

PUBLIC UTILITIES COMMISSION  
505 Van Ness Avenue  
San Francisco CA 94102-3298



**Pacific Gas & Electric Company**  
**ELC (Corp ID 39)**  
**Status of Advice Letter 6735E**  
**As of December 1, 2022**

Subject: Corrections to Schedules NEM and NEM2 for Storage Devices Paired with Net Energy Metering Generating Facilities

Division Assigned: Energy

Date Filed: 10-12-2022

Date to Calendar: 10-17-2022

Authorizing Documents: None

<b>Disposition:</b>	<b>Accepted</b>
<b>Effective Date:</b>	<b>11-11-2022</b>

Resolution Required: No

Resolution Number: None

Commission Meeting Date: None

CPUC Contact Information:

[edtariffunit@cpuc.ca.gov](mailto:edtariffunit@cpuc.ca.gov)

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**PUBLIC UTILITIES COMMISSION**  
505 Van Ness Avenue  
San Francisco CA 94102-3298



To: Energy Company Filing Advice Letter

From: Energy Division PAL Coordinator

Subject: Your Advice Letter Filing

The Energy Division of the California Public Utilities Commission has processed your recent Advice Letter (AL) filing and is returning an AL status certificate for your records.

The AL status certificate indicates:

- Advice Letter Number
- Name of Filer
- CPUC Corporate ID number of Filer
- Subject of Filing
- Date Filed
- Disposition of Filing (Accepted, Rejected, Withdrawn, etc.)
- Effective Date of Filing
- Other Miscellaneous Information (e.g., Resolution, if applicable, etc.)

The Energy Division has made no changes to your copy of the Advice Letter Filing; please review your Advice Letter Filing with the information contained in the AL status certificate, and update your Advice Letter and tariff records accordingly.

All inquiries to the California Public Utilities Commission on the status of your Advice Letter Filing will be answered by Energy Division staff based on the information contained in the Energy Division's PAL database from which the AL status certificate is generated. If you have any questions on this matter please contact the:

Energy Division's Tariff Unit by e-mail to  
**[edtariffunit@cpuc.ca.gov](mailto:edtariffunit@cpuc.ca.gov)**

October 12, 2022

**Advice 6735-E**

(Pacific Gas and Electric Company ID U 39 E)

Public Utilities Commission of the State of California

**Subject: Corrections to Schedules NEM and NEM2 for Storage Devices Paired with Net Energy Metering Generating Facilities**

**Purpose**

The purpose of this advice letter is to make corrections to Pacific Gas and Electric Company's (PG&E) Rate Schedules NEM and NEM2 for storage devices paired with net energy metering Generating Facilities. PG&E has found some descriptive errors that it seeks to correct with this advice letter. Because they are not mere typographical errors, in an abundance of caution PG&E submits this as a Tier 2.

This advice letter seeks to correct the red language in Rate Schedule [NEM2](#)<sup>1</sup> Section 9.a (*Definitions*) for:

**No Storage Export:**

A storage system that uses a power-control configuration that is certified either to a national standard or to a utility-approved interim testing procedure, either of which ensures that the storage system cannot export to PG&E's grid. A PG&E approved physical non-export relay or a functionally equivalent non-export configuration to prevent ~~grid power from flowing to the~~ storage device **export** is also permitted. Inadvertent but minor instances of storage export are permitted. Such inadvertent grid exports must not exceed durations of ten seconds.

The sentence edits here make much more sense in the topic context.

And in section 9.c.2) (iii) for Directly Connected Paired Storage:

(iii) Large AC Coupled storage system ("Large NEM-eligible GFs")

Large NEM-eligible Generating Facilities (GFs) are NEM-eligible GFs paired with storage sized larger than 10 kW. For Large NEM-eligible GFs,

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<sup>1</sup> And similarly for Schedule NEM

the storage system shall have a maximum output power no larger than 150% of the NEM-eligible generator's maximum output capacity. Pursuant to Decision 20-06-017 the maximum output capacity limit shall not apply for a period of 3 years starting on August 16, 2020.

Large NEM-eligible GFs are required to select one of the following:

- a) install a non-export relay on the storage device(s);
- b) install an interval meter for the NEM-eligible generation, meter the load, and meter total energy flows at the point of common coupling;
- c) install an interval meter directly to the NEM-eligible generator(s); or
- d) or meet the requirements of No ~~Storage Export~~~~Grid Export~~

Most likely PG&E inadvertently conflated the two defined terms "No Grid Charging" and "No storage export" to come up with "No Grid Export."

## **Background**

This relevant background below was provided in Advice Letter (AL) 5501-E, -A, -B, where the section with current NEM paired storage language that needs revision was added.

### **Decision (D.) 14-05-033**

In July 2014, the Commission issued D. 14-05-033<sup>2</sup> in Rulemaking 14-07-002<sup>3</sup> addressing net energy metering and storage. In the decision the Commission adopted, it used the terminology of the Renewable Portfolio Standard program and noted:<sup>4</sup>

"Section III.G [of the California Energy Commission (CEC) adopted the seventh edition of the RPS Eligibility Guidebook (Guidebook<sup>45</sup>)] establishes two categories of energy storage that 'may be considered an addition or enhancement to a renewable electrical generation facility': 'integrated' and 'directly connected.'"

**Integrated energy storage** is described as "[m]ethods of storing energy from a renewable energy resource that are integrated into the renewable electrical generating facility as part of the generation process..." For battery-based storage, Generating Facilities, the Guidebook further elaborates that "the storage device

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<sup>2</sup> [Decision 14-05-033](#) - *Decision Regarding Net Energy Metering Interconnection Eligibility for Storage Devices Paired with Net Energy Metering Generation Facilities* - May 15, 2014

<sup>3</sup> Regarding developing a successor to existing net energy metering Tariffs (NEM2)

<sup>4</sup> D.14-05-033 at 4, 5.

<sup>5</sup> The current RPS Eligibility Guidebook (7th Edition, April 2013) is available at <https://www.energy.ca.gov/programs-and-topics/programs/renewables-portfolio-standard/renewables-portfolio-standard-0>

must only be capable of storing energy from the renewable generator” to be considered “integrated.”<sup>6</sup>

For a storage device to be deemed “**directly connected**,” it must be both directly connected to the renewable generator via an internal power line (i.e., power may not be transmitted from the renewable facility to the energy storage via an external distribution line) and the storage device must be operated as part of the RPS eligible facility.”<sup>7</sup>

(Note: emphasis and paragraph re-formatting added for clarity.)

In addition to the RPS configurations described above, when both storage and inverter-based generation are present, the storage may utilize a single set of inverters shared with the generation. In this case, the solar and storage systems are said to be direct current (DC)-coupled; Alternatively, the storage and generation may each separately have their own sets of inverters. In this case the solar and storage systems are said to be alternating current (AC)-coupled.

Based on the description in D.14-05-033, DC-coupled solar plus storage systems may fall under either the definition of directly connected or integrated energy storage. Regardless, D.14-05-033 had suggested that one means to make sure the storage is eligible for net energy metering (i.e., the storage is only renewably charged) is to use direct current metering. However, since such metering is non-standard, the Commission declined in D.14-05-033 to consider a possible pathway for direct current configurations.<sup>8</sup>

In September 2017, the California Solar & Storage Association (CALSSA), formerly the California Solar Energy Industries Association (CALSEIA), filed a Petition for Modification of D.14-05-033 (Petition)<sup>9</sup> to facilitate the interconnection of both direct current DC-coupled and AC-coupled solar plus storage systems.

The CALSSA/CALSEIA Petition described two use cases:

- 1) “**no grid charging**” (i.e., no grid charging to the storage device) For the “no grid charging” use case, the Petition discussed a voltage-controlled configuration of DC-coupled solar plus storage, a virtual net energy metering

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<sup>6</sup> RPS Guidebook at 64.

<sup>7</sup> RPS Guidebook at 65.

<sup>8</sup> D.14.05-033 at 21, “*Although we recognize that certain single inverter large GFs with NEMpaired storage devices may not be able to accommodate the metering requirements as described above, we choose not to provide an alternative metering solution for such configurations at this time.*”

<sup>9</sup> Petition of the California Solar Energy Industries Association for Modification of D.14-05-033 to Allow DC-Coupled Solar Plus Storage Systems, filed September 1, 2017 (Petition).

(VNEM) configuration, a NEM Aggregation (NEM-A) configuration, other unspecified configurations, and related configurations for AC-coupled solar plus storage systems; and

- 2) “**no storage export**” (i.e., no storage exports to the grid) For the “no storage export” use case, the Petition discussed using an inverter or charge controller “with functionality that prevents the storage device from discharging at times when the customer site is exporting power to the grid or install an external relay that provides the same function.”

#### Decision 19-01-03

In January of 2019, D.19-01-030<sup>10</sup> granted CALSSA/CALSEIA’s petition for modification of D. 14-05-033, approving “*non-metering, power control-based options for ensuring net energy metering credit accrues only the net energy metering-eligible generation, as long as the control configuration is certified to a national standard or a utility-approved interim testing procedure. Power control-based options include the use of equipment, whether firmware-based or software-based, to prevent the storage device from charging from the grid or to prevent the storage device from exporting to the grid.*”<sup>11,12</sup>

...

#### Advice 5501-E - 6 - March 22, 2019

The original Advice letter 5501-E was prepared pursuant to D.19-01-30 Ordering Paragraph 4, and submitted March 22, 2019<sup>13</sup> fulfilling the requirement that PG&E “submit a Tier 2 advice letter modifying its respective net energy metering tariffs and interconnection agreement forms, as applicable, to implement the power control-based options as discussed in this decision and reflected in this decision’s changes to Decision 14-05-033 for net energy metering generating facilities paired with energy storage devices.”

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<sup>10</sup> [Decision 19-01-030](#) - *Decision Granting Petition for Modification of Decision 14-05-033 Regarding Storage Devices Paired with Net Energy Metering Generating Facilities* - January 31, 2019.

<sup>11</sup> D.19-01-030 at 2.

<sup>12</sup> Ordering Paragraph 1. “*The Petition for Modification is granted in the following respects:*  
*a. We approve power control-based options for ensuring net energy metering (NEM) credit accrues only to NEM-eligible generation in large solar plus storage systems so long as the control configuration is certified to a national standard (upon publication of a Certification Requirements Decision) or utility-approved interim testing procedure. Power control-based options include using equipment that prevents electricity to be exported from the storage device to the grid, and using equipment that prevents electricity imported from the grid to charge the storage device.*”

<sup>13</sup> D.19-01-030 Ordering Paragraph 4 requires within 45 days after the issue date of D.19-01-030, i.e., February 5, 2019.

On April 11, 2019, PG&E received protests to AL 5501-E from Tesla Inc.'s (Tesla) and the California Solar & Storage Association (CALSSA).

PG&E responded to the protests on April 18, 2019.

#### [Advice 5501-E-A - September 26, 2019](#)

Following its response, PG&E realized that there was a better way to present the NEM paired stored options and voluntarily agreed to submit this supplement. PG&E submitted supplement, AL 5501-E-A, on September 26, 2019, to include improved tables clearly laying out the options within the integrated storage/directly connected storage framework of the original decision D.14-05-033. The AC-coupled scenarios are clearly included now. Regarding the CRD, and its administration to ensure NEM integrity, PG&E proposed further discussion on what was needed.

On October 16, 2019, protests were received from Tesla and CALSSA to PG&E's AL 5501-E-A. Tesla and CALSSA variously raised issue relating to several areas, *including the "No Storage Export" Definition.*

#### [Advice 5501-E-B - November 8, 2019](#)

In its second supplemental Advice Letter, PG&E agreed to make most of the changes raised above. PG&E relied on an attestation to be submitted during the interconnection process to affirm the requirements of power-controlled systems when required, are met, but reserves the right, as necessary, to require additional documentation.

#### [This Advice Letter](#)

PG&E proposes the above changes to make the language consistent with the intent.

### **Tariff Revisions**

As noted above, this advice letter proposes the correction to:

- 1) Rate Schedule **NEM2** Section 9.a (*Definitions*) and Section 9.c.2) (iii) for Directly Connected Paired Storage.
- 2) The corresponding Rate Schedule **NEM** Sections 11.a (*Definitions*) and 11.c.2) (iii) for Directly Connected Paired Storage.
- 3) **Based on Energy Division recommendations PG&E replaces the language "Man-Made" with "Human-Made" (see Advice Letter 6668-E where similar changes had been made)**

### **Protests**

Anyone wishing to protest this submittal may do so by letter sent electronically via E-mail, no later than November 1, 2022, which is 20 days after the date of this submittal. Protests must be submitted to:

CPUC Energy Division  
ED Tariff Unit  
E-mail: EDTariffUnit@cpuc.ca.gov

The protest shall also be electronically sent to PG&E via E-mail at the address shown below on the same date it is electronically delivered to the Commission:

Sidney Bob Dietz II  
Director, Regulatory Relations  
c/o Megan Lawson  
E-mail: PGETariffs@pge.com

Any person (including individuals, groups, or organizations) may protest or respond to an advice letter (General Order 96-B, Section 7.4). The protest shall contain the following information: specification of the advice letter protested; grounds for the protest; supporting factual information or legal argument; name and e-mail address of the protestant; and statement that the protest was sent to the utility no later than the day on which the protest was submitted to the reviewing Industry Division (General Order 96-B, Section 3.11).

### **Effective Date**

Pursuant to General Order (GO) 96-B, Rule 5.2, this advice letter is submitted with a Tier 2 designation. PG&E requests that this Tier 2 advice submittal become effective on regular notice, November 11, 2022, which is 30 calendar days after the date of submittal.

### **Notice**

In accordance with General Order 96-B, Section IV, a copy of this advice letter is being sent electronically to parties shown on the attached list and the parties on the service list for Service Lists R.14-07-002, and R.17-07-007. Address changes to the General Order 96-B service list should be directed to PG&E at email address PGETariffs@pge.com. For changes to any other service list, please contact the Commission's Process Office at (415) 703-2021 or at Process\_Office@cpuc.ca.gov. Send all electronic approvals to PGETariffs@pge.com. Advice letter submittals can also be accessed electronically at: <http://www.pge.com/tariffs/>.

\_\_\_\_\_/S/  
Sidney Bob Dietz II  
Director, Regulatory Relations

### **Attachments:**

Attachment 1: Clean Tariffs  
Attachment 2: Redline Tariff Revisions

cc: Service List R.14-07-002, and R.17-07-007



# ADVICE LETTER SUMMARY

## ENERGY UTILITY



MUST BE COMPLETED BY UTILITY (Attach additional pages as needed)

Company name/CPUC Utility No.: Pacific Gas and Electric Company (ID U39 E)

Utility type:

- ELC       GAS       WATER  
 PLC       HEAT

Contact Person: Kimberly Loo

Phone #: (415)973-4587

E-mail: PGETariffs@pge.com

E-mail Disposition Notice to: KELM@pge.com

EXPLANATION OF UTILITY TYPE

ELC = Electric      GAS = Gas      WATER = Water  
 PLC = Pipeline      HEAT = Heat

(Date Submitted / Received Stamp by CPUC)

Advice Letter (AL) #: 6735-E

Tier Designation: 2

Subject of AL: Corrections to Schedules NEM and NEM2 for Storage Devices Paired with Net Energy Metering Generating Facilities

Keywords (choose from CPUC listing): Compliance

AL Type:  Monthly  Quarterly  Annual  One-Time  Other:

If AL submitted in compliance with a Commission order, indicate relevant Decision/Resolution #:

Does AL replace a withdrawn or rejected AL? If so, identify the prior AL: No

Summarize differences between the AL and the prior withdrawn or rejected AL:

Confidential treatment requested?  Yes  No

If yes, specification of confidential information:

Confidential information will be made available to appropriate parties who execute a nondisclosure agreement. Name and contact information to request nondisclosure agreement/ access to confidential information:

Resolution required?  Yes  No

Requested effective date: 11/11/22

No. of tariff sheets: 11

Estimated system annual revenue effect (%): N/A

Estimated system average rate effect (%): N/A

When rates are affected by AL, include attachment in AL showing average rate effects on customer classes (residential, small commercial, large C/I, agricultural, lighting).

Tariff schedules affected: See Attachment 1

Service affected and changes proposed<sup>1</sup>: N/A

Pending advice letters that revise the same tariff sheets: 6395-E, 6533-E, 6682-E-A

<sup>1</sup>Discuss in AL if more space is needed.

**Protests and correspondence regarding this AL are to be sent via email and are due no later than 20 days after the date of this submittal, unless otherwise authorized by the Commission, and shall be sent to:**

California Public Utilities Commission  
Energy Division Tariff Unit Email:  
[EDTariffUnit@cpuc.ca.gov](mailto:EDTariffUnit@cpuc.ca.gov)

Contact Name: Sidnev Bob Dietz II. c/o Megan Lawson  
Title: Director, Regulatory Relations  
Utility/Entity Name: Pacific Gas and Electric Company  
  
Telephone (xxx) xxx-xxxx:  
Facsimile (xxx) xxx-xxxx:  
Email: PGETariffs@pge.com

Contact Name:  
Title:  
Utility/Entity Name:  
  
Telephone (xxx) xxx-xxxx:  
Facsimile (xxx) xxx-xxxx:  
Email:

CPUC  
Energy Division Tariff Unit  
505 Van Ness Avenue  
San Francisco, CA 94102

Clear Form

Cal P.U.C. Sheet No.	Title of Sheet	Cancelling Cal P.U.C. Sheet No.
54469-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 3	50612-E
54470-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 25	43186-E*
54471-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 27	46840-E
54472-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 29	53872-E
54473-E	ELECTRIC SCHEDULE NEM2 NET ENERGY METERING SERVICE Sheet 15	48533-E
54474-E	ELECTRIC SCHEDULE NEM2 NET ENERGY METERING SERVICE Sheet 29	46841-E
54475-E	ELECTRIC SCHEDULE NEM2 NET ENERGY METERING SERVICE Sheet 31	46846-E
54476-E	ELECTRIC SCHEDULE NEM2 NET ENERGY METERING SERVICE Sheet 39	45739-E
54477-E	ELECTRIC SCHEDULE NEM2 NET ENERGY METERING SERVICE Sheet 40	47180-E
54478-E	ELECTRIC TABLE OF CONTENTS Sheet 1	54449-E
54479-E	ELECTRIC TABLE OF CONTENTS Sheet 6	54049-E



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 3

APPLICABILITY: (Cont'd.) **C. Modifications: (Cont'd.)** NEM Transition Eligible Customers, NEMV Transition Eligible Customers or NEMVMASH Transition Eligible Customers making modifications that increase the Renewable Electrical Generation Facility's size by more than the above amounts may either choose to (i) meter the additions separately under the successor tariff or (ii) elect for the whole system to take service under the successor tariff.

**D. Change Party:** Renewable Electrical Generation Facilities for NEM Transition Eligible Customers, NEMV Transition Eligible Customers or NEMVMASH Transition Eligible Customers shall not lose eligibility if transferred to a new owner, operator, or PG&E account at the original location, except if the Transition Option is selected.

**E. Storage:** Integrated storage or directly connected storage as defined Special Condition 11 shall be treated in the same way, and be subject to the same transition period, as the underlying REGF to which they are connected.

**F. Natural or Human-Made Disasters<sup>1</sup>:** NEM Transition Eligible Customers whose eligible generator needs to be replaced due to a natural or human-made disaster will maintain their NEM transition period status as laid out in this section and Special Condition 10. (T)

Customers seeking generator interconnections in portions of San Francisco and Oakland where PG&E has a network grid must contact PG&E about generation export limitations.

A Renewable Electrical Generation Facility means a generating facility that generates electricity by using:

- a) biomass,
- b) solar thermal,
- c) photovoltaic,
- d) wind,
- e) geothermal,
- f) fuel cells using renewable fuels,
- g) small hydroelectric generation (but a small hydroelectric generation facility is not an eligible Renewable Electrical Generation Facility if it will cause an adverse impact on instream beneficial uses or cause a change in the volume or timing of streamflow),
- h) digester gas,
- i) municipal solid waste conversion,
- j) landfill gas,
- k) ocean wave,
- l) ocean thermal, or
- m) tidal current,

and any additions or enhancements to the facility using that technology pursuant to paragraph (1) of subdivision (a) of Section 25741 of the Public Resources Code. These renewable sources are defined in the latest version of the California Energy Commission's (CEC's) Renewables Portfolio Standard (RPS) Eligibility Guidebook and the Overall Program Guidebook.<sup>2</sup>

<sup>1</sup> Natural or human-made disasters includes such events as a fire, earthquake, flood, or severe storms. (T)

<sup>2</sup> The RPS Guidebooks can be found at: <https://www.energy.ca.gov/programs-and-topics/programs/renewables-portfolio-standard>

(Continued)



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 25

SPECIAL  
CONDITIONS:  
(Cont'd.)

10. Natural or Human-Made Disasters (T)

Pursuant to Section F of the NEM Transition Provisions, NEM Transition Eligible Customers impacted by a natural or human-made disaster may request service on this tariff from (i) the date of the issuance of their original pre-natural-or- human-made disaster "permission to operate" (PTO) letter until (ii) the date of the customer's first Energy True Up in the twenty first (21st) year. (T)  
(T)

Impacted Customers must:

- (i) reapply for interconnection with a replacement system sized (i) no larger than 1,000 kW as defined under Total Rated Generating Capacity in the Applicability section above, and (ii) to generate no more than the 12 months of historic, or estimated, usage (kWh), and
- (ii) when reapplying for interconnection, submit proof of destruction of the renewable generator, if requested by PG&E.

If the generator needs to be replaced due to a natural or human-made disaster PG&E will true-up the NEM account(s) pursuant to Special Condition 2.g., and Net Surplus Compensation will be issued, if any, pursuant to Special Condition 5 up to the date of the natural or human-made disaster, unless the customer requests that PG&E continue to bill the Customer on NEM through Customer's the next regular true-up date. (T)  
(T)

The intervening period from destruction of the generator to PTO of the replacement generator must be no longer than two years, unless reasonable documentation acceptable to PG&E is provided showing that the new interconnection is in process and must be completed by the same NEM customer who was taking service on NEM prior to the Natural or Human-Made Disaster. If the generator is not replaced by the same NEM Customer, but the property is sold to a new owner after the destruction of the generator, this provision does not extend to the new owner. The new owner must apply for interconnection and take service under the NEM tariff in effect at the time and is subject to all the requirements of a new customer seeking interconnection for that NEM tariff. (T)

Customers impacted by Natural or Human-Made Disasters must comply with all requirements associated with the installation of Smart Inverter technology, as defined in Electric Rule 21. (T)



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 27

SPECIAL  
CONDITIONS:  
(Cont'd.)

11. NEM Paired Storage

a. Definitions (Cont'd.)

No Grid Charging:

A storage system that uses a control configuration that is either certified to a national standard or to a utility-approved interim testing procedure, either of which ensures that the storage system cannot be charged from the PG&E grid<sup>5</sup>. A PG&E approved physical non-import relay or a functionally equivalent non-import configuration to prevent grid power from flowing to the storage device is also permitted. Customers may not have access to software settings, only the installer and the storage provider would be able to access and select settings profiles. Inadvertent but minor instances of grid import are permitted. Such inadvertent grid imports must not exceed durations of ten seconds.

No Storage Export:

A storage system that uses a power-control configuration that is certified either to a national standard or to a utility-approved interim testing procedure, either of which ensures that the storage system cannot export to PG&E's grid. A PG&E approved physical non-export relay or a functionally equivalent non-export configuration to prevent storage device export is also permitted. Inadvertent but minor instances of storage export are permitted. Such inadvertent grid exports must not exceed durations of ten seconds.

(T)  
(T)

b. Interconnection

NEM Paired Storage will have the same interconnection cost responsibility as the NEM generator that it is paired with, including charges or fees related to the interconnection application, Rule 21 engineering study/review, and/or any associated distribution upgrade.

See Section c.5 below for additional information

c. Types of NEM Paired Storage

The Renewables Portfolio Standard (RPS) Guidebook establishes two categories of energy storage that may be considered an addition or enhancement to a renewable electrical generation facility: "integrated" and "directly connected" storage.

1) Integrated Storage:

Integrated Energy Storage is defined in the RPS guidelines as methods of storing energy from a renewable energy resource that are integrated into the REGF as part of the generation process.

<sup>5</sup>In the event of an expected PSPS (Public Safety Power Shutoff) outage, as evidenced by a 48-hour notice from PG&E to the expected outage start, a storage system defined as "No Grid Charging" and designed for resiliency, meaning it is capable of providing back-up power safely and in compliance with all relevant tariffs, electric rules, other requirements, and is qualified by PG&E to participate, will be temporarily permitted to charge from the grid in order to prepare for the PSPS outage. The notification must specify an impact to the customer generator location. This temporary permission will begin at the publication of the 48-hour notification and will end 24 hours after the end of the PSPS event, as marked by the restoration of power at the site. If power is not shutoff, the temporary permission will end 72 hours after the original 48-hour notice. At the end of the temporary permission period as described above, the storage system will need to revert to "No Grid Charging" operation mode in order to maintain compliance with the NEM tariff, notwithstanding additional PSPS Alerts. At no point during the temporary permission period will the system be permitted to violate the interconnection agreement. Specifically, the storage system must not increase the host facility's historical peak demand.

(Continued)



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 29

SPECIAL  
CONDITIONS:  
(Cont'd.)

11. NEM Paired Storage

c. Types of NEM Paired Storage

2) Directly Connected: (Cont'd.)

Directly Connected Cases:

(i) DC-Coupled storage system sized 10kW or smaller

DC-Coupled storage systems sized 10kW or smaller are not required to meet either the "No Grid Charging" or "No Storage Export" requirements, must complete interconnection agreement Form 79-1193 (solar and/or wind electric facilities of 30kW or less) and will be billed using the estimation methodology as described in Section g.1) of this special condition when no additional metering is installed as described in "Large NEM-Eligible GFs" below.

(ii) DC-Coupled storage system sized greater than 10kW

The DC-Coupled storage systems sized greater than 10kW must satisfy the definition of "No Storage Export", apply with 79-1174-02, complete Form 79-1069, and will be billed as described for Large NEM paired Storage in Section 3)(ii) of this special condition.

For this case, there are no restrictions on the storage system size (kW).

(iii) Large AC Coupled storage system ("Large NEM-eligible GFs")

Large NEM-eligible Generating Facilities (GFs) are NEM-eligible GFs paired with storage sized larger than 10 kW. For Large NEM-eligible GFs, the storage system shall have a maximum output power no larger than 150% of the NEM-eligible generator's maximum output capacity. Pursuant to Decision 20-06-017 the maximum output capacity limit shall not apply for a period of 3 years starting on August 16, 2020.

Large NEM-eligible GFs are required to select one of the following:

- a) install a non-export relay on the storage device(s);
- b) install an interval meter for the NEM-eligible generation, meter the load, and meter total energy flows at the point of common coupling;
- c) install an interval meter directly to the NEM-eligible generator(s); or
- d) meet the requirements of No Storage Export (T)

(Continued)



**ELECTRIC SCHEDULE NEM2  
NET ENERGY METERING SERVICE**

Sheet 15

SPECIAL  
CONDITIONS:  
(Cont'd.)

3. INTERCONNECTION: (Cont'd.)

For Load Aggregation, a completed and signed "NEM Load Aggregation Appendix" (Form 79-1202) must be submitted together with the appropriate NEM interconnection agreement listed above.

The eligible customer-generator must meet all applicable safety, and performance standards established by the National Electrical Code, the Institute of Electrical and Electronics Engineers, and accredited testing laboratories such as Underwriters Laboratories and, where applicable, rules of the California Public Utilities Commission regarding safety and reliability.

In order to promote the safety and reliability of the customer REGF, the applicant is required to verify as a part of each interconnection request for this tariff, that all major solar system components are on the verified equipment list maintained by the California Energy Commission and other equipment, as determined by PG&E, should be verified by the customer as having safety certification from a nationally recognized testing laboratory.

Applicant is required to verify as a part of each interconnection request for this tariff, that (i) a warranty of at least 10 years, or (ii) a 10-year service warranty or executed "agreement" ensuring proper maintenance and continued system performance has been provided on all equipment and on its installation.

For Load Aggregation Arrangements Requesting an additional service for Generator – Subject to all other applicable rules, an additional service may be allowed for the Generating Account if it has no load other than that associated directly with the REGF. However, a customer may not subsequently add load to that additional service, and if the REGF is removed, the additional service, may not be converted to a load account.

Customers on this tariff must pay for the interconnection of their REGF as provided in Electric Rule 21, including an application fee. This application fee must be paid through PG&E's online application portal in order to complete the application, unless otherwise directed by PG&E. For application fees for Customers impacted by a Natural or Human-Made Disasters<sup>5</sup>, see Special Condition 10. (T)

For the purposes of the NEM2, NEM2V, and NEM2VMSH tariffs, the rating of the generating facility, for the purposes of comparing its size relative to the 1 megawatt (MW) limit, will be determined based on:

- (a) For each PV generator, the California Energy Commission's (CEC) AC rating;
- (b) For each inverter based generator, the gross nameplate rating of the inverter; or
- (c) For each non-inverter based generator, the generator gross nameplate.

<sup>5</sup> Natural or human-made disasters includes such events as a fire, earthquake, flood, or severe storms. (T)

(Continued)



**ELECTRIC SCHEDULE NEM2  
NET ENERGY METERING SERVICE**

Sheet 29

SPECIAL  
CONDITIONS:  
(Cont'd.)

9. NEM Paired Storage

a. Definitions: (Cont'd.)

No Grid Charging:

A storage system that uses a power control configuration that is either certified to a national standard or to a utility-approved interim testing procedure, either of which ensures that the storage system cannot be charged from the PG&E grid<sup>9</sup>. A PG&E approved physical non-import relay or a functionally equivalent non-import configuration to prevent grid power from flowing to the storage device is also permitted. Customers may not have access to software settings, only the installer and the storage provider would be able to access and select settings profiles. Inadvertent but minor instances of grid import are permitted. Such inadvertent grid imports must not exceed durations of ten seconds.

No Storage Export:

A storage system that uses a power-control configuration that is certified either to a national standard or to a utility-approved interim testing procedure, either of which ensures that the storage system cannot export to PG&E's grid. A PG&E approved physical non-export relay or a functionally equivalent non-export configuration to prevent storage device export is also permitted. Inadvertent but minor instances of storage export are permitted. Such inadvertent grid exports must not exceed durations of ten seconds.

(T)

b. Interconnection

NEM Paired Storage will have the same interconnection cost responsibility as the NEM generator that it is paired with, including charges or fees related to the interconnection application, Rule 21 engineering study/review, and/or any associated distribution upgrades.

See Section c.5. below for additional information

c. Types of NEM Paired Storage

The Renewables Portfolio Standard (RPS) Guidebook<sup>8</sup> establishes two categories of energy storage that may be considered an addition or enhancement to a renewable electrical generation facility: "integrated" and "directly connected" storage.

1) Integrated Storage:

Integrated Energy Storage is defined in the RPS guidelines as methods of storing energy from a renewable energy resource that are integrated into the REGF as part of the generation process.

<sup>9</sup> In the event of an expected PSPS (Public Safety Power Shutoff) outage, as evidenced by a 48-hour notice from PG&E to the expected outage start, a storage system defined as "No Grid Charging" and designed for resiliency, meaning it is capable of providing back-up power safely and in compliance with all relevant tariffs, electric rules, other requirements, and is qualified by PG&E to participate, will be temporarily permitted to charge from the grid in order to prepare for the PSPS outage. The notification must specify an impact to the customer generator location. This temporary permission will begin at the publication of the 48-hour notification and will end 24 hours after the end of the PSPS event, as marked by the restoration of power at the site. If power is not shutoff, the temporary permission will end 72 hours after the original 48-hour notice. At the end of the temporary permission period as described above, the storage system will need to revert to "No Grid Charging" operation mode in order to maintain compliance with the NEM tariff, notwithstanding additional PSPS Alerts. At no point during the temporary permission period will the system be permitted to violate the interconnection agreement. Specifically, the storage system must not increase the host facility's historical peak demand.

(Continued)



**ELECTRIC SCHEDULE NEM2  
NET ENERGY METERING SERVICE**

Sheet 31

SPECIAL  
CONDITIONS:  
(Cont'd.)

- 9. NEM Paired Storage
  - c. Types of NEM Paired Storage
    - 2) Directly Connected: (Cont'd.)

Directly Connected Cases:

(i) DC-Coupled storage system sized 10 kW or smaller. DC-Coupled storage systems sized 10 kW or smaller are not required to meet either the "No Grid Charging" or "No Storage Export" requirements, must apply with 79-1174-02, and either complete interconnection agreement Form 79-1193-02 (solar and/or wind electric facilities of 30 kW or less) or Form 79-1069-02 (all other REGF with a storage system configurations fulling the requirements of "No Grid Charging"). All configurations will be billed using the estimation methodology as described in Section g.1) of this special condition when no additional metering is installed as described in "Large NEM-Eligible GFs" below.

(ii) DC-Coupled storage system sized greater than 10 kW

The DC-Coupled storage systems sized greater than 10 kW must satisfy the definition of "No Storage Export", apply with 79-1174-02, complete Form 79-1069-02 and will be billed as described for Large NEM paired Storage in Section 3)(ii) of this special condition.

For this case, there are no restrictions on the storage system size (kW).

(iii) Large AC Coupled storage system ("Large NEM-eligible GFs")

Large NEM-eligible Generating Facilities (GFs) are NEM-eligible GFs paired with storage sized larger than 10 kW. For Large NEM-eligible GFs, the storage system shall have a maximum output power no larger than 150% of the NEM-eligible generator's maximum output capacity. Pursuant to Decision 20-06-017 the maximum output capacity limit shall not apply for a period of 3 years starting on August 16, 2020.

Large NEM-eligible GFs are required to select one of the following:

- a) install a non-export relay on the storage device(s);
- b) install an interval meter for the NEM-eligible generation, meter the load, and meter total energy flows at the point of common coupling;
- c) install an interval meter directly to the NEM-eligible generator(s); or
- d) or meet the requirements of No Storage Export (T)

(Continued)



**ELECTRIC SCHEDULE NEM2  
NET ENERGY METERING SERVICE**

Sheet 39

SPECIAL  
CONDITIONS:  
(Cont'd.)

10. Natural or Human-Made Disasters (T)

Pursuant to Special Condition 8, all Customers receiving service on Schedule NEM2 who impacted by a natural or human-made disaster may request service on this tariff from (i) the date of the issuance of their original pre-natural-or- human-made disaster "permission to operate" (PTO) letter until (ii) the date of the customer's first Energy True Up in the twenty first (21st) year. (T)

Impacted Customers must:

- (i) reapply for interconnection with a replacement system sized to generate no more than the 12 months of historic, or estimated, usage (kWh), and
- (ii) when reapplying for interconnection, submit proof of destruction of the renewable generator, if requested by PG&E.

If the generator needs to be replaced due to a natural or human-made disaster PG&E will true-up the NEM account(s) pursuant to Special Condition 2.h., and Net Surplus Compensation will be issued, if any, pursuant to Special Condition 5, up to the date of the natural or human-made disaster, unless the Customer requests that PG&E continue to bill the Customer on NEM2 through the Customer's the next regular true-up date. (T)

(Continued)



**ELECTRIC SCHEDULE NEM2  
NET ENERGY METERING SERVICE**

Sheet 40

SPECIAL  
CONDITIONS:  
(Cont'd.)

10. Natural or Human-Made Disasters (Cont'd) (T)

The intervening period from destruction of the generator to PTO of the replacement generator must be no longer than two years, unless reasonable documentation acceptable to PG&E is provided showing that the new interconnection is in process. The interconnection application must be completed by the same NEM2 customer who was taking service on NEM2 prior to the Natural or Human-Made Disaster. If the generator is not replaced by the same NEM2 Customer, but the property is sold to a new owner after the destruction of the generator, this provision does not extend to the new owner. The new owner must apply and take service under the NEM tariff in effect at the time and is subject to all the requirements of a new customer seeking interconnection for that NEM tariff. (T)

Customers impacted by Natural or Human-Made Disasters who meet the requirements included in this Special Condition and whose replacement system is sized<sup>12</sup> no greater than 1 megawatt (MW) are exempt from the interconnection application fee when reapplying. (T)

Customers impacted by Natural or Human-Made Disasters must comply with all requirements associated with the installation of Smart Inverter technology, as defined in Electric Rule 21. (T)

<sup>12</sup> Sized as defined in Special Condition 3.



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Advice 6735-E  
Decision

Issued by  
**Meredith Allen**  
Vice President, Regulatory Affairs

Submitted  
Effective  
Resolution

October 12, 2022



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Sheet 6

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Advice 6735-E  
October 12, 2022

## **Attachment 2**

### **Redline Tariff Revisions**



**ELECTRIC SCHEDULE NEM**  
**NET ENERGY METERING SERVICE**

Sheet 3

- APPLICABILITY: (Cont'd.)
- C. Modifications: (Cont'd.)** NEM Transition Eligible Customers, NEMV Transition Eligible Customers or NEMVMASH Transition Eligible Customers making modifications that increase the Renewable Electrical Generation Facility's size by more than the above amounts may either choose to (i) meter the additions separately under the successor tariff or (ii) elect for the whole system to take service under the successor tariff.
  - D. Change Party:** Renewable Electrical Generation Facilities for NEM Transition Eligible Customers, NEMV Transition Eligible Customers or NEMVMASH Transition Eligible Customers shall not lose eligibility if transferred to a new owner, operator, or PG&E account at the original location, except if the Transition Option is selected.
  - E. Storage:** Integrated storage or directly connected storage as defined Special Condition 11 shall be treated in the same way, and be subject to the same transition period, as the underlying REGF to which they are connected.
  - F. Natural or HumanMan-Made Disasters<sup>1</sup>:** NEM Transition Eligible Customers whose eligible generator needs to be replaced due to a natural or humanman-made disaster will maintain their NEM transition period status as laid out in this section and Special Condition 10.

Customers seeking generator interconnections in portions of San Francisco and Oakland where PG&E has a network grid must contact PG&E about generation export limitations.

A Renewable Electrical Generation Facility means a generating facility that generates electricity by using:

- a) biomass,
- b) solar thermal,
- c) photovoltaic,
- d) wind,
- e) geothermal,
- f) fuel cells using renewable fuels,
- g) small hydroelectric generation (but a small hydroelectric generation facility is not an eligible Renewable Electrical Generation Facility if it will cause an adverse impact on instream beneficial uses or cause a change in the volume or timing of streamflow),
- h) digester gas,
- i) municipal solid waste conversion,
- j) landfill gas,
- k) ocean wave,
- l) ocean thermal, or
- m) tidal current,

and any additions or enhancements to the facility using that technology pursuant to paragraph (1) of subdivision (a) of Section 25741 of the Public Resources Code. These renewable sources are defined in the latest version of the California Energy Commission's (CEC's) Renewables Portfolio Standard (RPS) Eligibility Guidebook and the Overall Program Guidebook.<sup>2</sup>

<sup>1</sup> Natural or humanman-made disasters includes such events as a fire, earthquake, flood, or severe storms.

<sup>2</sup> The RPS Guidebooks can be found at: <https://www.energy.ca.gov/programs-and-topics/programs/renewables-portfolio-standard>

(Continued)

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Decision

Issued by  
**Robert S. Kenney**  
Vice President, Regulatory Affairs

Submitted July 8, 2021  
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Resolution

Internal



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 25

SPECIAL  
CONDITIONS:  
(Cont'd.)

10. Natural or **HumanMan**-Made Disasters

Pursuant to Section F of the NEM Transition Provisions, NEM Transition Eligible Customers impacted by a natural or **humanman**-made disaster may request service on this tariff from (i) the date of the issuance of their original pre-natural-or-**humanman**-made disaster "permission to operate" (PTO) letter until (ii) the date of the customer's first Energy True Up in the twenty first (21st) year.

Impacted Customers must:

- (i) reapply for interconnection with a replacement system sized (i) no larger than 1,000 kW as defined under Total Rated Generating Capacity in the Applicability section above, and (ii) to generate no more than the 12 months of historic, or estimated, usage (kWh), and
- (ii) when reapplying for interconnection, submit proof of destruction of the renewable generator, if requested by PG&E.

If the generator needs to be replaced due to a natural or **humanman**-made disaster PG&E will true-up the NEM account(s) pursuant to Special Condition 2.g., and Net Surplus Compensation will be issued, if any, pursuant to Special Condition 5 up to the date of the natural or **humanman**-made disaster, unless the customer requests that PG&E continue to bill the Customer on NEM through Customer's the next regular true-up date.

The intervening period from destruction of the generator to PTO of the replacement generator must be no longer than two years, unless reasonable documentation acceptable to PG&E is provided showing that the new interconnection is in process and must be completed by the same NEM customer who was taking service on NEM prior to the Natural or **HumanMan**-Made Disaster. If the generator is not replaced by the same NEM Customer, but the property is sold to a new owner after the destruction of the generator, this provision does not extend to the new owner. The new owner must apply for interconnection and take service under the NEM tariff in effect at the time and is subject to all the requirements of a new customer seeking interconnection for that NEM tariff.

Customers impacted by Natural or **HumanMan**-Made Disasters must comply with all requirements associated with the installation of Smart Inverter technology, as defined in Electric Rule 21.



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 27

SPECIAL  
CONDITIONS:  
(Cont'd.)

11. NEM Paired Storage

a. Definitions (Cont'd.)

No Grid Charging:

A storage system that uses a control configuration that is either certified to a national standard or to a utility-approved interim testing procedure, either of which ensures that the storage system cannot be charged from the PG&E grid<sup>5</sup>. A PG&E approved physical non-import relay or a functionally equivalent non-import configuration to prevent grid power from flowing to the storage device is also permitted. Customers may not have access to software settings, only the installer and the storage provider would be able to access and select settings profiles. Inadvertent but minor instances of grid import are permitted. Such inadvertent grid imports must not exceed durations of ten seconds.

No Storage Export:

A storage system that uses a power-control configuration that is certified either to a national standard or to a utility-approved interim testing procedure, either of which ensures that the storage system cannot export to PG&E's grid. A PG&E approved physical non-export relay or a functionally equivalent non-export configuration to prevent ~~grid power from flowing to the~~ storage device export is also permitted. Inadvertent but minor instances of storage export are permitted. Such inadvertent grid exports must not exceed durations of ten seconds.

b. Interconnection

NEM Paired Storage will have the same interconnection cost responsibility as the NEM generator that it is paired with, including charges or fees related to the interconnection application, Rule 21 engineering study/review, and/or any associated distribution upgrade.

See Section c.5 below for additional information

c. Types of NEM Paired Storage

The Renewables Portfolio Standard (RPS) Guidebook establishes two categories of energy storage that may be considered an addition or enhancement to a renewable electrical generation facility: "integrated" and "directly connected" storage.

1) Integrated Storage:

Integrated Energy Storage is defined in the RPS guidelines as methods of storing energy from a renewable energy resource that are integrated into the REGF as part of the generation process.

<sup>5</sup>In the event of an expected PSPS (Public Safety Power Shutoff) outage, as evidenced by a 48-hour notice from PG&E to the expected outage start, a storage system defined as "No Grid Charging" and designed for resiliency, meaning it is capable of providing back-up power safely and in compliance with all relevant tariffs, electric rules, other requirements, and is qualified by PG&E to participate, will be temporarily permitted to charge from the grid in order to prepare for the PSPS outage. The notification must specify an impact to the customer generator location. This temporary permission will begin at the publication of the 48-hour notification and will end 24 hours after the end of the PSPS event, as marked by the restoration of power at the site. If power is not shutoff, the temporary permission will end 72 hours after the original 48-hour notice. At the end of the temporary permission period as described above, the storage system will need to revert to "No Grid Charging" operation mode in order to maintain compliance with the NEM tariff, notwithstanding additional PSPS Alerts. At no point during the temporary permission period will the system be permitted to violate the interconnection agreement. Specifically, the storage system must not increase the host facility's historical peak demand.

(Continued)

Advice 5879-E  
Decision D.20-06-017

Issued by  
**Robert S. Kenney**  
Vice President, Regulatory Affairs

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Resolution



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 29

SPECIAL  
CONDITIONS:  
(Cont'd.)

11. NEM Paired Storage

c. Types of NEM Paired Storage

2) Directly Connected: (Cont'd.)

Directly Connected Cases:

(i) DC-Coupled storage system sized 10kW or smaller

DC-Coupled storage systems sized 10kW or smaller are not required to meet either the "No Grid Charging" or "No Storage Export" requirements, must complete interconnection agreement Form 79-1193 (solar and/or wind electric facilities of 30kW or less) and will be billed using the estimation methodology as described in Section g.1) of this special condition when no additional metering is installed as described in "Large NEM-Eligible GFs" below.

(ii) DC-Coupled storage system sized greater than 10kW

The DC-Coupled storage systems sized greater than 10kW must satisfy the definition of "No Storage Export", apply with 79-1174-02, complete Form 79-1069, and will be billed as described for Large NEM paired Storage in Section 3)(ii) of this special condition.

For this case, there are no restrictions on the storage system size (kW).

(iii) Large AC Coupled storage system ("Large NEM-eligible GFs")

Large NEM-eligible Generating Facilities (GFs) are NEM-eligible GFs paired with storage sized larger than 10 kW. For Large NEM-eligible GFs, the storage system shall have a maximum output power no larger than 150% of the NEM-eligible generator's maximum output capacity. Pursuant to Decision 20-06-017 the maximum output capacity limit shall not apply for a period of 3 years starting on August 16, 2020.

Large NEM-eligible GFs are required to select one of the following:

- a) install a non-export relay on the storage device(s);
- b) install an interval meter for the NEM-eligible generation, meter the load, and meter total energy flows at the point of common coupling;
- c) install an interval meter directly to the NEM-eligible generator(s); or
- d) meet the requirements of No Storage Grid Export

(Continued)



**ELECTRIC SCHEDULE NEM2  
NET ENERGY METERING SERVICE**

SPECIAL  
CONDITIONS:  
(Cont'd.)

3. INTERCONNECTION: (Cont'd.)

For Load Aggregation, a completed and signed "NEM Load Aggregation Appendix" (Form 79-1202) must be submitted together with the appropriate NEM interconnection agreement listed above.

The eligible customer-generator must meet all applicable safety, and performance standards established by the National Electrical Code, the Institute of Electrical and Electronics Engineers, and accredited testing laboratories such as Underwriters Laboratories and, where applicable, rules of the California Public Utilities Commission regarding safety and reliability.

In order to promote the safety and reliability of the customer REGF, the applicant is required to verify as a part of each interconnection request for this tariff, that all major solar system components are on the verified equipment list maintained by the California Energy Commission and other equipment, as determined by PG&E, should be verified by the customer as having safety certification from a nationally recognized testing laboratory.

Applicant is required to verify as a part of each interconnection request for this tariff, that (i) a warranty of at least 10 years, or (ii) a 10-year service warranty or executed "agreement" ensuring proper maintenance and continued system performance has been provided on all equipment and on its installation.

For Load Aggregation Arrangements Requesting an additional service for Generator – Subject to all other applicable rules, an additional service may be allowed for the Generating Account if it has no load other than that associated directly with the REGF. However, a customer may not subsequently add load to that additional service, and if the REGF is removed, the additional service, may not be converted to a load account.

Customers on this tariff must pay for the interconnection of their REGF as provided in Electric Rule 21, including an application fee. This application fee must be paid through PG&E's online application portal in order to complete the application, unless otherwise directed by PG&E. For application fees for Customers impacted by a Natural or HumanMan-Made Disasters<sup>5</sup>, see Special Condition 10.

For the purposes of the NEM2, NEM2V, and NEM2VMSH tariffs, the rating of the generating facility, for the purposes of comparing its size relative to the 1 megawatt (MW) limit, will be determined based on:

- (a) For each PV generator, the California Energy Commission's (CEC) AC rating;
- (b) For each inverter based generator, the gross nameplate rating of the inverter; or
- (c) For each non-inverter based generator, the generator gross nameplate.

<sup>5</sup> Natural or humanman-made disasters includes such events as a fire, earthquake, flood, or severe storms.

(Continued)

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Decision

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**Robert S. Kenney**  
Vice President, Regulatory Affairs

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**ELECTRIC SCHEDULE NEM2  
NET ENERGY METERING SERVICE**

SPECIAL  
CONDITIONS:  
(Cont'd.)

9. NEM Paired Storage

a. Definitions: (Cont'd.)

No Grid Charging:

A storage system that uses a power control configuration that is either certified to a national standard or to a utility-approved interim testing procedure, either of which ensures that the storage system cannot be charged from the PG&E grid<sup>9</sup>. A PG&E approved physical non-import relay or a functionally equivalent non-import configuration to prevent grid power from flowing to the storage device is also permitted. Customers may not have access to software settings, only the installer and the storage provider would be able to access and select settings profiles. Inadvertent but minor instances of grid import are permitted. Such inadvertent grid imports must not exceed durations of ten seconds.

No Storage Export:

A storage system that uses a power-control configuration that is certified either to a national standard or to a utility-approved interim testing procedure, either of which ensures that the storage system cannot export to PG&E's grid. A PG&E approved physical non-export relay or a functionally equivalent non-export configuration to prevent ~~grid power from flowing to the~~ storage device export is also permitted. Inadvertent but minor instances of storage export are permitted. Such inadvertent grid exports must not exceed durations of ten seconds.

b. Interconnection

NEM Paired Storage will have the same interconnection cost responsibility as the NEM generator that it is paired with, including charges or fees related to the interconnection application, Rule 21 engineering study/review, and/or any associated distribution upgrades.

See Section c.5. below for additional information

c. Types of NEM Paired Storage

The Renewables Portfolio Standard (RPS) Guidebook<sup>8</sup> establishes two categories of energy storage that may be considered an addition or enhancement to a renewable electrical generation facility: "integrated" and "directly connected" storage.

1) Integrated Storage:

Integrated Energy Storage is defined in the RPS guidelines as methods of storing energy from a renewable energy resource that are integrated into the REGF as part of the generation process.

<sup>9</sup> In the event of an expected PSPS (Public Safety Power Shutoff) outage, as evidenced by a 48-hour notice from PG&E to the expected outage start, a storage system defined as "No Grid Charging" and designed for resiliency, meaning it is capable of providing back-up power safely and in compliance with all relevant tariffs, electric rules, other requirements, and is qualified by PG&E to participate, will be temporarily permitted to charge from the grid in order to prepare for the PSPS outage. The notification must specify an impact to the customer generator location. This temporary permission will begin at the publication of the 48-hour notification and will end 24 hours after the end of the PSPS event, as marked by the restoration of power at the site. If power is not shutoff, the temporary permission will end 72 hours after the original 48-hour notice. At the end of the temporary permission period as described above, the storage system will need to revert to "No Grid Charging" operation mode in order to maintain compliance with the NEM tariff, notwithstanding additional PSPS Alerts. At no point during the temporary permission period will the system be permitted to violate the interconnection agreement. Specifically, the storage system must not increase the host facility's historical peak demand.

(Continued)

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Decision D.20-06-017

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Vice President, Regulatory Affairs

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Resolution



**ELECTRIC SCHEDULE NEM2**  
**NET ENERGY METERING SERVICE**

Sheet 31

SPECIAL  
CONDITIONS:  
(Cont'd.)

- 9. NEM Paired Storage
  - c. Types of NEM Paired Storage
    - 2) Directly Connected: (Cont'd.)

Directly Connected Cases:

(i) DC-Coupled storage system sized 10 kW or smaller. DC-Coupled storage systems sized 10 kW or smaller are not required to meet either the "No Grid Charging" or "No Storage Export" requirements, must apply with 79-1174-02, and either complete interconnection agreement Form 79-1193-02 (solar and/or wind electric facilities of 30 kW or less) or Form 79-1069-02 (all other REGF with a storage system configurations fulling the requirements of "No Grid Charging"). All configurations will be billed using the estimation methodology as described in Section g.1) of this special condition when no additional metering is installed as described in "Large NEM-Eligible GFs" below.

(ii) DC-Coupled storage system sized greater than 10 kW

The DC-Coupled storage systems sized greater than 10 kW must satisfy the definition of "No Storage Export", apply with 79-1174-02, complete Form 79-1069-02 and will be billed as described for Large NEM paired Storage in Section 3)(ii) of this special condition.

For this case, there are no restrictions on the storage system size (kW).

(iii) Large AC Coupled storage system ("Large NEM-eligible GFs")

Large NEM-eligible Generating Facilities (GFs) are NEM-eligible GFs paired with storage sized larger than 10 kW. For Large NEM-eligible GFs, the storage system shall have a maximum output power no larger than 150% of the NEM-eligible generator's maximum output capacity. Pursuant to Decision 20-06-017 the maximum output capacity limit shall not apply for a period of 3 years starting on August 16, 2020.

Large NEM-eligible GFs are required to select one of the following:

- a) install a non-export relay on the storage device(s);
- b) install an interval meter for the NEM-eligible generation, meter the load, and meter total energy flows at the point of common coupling;
- c) install an interval meter directly to the NEM-eligible generator(s); or
- d) or meet the requirements of No ~~Storage Export~~ Grid Export

(Continued)

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**ELECTRIC SCHEDULE NEM2  
NET ENERGY METERING SERVICE**

Sheet 39

SPECIAL  
CONDITIONS:  
(Cont'd.)

10. Natural or HumanMan-Made Disasters

Pursuant to Special Condition 8, all Customers receiving service on Schedule NEM2 who impacted by a natural or humanman-made disaster may request service on this tariff from (i) the date of the issuance of their original pre-natural-or- humanman-made disaster "permission to operate" (PTO) letter until (ii) the date of the customer's first Energy True Up in the twenty first (21st) year.

Impacted Customers must:

- (i) reapply for interconnection with a replacement system sized to generate no more than the 12 months of historic, or estimated, usage (kWh), and
- (ii) when reapplying for interconnection, submit proof of destruction of the renewable generator, if requested by PG&E.

If the generator needs to be replaced due to a natural or humanman-made disaster PG&E will true-up the NEM account(s) pursuant to Special Condition 2.h., and Net Surplus Compensation will be issued, if any, pursuant to Special Condition 5, up to the date of the natural or humanman-made disaster, unless the Customer requests that PG&E continue to bill the Customer on NEM2 through the Customer's the next regular true-up date.

(Continued)

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Decision 19-01-030

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Internal



**ELECTRIC SCHEDULE NEM2  
NET ENERGY METERING SERVICE**

Sheet 40

SPECIAL  
CONDITIONS:  
(Cont'd.)

10. Natural or **HumanMan**-Made Disasters (Cont'd)

The intervening period from destruction of the generator to PTO of the replacement generator must be no longer than two years, unless reasonable documentation acceptable to PG&E is provided showing that the new interconnection is in process. The interconnection application must be completed by the same NEM2 customer who was taking service on NEM2 prior to the Natural or **HumanMan**-Made Disaster. If the generator is not replaced by the same NEM2 Customer, but the property is sold to a new owner after the destruction of the generator, this provision does not extend to the new owner. The new owner must apply and take service under the NEM tariff in effect at the time and is subject to all the requirements of a new customer seeking interconnection for that NEM tariff.

Customers impacted by Natural or **HumanMan**-Made Disasters who meet the requirements included in this Special Condition and whose replacement system is sized<sup>12</sup> no greater than 1 megawatt (MW) are exempt from the interconnection application fee when reapplying.

Customers impacted by Natural or **HumanMan**-Made Disasters must comply with all requirements associated with the installation of Smart Inverter technology, as defined in Electric Rule 21.

<sup>12</sup> Sized as defined in Special Condition 3.

**PG&E Gas and Electric  
Advice Submittal List  
General Order 96-B, Section IV**

AT&T  
Albion Power Company

Alta Power Group, LLC  
Anderson & Poole

Atlas ReFuel  
BART

Barkovich & Yap, Inc.  
Braun Blasing Smith Wynne, P.C.  
California Cotton Ginners & Growers Assn  
California Energy Commission

California Hub for Energy Efficiency  
Financing

California Alternative Energy and  
Advanced Transportation Financing  
Authority  
California Public Utilities Commission  
Calpine

Cameron-Daniel, P.C.  
Casner, Steve  
Center for Biological Diversity

Chevron Pipeline and Power  
City of Palo Alto

City of San Jose  
Clean Power Research  
Coast Economic Consulting  
Commercial Energy  
Crossborder Energy  
Crown Road Energy, LLC  
Davis Wright Tremaine LLP  
Day Carter Murphy

Dept of General Services  
Don Pickett & Associates, Inc.  
Douglass & Liddell

East Bay Community Energy Ellison  
Schneider & Harris LLP  
Engineers and Scientists of California

GenOn Energy, Inc.  
Goodin, MacBride, Squeri, Schlotz &  
Ritchie  
Green Power Institute  
Hanna & Morton  
ICF  
International Power Technology

Intertie

Intestate Gas Services, Inc.  
Kelly Group  
Ken Bohn Consulting  
Keyes & Fox LLP  
Leviton Manufacturing Co., Inc.

Los Angeles County Integrated  
Waste Management Task Force  
MRW & Associates  
Manatt Phelps Phillips  
Marin Energy Authority  
McClintock IP  
McKenzie & Associates

Modesto Irrigation District  
NLine Energy, Inc.  
NRG Solar

OnGrid Solar  
Pacific Gas and Electric Company  
Peninsula Clean Energy

Pioneer Community Energy

Public Advocates Office

Redwood Coast Energy Authority  
Regulatory & Cogeneration Service, Inc.

Resource Innovations

SCD Energy Solutions  
San Diego Gas & Electric Company

SPURR

San Francisco Water Power and Sewer  
Sempra Utilities

Sierra Telephone Company, Inc.  
Southern California Edison Company  
Southern California Gas Company  
Spark Energy  
Sun Light & Power  
Sunshine Design  
Stoel Rives LLP

Tecogen, Inc.  
TerraVerde Renewable Partners  
Tiger Natural Gas, Inc.

TransCanada  
Utility Cost Management  
Utility Power Solutions  
Water and Energy Consulting Wellhead  
Electric Company  
Western Manufactured Housing  
Communities Association (WMA)  
Yep Energy