



New York Battery and Energy Storage Technology Consortium, Inc.

May 30, 2019

Fire Department of New York

Comment on Proposed Rules for Outdoor Stationary Storage Battery Systems

(3RCNY 608-01)

The New York Battery and Energy Storage Technology Consortium (“NY-BEST”) is pleased to submit these comments on the Fire Department of New York (“FDNY” or “the Department”) proposed rules for Outdoor Stationary Storage Battery Systems (3RCNY 608-01).

NY-BEST appreciates FDNY’s participation in the working group coordinated by the City University of New York and the New York State Energy Research and Development Agency (NYSERDA), and your efforts to create a pathway for safe widespread use of lithium-ion stationary storage battery systems. We share your interest in achieving this goal and our comments are offered in the spirit of providing constructive recommendations to improve the proposed rules.

Background

The New York Battery and Energy Storage Technology Consortium (“NY-BEST”) is a not-for profit industry trade association that serves as a voice of the energy storage industry for more than 180 member organizations on matters related to advanced batteries and energy storage technologies. Our membership covers the full span of activities related to research, development, production and deployment of energy storage devices, and currently includes: technology developers, ranging in size from small start-up companies to global industry corporations, project developers, leading research institutions and universities, national labs and numerous companies involved in the electricity and transportation sectors.

Policy and Regulatory Context

In 2017, the New York State Legislature, recognizing the critical role of energy storage in modernizing the state’s electric grid, unanimously passed, and Governor Andrew Cuomo signed into law, legislation requiring the Public Service Commission to adopt a 2030 energy storage

deployment goal for New York's electric grid, along with a policy to achieve the goal.¹ In January of 2018, Governor Cuomo in his State of the State address announced a goal of deploying 1,500 MW of energy storage on the state's grid by 2025 and directed state agencies to develop a roadmap for achieving the goal. The New York State energy Research and Development Authority and the New York State Department of Public Service published the New York Energy Storage Roadmap² in June of 2018 and solicited comments on its recommendations. In December 2018, the New York Public Service Commission issued an Order³ formally adopting the 1500 MW by 2025 energy storage deployment goal and establishing a 3,000 MW by 2030 goal recommendations.

In the Order, the PSC noted the important role that energy storage will play in transforming the state's electricity system into one that is cleaner and smarter, as well as more resilient and affordable. The Commission identified an array of public benefits that would result from the deployment of 3,000 MW of storage, including: "over \$3 billion in gross lifetime benefits to New York's utility customers; creating approximately 30,000 jobs; mitigating the impacts of climate change from approximately 2 million metric tons of avoided greenhouse gas (GHG) emissions; and, improving public health by avoiding criteria air pollutant emissions such as nitrogen oxides (NOx), sulfur oxides (SOx), and particulate matter."

Importantly, in modeling the costs and benefits of energy storage projects, the State determined that projects in NYC (Zone J of the NYISO) should account for more than half (877 MW) of the 1,500 MW goal by 2025.

Additionally, New York City Mayor DeBlasio has established a 100 MWhr by 2020 energy storage goal noting its important role in reducing harmful air emissions and supporting resiliency.

Recognizing this larger context, it is clear that creating a viable path to installing energy storage systems in New York City is vital for the State and the City to reach its aggressive energy, environmental and public health goals and we appreciate FDNY's efforts to establish clear and achievable rules for industry to follow.

Comments on the Proposed Rule

Our comments are organized to in two major sections 1) the topics specifically identified by FDNY as topics for feedback; and 2) areas identified by NY-BEST and our members as needing further clarification and refinement.

¹ Assembly bill 6571/Senate Bill 5190, enacted as Chapter 415 of the Laws of 2017

² <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7b2A1BFBC9-85B4-4DAE-BCAE-164B21B0DC3D%7d>

³ NYPSC Order Establishing Energy Storage Goal and Policy, December 12, 2018, <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7bfDE2C318-277F-4701-B7D6-C70FCE0C6266%7d>

FDNY Identified Topics for Comment:

FDNY specifically requested input on 4 main areas of the proposed rule. Our recommendations for these 4 areas of the proposed rule are detailed below.

- 1) “Fire Department specifically invites public comment as to how outdoor stationary storage battery systems are likely to be managed, maintained and monitored once installed, and the category of persons who would be best qualified and available to provide the assistance that the Fire Department may require in the event a seriously malfunctioning stationary storage battery system necessitates a Fire Department response.”

NY-BEST Comments

How battery systems are likely to be managed, maintained and monitored once installed will vary depending upon the company. As a result, we do not recommend that a specific party be identified in the rule. Rather, NY-BEST recommends that FDNY simply require in the rule that a “Certificate of Fitness” holder to be responsible for the battery systems, but not specifically identify who the Certificate holder must be. We recommend that the rule focus instead on the responsibilities of the Certificate of Fitness holder. Based on industry feedback, many companies would prefer to utilize qualified third parties to perform these roles and we encourage FDNY to allow for this in the rule. Whether the “Certificate of Fitness” holder is a company representative or third party, should not be the determining factor, as either party may be fully capable of fulfilling the requirements.

NY-BEST recommends that there should be one Certificate of Fitness holder who is responsible for all aspects of the battery monitoring, emergency response, operation, etc. that is determined by the project owner. We urge FDNY to not require other parties, including manufacturers, property owners, etc., to have ongoing responsibility over the battery system. Flexibility is key here to maximize safety, given that the internal expertise of companies can vary significantly and qualified third-parties may be better positioned to provide this support.

- 2) “The Fire Department specifically invites public comment on the design and installation requirements for enclosures, and whether the rule needs to address the design and installation of other products developed for outdoor stationary storage battery systems.”

NY-BEST comments

The established listings for components such as inverters, HVAC units, transformers, switchgear and the like, should not have additional restrictions placed on their installation simply because they are being included in a battery system. There is no technical basis for placing additional restrictions on these approved devices and as such it would be overly restrictive for FDNY to place additional requirements on the use of these approved components solely because they are being included in a storage device.

- 3) “The Fire Department specifically invites public comment on the business arrangements among the manufacturer, installer and property owner with respect to the monitoring of battery

management systems and management of emergencies affecting outdoor stationary storage battery systems.”

NY-BEST comments:

Business arrangements among the manufacturer, installer and property owner will vary across companies and property owners. As a result, NY-BEST and our members support flexibility around the arrangements for operations, maintenance, and emergency response for energy storage systems. FDNY has acknowledged that they do not know who is best positioned to provide these services, resulting in the creation of the “Certificate of Fitness” holder mechanism. Different project developers utilize different business models and may leverage qualified third parties for monitoring and management of emergencies. We agree that a Certificate of Fitness holder should have responsibility for the battery system’s operation and safety, but who that person or organization may vary by project. Ultimately, the project owner should be allowed to designate a Certificate of Fitness holder for each project. NY-BEST also recommends that the property owner should not be required to have monitoring and management responsibility over the project, given that they would likely not have the required expertise and such a requirement would thwart the deployment of these projects.

- 4) “The Fire Department specifically invites public comment, including technical comment, about the full-scale testing standard and other standards adopted in this proposed rule.”

NY-BEST comments:

- The language in the proposed rule is vague with respect to full-scale testing standards. The language in the rule should clearly state which tests are currently required. If additional or new test methods and/or certifications are required in the future, the rule should be updated accordingly, rather than leave open for interpretation what “approved standard or test data” means.
- We recommend that small and medium sized systems, which pose a much smaller risk, should be allowed to use approved test data other than UL 9540A for a period of one year. This would give battery suppliers time to undergo 9540A testing, while simultaneously enabling the deployment of these systems in a safe and efficient manner. If FDNY opts to require UL 9540A for all small and medium sized systems, no small or medium sized battery systems will be deployed because none have finished UL 9540A testing.
- We recommend that FDNY clarify the language below:
 - “The concentration of combustible vapors during abnormal operation may be controlled in accordance with NFPA Standard 69 (2008 edition) if a hazard mitigation analysis, based on full-scale testing or other approved test data, indicates that such mitigation measures will be effective in keeping the target lower flammability limit (LFL) within the enclosure at or below 25 percent of the LFL” in context with the requirements of UL 9540 and 9540-a which are already taking the concentrations of flammable gasses into account.

Additional Areas requiring Clarification

NY-BEST, in concert with our industry members, identified the following additional areas of the proposed rule in need of clarification or alteration.

- 1) The small/medium/large thresholds should be **consistent** across chemistries. It creates confusion to have different threshold levels. We recommend following the Lead Acid Battery threshold ratings, but the most important thing is consistency. Additionally, we recommend raising the lower limit for large systems to 500 kWh.
- 2) NY-BEST recommends that FDNY establish a minimum threshold for battery size. A small battery system does not have the same risk profile as a larger system. We recommend using 15 kWh as the minimum threshold for a battery system governed by these rules.
- 3) The applicability of the rules needs to be clarified. We recommend using the language: “This section does not govern the design, installation, operation and maintenance of indoor stationary storage battery systems or systems specifically designed and evaluated under UL 924: Emergency Lightning and Power Equipment, or UL 1778: Uninterruptible Power Systems. Any systems meeting the medium or large Table 1 category, regardless of application, are covered.”
- 4) We recommend that FDNY provide a standardized timeline and procedural outline in the rules for the Letter of No Objection (LoNO) process.
- 5) Definitions
 - a. As written, the definitions of Stationary Storage Battery System, and Storage Battery Unit, are inconsistent, misleading and not reflective of industry standards. We propose using the term “Energy Storage System (ESS), to describe a stationary storage battery system, which includes batteries, inverters, electrical systems, as well as associated fire protection, explosion mitigation, ventilation and/or exhaust systems. The entire ESS system needs to be a listed system and certified to UL 9540. Furthermore, the term “Storage battery unit” incorrectly states that it is tested and listed to UL 9540 – it is the entire ESS system that should be tested and listed to UL 9540, including inverter, batteries and associated BMS. The “Storage battery unit” should be redefined as “... a component of an Energy Storage System, comprising of battery modules and associated Battery Management System (BMS), all typically certified to UL 1973”. The proposed wording is internationally recognized, and we recommend that this updated definition be used throughout the document.
- 6) The term “other enclosure” needs to be clarified. As drafted, the rule is not clear as to whether it includes a purpose-made building constructed solely to hold batteries, or a repurposed building for the sole use of housing the battery system. NY-BEST recommends that such buildings be considered an “other enclosure” and we note that these purpose-made buildings would have no regular human occupancy.

- 7) Gas sensor requirements are not clear and clarification is necessary. For example, which section of FC908 is applicable? Considering there is no occupancy allowed, 908.1 and 908.2 (Group H and H-5) do not apply. 908.9 for flammable gas does not specify any specific code. What are gas sensor requirements for ESS containers/cabinets?
- 8) For large commercial installations, listing all buildings and structures is a significant task. NY-BEST recommends using the approach from same section bullet (E), and limiting the scope of this request to all buildings within 100 feet of proposed ESS installation. Fire codes use 100 feet to establish “remote installation” criteria.
- 9) Clarification is needed around the secondary power requirements. Providing backup power is much different for emergency systems only versus providing full auxiliary load backup. In general, industry is supportive of requiring backup power for the controls, monitoring, and emergency systems, which is standard procedure. Clarification is needed about whether full auxiliary load backup is required, and whether this backup needs to come from on-site or whether the distribution system would suffice.

10) Operations and Maintenance

- a. 24/7 Remote Monitoring – We agree with this general requirement, but developers and project owners should be allowed flexibility when determining who is responsible for the remote monitoring. In many cases, it will be a qualified third-party O & M contractor, not an internal company team. This should be aligned with the “Certificate of Fitness” holder.
 - i. We recommend further clarification on what FDNY means by 24/7 remote monitoring and urge FDNY to allow BMS systems, with enunciated features that have instantaneous monitoring capabilities and the ability to notify someone of an event be specifically included in the rule as a mean of compliance.
- b. **Technical assistance.** Upon request of the Department, both the certificate of fitness holder responsible for the battery system and the battery system manufacturer shall make available to the Department a representative with technical knowledge of the battery system and its operation. Such representative shall be made available as soon as possible, but in any event within 15 minutes of receipt of the Department’s request.
 - i. We recommend FDNY consider alternative means of obtaining this type of information, such as FDNY portals into the controls and monitoring systems or use of on-site systems that can provide information to responders on the status of the battery.
 - ii. NY-BEST is concerned that the requirement that representatives are available within 15 minutes is impractical and we recommend that it be extended to one hour. Fifteen is simply too short a period, given that any number of factors could cause a 15-minute delay.
 - iii. We recommend that the certificate of fitness holder should be designated representative required to be made available, not the battery manufacturer. In many cases, the battery manufacturer could be located overseas or unable to

respond quickly. The certificate of fitness holder will have deep technical knowledge about the system.

- c. NY-BEST is very supportive of the requirement that authorized representatives must be on site within a designated period of time, in order to maximize the safety of emergency responders and minimize the damage caused by an emergency event. We believe that the 2-hour limit is not the correct language, given that it could take more than 2-hours to travel from point A to point B within NYC. We recommend that the language be changed to: "A representative must be immediately available in the case of an abnormal operation or when the central station is notified of an issue, and must make every effort to be on site as soon as possible."

Submitted By:

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