



Proposed 2021 New York City Fire Code: NYSEIA Comments

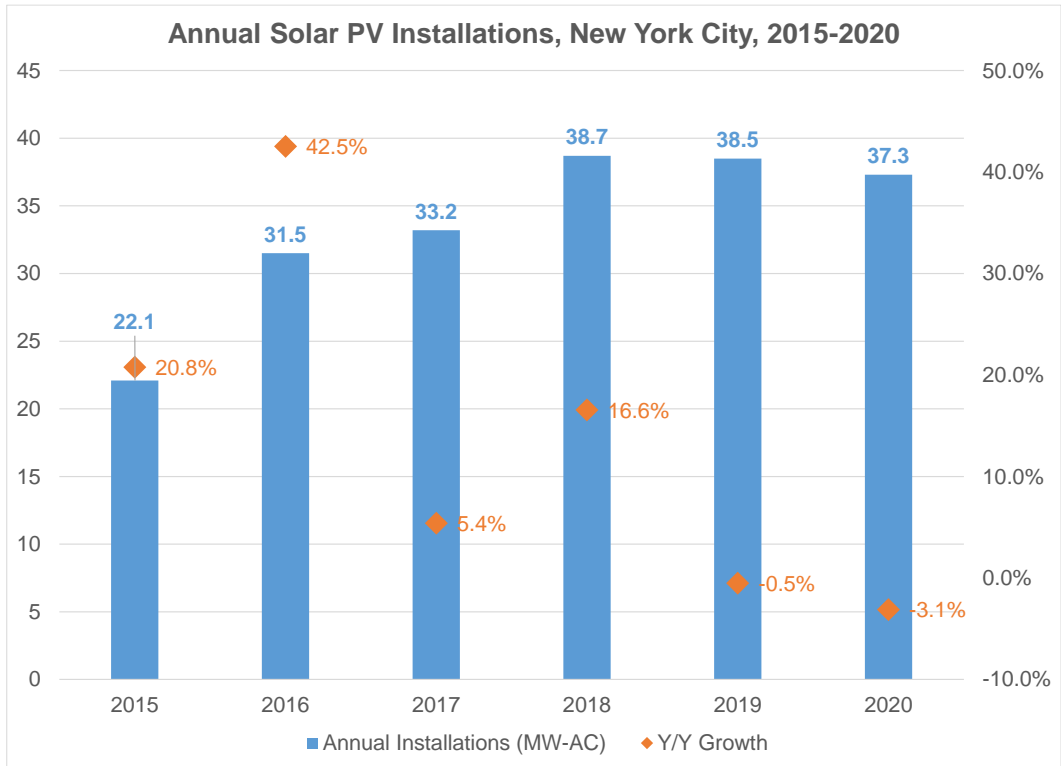
June 10, 2021

Introduction

New York Solar Energy Industries Association (NYSEIA) appreciates the opportunity to submit comments with regard to the proposed Fire Department of New York’s (FDNY) 2021 Fire Code Revisions. NYSEIA is a not-for-profit industry association with a mission to advance and accelerate the deployment of distributed solar energy and energy storage in New York State, acting as the voice of the distributed solar and storage industry for more than 140 member organizations on key legislative, regulatory, and statutory policy matters affecting these industries. Our membership is primarily comprised of local, regional and national firms that develop and install distributed solar energy and battery storage systems across New York State, and includes over 50 firms active in the five boroughs of New York City.

NYSEIA appreciates and supports FDNY in its role in protecting New York City’s buildings and citizens. However, the proposed code changes identified below, data-driven justification for which has not been provided by FDNY, would dramatically restrict solar PV deployment on New York City’s already highly constrained roof spaces. As shown in Figure 1, solar PV deployments in New York City have plateaued and even declined in recent years; if effectuated, these changes would significantly downsize or outright eliminate many solar PV projects across New York City, leading to a downturn in solar PV deployment. Consequently, they would lead to a contraction of New York City’s solar PV industry and its workforce and its economic recovery from the devastating effects of COVID-19 and impede the realization of the City’s and New York State’s solar PV and decarbonization goals at a time when accelerated deployment of clean energy is more crucial than ever in order to mitigate the effects of the climate crisis.

Figure 1: Annual Solar PV Installations in New York City, 2015-2020



Source: New York Department of Public Service SIR Inventory Data, Con Edison, April 2021

New York City’s Fire Code already places more restrictions on the siting of rooftop solar PV systems than any other fire code in the nation. NYSEIA respectfully opposes additional restrictions that impede rooftop solar development without data demonstrating the necessity of the restrictions to protect the safety of firefighters and the public.

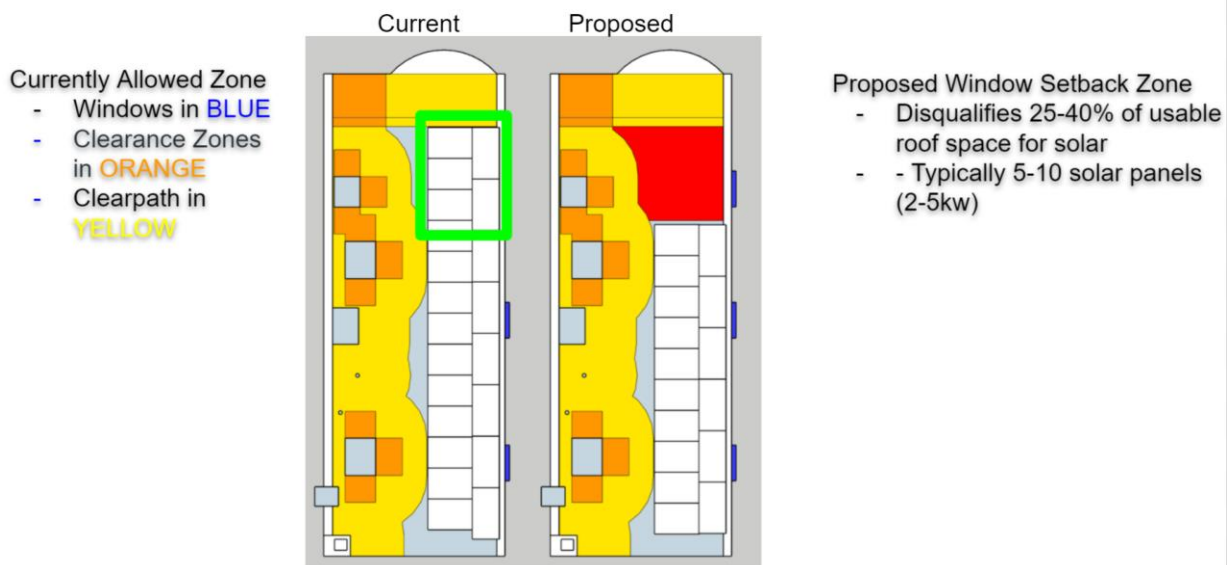
Detailed Comments on Proposed 2021 Fire Code Changes

A. 504.4.4: Rooftop Clear Path

Proposed Change: A clear path of not less than 6 feet (1829 mm) horizontal width and 9 feet (2743 mm) in height shall be provided from the front of the building to the rear of the building;[and] from one side of the building to the other for each 100 linear feet (30 480 mm) of rooftop width and depth such that the maximum distance between clear paths is 100 feet (30 480 mm); **and for a minimum distance (including the width of the clear path) of 30 percent of the perimeter of the building facing the rear yard and any side of the building that has windows.** [emphasis added]

NYSEIA strongly recommends removing the new requirement to provide a clear path on 30 percent of the wall area for rear yards and side walls with windows. Based on member firms' studies of several buildings, we find that this requirement will reduce the potential solar PV capacity of the roof by as much as 20 percent for typical buildings with 5-200 kW-DC systems, which constitute the vast majority of the addressable market in New York City. Overall, as shown in Figure 2, the proposed window setbacks would reduce 25 to 40 percent of usable roof space for solar, translating to a reduction of five to ten solar panels on a typical 20 x 40 ft building. As panel efficiency and therefore wattage increases over time, this capacity loss will only increase further. Furthermore, fixed costs for such projects tend to be high, meaning that system prices per watt would also increase significantly and degrade their value proposition for potential customers.

Figure 2: Impact of Proposed Window Setback Zone on Usable Solar Roof Space



Source: NYSEIA

B. 504.4.4: Additional Comments

In addition to the significant reduction in usable roof space due to the proposed “30 percent rule”, we highlight the following concerns relating to proposed FC 504.4.4 changes as outlined below:

- i. Vertical renovation projects will also be able to avoid solar panel requirements under Local Laws 92 and 94 by claiming exemption because of a stricter fire code.
- ii. The current version of proposed language adds a requirement that the FDNY’s 6-foot clear paths provide access to roof drains in addition to the previously listed building features. Roof drains are pervasive on multi-family buildings, and requiring this clearance will only further erode solar

system sizes, undermine LL 92/94 goals, and hamper deployment of solar on low-and-moderate income residences throughout New York City.

- iii. Significant clarification is needed to avoid variation in interpretation between FDNY intent and DOB plan examiners' evaluations. For example: the proposed change only references 30 percent of the perimeter for side windows, but does not specify if the clearance needs to be directly above the window, which creates potential for uncertainty and inconsistent interpretation. Does a 100-foot-long wall with one window still need 30 feet of exposed perimeter, and does it matter whether the open area is anywhere near the window itself? Similarly, do roof drains include gutters, or only apply to circular roof drains, and does the proposal also require three feet of clearance around roof drains?

C. 504.5: Access Pathway Requirements for Newly Constructed 100-foot-plus Buildings

Proposed Change: All newly constructed buildings greater than 100 feet in height must also provide six-foot-wide access pathways in accordance with the requirements of FC 504.4.

NYSEIA strongly opposes this proposed change, as we believe that expanding the requirement for FDNY access pathways to buildings more than 100 feet in height will reduce the feasibility of installing solar on these properties, which would otherwise be required to install solar pursuant to Local Laws 92 and 94. Prior versions of the Fire Code do not include any FDNY access pathway requirements for buildings greater than 100 feet in height. NYSEIA's understanding is that such access pathways are not critical to the FDNY, as FDNY ladders are not long enough to access roofs greater than 100 feet in height.

D. 504.4.1.7: Barrier Requirements for Existing Buildings

Proposed Change: The rooftop parapet or other perimeter railing or barrier shall be designed to facilitate the safe dismounting of a firefighter from an aerial ladder. **Any such parapet, railing or barrier shall be of substantial construction capable of supporting a minimum of 350 pounds (159 kg) and shall be designed with a level surface at least 5 inches in width (127 mm) so as to allow a firefighter to safely step on it, as prescribed by the department.** Where the height of the rooftop parapet, railing or other enclosure is more than 48 inches (1219 mm), an approved landing platform and steps or ladder shall be provided to allow a firefighter to safely dismount and descend to the rooftop. Design and installation documents shall be submitted to the department for approval. [emphasis added]

NYSEIA strongly recommends eliminating the requirement for barriers to be greater than 5 inches in width for projects on existing buildings. The cost of installing perimeter barriers is already a major impediment to many solar projects on existing buildings. Where barriers need to be installed, requiring

5-inch-wide barriers will increase overall solar PV project costs significantly, by as much as 50 percent depending on project size.

E. 504.4.1.1: Exposures Accessible to Fire Apparatus

Proposed Change: For each 12 linear feet (3658 mm) of building perimeter accessible from the frontage space of the building and **from any other exposure accessible to fire apparatus**, a minimum clearance of 6 feet (1829 mm) in width and 6 feet (1829 mm) in depth from any obstruction shall be provided at the parapet wall or other perimeter of the rooftop. [emphasis added]

NYSEIA recommends that the language “any other exposure accessible to fire apparatus” should be struck or further defined. Buildings may have parking lots, landscaped areas, pedestrian walkways, or other features, located along exposures that are not the “frontage space” as defined in FC202 (previously FC502). For small buildings, whether or not perimeter access is required at these exposures has a significant impact on the potential solar PV size for the building. As these are common features on many buildings, it is not practical to seek FDNY interpretation every time a building has a parking lot or other feature which may or may not cause an exposure to be considered “accessible to fire apparatus.”

F. 504.4.8: Rooftop Access Underneath Cantilevered or Overhead Buildings

Proposed Change: Where a building is constructed directly above another building, including a building cantilevered over another building, a vertical clearance from the rooftop of the building below shall be provided for firefighting operations in accordance with the following requirements. Design and installation documents documenting compliance with this section, including the fire analysis filed with the Department of Buildings, shall be submitted for Fire Department review and approval.

NYSEIA recommends clarifying that the requirements of this section to not apply to solar PV equipment installed on an elevated structure above existing rooftop equipment.

G. 608.6.1: Review and Approval of Indoor Systems

Proposed Change: Department review and approval of indoor system installations is required for systems utilizing equipment not approved by the department or not in accordance with the terms and conditions of the certificate of approval, equipment listing or requirements of this code. Otherwise, department review and approval is required only for battery management system monitoring stations, smoke control and smoke purge systems, explosion mitigation, and such fire protection and hazard mitigation systems and measures as are otherwise reviewed by the department under this code or the construction codes.

NYSEIA interprets the above language to mean that where equipment has been issued a Certificate of Approval stating that the equipment is suitable for indoor installation, subject to conditions, a FDNY application for site specific review is not required, regardless of whether the system is a small, medium or large battery storage system, as defined in the Rules, and provided that the system does not exceed the maximum capacity per control area as proposed in FC608.9.1.11. We request that FDNY confirm that this interpretation is correct.

H. 608.9.4.1.4: Exemption for Lithium-Ion Batteries Used for Emergency/Standby Power

Proposed Change: Indoor systems shall be installed only in control areas designed, installed, operated and maintained in accordance with this section. The maximum aggregate rated energy capacity of indoor systems per control area shall be in accordance with FC608.9.1. The design and number of control areas per floor shall be in accordance with FC5003.8.3.3, including FC Table 5003.8.3.3, except that (subject to FC608.9.4.1.9 and FC608.9.4.1.10) each control area housing an indoor stationary energy storage system shall be designed and constructed as a high-hazard occupancy, and rooftop installations shall be treated as outdoor installations.

Proposed FC 608.9.4.1.9 exempts lead acid and nickel-cadmium batteries used for emergency or standby power only from being installed in control areas designed as high-hazard occupancies. This is similar to the existing exception in 2014 NYCBC 307.1, however 307.1 does not list a specific chemistry. NYSEIA believes that this is the correct approach, and that the FC 608.9.4.1.9 exemption should be extended to lithium-ion batteries as well, possibly subject to a size limit determined by the Department. Regardless of chemistry, battery systems used for emergency or standby power only experience dramatically fewer cycles than energy storage system batteries, and the hazards of thermal runaway or other thermal events are thus proportionately reduced.

I. 608.9.4.1.1: Indoor Systems Installed in a Below-Grade Location

Proposed Change: Indoor systems shall not be installed below grade, except when approved by the department in a building dedicated to housing such system that allows human entry (walk-in) but is not designed or used for human occupancy.

NYSEIA recommends clarifying that indoor systems installed in a below grade location, dedicated to housing such a system and not designed for human occupancy, are not subject to the control area limitations in FC Table 5003.8.3.3.

NYSEIA appreciates the opportunity to provide comments on this important matter and the FDNY's consideration of the above recommendations. Please contact NYSEIA Executive Director Shyam Mehta at shyam@nyseia.org with any questions.