

The background of the entire page is a light blue, semi-transparent overlay of various financial and technical documents. It includes a line graph at the top, a bar chart in the middle, and a grid with a wavy line at the bottom. The text is overlaid on these graphics.

Energy Storage Customer Electric Rates Reference Guide **for Project Developers**



Table of Contents

Standby Rate	3
Con Edison Rider Q Tariff	4
• Option A Customer Choose Contract Demand	5
• Option B Location-Based As-Used Daily Demand Delivery Charge	5
• Option C Export Pilot Credit.	7

**For questions related to information found in this reference guide,
please contact energystorage@nyscrda.ny.gov.**

Overview

As an electric customer billed for demand charges, you have the opportunity to choose your electric delivery rate from a variety of options. These options are structured to give you more control of your electricity bill when working with an energy storage contractor. This guide provides a detailed explanation of the delivery rates for you to make informed decisions when examining the feasibility of an energy storage project.

While the standard billing option is a conventional monthly rate, customers can opt into delivery options such as a time-of-day rate,¹ a conventional standby rate, or Con Edison's Rider Q² as an alternative standby rate. Standby rates were originally designed as the delivery rate for a customer using on-site power to receive supplemental, backup, and maintenance power from the grid.³ The standby rate delivery option provides storage vendors more flexibility to manage their customers' electricity bills. This is because demand charges under standby rates are calculated on a daily, rather than monthly, basis.

Rider Q is a pilot tariff rate in Con Edison's service territory that provides alternative rate options for energy storage customers receiving standby service. It's a more granular time-of-use standby rate with new opportunities for storage. This rate signals a four-hour daily peak window that aligns demand charges when network peaks occur. This contrasts with the conventional standby rates structured so that storage vendors must find the customer's peak load within a 10 or 14-hour window.

Standby Rate

The standby rate applies to electric customers who have their own distributed energy resources (DERs) on-site, including solar, combined heat and power (CHP), and storage.

In Con Edison’s territory, the conventional standby rates are as follows:

- Rate III or Rate IV of SC 5
- Rate IV or Rate V of SC 8, 9, or 12
- Rate II of SC 13

The standby rate calculates demand based on daily peaks. Daily peak load management gives a storage vendor the flexibility to operate the storage system without the risk of a missed peak, which could greatly increase the demand charges for the month. For example, with standby rate, a storage vendor has the flexibility to participate in a demand response event rather than reduce your peak load on a given day.

The following chart compares delivery service under a monthly demand rate with a standby rate based on daily demand. Your load profile will have to be analyzed under each billing structure to determine the optimal business model. A thorough evaluation and understanding of the conventional standby rate and Rider Q is vital to obtaining the most value.

Year	Standard Demand-Billed Customer	Conventional Standby Rate or Rider Q Customer
Demand Charge	\$/kW charge based on your peak demand in a monthly billing period.	\$/kW charge calculated daily. You pay the sum of daily demand peaks in a monthly billing period.
Considerations	<p>Some customers are billed based on a single month’s peak, others on a time-of-day rate.</p> <p>Time-of-day rate sums three charges based on the highest peaks reached within three time intervals during the month.</p> <p>Missing a single peak can result in a large bill increase for the entire month.</p> <p>Flexibility limited to forego demand charge reduction on a particular day to pursue other value streams.</p>	<p>Conventional standby rates are based on demand during Monday-Friday, 8 a.m.-10 p.m. in Con Edison’s service territory.</p> <p>Rider Q, Option B (only available in Con Edison’s territory), is based on demand during the same time window as the conventional standby rate. However, the demand charges are significantly higher during an identified daily four-hour peak window.</p> <p>Compensation optimized by electing to forego demand charge reduction (allowing a daily peak) to pursue other value streams (such as demand response) without potentially greatly increasing the entire month’s bill.</p>

Con Edison Rider Q Tariff

There are three different rate options under the Rider Q tariff. Each option is a one-time election.

Rider Q Options	Considerations
<p>Option A <i>Customer Chooses Contract Demand</i></p>	<p>You select standby service but can choose more frequent modification of contract demand level rather than being set by the utility (this is your maximum expected demand from the grid).</p> <p>High penalties for exceeding contract demand</p>
<p>Option B <i>Location-Based As-Used Daily Demand Delivery Charges</i></p>	<p>This option has three demand charge periods:</p> <ul style="list-style-type: none"> • A decreased demand charge during the 8 a.m.-10 p.m. window, M-F, June-September • A significantly increased demand charge for a specified four-hour peak window, M-F, June-September • An 8 a.m.-10 p.m. window, M-F, all other months. <p>The time for the four-hour peak demand charge window is preset by Con Edison and is aligned with when the local network peak occurs. A narrower time window with increased demand charges represents an opportunity for energy storage developers to target your peak billing rate while also providing system value.</p>
<p>Option C <i>Export Pilot Credit</i></p>	<p>This provides a method of valuing exported energy.</p>

Rider Q is available for up to a total of 125 MWs of CHP capacity and battery storage inverter capability. The deadline to apply for the program is December 31, 2021 or when the available MW are fully subscribed, whichever comes first. The term of service under Rider Q is 10 years from the date the customer commences taking service under this Rider or until the Rider expires (scheduled for January 1, 2032), whichever comes first.

Option A: Customer Chooses Contract Demand

Rider Q, Option A is an alternative method for determining your contract demand on the standby rate. The main components of the cost for electric delivery under the standby rate are the contract demand charge and the daily demand charge (which is the focus of this document and option B).

The contract demand charge is a \$/kW charge based on a set kW level for each customer that is either chosen by you or by the utility. Under Option A, you have the option to select your own contract demand, but you are not allowed to adjust down within 12 months of an increase to contract demand.

An exceedance surcharge will apply if your demand exceeds the selected kW contract demand level (unless there is a preplanned maintenance outage that the utility agrees to). The exceedance surcharge will be equal to the product of (a) * (b) * (c), where:

- a) The maximum actual demand less the contract demand selected by you, in kW
- b) The number of months since the contract demand was selected by you, up to 36 months
- c) One and a half times the applicable contract demand rate per kW, in \$/kW

This is an alternative method for calculating the contract demand, whether you are receiving demand delivery charges under the conventional standby rate or Rider Q. This may be appropriate for an installation that has predictable energy usage and can avoid the penalties for exceeding your contract demand.

Option B: Location-Based As-Used Daily Demand Delivery Charges

Rider Q, Option B is an alternative method for calculating the as-used daily demand for you under the standby rate. The rates for this option vary depending on your location in Con Edison's territory.

The conventional as-used daily demand charge under the standby rate is set to a 10 or 14-hour window throughout the territory. Rider Q concentrates the peak hours into a four-hour window each day, Monday through Friday, June through September. This window varies depending on which demand response network Commercial System Relief Program (CSRP) and Distribution Load Relief Program (DLRP) you are located in.

The following table illustrates this variation, and you should check your electric tariff or work with a storage contractor to confirm current applicable rates. All demand delivery charges for overlapping periods are additive, so for the 11 a.m. to 3 p.m. window (Rider Q, Option B), you would have an as-used demand delivery charge of \$1.5019/kW under the rates in the table

	Conventional Standby Rate (Customer on SC-9 Standby Rate IV, Low Tension Services)	Rider Q: Option B (Customer on SC-9 Standby Rate IV in an 11a.m.-3p.m. CSRP Network, Low Tension Service)
As Used Daily Demand Charges	Summer, M-F, 8 a.m-6 p.m. = \$.4866/kW Summer, M-F, 8 a.m-10 p.m.= \$1.0052/kW Charges Applicable to all other months M-F, 8 a.m-10 p.m.= \$.6820/kW	Summer, M-F, 11 a.m.-3 p.m.= \$.7480/kW Summer, M-F, 8 a.m.-10 p.m.= \$.7539/kW Charges Applicable to all other months M-F, 8 a.m.-10 p.m.= \$.6820/kW
Customer Charge	\$99.42/Month	\$99.42/Month
Contract Demand Charge	\$7.87/kW	\$7.87/kW

The opportunity is the greatest in DLRP networks, where the applicable charges for peak hours are the highest. There is a four-hour window where demand charges are high (the super-peak), and if project developers can focus on reducing demand within this window, savings are available

The modeling results in the following table correlate with the modeling completed in the New York State Energy Storage Roadmap.⁴ These models use a perfect knowledge approach and are based on a single representative load profile. You can use the modeling as an informational resource; however, that may not reflect actual savings at an installed project.

Charges are broken out by whether they are assessed on an energy (\$/kWh) or demand (\$/kW) basis, but the fixed monthly metering charges are not included. The energy storage system is sized for a power output of 20% of peak load with an energy capacity of four hours and assumes the customers are in the 2 p.m. to 6 p.m. CSRP Network.

The Before Storage scenario is the customer on the standard monthly rate:

- Energy Charges = energy supply + energy delivery charges
- Demand Charges = demand delivery charge

The Rider Q + Storage scenario is the customer on the Rider Q Rate with storage installed:

- Energy Charges = energy supply charge
- Demand Charges = contract demand + demand delivery charges

Battery Sized to 20% of Peak Load	Office		Multifamily High-Rise, Common Area		K-12 School	
	Before Storage	Rider Q and Storage	Before Storage	Rider Q and Storage	Before Storage	Rider Q and Storage
Annual Bill Savings						
Energy Charges	\$1,117,974	\$943,894	\$214,573	\$142,870	\$62,058	\$42,162
Demand Charges	\$1,245,114	\$1,224,747	\$162,490	\$184,397	\$63,089	\$61,866
Bill Savings		\$194,447		\$49,796		\$21,120
Percent Savings		8.2%		13.2%		16.9%

Note: In some cases, the conventional standby rate may be slightly superior to the Rider Q tariff. Results depend on factors such as facility type, CSRP network, assuming perfect knowledge or a savings discount, and load profile. Nevertheless, an important benefit of Rider Q tariff is the predictable four-hour peak demand window.

Although the Rider Q tariff currently only applies to Con Edison’s service territory, the remainder of the State’s utilities are required to develop a similar optional rate. The primary opportunity for energy storage systems receiving Rider Q service will likely be through Option B. A project or fleet of projects that utilize Option B to reduce demand charges could be a valuable, particularly if also accessing a NYSERDA funding opportunity.

Option C: Export Pilot Credit

The Export Pilot Credit (Credit) is based on the performance of a customer's generation facility during the previous two consecutive summers (June 1 through September 30) for which interval data was available (Measurement Period). However, the first year a customer seeks a Credit, it is based on the previous summer only. The Credit is based on performance during the Measurement Period, Monday through Friday, 10 a.m. to midnight for customers in the 7 p.m. to 11 p.m. CSRP window, and Monday through Friday, 8 a.m. to 10 p.m. for all other customers. The Credit measurement excludes outage events and holidays.

Export Pilot Credit = (Performance Adjustment) * (Contract Demand Delivery Charge/kW under SC-11)⁵

Performance Adjustment means the lesser of:

- (a) the lowest kW recorded on the output meter during the Measurement Period; or
- (b) the Customer's kW of Contract Demand under SC 11 in excess of the Contract Demand billed under Standby Service rates or the Contract Demand in excess of the as used demand billed under another rate.

Outage events consist of up to three events that, in aggregate, equal no more than five 24-hour periods, excluding weekends and holidays. These periods are meant to prevent system maintenance from unfairly impacting the system's compensation. The five 24-hour periods cannot be broken up into smaller periods of time, and the time is always rounded up to the nearest full 24-hour period.

For a project developer to confidently build a project under this rate structure, it would require in-depth analysis of the facility's load profile and the system's operating constraints. The Credit is applied to the customer's bill monthly for the 12-months from November to October, following the Measurement Period. This will provide a year-round credit on your bill, giving you an opportunity to benefit from your performance during the summer months. The performance adjustment is based on the system's lower kW output during the measurement period, which includes a daily 14-hour (10 a.m. to Midnight or 8 a.m. to 10 p.m.) window. This option will likely only be feasible for hybridized (e.g., CHP + Storage) systems.

End Notes

¹ This resource is focused on standby rates. For information on monthly rates: <https://www.nyserda.ny.gov/All-Programs/Programs/Energy-Storage/The-Opportunity/Building-Owners-and-Site-Managers/Benefits>

² <https://www.coned.com/en/rates-tariffs/rates>

³ Please see: <https://energy.pace.edu/project/combined-heat-and-power/> for background on the standby rate.

⁴ See the second chart on page 24 of the Appendix (Table 6). The chart in this resource shows annual savings and the New York State Energy Storage Roadmap shows net present value (NPV) for 20% sizing from the same data: <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7b2A1BFBC9-85B4-4DAE-BCAE-164B21B0DC3D%7d>

⁵ This is the delivery charge that is in effect on October 1st of the year in which the credit is determined.



NYSERDA

**New York State
Energy Research and
Development Authority**

17 Columbia Circle
Albany, NY 12203-6399

toll free: 866-NYSERDA
local: 518-862-1090
fax: 518-862-1091

info@nyserda.ny.gov
nyserda.ny.gov