be screened.
Lot area coverage of the ESS	If above the zoning height limit, the aggregate area of ESS installation must be <50% of the lot coverage of the building. If below the zoning height limit, no limit applies.	If above the zoning height limit, the aggregate area of ESS installation must be <50% of the lot coverage of the building. If below the zoning height limit, no limit applies.
Height limit	If above the zoning height limit: ▪ 15’ above max height for up to the full 50% of allowable lot area coverage, with the following limits for up to 30% of allowable lot coverage: ◊ 25’ above max height in select R-districts. ◊ 35’ above max height in R6-10 district buildings below 120’. ◊ 55’ above max height in R6-10 district buildings above 120’. If fully located below the zoning height limit applicable to buildings: ▪ No height limit applies to the ESS itself.	If above the zoning height limit: ▪ 15’ above max height for up to the full 50% of allowable lot area coverage, with the following limits for up to 30% of allowable lot coverage: ◊ 35’ above max height on buildings below 120’. ◊ 55’ above max height on buildings above 120’. If fully located below the zoning height limit applicable to buildings: ▪ No height limit applies to the ESS itself.

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 (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:** several SPD's have adopted allowances for EIE & AME to be rooftop POs & some allowances to exceed SPD height limits.

E. Special Permits – Board of Standards & Appeals

Via the Board of Standards & Appeals (BSA) process, approval can be sought for ESS that would not otherwise meet bulk zoning regulations, in certain cases:

- UG 6F ESS installations in R-districts
- Enlargements of EIE ESS beyond bulk regulation allowances (in any district)
- Modification of bulk regulations, other than floor area ratio, for EIE ESS

For UG 6F ESS installations in R-districts, a BSA special permit may be issued if the project meets BSA requirements as described in *73-14*:

- That such use will serve the residential area within which it is proposed to be located;
- That 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 a Residence District;
- 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 solar+storage installations in New York. 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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