

Best Practices for Interconnecting Energy Storage Systems (ESS)

- Please review the New York State Standardized Interconnection Requirements ([SIR](#)) and milestones.
 - It is important to meet the requirements in each milestone to avoid project cancellation.
- Please review and utilize the [Hosting Capacity Map](#) for information.
 - For guidance on the map and to be informed on upcoming stakeholder sessions, please review [Hosting Capacity | Joint Utilities \(jointutilitiesofny.org\)](#)

Appendix K/Operational Parameter Inputs

- Submit an understandable Appendix K “*Energy Storage System (ESS) Application Requirements / System Operating Characteristics / Market Participation.*”
- When an application is submitted, if there is any confusion on the parameters to be studied, the developer will be notified.
- Submit a scope of the project that provides an overview of your system which includes, but is not limited to, the size of the system (nominal kW / kVA / kWh), charging capacity inclusive of the efficiency losses, system configuration (e.g., AC or DC-coupled), requested contingency, and high tension or low-tension interconnection.
 - Please note Con Edison’s design for the underground network distribution is N-2; however, for interconnecting standalone DER systems, Con Edison offers an N-1 contingency design by default unless otherwise requested. Con Edison will utilize the Appendix K information to provide the charging window and rate.
 - System capacity is described in Appendix K sections d. and e.
- Please clearly identify the Operational Parameters of the ESS System and indicate in section n, the preferred start and stop time for charging and discharging. All requested windows should consider the programs the battery system will be enrolled in (see “Tariff and Demand Response Programs” section below).
 - Con Edison will consider the requested windows when performing a system impact study. However, local area peak windows may vary from the overall system peak windows outlined in the tariff.
 - Con Edison supports off-peak charging (the minimum load hours of the area of interconnection).
 - Please note Con Edison may propose a modified window during the study process.
 - Con Edison will provide one interconnection solution unless specifically requested by the customer with an agreement on an additional 40 business days (on top of the 60 business days). The job scope, number of options, and amount of permitted time for the CESIR will be determined during document review.
 - A second option may be provided without the additional 40 business days if it is apparent in the study and reasonable to do so. Note that this may not be the case for most projects.

Please review guides, standards and tariffs at www.coned.com/dg.

- Please clearly describe the ESS protection and control system being implemented (hardware & software).
- Please describe the auxiliary loads of the system, include the total kW / kVA size of each component, along with a total auxiliary system load. Be prepared for any technical questions regarding auxiliary loads (where applicable).
- For hybrid systems, please indicate which hybrid option the system qualifies for so the technical team may review the system integration to the grid. Please note, Hybrid Option A is studied with the understanding that the customer shall not charge from the grid.
 - Please note, projects may revise or modify their Hybrid Option selected via the material modification review process.

Construction Standards

To learn more about utility operating requirements, inverter protection requirements, and construction standards use the following link: [Guides and Specifications for Private Generation | Con Edison.](#)

- Please review Con Edison's Blue Book for electrical requirements at [Specifications for Electric Installations \(azureedge.net\).](#)
- [Energy Storage Guide:](#) For customers considering installing or upgrading an Energy Storage System up to 5 MW.
- [Electrical Service to Dispersed Generation Customers:](#) Requirements for small and independent power producers (EO-2115).
- [Network and Non-Network Customer Substation High Tension Design Requirements \(EO-2022\).](#)
- [Interconnection to select Non-Network Distribution specifically Auto Loop, 4 kV Grid, Step Down Feeder distribution systems and not primary feeder trunk/main lines also known as feeder proper cable sections. \(EO-10215\)](#)

Additional Notes:

- Con Edison generally offers a maximum interconnection limit on the 4kV system up to 2 MW.
- Please review and consider any construction, supply chain and permitting challenges when developing interconnection timelines.
- Engage the local fire department and/or Authority Having Jurisdiction (AHJ) for each project.
 - When reviewing requirements for interconnection, be sure to understand any safety and code requirements by the AHJ in that area. Engaging these groups early in the process will prove beneficial.

Tariff and Demand Response (DR) Programs

- For contingency, if N-2 is requested under a Company program, the project will be studied as N-2 as well as N-1 as long as the developer grants a 40-business day extension for the CESIR to be complete within 100 business days.
- Stand-alone ESS projects are typically subject to [Standby Service \(General Rules 20\)](#) under [Service Classification No.9 Rate IV/ V:](#)

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- For charging, this includes As-Used Daily Demand (AUDD) delivery charges, (\$/kW), which are applicable to the peak load between the Daily Peak Demand period of M-F, 08:00 - 22:00.
- No charges will be incurred by the customer for any charging during off-peak hours (M-F 22:00 – 08:00).
- Customers receiving Standby Service will be billed under Standby Service rates unless exempt via the [Designated Technology Exemption](#) i.e. ESS with max capacity up to and including 1 MW.
 - Note that these projects receive standard rates where delivery demand charges for charging can potentially be incurred for battery usage during any hour of the day, especially low-tension service.
- All DR programs require at least a **four-hour** discharge window within the load relief period listed below:

DR Program Name	Applicable Days	Load Relief Period (subject to change)
CSRP	Weekdays only (Excluding federal holidays)	10:00 to 24:00***
DLRP	Weekdays, weekends, and federal holidays	06:00 to 24:00*
Term DLM	Weekdays only (Excluding federal Holidays)	11:00 to 23:00**
Auto DLM	Weekdays, weekends, and federal holidays	06:00 to 24:00
* Events may be activated between the hours of 24:00 and 6:00 on a voluntary basis		
** Load Relief Period is subject to change to align with the CSRP load relief period.		
*** CSRP is typically a 4–6-hour window determined by the area of interconnection.		

Please contact dgexpert@coned.com for any questions.