

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



**Pacific Gas & Electric Company**  
**ELC (Corp ID 39)**  
**Status of Advice Letter 6668E**  
**As of September 13, 2022**

Subject: Clean-Up of Rule 21/Net Energy Metering (NEM) Tariffs and Forms

Division Assigned: Energy

Date Filed: 08-02-2022

Date to Calendar: 08-10-2022

Authorizing Documents: None

<b>Disposition:</b>	<b>Accepted</b>
<b>Effective Date:</b>	<b>08-22-2022</b>

Resolution Required: No

Resolution Number: None

Commission Meeting Date: None

CPUC Contact Information:

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

AL Certificate Contact Information:

Kimberly Loo

(415)973-4587

[PGETariffs@pge.com](mailto:PGETariffs@pge.com)

**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- Disposition of Filing (Accepted, Rejected, Withdrawn, etc.)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)**



**Sidney Bob Dietz II**  
Director  
Regulatory Relations

Pacific Gas and Electric Company  
77 Beale St., Mail Code B13U  
P.O. Box 770000  
San Francisco, CA 94177

Fax: 415-973-3582

August 2, 2022

**Advice 6668-E**

(Pacific Gas and Electric Company ID U 39 E)

Public Utilities Commission of the State of California

**Subject: Clean-Up of Rule 21/Net Energy Metering (NEM1 and NEM2) Tariffs and Forms**

Pacific Gas and Electric Company (PG&E) hereby submits revisions to its Rule 21/Net Energy Metering (NEM1 and NEM2) Tariffs and Forms. The affected tariff sheets are listed on the enclosed Attachment 1.

**Purpose**

The purpose of this advice letter is to make minor revisions to various Rule 21/NEM1 and NEM2 tariffs and forms in PG&E's Tariff book to make cosmetic and formatting changes, correct typographical errors, update language that is consistent with current practices, add clarifying language and references, retire a form that is no longer used, and update outdated tariff references. The revisions are either non-substantial editorial changes to the text of a tariff or revisions in compliance with specific requirements of a statute or Commission order. The submittal will not increase any current rate or charge, cause the withdrawal of service, or conflict with any rate schedule or rule.

This advice letter to rectify the identified issues is being submitted pursuant to Industry Rule 5.1 of General Order 96-B, that states that PG&E may submit a Tier 1 advice letter in compliance with specific requirements of a statute, or Commission order where the wording of the change follows directly from the statute or Commission order, or to make non-substantive editorial changes to the text of a tariff.

**Tariff Revisions**

A matrix describing all tariff revisions is included below. The affected tariff sheets are listed on the enclosed Attachment 1. In addition, where tariffs have been revised, the redlines of the current tariffs are provided as Attachment 2.

#	Tariff	Location	Modification/Additional Information
1.	<b>Electric Form 79-1145 - Rule 21 Exporting Generator Interconnection Request</b>	Sheet 2-3	<ul style="list-style-type: none"> <li>Removes Section 3.d from the form because it is no longer relevant. The dates are based on study results and negotiations between PG&amp;E and the customer.</li> <li>Updates all subsequent section 3 designations.</li> <li>Replaces references to PG&amp;E's department name "Electric <b>Generation</b> Interconnection Department" with "Electric Grid Interconnection Department (EGI)" its current name.</li> </ul>
2.	<b>Electric Form 79-1151B - Application - Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less</b>	Sheet 2, 3	<ul style="list-style-type: none"> <li>Updates the term "Man-Made" to a nongendered term: "Human-Made."</li> </ul>
Sheet 5		<ul style="list-style-type: none"> <li>Removes Section F: Service Panel Short Circuit Interrupting Rating (SCIR) since PG&amp;E's Distribution Planning no longer requires customers to provide SCIR for projects sized 30KVA or less.</li> </ul>	
Sheet 6		<ul style="list-style-type: none"> <li>Updates Part III – Interconnection Guidelines and Document Information to direct customers to a PG&amp;E website to find more information on Secondary Network Areas in San Francisco and Oakland if the generating facility is located in specified zip codes.</li> </ul>	
3.	<b>Electric Form 79-1151B-02 - Application - Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less</b>	Sheet 5, 6	<ul style="list-style-type: none"> <li>Removes Section F: Service Panel Short Circuit Interrupting Rating (SCIR), since PG&amp;E's Distribution Planning no longer requires customers to provide SCIR for projects sized 30KVA or less.</li> <li>Updates the term "Man-Made" to a nongendered term: "Human-Made."</li> <li>Updates subsequent section "Customer Impacted by a Natural or Human-Made Disaster" designation to "F."</li> </ul>
Sheet 6		<ul style="list-style-type: none"> <li>Updates Part III – <i>Interconnection Guidelines and Document Information</i> to direct customers to a PG&amp;E website to find more information on Secondary Network Areas in San Francisco and Oakland if the generating facility is located in specified zip codes.</li> </ul>	
4.	<b>Electric Form 79-1174-02 - Rule 21 Generator Interconnection Application</b>	Sheet 5	<ul style="list-style-type: none"> <li>Corrects a typographical error found on sheet 5 of Form 79-1174-02 where an incorrect form number, 79-1184, has been corrected to 79-1174-02.</li> </ul>

#	Tariff	Location	Modification/Additional Information
5.	<b>Electric Form 79-997 - Interconnection Agreement for Net Energy Metering of Biogas Digester Generating Facilities</b>		<ul style="list-style-type: none"> <li>Retires closed Rate Schedule NEMBIO Electric Form 79-997.</li> </ul>
6.	<b>Electric Schedule NEM - Net Energy Metering Service</b>	Sheets, 4, 12, 13, 23, 24, 28, 29, 30	<ul style="list-style-type: none"> <li>Updates several outdated form references in Electric Schedule NEM.</li> </ul>
7.	<b>Electric Schedule NEM2 - Net Energy Metering Service</b>	Sheet 13	<ul style="list-style-type: none"> <li>Replaces references to Form 79-1174 with Form 79-1174-02.</li> </ul>
8.	<b>Electric Rule 21 - Generating Facility Interconnections</b>	Sheets 55 & 72	<ul style="list-style-type: none"> <li>Revises Rule 21 Tables E.1 and Ee.1 to clarify Rule 21 references.</li> </ul>
		Sheets 284-292	<ul style="list-style-type: none"> <li>Updates and reorganizes the Rule 21 Appendix A interconnection form listings, including removing obsolete forms, and adding new forms.</li> </ul>

**Protests**

Anyone wishing to protest this submittal may do so by letter sent electronically via E-mail, no later than August 22, 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 5.1.1 and 5.1.2, this advice letter is submitted with a Tier 1 designation. PG&E requests that this Tier 1 advice submittal become effective on August 22, 2022, to coincide with planned implementation of these updates into PG&E's online application portal.

**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. 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/>.





# 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) #: 6668-E

Tier Designation: 1

Subject of AL: Clean-Up of Rule 21/Net Energy Metering (NEM) Tariffs and Forms

Keywords (choose from CPUC listing): Tariffs

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: 8/22/22

No. of tariff sheets: 29

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: 5915-E-B, 6635-E-A, 6395-E

<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.
53862-E	Electric Sample Form 79-1145 Rule 21 Exporting Generator Interconnection Request Sheet 1	49768-E
53863-E*	Electric Sample Form 79-1151B APPLICATION Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less Sheet 1	52516-E
53864-E*	Electric Sample Form No. 79-1151B-02 Application - Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less Sheet 1	52517-E
53865-E	Electric Sample Form No. 79-1174-02 Rule 21 Generator Interconnection Application Sheet 1	49266-E
53866-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 4	35636-E
53867-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 12	47358-E
53868-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 13	47359-E
53869-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 23	35645-E
53870-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 24	35646-E
53871-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 28	45718-E
53872-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 29	46844-E
53873-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 30	45720-E

Cal P.U.C. Sheet No.	Title of Sheet	Cancelling Cal P.U.C. Sheet No.
53874-E	ELECTRIC SCHEDULE NEM2 NET ENERGY METERING SERVICE Sheet 13	52979-E
53875-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 55	50338-E
53876-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 72	50342-E
53877-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 284	53057-E
53878-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 285	53058-E
53879-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 286	53059-E
53880-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 287	53060-E
53881-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 288	53061-E
53882-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 289	
53883-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 290	
53884-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 291	
53885-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 292	53062-E
53886-E*	ELECTRIC TABLE OF CONTENTS Sheet 1	53859-E
53887-E	ELECTRIC TABLE OF CONTENTS Sheet 6	53117-E
53888-E	ELECTRIC TABLE OF CONTENTS Sheet 20	53834-E

<b>Cal P.U.C. Sheet No.</b>	<b>Title of Sheet</b>	<b>Cancelling Cal P.U.C. Sheet No.</b>
53889-E	ELECTRIC TABLE OF CONTENTS Sheet 24	52529-E
53890-E	ELECTRIC TABLE OF CONTENTS Sheet 25	52882-E
53891-E*	ELECTRIC TABLE OF CONTENTS Sheet 28	52939-E



**Electric Sample Form 79-1145**  
Rule 21 Exporting Generator  
Interconnection Request

Sheet 1

**Please Refer to Attached  
Sample Form**



# RULE 21 EXPORTING GENERATOR INTERCONNECTION REQUEST

1. The undersigned Applicant submits this request to interconnect its Generating Facility with the Pacific Gas and Electric Company (PG&E or Distribution Provider) Distribution System pursuant to Rule 21 (check only one):

- Detailed Study Process
- Fast Track Process

2. This Interconnection Request is for (check only one):

- A proposed new Generating Facility.
- An increase in the generating capacity or a Material Modification of an existing Generating Facility.

3. Applicant provides the following information:

a. Address (to the extent known) or location, including the county, of the proposed new Generating Facility site or, in the case of an existing Generating Facility, the name and specific location, including the county, of the existing Generating Facility;

Project Name:

Project Location:

Street Address:

City, State:

County:

Zip Code:

GPS Coordinates:

b. Maximum net megawatt electrical output (as defined by section 2.c. of Attachment A to this appendix) of the proposed new Generating Facility or the amount of net megawatt increase in the generating capacity of an existing Generating Facility;

Maximum net megawatt electrical output (MW): \_\_\_\_\_ or

Net Megawatt increase (MW): \_\_\_\_\_

**PG&E'S RULE 21**  
**EXPORTING GENERATOR INTERCONNECTION REQUEST**

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- c. Type of project (i.e., gas turbine, hydro, wind, etc.) and general description of the equipment configuration (if more than one type is chosen, include net MW for each);

___ Cogeneration	___ MW
___ Reciprocating Engine	___ MW
___ Biomass	___ MW
___ Steam Turbine	___ MW
___ Gas Turbine	___ MW
___ Wind	___ MW
___ Hydro	___ MW
___ Inverter Based: (e.g., Photovoltaic, Fuel Cell)	___ MW
If Fuel Cell, please describe primary fuel source:	
___ Combined Cycle	___ MW
___ Other (please describe):	_____

- d. Name, address, telephone number, and e-mail address of Applicant (primary person who will be contacted);

Name:

Title:

Company Name:

Street Address:

City, State:

Zip Code:

Phone Number:

Fax Number:

Email Address:

- e. Approximate location of the proposed Point of Interconnection (i.e., specify distribution facility interconnection point name, voltage level, and the location of interconnection);

**PG&E'S RULE 21**  
**EXPORTING GENERATOR INTERCONNECTION REQUEST**

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f. Applicant Data (set forth in Attachment A)

*The Applicant shall provide to the Distribution Provider the technical data called for in Attachment A.*

g. AC Disconnect Switch. List the AC disconnect switch that will be used at this Generating Facility (enter "N/A" if not applicable)

Disconnect Switch Manufacturer: \_\_\_\_\_

Disconnect Switch Model Number: \_\_\_\_\_

Disconnect Switch Rating (amps): \_\_\_\_\_

4. Application Fee and Detailed Study Deposit as specified in Rule 21 is required to complete this application. Upon receipt of this Interconnection Request and Attachment A, PG&E will send a separate invoice for the applicable fee or deposit. **PLEASE DO NOT INCLUDE ANY CHECKS/MONIES WITH THIS INTERCONNECTION REQUEST.** (Any checks/monies submitted with this IR will be returned to the sender and may result in a delay in the application process.)

Please indicate below if Applicant elects to pre-pay the Supplemental Review Fee:

\_\_\_\_\_ Yes \_\_\_\_\_ No

5. Attach evidence of Site Exclusivity as specified in Rule 21 Section E.2.d as applicable, and name(s), address(es) and contact information of site owner(s).

6. **Interconnection Request Instructions:** Complete this interconnection request and enter this information into PG&E's web-based form. (PG&E strongly recommends preparing all information and materials before starting the online interconnection request.) The online web-based form can be found at:

[https://www.pge.com/en\\_US/large-business/services/alternatives-to-pge/electric-generation-interconnection.page](https://www.pge.com/en_US/large-business/services/alternatives-to-pge/electric-generation-interconnection.page)

Questions concerning PG&E's online interconnection request process can be directed to the Electric Grid Interconnection Department at **rule21gen@pge.com..**

7 Representative of Applicant to contact:

[To be completed by Applicant]

Name:

Title:

Company Name:

Street Address:

City, State:

Zip Code:

Phone Number:

Fax Number:

Email Address:

**PG&E'S RULE 21**  
**EXPORTING GENERATOR INTERCONNECTION REQUEST**

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8. If the Applicant also requires new Distribution Service, the Distribution Provider will coordinate these efforts with this application. The Applicant must also complete a PG&E Application for Service. Additional fees may be required if a service or line extension is required (in accordance with PG&E Electric Rules 15 and 16). Please contact PG&E's Building and Renovation Services Center (BRSC): 1-800-743-7782 to initiate the application for the new Distribution Service. Additional information will be required in conjunction with an application for new Distribution Service.
9. Applicant should be aware that if Applicant has not yet received Rule 21 Screen Q results from PG&E by March 15 following submittal of this IR, Applicant will need to submit, if Applicant voluntarily chooses to do so, an Interconnection Request under PG&E's FERC Wholesale Distribution Tariff (WDT) by the close of the CAISO cluster application window (refer to <http://www.caiso.com/docs/2002/06/11/2002061110300427214.html> for the exact date) in order to participate in the Transmission Cluster Study for the year. An application under WDT will not impact the results of this Rule 21 study.
10. This agreement at all times shall be subject to such modifications as the California Public Utilities Commission may direct from time to time in the exercise of its jurisdiction.
11. This Interconnection Request is submitted by:

Legal name of Applicant: \_\_\_\_\_

By (signature): \_\_\_\_\_

Name (type or print): \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

# PG&E'S RULE 21 EXPORTING GENERATOR INTERCONNECTION REQUEST

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## Attachment A to PG&E Rule 21 Exporting Generator Interconnection Request

### GENERATING FACILITY DATA

Each Applicant will complete Sections 1 and 2 of this Attachment A.

Each Applicant will complete the applicable data in Sections 3 through 6 of this Attachment A based on the type of generating facility(ies) requesting interconnection. (Section 3 for synchronous generators, Section 4 for induction generators, Section 5 for wind turbine generators, and Section 6 for inverter-based generators).

Each Applicant will complete Sections 7 through 10, as applicable.

At any time, Distribution Provider may require Applicant to provide additional technical data, or additional documentation supporting the technical data provided, as deemed necessary by the Distribution Provider to perform Interconnection Studies, other studies, or evaluations as set forth under Rule 21.

**1. Provide electronic copies of the following:**

- A. Site drawing to scale, showing generator location and Point of Interconnection with the Distribution Provider's Distribution System.
- B. Single-line diagram showing applicable equipment such as generating units, step-up transformers, auxiliary transformers, switches/disconnects of the proposed interconnection, including the required protection devices and circuit breakers. For wind and photovoltaic generator projects, the one line diagram should include the distribution lines connecting the various groups of generating units, the generator capacitor banks, the step up transformers, the distribution lines, and the substation transformers and capacitor banks at the Point of Interconnection with the Distribution Provider's Distribution System. This one-line drawing must be signed and stamped by a licensed Professional Engineer if the Generating Facility is larger than 50 kW.
- C. AC and DC schematics if available. Required for detailed study process.
- D. Description of operations.

Note: Electronic processing is preferred, however, if submitting via U.S. mail, provide one original print of items in A through D, above.

**2. Generating Facility General Information:**

- A. Total Generating Facility rated output (MW): \_\_\_\_\_
- B. Generating Facility auxiliary Load (MW): \_\_\_\_\_
- C. Project net capacity (MW): \_\_\_\_\_
- D. Standby Load when Generating Facility is off-line (MW): \_\_\_\_\_
- E. Number of Generating Units: \_\_\_\_\_  
(Please repeat the following items for each generator)
- F. Individual generator rated output (MW for each unit): \_\_\_\_\_
- G. Type (induction, synchronous, D.C. with inverter): \_\_\_\_\_
- H. Phase (3 phase or single phase): \_\_\_\_\_

**PG&E'S RULE 21**  
**EXPORTING GENERATOR INTERCONNECTION REQUEST**

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**3. Synchronous Generator –Information:**

**3A Generator Information:**

(Please repeat the following for each generator)

- A. Manufacturer: \_\_\_\_\_
- B. Year Manufactured: \_\_\_\_\_
- C. Rated Generator speed (rpm): \_\_\_\_\_
- D. Rated MVA: \_\_\_\_\_
- E. Rated Terminal Voltage (kV): \_\_\_\_\_
- F. Rated Generator Power Factor Range: \_\_\_\_\_
- G. Generator Efficiency at Rated Load (%): \_\_\_\_\_
- H. Moment of Inertia (including prime mover): \_\_\_\_\_
- I. Inertia Time Constant (on machine base) H: \_\_\_\_\_ sec or MJ/MVA
- J. SCR (Short-Circuit Ratio - the ratio of the field current required for rated open-circuit voltage to the field current required for rated short-circuit current): \_\_\_\_\_
- K. Please attach generator reactive capability curves.
- L. Rated Hydrogen Cooling Pressure in psig (Steam Units only): \_\_\_\_\_
- M. Please attach a plot of generator terminal voltage versus field current that shows the air gap line, the open-circuit saturation curve, and the saturation curve at full load and rated power factor.

**3B Excitation System Information:**

(Please repeat the following for each generator)

- A. Indicate the Manufacturer \_\_\_\_\_ and Type \_\_\_\_\_ of excitation system used for the generator. For exciter type, please choose from 1 to 9 below or describe the specific excitation system.
  - (1) Rotating DC commutator exciter with continuously acting regulator. The regulator power source is independent of the generator terminal voltage and current.
  - (2) Rotating DC commutator exciter with continuously acting regulator. The regulator power source is bus fed from the generator terminal voltage.
  - (3) Rotating DC commutator exciter with non-continuously acting regulator (i.e., regulator adjustments are made in discrete increments).
  - (4) Rotating AC Alternator Exciter with non-controlled (diode) rectifiers. The regulator power source is independent of the generator terminal voltage and current (not bus-fed).

**PG&E'S RULE 21**  
**EXPORTING GENERATOR INTERCONNECTION REQUEST**

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- (5) Rotating AC Alternator Exciter with controlled (thyristor) rectifiers. The regulator power source is fed from the exciter output voltage.
  - (6) Rotating AC Alternator Exciter with controlled (thyristor) rectifiers.
  - (7) Static Exciter with controlled (thyristor) rectifiers. The regulator power source is bus-fed from the generator terminal voltage.
  - (8) Static Exciter with controlled (thyristor) rectifiers. The regulator power source is bus-fed from a combination of generator terminal voltage and current (compound-source controlled rectifiers system).
  - (9) Other (specify): \_\_\_\_\_
  - B. Attach a copy of the block diagram of the excitation system from its instruction manual. The diagram should show the input, output, and all feedback loops of the excitation system.
  - C. Excitation system response ratio (ASA): \_\_\_\_\_
  - D. Full load rated exciter output voltage: \_\_\_\_\_
  - E. Maximum exciter output voltage (ceiling voltage): \_\_\_\_\_
  - F. Other comments regarding the excitation system? \_\_\_\_\_
- 

**3C Turbine-Governor Information:**

(Please repeat the following for each generator)

Please complete Part A for steam, gas or combined-cycle turbines, Part B for hydro turbines, and Part C for both.

A. Steam, gas or combined-cycle turbines:

- (1) List type of unit (Steam, Gas, or Combined-cycle): \_\_\_\_\_
- (2) If steam or combined-cycle, does the turbine system have a reheat process (i.e., both high and low pressure turbines)? \_\_\_\_\_
- (3) If steam with reheat process, or if combined-cycle, indicate in the space provided, the percent of full load power produced by each turbine:  
Low pressure turbine or gas turbine: \_\_\_\_\_ %  
High pressure turbine or steam turbine: \_\_\_\_\_ %
- (4) For combined cycle plants, specify the plant net output capacity (MW) for an outage of the steam turbine or an outage of a single combustion turbine: \_\_\_\_\_

B. Hydro turbines:

- (1) Turbine efficiency at rated load: \_\_\_\_\_ %
- (2) Length of penstock: \_\_\_\_\_ ft

**PG&E'S RULE 21**  
**EXPORTING GENERATOR INTERCONNECTION REQUEST**

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- (3) Average cross-sectional area of the penstock: \_\_\_\_\_ ft<sup>2</sup>
- (4) Typical maximum head (vertical distance from the bottom of the penstock, at the gate, to the water level): \_\_\_\_\_ ft
- (5) Is the water supply run-of-the-river or reservoir: \_\_\_\_\_
- (6) Water flow rate at the typical maximum head: \_\_\_\_\_ ft<sup>3</sup>/sec
- (7) Average energy rate: \_\_\_\_\_ kW-hrs/acre-ft
- (8) Estimated yearly energy production: \_\_\_\_\_ kW-hrs

C. Complete this section for each machine, independent of the turbine type.

- (1) Turbine manufacturer: \_\_\_\_\_
- (2) Maximum turbine power output: \_\_\_\_\_ MW
- (3) Minimum turbine power output (while on line): \_\_\_\_\_ MW
- (4) Governor information:
  - (a) Droop setting (speed regulation): \_\_\_\_\_
  - (b) Is the governor mechanical-hydraulic or electro-hydraulic (Electro-hydraulic governors have an electronic speed sensor and transducer.)? \_\_\_\_\_
  - (c) Other comments regarding the turbine governor system?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**3D Short Circuit Duty Information:**

For each generator, provide the following reactances expressed in p.u. on the generator base:

- X<sub>d</sub> – Direct Axis Synchronous Reactance: \_\_\_\_\_ p.u.
- X'<sub>d</sub> – Direct Axis Transient Reactance: \_\_\_\_\_ p.u.
- X''<sub>d</sub> – Direct Axis Subtransient Reactance: \_\_\_\_\_ p.u.
- X<sub>2</sub> – Negative Sequence Reactance: \_\_\_\_\_ p.u.
- X<sub>0</sub> – Zero Sequence Reactance: \_\_\_\_\_ p.u.

Generator Grounding (select one for each model):

- A. \_\_\_\_\_ Solidly grounded
- B. \_\_\_\_\_ Grounded through an impedance  
(Impedance value in p.u. on generator base. R: \_\_\_\_\_ p.u.  
X: \_\_\_\_\_ p.u.)
- C. \_\_\_\_\_ Ungrounded

**4. Induction Generator Information:**

**PG&E'S RULE 21**  
**EXPORTING GENERATOR INTERCONNECTION REQUEST**

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(Please repeat the following for each generator)

- A. Motoring Power (kW): \_\_\_\_\_
- B.  $I_2^2t$  or K (Heating Time Constant): \_\_\_\_\_
- C. Rotor Resistance,  $R_r$ : \_\_\_\_\_
- D. Stator Resistance,  $R_s$ : \_\_\_\_\_
- E. Stator Reactance,  $X_s$ : \_\_\_\_\_
- F. Rotor Reactance,  $X_r$ : \_\_\_\_\_
- G. Magnetizing Reactance,  $X_m$ : \_\_\_\_\_
- H. Short Circuit Reactance,  $X_d''$ : \_\_\_\_\_
- I. Exciting Current: \_\_\_\_\_
- J. Temperature Rise: \_\_\_\_\_
- K. Frame Size: \_\_\_\_\_
- L. Design Letter: \_\_\_\_\_
- M. Reactive Power Required In Vars (No Load): \_\_\_\_\_
- N. Reactive Power Required In Vars (Full Load): \_\_\_\_\_
- O. Total Rotating Inertia, H: \_\_\_\_\_ Per Unit on kVA Base

**5. Wind Turbine Generator (WTG) Information:**

(Proposed projects may include one or more WTG types. Please repeat the following for each type of WTG).

- A. WTG Manufacturer and Model: \_\_\_\_\_
- B. Number of WTGs: \_\_\_\_\_
- C. WTG Type (check one):
  - \_\_\_\_\_ Type 1 (Squirrel-cage induction generator)
  - \_\_\_\_\_ Type 2 (Wound rotor induction machine with variable rotor resistance)
  - \_\_\_\_\_ Type 3 (Doubly-fed asynchronous generator)
  - \_\_\_\_\_ Type 4 (Full converter interface)
- D. Nameplate Rating (each WTG): \_\_\_\_\_ / \_\_\_\_\_ kW/kVA
- E. Rated Terminal Voltage: \_\_\_\_\_ kV
- F. For Type 1 or Type 2 WTGs:
  - (1) uncompensated power factor at full load: \_\_\_\_\_
  - (2) power factor correction capacitors at full load: \_\_\_\_\_ MVAR
  - (3) number of shunt stages and size: \_\_\_\_\_
  - (4) Please attach capability curve describing reactive power or power factor range from no output to full rated output, including the effect of shunt compensation
- G. For Type 3 or Type 4 WTGs:
  - (1) Maximum under-excited power factor at full load: \_\_\_\_\_
  - (2) Maximum over-excited power factor at full load: \_\_\_\_\_
  - (3) Control mode: \_\_\_\_\_ (voltage control, fixed power factor)
  - (4) Please attach capability curve describing reactive power or power factor range from no output to full rated output

# PG&E'S RULE 21

## EXPORTING GENERATOR INTERCONNECTION REQUEST

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- H. Short Circuit Characteristics: Applicant to provide technical data related to the short circuit characteristics of proposed WTGs for short circuit duty study modeling purposes. For example, the applicant can provide manufacturer short circuit test data showing faulted condition for three phase and single-line-to-ground fault.

Distribution Provider may require testing verification of voltage and harmonic performance during commissioning test of WTG based generation projects.

### 6. Inverter Based Generation Systems Information:

Proposed inverter based generation projects may include one or more types of inverters. Please provide answers to the following for each type of inverter.

- A. Inverter Manufacturer and Model: \_\_\_\_\_
- B. Number of Inverters: \_\_\_\_\_
- C. Nameplate Rating (AC, each inverter): \_\_\_\_\_ / \_\_\_\_\_ kW
- D. Nameplate Voltage Rating (AC): \_\_\_\_\_ kV
- E. Maximum AC line current: \_\_\_\_\_ Amps
- F. Nameplate Power Factor Rating (AC): \_\_\_\_\_
- G. Please attach capability curve describing reactive power or power factor range from no output to full rated output
- H. Inverter control mode (e.g. voltage, power factor, reactive power): \_\_\_\_\_
- I. Short Circuit Characteristics: Applicant to provide technical data related to the short circuit characteristics of proposed inverter based generation systems. For example, the applicant can provide a sinusoidal waveform test data showing faulted condition at the AC side of the inverter for a three phase and single-line-to-ground fault.
- J. Harmonics Characteristics:  
(1) Inverter switching frequency: \_\_\_\_\_  
(2) Harmonic characteristics for each unit up to switching frequency: \_\_\_\_\_  
(3) Harmonic characteristics for aggregate generation facility: \_\_\_\_\_
- K. Inverter disconnection characteristics: Applicant to provide voltage sinusoidal waveform test data which shows the voltage characteristics during disconnection of inverter system from distribution system at 100% and at 50% of rated output.

Distribution Provider may require testing verification of voltage and harmonic performance during commissioning test of the inverter based generation systems.

### 7. Step-Up Transformer Data:

For each step-up transformer (e.g. main step-up transformers, padmount transformers), fill out the data form provided in Table 1.

# PG&E'S RULE 21

## EXPORTING GENERATOR INTERCONNECTION REQUEST

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### 8. Plant-Level Reactive Power Compensation Data:

Provide the following information for plant-level reactive power compensation, if applicable:

- A. Number of individual shunt capacitor banks: \_\_\_\_\_
- B. Individual shunt capacitor bank rated voltage (kV): \_\_\_\_\_
- C. Individual shunt capacitor bank size (kVAR at rated voltage): \_\_\_\_\_
- D. Planned dynamic reactive control devices (SVC, STATCOM): \_\_\_\_\_
- E. Control range: \_\_\_\_\_ kVAR (lead) \_\_\_\_\_ kVAR (lag)
- F. Control mode (e.g. voltage, power factor, reactive power): \_\_\_\_\_
- G. Please provide the overall plant reactive power control strategy

### 9. Load Flow and Dynamic Models:

**Only provide data in this section when requested by the Distribution Provider.**

The WECC Data Preparation Manual for Power Flow Base Cases and Dynamic Stability Data has established power flow and dynamic modeling requirements for generation projects in WECC base cases. In general, if the aggregate sum of generation on a bus exceeds 10 MVA, it should not be netted. Furthermore, the total netted generation in an area should not exceed five percent of the area's total generation. Based on current WECC modeling requirements, the following information will be required for all generation projects whose net capacity is greater than 10 MVA. The following information may also be required for generation projects less than 10 MVA on a case-by-case basis, based on the amount of generation in the area of the requested Point of Interconnection.

- A. Provide load flow model for the generating plant and its interconnection facilities in GE PSLF \*.epc format, including new buses, generators, transformers, interconnection facilities. An equivalent model is required for the plant with generation collector systems. This data should reflect the technical data provided in this Attachment A.
- B. For each generator, governor, exciter, power system stabilizer, WTG, or inverter based generator, select the appropriate dynamic models from the General Electric PSLF Program Manual and provide the required input data. Include any user written \*.p EPCL files to simulate inverter based plants' dynamic responses (typically needed for inverter based PV/wind plants). Provide a completed \*.dyd file that contains the information specified in this section.

The GE PSLF manual is available upon request from GE. There are links within the GE PSLF User's Manual to detailed descriptions of specific models, a definition of each parameter, a list of the output channels, explanatory notes, and a control system block diagram. In addition, GE PSLF modeling information and various modeling guidelines

## **PG&E'S RULE 21 EXPORTING GENERATOR INTERCONNECTION REQUEST**

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documents have been prepared by the WECC Modeling and Validation Work Group. This information is available on the WECC website ([www.wecc.biz](http://www.wecc.biz)).

If you require assistance in developing the models, we suggest you contact General Electric. Accurate models are important to obtain accurate study results. Costs associated with any changes in facility requirements that are due to differences between model data provided by the generation developer and the actual generator test data, may be the responsibility of the generation developer.

**PG&E'S RULE 21  
EXPORTING GENERATOR INTERCONNECTION REQUEST**

TABLE 1

TRANSFORMER DATA  
(Provide for each level of transformation)

UNIT \_\_\_\_\_

NUMBER OF TRANSFORMERS \_\_\_\_\_ PHASE \_\_\_\_\_

RATING	H Winding	X Winding	Y Winding
Rated MVA	_____	_____	_____
Connection (Delta, Wye, Gnd.)	_____	_____	_____
Cooling Type (OA,OA/FA, etc.) :	_____	_____	_____
Temperature Rise Rating	_____	_____	_____
Rated Voltage	_____	_____	_____
BIL	_____	_____	_____
Available Taps (% of rating)	_____	_____	_____
Load Tap Changer? (Y or N)	_____	_____	_____
Tap Settings	_____	_____	_____
IMPEDANCE	H-X	H-Y	X-Y
Percent	_____	_____	_____
MVA Base	_____	_____	_____
Tested Taps	_____	_____	_____
WINDING RESISTANCE	H	X	Y
Ohms	_____	_____	_____

CURRENT TRANSFORMER RATIOS

H \_\_\_\_\_ X \_\_\_\_\_ Y \_\_\_\_\_ N \_\_\_\_\_

PERCENT EXCITING CURRENT 100 % Voltage; \_\_\_\_\_ 110% Voltage \_\_\_\_\_

Supply copy of nameplate and manufacturer's test report when available.



**Electric Sample Form 79-1151B**

Sheet 1

APPLICATION

Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30  
Kilowatts Or Less

**Please Refer to Attached  
Sample Form**



# APPLICATION

## Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

### IMPORTANT NOTES:

- Customers may not operate their Generating Facility while interconnected to the PG&E system until they receive written permission from PG&E.
- For a non-exporting Generating Facility, RES-BCT facility, or NEM Generating technologies other than 30 kW or less solar or wind, Customers must submit the online Form 79-974 available at [www.pge.com/gen](http://www.pge.com/gen).

### Part I – Generating Facility Information and Responsible Parties

#### A. Customer and Generating Facility Information (\*as it appears on the PG&E bill):

Electric Service Agreement ID\*

Meter Number\*

Is there an electric vehicle charging on site at the above service address?  Yes  No

If yes, please indicate how many electric vehicles \_\_\_\_\_

#### B. Interconnection Application Type (check one):

- New NEM Generating Facility interconnection at an existing PG&E service.
- Modify existing PG&E approved Generating Facility interconnection (adding/removing/replacing equipment).
  - Must provide a Custom Single-Line Drawing (SLD) showing the original system and the modified system.
- New interconnection in combination with a new service.
  - An Application for Service must be completed. Additional fees may be required if a service or line extension is required in accordance with PG&E Electric Rules 15 and 16. Please contact PG&E at 1-800-PGE-5000.
  - If this account will be established in a new subdivision, attach a list of lots/addresses and provide the following:

Developer Name

Development Name

#### C. System Owner (check one):

- PG&E Customer Owned

If PG&E Customer Owned, please answer the following:

Property Assessed Clean Energy (PACE) Financed?  Yes  No

Indicate the System Cost paid by Customer: \$ \_\_\_\_\_

PACE financed by which entity? \_\_\_\_\_

If you have non-PACE financing or a lease, please fill in the information below.

Financial Institution/Lessor Name

Financial Institution/Lessor Address

City

State

Zip

- Third Party Owned

If Third Party Owned, please answer the following:

Claimed Federal Investment Tax Credit (ITC) Cost Basis: \$ \_\_\_\_\_

Name of Developer at the time of sale: \_\_\_\_\_

Contract Type:  PPA  Lease  Pre-Paid Lease  Other \_\_\_\_\_

#### Please complete this agreement in its entirety

† Information collected on this form is used in accordance with PG&E's Privacy Policy. The Privacy Policy is available at [pge.com/privacy](http://pge.com/privacy).



# APPLICATION

## Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

**D. Rebate Information:**

Did you participate in a California rebate program?  Yes  No

Please indicate the rebate program that you participated in: \_\_\_\_\_

Rebate Amount: \$ \_\_\_\_\_

**Part I – Generating Facility Information and Responsible Parties – Continued**

**E. Contractor Information** (List who is installing the system):  Check this box if self-installed

\_\_\_\_\_  
Company Name California Contractors State License Number

\_\_\_\_\_  
Company Address Phone Number

\_\_\_\_\_  
Email

**Home Improvement Salesperson (HIS) Registration Number Information**

Was a Home Improvement Salesperson (HIS) involved in the development of your project?

Yes  No

*California Public Utilities Commission Decision 21-02-026 requires “the Home Improvement Salesperson (HIS) registration number of solar providers who are required to have a HIS registration number, while enabling solar providers who are not required to have a HIS registration number to indicate they are exempt and to instead provide the applicable contractor’s license.”*

If you checked “Yes” above:

Please provide the Home Improvement Salesperson (HIS) registration number below.

Home Improvement Salesperson (HIS) registration number: \_\_\_\_\_

**F. Preparer of this Application** (if not the PG&E Customer, the Preparer must be authorized to act on behalf of the Customer on the Interconnection Agreement and Customer Authorization Form 79-1151A):

\_\_\_\_\_  
Company Name Preparer Name Date Prepared

**G. Customer Impacted by a Natural or Human-Made Disaster**

Customers who were taking service on the NEM tariff prior to the total or partial destruction of their system have the option to resume service on the same NEM tariff if a request for reapplication is received within two years from the date of destruction. To be eligible for this provision, all the following must be true:

1. You are the same PG&E customer of record pre-system destruction
2. You are now reapplying with a system that is sized to your most recent 12 months usage, or estimated usage that is determined by building size<sup>1</sup> (if applicable)
3. You are not operating the new (either completely new or partially new) system without written permission from PG&E

<sup>1</sup>Building Size Calculation: Sq Ft X 3.23. Note: 2 watts/sq ft x 1/1,000 watts x 8,760 hrs/yr x 0.19 solar capacity factor = 3.32



# APPLICATION

## Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

4. Your NEM Transition Period has not expired at the time of reapplication (see NEM Tariff)

Based on the above, select the appropriate box (check one):

- I am a Customer who was impacted by a Natural or Human-Made Disaster as described in the NEM Tariffs and the above statements are true. I will submit my application online at [yourprojects.pge.com](http://yourprojects.pge.com) and will include the complete system currently onsite on the single line diagram. If my previous system was destroyed, I will also state this on the single line diagram.
- I am either ineligible for this provision or this provision does not apply to my application. In either case, I will submit my application online at [yourprojects.pge.com](http://yourprojects.pge.com).

### Part II – Description of the Generating Facilities

**A. Variances from Distribution Interconnection Handbook (DIH) and Greenbook Requirements** (check one):  
 Generating Facilities must meet the DIH and Greenbook requirements, available at [www.pge.com/dih](http://www.pge.com/dih) and [www.pge.com/greenbook](http://www.pge.com/greenbook). A Variance Request must be submitted with the application for deviations, i.e. line-side tap, AC Disconnect > 10 ft from PG&E meter. (See Part III Section B for information on submitting Variance Request)

- The project meets the DIH and Greenbook Requirements and does not require a Variance Request.
- The project deviates from the DIH and Greenbook Requirements and I will include a Variance Request.

Note: Customers with Non-certified inverters or whose aggregate Generating Facility capacity exceeds 15% of the peak load on the distribution line section (or do not meet other Initial Review screens as described in Electric Rule 21) require a Supplemental Review which may result in further study, additional equipment, and/or other requirements. Customers will be notified if a Supplemental Review is required.

### Part II – Description of the Generating Facilities – Continued

#### B. Photovoltaic (PV) Generating Facility Information

To avoid application processing delays, the manufacturer and model numbers provided should be the same as they appear on the Go Solar California website: <https://www.energy.ca.gov/programs-and-topics/programs/solar-equipment-lists>.

- B.1 Mounting Method:**     Rooftop     Ground     Mixed
- B.2 Tracking Type:**     Fixed     Single-Axis     Dual-Axis     Mixed

If fixed, please indicate: Tilt: \_\_\_\_\_ degrees    Azimuth: \_\_\_\_\_ degrees

**B.3 Are Performance Monitoring and Reporting Services (PMRS) being utilized?**     Yes     No

Who is receiving the data (check all that apply):     Customer  
 Third Party (list name) \_\_\_\_\_

#### B.4 Photovoltaic Generator 1:

**Please complete this agreement in its entirety**



# APPLICATION

## Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

Inverter Manufacturer	Model Number	Nameplate Rating kW/unit	CEC <sup>B</sup> Rating kW/unit	Output Voltage	1 or 3 Phase	Qty
PV Panel Manufacturer	Model Number	Nameplate Rating kW/unit	PTC <sup>C</sup> Rating kW/unit	Total Nameplate Capacity kW		Qty

### B.4 Photovoltaic Generator 2:

Inverter Manufacturer	Model Number	Nameplate Rating kW/unit	CEC Rating kW/unit	Output Voltage	1 or 3 Phase	Qty
PV Panel Manufacturer	Model Number	Nameplate Rating kW/unit	PTC Rating kW/unit	Total Nameplate Capacity kW		Qty

### C. Wind Turbine Generating Facility Information

Check this box if the inverter is incorporated in the wind turbine. Then complete the Wind Turbine information below and identify the following: Output Voltage: \_\_\_\_\_(volts); Phase Type:  1  3

### Part II – Description of the Generating Facilities – Continued

Inverter Manufacturer	Model Number	Nameplate Rating kW/unit	CEC Rating kW/unit	Output Voltage	1 or 3 Phase	Qty
Wind Turbine Manufacturer	Model Number	Nameplate Rating kW/unit	CEC Rating kW/unit	Total Nameplate Capacity kW		Qty

### D. AC Disconnect Switch

Check this box if no A/C Disconnect Switch is applicable. See Part III, Section C for requirements.

AC Disconnect Manufacturer	Model Number	Rating (amps)	Qty

If applicable, is/are the AC Disconnect(s) less than 10 ft. of the PG&E electric meter?  Yes  No

<sup>A</sup> California Energy Commission (CEC) ratings are available at [www.consumerenergycenter.org](http://www.consumerenergycenter.org)

<sup>C</sup> PTC: PVUSA Test Conditions. PTC ratings are available at [www.consumerenergycenter.org](http://www.consumerenergycenter.org)

**Please complete this agreement in its entirety**

† Information collected on this form is used in accordance with PG&E's Privacy Policy.

The Privacy Policy is available at [pge.com/privacy](http://pge.com/privacy).



# APPLICATION

## Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

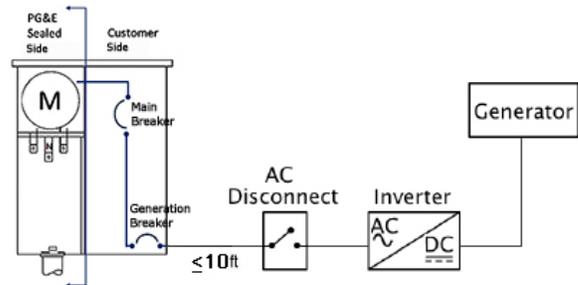
Note: PG&E's Electric and Gas Service Requirements, also known as the "Greenbook" requires the AC Disconnect Switch to be located 10 feet or less from PG&E's electric revenue meter at the point of common coupling or interconnection and easily seen from the panel. If the AC Disconnect Switch is greater than 10 feet or there is more than one AC Disconnect, a variance request must be submitted as outlined in Part II, Section A.

**E. Basic Single-Line Diagram (SLD) for Solar Projects (check one):**

- I certify that the SLD below and the PV equipment information in Part II accurately represents the Customer's service, the Generating Facility (and that there are no other Generator Facility(ies)) connected to the service, and the project does not require a Variance Request.

**Utility Service:** (if using the SLD to the right)

Panel Voltage (volts)	Main Breaker (amps)	PV Breaker Size (amps)



- I will submit a custom SLD for one or more of the following reasons: there is/are existing Generating Facility(ies) connected to the service, I am modifying an existing Generating Facility, the Basic SLD does not accurately reflect the project, or I am submitting a Variance Request. (See Part III Section D for Custom SLD details.)



# APPLICATION

## Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

### Part III – Interconnection Guidelines and Document Information

Note: Applications to interconnect systems located in San Francisco or Oakland may require additional analysis to determine whether or not their proposed installation is on PG&E's networked secondary system. Networked secondary systems are in place to provide heightened levels of reliability in densely populated areas and may affect the ability of PG&E to interconnect NEM customers. If the proposed installation is in San Francisco where the zip code is 94102, 94103, 94104, 94105, 94107, 94108, 94109, 94111 or 94133 or in Oakland where the zip code is 94607 or 94612, please see [www.pge.com/standardnem](http://www.pge.com/standardnem), under the labeled section "Which Customers Are Not Eligible For Standard NEM Interconnection" and the bullet "Secondary Network Areas In San Francisco and Oakland,".

#### A. Documents

In addition to this NEM Interconnection Application, the documents listed below are needed to ensure safe and reliable operation of PG&E's Distribution System and to confirm that Customer's interconnection has been performed in accordance with PG&E's tariffs. Additional forms are available on PG&E's website at [www.pge.com/standardnem](http://www.pge.com/standardnem).

##### Required Documents

- Net Energy Metering (NEM) Interconnection Agreement for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less and Customer Authorization Form 79-1151A.
- Copy of the final, signed, jurisdiction approval (building permit) for Customer's Generating Facility.

##### Additional Documents (if applicable)

- Variance Request (if project deviates from requirements in Part II Section A).
- Custom Single-Line Diagram (SLD) (if project does not meet Part II Section E basic SLD requirements).

Documents and requirements other than those listed above and/or fees *may* be required depending on the specifics of the planned Generating Facility.

#### B. Variance Request (if applicable)

The Customer or the Customer's Contractor can request a Variance Request review from PG&E if the project is unable to meet the requirements described in the Distribution Interconnection Handbook and Greenbook, available at [www.pge.com/dih](http://www.pge.com/dih) and [www.pge.com/greenbook](http://www.pge.com/greenbook). The Variance Request must be submitted with the Interconnection Application and include the following.

1. Description of the proposal for which the Customer is requesting approval.
2. Customer name and project address.
3. Copy of the Custom Single Line Diagram or electrical drawings (Include the equipment, location, and/or distances for the proposed work).
4. Color photos of the Customer's area or section for the proposed work.
5. Manufacturer specification drawings for unapproved equipment that the Customer is requesting an approval.

#### C. AC Disconnect Switch Guidelines

PG&E recommends that customers installing an inverter-based generator consider also installing an AC Disconnect Switch to facilitate maintenance of the Customer's equipment (i.e. inverter, PV arrays, etc.). The AC Disconnect Switch provides the additional benefit of allowing PG&E to isolate the Customer's generator from the utility's Distribution System without having to interrupt service to the customer's facility or residence.

Customers **are not required** to include an AC Disconnect Switch when the facility has a single-phase self-contained electric revenue meter (i.e. 0-320 amp panel). However, if the Customer does not install an AC Disconnect Switch, the revenue meter may be temporarily removed by PG&E due to an emergency or maintenance on PG&E's system to isolate the Customer's generator from the electric distribution system. Removal of the revenue meter will result in loss of electrical service to the Customer's facility or residence.

An AC Disconnect Switch **is required** for a Customer with:

- Inverter-based interconnections having a three-phase self-contained meter or a transformer-rated meter (i.e. all meter panels or switchboards employing the use of potential and current transformers).

**Please complete this agreement in its entirety**



# APPLICATION

## Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

- Non-inverter based generators, including rotating or machine-based generators - irrespective of whether the service meter configuration is transformer-rated or self-contained.
- Inverter and non-inverter based generators that do not have overcurrent protection at the point of interconnection.

### Part III – Interconnection Guidelines and Document Information – Continued

#### D. Custom Single-line Diagram (SLD) (if applicable)

The Custom SLD must include the information below for identified equipment.

1. Manufacturer, model number, nameplate rating, quantity:
  - a) Inverter(s), PV or wind turbine generators, AC Disconnect Switch, generation output meter and instrument transformers.
2. Electrical rating and operating voltages:
  - a) Service panel, circuit breaker, and other Generating Facility protective devices
3. Location of:
  - a) Customer's loads relative to the Generating Facility, and the interconnection with PG&E's Distribution System.
  - b) AC Disconnect Switch.
4. Description of how the power output from the inverter is connected to the main service panel via a branch breaker. The ampere rating of this branch breaker and the main service panel breaker must be compatible with the output rating of the Generating Facility. The output rating is based on the total nameplate rating of the inverter.

**E. Governing Authority.** This form at all times shall be subject to such modifications as the California Public Utilities Commission may direct from time to time in the exercise of its jurisdiction.

Please submit the Agreement and Customer Authorization and Application online at [www.pge.com/standardnem](http://www.pge.com/standardnem).



**Electric Sample Form No. 79-1151B-02**

Sheet 1

Application - Net Energy Metering (NEM2) Interconnection For Solar And/Or  
Wind Electric Generating Facilities Of 30 Kilowatts Or Less

**Please Refer to Attached  
Sample Form**



# APPLICATION

## Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

### IMPORTANT NOTES:

- Customers may not operate their Generating Facility while interconnected to the PG&E system until they receive written permission from PG&E.
- For a non-exporting Generating Facility, RES-BCT facility, or NEM2 Generating technologies other than 30 kW or less solar or wind, Customers must submit the online Form 79-1174-02 available at [www.pge.com/gen](http://www.pge.com/gen).

### Part I – Generating Facility Information and Responsible Parties

#### A. Customer and Generating Facility Information (\*as it appears on the PG&E bill):

Electric Service Agreement ID\*

Meter Number\*

#### B. Interconnection Application Type (check one):

- New NEM2 Generating Facility interconnection at an existing PG&E service.
- Modify existing PG&E approved Generating Facility interconnection (adding/removing/replacing equipment).
- Must provide a Custom Single-Line Drawing (SLD) showing the original system and the modified system.

#### C. System Owner (check one):

- PG&E Customer Owned

If PG&E Customer Owned, please answer the following:

Property Assessed Clean Energy (PACE) Financed?  Yes  No

PACE financed by which entity? \_\_\_\_\_

Indicate the System Cost paid by Customer: \$ \_\_\_\_\_

If you have non-PACE financing or a lease, please fill in the information below.

Financial Institution/Lessor Name \_\_\_\_\_

Financial Institution/Lessor Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

- Third Party Owned

If Third Party Owned, please answer the following:

Claimed Federal Investment Tax Credit (ITC) Cost Basis: \$ \_\_\_\_\_

Name of Developer at the time of sale: \_\_\_\_\_

Contract Type:  PPA  Lease  Pre-Paid Lease  Other \_\_\_\_\_

#### D. Rebate Information:

Did the Customer participate in a California rebate program?  Yes  No

Please indicate the rebate program that you participated in: \_\_\_\_\_

Rebate Amount: \$ \_\_\_\_\_

**Please complete this agreement in its entirety**

† Information collected on this form is used in accordance with PG&E's Privacy Policy.  
The Privacy Policy is available at [pge.com/privacy](http://pge.com/privacy).



# APPLICATION

## Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

### Part I – Generating Facility Information and Responsible Parties – Continued

**E. Contractor Information** (List who is installing the system):  Check this box if self-installed

Company Name	California Contractors State License Number		
Street Address	City	State	Zip
Email	Phone Number		

**Home Improvement Salesperson (HIS) Registration Number Information**

Was a Home Improvement Salesperson (HIS) involved in the development of your project?

- Yes       No

California Public Utilities Commission Decision 21-02-026 requires “the Home Improvement Salesperson (HIS) registration number of solar providers who are required to have a HIS registration number, while enabling solar providers who are not required to have a HIS registration number to indicate they are exempt and to instead provide the applicable contractor’s license.”

If you checked “Yes” above:

Please provide the Home Improvement Salesperson (HIS) registration number below.

Home Improvement Salesperson (HIS) registration number: \_\_\_\_\_

**F. Preparer of this Application** (if not the PG&E Customer, the Preparer must be authorized to act on behalf of the Customer on the Interconnection Agreement and Customer Authorization Form 79-1151-02A):

Company Name	Preparer Name	Date Prepared
--------------	---------------	---------------

### Part II – Description of the Generating Facilities

**A. Variances from Distribution Interconnection Handbook (DIH) and Greenbook Requirements** (check one):  
Generating Facilities must meet the DIH and Greenbook requirements, available at [www.pge.com/dih](http://www.pge.com/dih) and [www.pge.com/greenbook](http://www.pge.com/greenbook). A Variance Request must be submitted with the application for deviations, i.e. line-side tap, AC Disconnect > 10 ft from PG&E meter. (See Part III Section B for information on submitting Variance Request)

- The project meets the DIH and Greenbook Requirements and does not require a Variance Request.
- The project deviates from the DIH and Greenbook Requirements and I will include a Variance Request.

**B. Photovoltaic (PV) Generating Facility Information**

To avoid application processing delays, the manufacturer and model numbers provided should be the same as they appear on the Go Solar California website: <https://www.energy.ca.gov/programs-and-topics/programs/solar-equipment-lists>.

**B.1 Mounting Method:**     Rooftop       Ground       Mixed

**B.2 Tracking Type:**       Fixed       Single-Axis       Dual-Axis       Mixed

Please complete this agreement in its entirety



# APPLICATION

## Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

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If fixed, please indicate: Tilt: \_\_\_\_\_ degrees Azimuth: \_\_\_\_\_ degrees

**B.3 Are Performance Monitoring and Reporting Services (PMRS) being utilized?**  Yes  No

Who is receiving the data (check all that apply):  Customer

Third Party (list name) \_\_\_\_\_



# APPLICATION

## Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

### Part II – Description of the Generating Facilities – Continued

#### B.4 Photovoltaic Generator 1:

Inverter Manufacturer	Model Number	Nameplate Rating kW/unit	CEC <sup>A</sup> Rating kW/unit	Output Voltage	1 or 3 Phase	Qty
PV Panel Manufacturer	Model Number	Nameplate Rating kW/unit	PTC <sup>B</sup> Rating kW/unit	Total Nameplate Capacity kW		Qty

#### B.4 Photovoltaic Generator 2:

Inverter Manufacturer	Model Number	Nameplate Rating kW/unit	CEC Rating kW/unit	Output Voltage	1 or 3 Phase	Qty
PV Panel Manufacturer	Model Number	Nameplate Rating kW/unit	PTC Rating kW/unit	Total Nameplate Capacity kW		Qty

#### C. Wind Turbine Generating Facility Information

Check this box if the inverter is incorporated in the wind turbine. Then complete the Wind Turbine information below and identify the following: Output Voltage: \_\_\_\_\_(volts); Phase Type:  1  3

Inverter Manufacturer	Model Number	Nameplate Rating kW/unit	CEC Rating kW/unit	Output Voltage	1 or 3 Phase	Qty
Wind Turbine Manufacturer	Model Number	Nameplate Rating kW/unit	CEC Rating kW/unit	Total Nameplate Capacity kW		Qty

#### D. AC Disconnect Switch

Check this box if no A/C Disconnect Switch is applicable. See Part III, Section C for requirements.

AC Disconnect Manufacturer	Model Number	Rating (amps)	Qty

If applicable, is/are the AC Disconnect(s) within 10 ft. of the PG&E electric meter?  Yes  No

Note: PG&E's Electric and Gas Service Requirements, also known as the "Greenbook" requires the AC Disconnect Switch to be located 10 feet or less from PG&E's electric revenue meter at the point of common coupling or interconnection and easily seen from the panel. If the AC Disconnect Switch is greater than 10 feet or there is more than one AC Disconnect, a variance request must be submitted as outlined in Part II, Section A.

<sup>A</sup> California Energy Commission (CEC) ratings are available at [www.consumerenergycenter.org](http://www.consumerenergycenter.org)

<sup>B</sup> PTC: PVUSA Test Conditions. PTC ratings are available at [www.consumerenergycenter.org](http://www.consumerenergycenter.org)

**Please complete this agreement in its entirety**

# APPLICATION

## Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

**Part II – Description of the Generating Facilities – Continued**

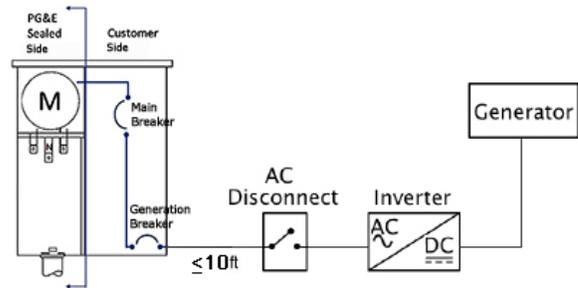
**E. Basic Single-Line Diagram (SLD) for Solar Projects (check one):**

I certify the following:

- 1) SLD below and the PV equipment information in Part II accurately represents the Customer's service,
- 2) the Generating Facility (and that there are no other Generator Facility(ies)) connected to the service, and
- 3) the project does not require a Variance Request.

**Utility Service:** (if using the SLD to the right)

Panel Voltage (volts)	Main Breaker (amps)	PV Breaker Size (amps)



I will submit a custom SLD for one or more of the following reasons: there is/are existing Generating Facility(ies) connected to the service, I am modifying an existing Generating Facility, the Basic SLD does not accurately reflect the project, or I am submitting a Variance Request.  
(See Part III Section D for Custom SLD details.)

**F. Customer Impacted by a Natural or Human-Made Disaster**

Customers who were taking service on the NEM 2 tariff prior to the total or partial destruction of their system have the option to resume service on the same NEM tariff if a request for reapplication is received within two years from the date of destruction. To be eligible for this provision, all the following must be true:

1. You are the same PG&E customer of record pre-system destruction
2. You are now reapplying with a system that is sized to your most recent 12 months usage, or estimated usage that is determined by building size<sup>C</sup> (if applicable)
3. You are not operating the new (either completely new or partially new) system without written permission from PG&E
4. Your NEM Transition Period has not expired at the time of reapplication (see NEM 2 Tariff)

Based on the above, select the appropriate box:

- I am a Customer who was impacted by a Natural or Human-Made Disaster as described in the NEM Tariffs and the above statements are true. I will submit my application online at [yourprojects.pge.com](http://yourprojects.pge.com) and will include the complete system currently onsite on the single line diagram. If my previous system was destroyed, I will also state this on the single line diagram.
- I am either ineligible for this provision or this provision does not apply to my application. In either case, I will submit my application online at [yourprojects.pge.com](http://yourprojects.pge.com).

<sup>C</sup>Building Size Calculation: Sq Ft X 3.23. Note: 2 watts/sq ft x 1/1,000 watts x 8,760 hrs/yr x 0.19 solar capacity factor = 3.32  
**Please complete this agreement in its entirety**



# APPLICATION

## Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

### Part III – Interconnection Guidelines and Document Information

Note: Applications to interconnect systems located in San Francisco or Oakland may require additional analysis to determine whether or not their proposed installation is on PG&E's networked secondary system. Networked secondary systems are in place to provide heightened levels of reliability in densely populated areas and may affect the ability of PG&E to interconnect NEM2 customers. If the proposed installation is in San Francisco where the zip code is 94102, 94103, 94104, 94105, 94107, 94108, 94109, 94111 or 94133 or in Oakland where the zip code is 94607 or 94612, please see [www.pge.com/standardnem](http://www.pge.com/standardnem), under the labeled section "Which Customers Are Not Eligible For Standard NEM Interconnection" and the bullet "Secondary Network Areas In San Francisco and Oakland."

#### A. Documents

In addition to this NEM2 Interconnection Application, the documents listed below are needed to ensure safe and reliable operation of PG&E's Electric System and to confirm that Customer's interconnection has been performed in accordance with PG&E's tariffs. Additional forms are available on PG&E's website at [www.pge.com/standardnem](http://www.pge.com/standardnem).

##### Required Documents

- Net Energy Metering (NEM2) Interconnection Agreement for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less and Customer Authorization Form 79-1151-02A.
- Copy of the final, signed, jurisdiction approval (building permit) for Customer's Generating Facility.

##### Additional Documents (if applicable)

- Variance Request (if project deviates from requirements in Part II Section A).
- Custom Single-Line Diagram (SLD) (if project does not meet Part II Section E basic SLD requirements).

Documents and requirements other than those listed above and/or fees *may* be required depending on the specifics of the planned Generating Facility.

#### B. Variance Request (if applicable)

The Customer or the Customer's Contractor can request a Variance Request review from PG&E if the project is unable to meet the requirements described in the Distribution Interconnection Handbook and Greenbook, available at [www.pge.com/dih](http://www.pge.com/dih) and [www.pge.com/greenbook](http://www.pge.com/greenbook). The Variance Request must be submitted with the Interconnection Application and include the following.

1. Description of the proposal for which the Customer is requesting approval.
2. Customer name and project address.
3. Copy of the Custom Single Line Diagram or electrical drawings (Include the equipment, location, and/or distances for the proposed work).
4. Color photos of the Customer's area or section for the proposed work.
5. Manufacturer specification drawings for unapproved equipment that the Customer is requesting an approval.

#### C. AC Disconnect Switch Guidelines

PG&E recommends that customers installing an inverter-based generator consider also installing an AC Disconnect Switch to facilitate maintenance of the Customer's equipment (i.e. inverter, PV arrays, etc.). The AC Disconnect Switch provides the additional benefit of allowing PG&E to isolate the Customer's generator from the utility's Electric System without having to interrupt service to the customer's facility or residence.

Customers **are not required** to include an AC Disconnect Switch when the facility has a single-phase self-contained electric revenue meter (i.e. 0-320 amp panel). However, if the Customer does not install an AC Disconnect Switch, the revenue meter may be temporarily removed by PG&E due to an emergency or maintenance on PG&E's system to isolate the Customer's generator from the electric distribution system. Removal of the revenue meter will result in loss of electrical service to the Customer's facility or residence.

An AC Disconnect Switch **is required** for a Customer with:

- Inverter-based interconnections having a three-phase self-contained meter or a transformer-rated meter (i.e. all meter panels or switchboards employing the use of potential and current transformers).
- Non-inverter based generators, including rotating or machine-based generators - irrespective of whether the service meter configuration is transformer-rated or self-contained.

**Please complete this agreement in its entirety**



# APPLICATION

## Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

### Part III – Interconnection Guidelines and Document Information - Continued

- Inverter and non-inverter based generators that do not have overcurrent protection at the point of interconnection.

#### D. Custom Single-line Diagram (SLD) (if applicable)

The Custom SLD must include the information below for identified equipment.

1. Manufacturer, model number, nameplate rating, quantity:
  - a) Inverter(s), PV or wind turbine generators, AC Disconnect Switch, generation output meter and instrument transformers.
2. Electrical rating and operating voltages:
  - a) Service panel, circuit breaker, and other Generating Facility protective devices
3. Location of:
  - a) Customer's loads relative to the Generating Facility, and the interconnection with PG&E's Electric System.
  - b) AC Disconnect Switch.
4. Description of how the power output from the inverter is connected to the main service panel via a branch breaker. The ampere rating of this branch breaker and the main service panel breaker must be compatible with the output rating of the Generating Facility. The output rating is based on the total nameplate rating of the inverter.

**E. Governing Authority.** This agreement at all times shall be subject to such modifications as the California Public Utilities Commission may direct from time to time in the exercise of its jurisdiction.

Please submit the Agreement and Customer Authorization and Application online at [www.pge.com/standardnem](http://www.pge.com/standardnem).



**Electric Sample Form No. 79-1174-02**  
Rule 21 Generator Interconnection Application

Sheet 1

**Please Refer to Attached  
Sample Form**



# RULE 21 GENERATOR INTERCONNECTION APPLICATION (Form 79-1174-02)

## Part I - Introduction and Overview

- A. Applicability:** This Generating Facility Interconnection Application (Application) is used to request the interconnection to Pacific Gas and Electric Company's (PG&E) Electric System (over which the California Public Utilities Commission (CPUC) has jurisdiction) one or more of the following<sup>1</sup> tariffs:
- (1) Non-Exporting Generating Facilities;
  - (2) NEM2 Solar (PV) (other than PV 30 KW or less)<sup>2</sup>; or RPS Generating Facilities
  - (3) NEM2 California Dept. of Corrections & Rehabilitation
  - (4) NEM2A – NEM2 Load Aggregation (under Schedule NEM2)
  - (5) NEM2MT- generating facilities subject to multiple tariff treatment
  - (6) RES-BCT (Renewable Energy Self-Generation Bill Credit Transfer) Generating Facilities;
  - (7) NEMFC / NEMFCA Net Energy Metering for Fuel Cells
  - (8) NEM2V – Virtual Net Energy Metering
  - (9) NEMVMASH (on a single Service Delivery Point, or for a Low Income Development)

Refer to PG&E's Electric Rule 21 and program tariffs to determine the specific requirements for interconnecting a Generating Facility. Capitalized terms used in this Application, and not otherwise defined herein, shall have the same meanings as defined in PG&E's Rule 21 and Rule 1.

Except as noted in the next paragraph, this Application may be used for any Generating Facility to be operated by, or for, a Customer and/or Interconnection Customer to supplement or serve part or all of its electric energy requirements that would otherwise be provided by PG&E, including distributed generation, cogeneration, emergency, backup, standby generation, and certain Net Energy Metered Generating Facilities. While Customers operating Generating Facilities isolated from PG&E's Electric System are not obligated to enter into an Interconnection Agreement with PG&E, parts of this Application will still need to be completed to satisfy PG&E's notice requirements for operating an isolated Generating Facility as specified in the California Health and Safety Code Section 119085 (b).

This Application may not be used to apply for interconnecting Generating Facilities used to participate in transactions where all, or a portion of, the electrical output of the Generating Facility is scheduled with the California Independent System Operator (CAISO). Such transactions may be subject to the jurisdiction of the Federal Energy Regulatory Commission (FERC) and require a different application available from PG&E.

**This Application is not applicable for incentives and/or rebates offered by the Energy Resources Conservation and Development Commission (CEC), the CPUC or any other entity. Please contact those agencies directly or on their respective websites:**

[www.energy.ca.gov](http://www.energy.ca.gov) and [www.cpuc.ca.gov](http://www.cpuc.ca.gov).

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<sup>1</sup> Also when included with Energy Storage (e.g., batteries), or when operating under the provisions of PU Code 218, where permitted.

<sup>2</sup> For Net Energy Metering Customers with Solar and/or Wind Electric Generating Facilities less than 30 kW that are not paired with Energy Storage, simpler, shorter forms are available from PG&E (i.e., Forms 79-1151-02 A and B). These forms are available on PG&E's website at <http://www.pge.com/gen>.

## RULE 21 GENERATOR INTERCONNECTION APPLICATION (Form 79-1174-02)

**B. Guidelines and Steps for Interconnection:** This Application must be completed and sent to PG&E along with the additional information indicated in Part II below to initiate PG&E's interconnection review of the proposed Generating Facility. When applicable per Rule 21, unless exempted by CPUC Decision, a non-refundable Interconnection Request fee shall be invoiced and must be paid by Interconnection Customer. Pursuant to PG&E's Rule 21, there may be additional study and other costs; see PG&E's Rule 21, Sections E.2.c and E.3., for more information regarding interconnection of a generator to PG&E's Electric System.

This document is only an Application. Upon acceptance of the Generating Facilities, PG&E will prepare an Interconnection Agreement for execution by the Interconnection Customer, the party that will be responsible for the Generating Facility. PG&E may also require an inspection and testing of the Generating Facility and installation of any related Interconnection Facilities prior to giving the Interconnection Customer written authorization to operate in parallel. **Unauthorized Parallel Operation may be dangerous and may result in injury to persons and/or may cause damage to equipment and/or property for which a Interconnection Customer/Customer may be liable!**

Please note, other approvals may need to be acquired, and/or other agreements may need to be formed with PG&E or regulatory agencies, such as the Air Quality Management Districts and local governmental building and planning commissions, prior to operating a Generating Facility. PG&E's authorization to operate in parallel does not satisfy the need for an Interconnection Customer to acquire such other approvals.

### Part II – Describing the Generating Facility and Host Customer's Electrical Facilities

**Required Documents:** Each of the following documents **is required to be submitted** before this application will be processed. Drawings must conform to accepted engineering standards and must be legible. Electronic documents are preferred.

1. A **Single-line drawing** showing the electrical relationship and descriptions of the significant electrical components such as the primary switchgear, secondary switchboard, protective relays, transformers, generators, circuit breakers, with operating voltages, capacities, and protective functions of the Generating Facility, the Customer's loads, and the interconnection with PG&E's Electric System. Please show the location of all required net generation electric output meter(s) and the A.C. manual operated disconnect switch on the single line drawing, when required.
2. **Site plans and diagrams** showing the physical relationship of the significant electrical components of the Generating Facility such as generators, transformers, primary switchgear/secondary switchboard, and control panels, the Customer's loads and the interconnection with PG&E's Electric System. Please show the location of all required net generation electric output meter(s) and the A.C. manual operated disconnect switch on the site plans, when required.
3. **Disconnect Switch Specification Sheet** - as required in Rule 21 Section H.1.d, along with the disconnect switch specification sheet.

PG&E allows only one AC Disconnect for a generating facility but does make exceptions upon review and approval. Please provide a Variance Letter explaining why multiple AC disconnect switches are needed. This Variance Request will be reviewed in parallel with the Engineering Review.

## RULE 21 GENERATOR INTERCONNECTION APPLICATION (Form 79-1174-02)

4. **Variance Request** - A variance request will be required for anything outside Electric Rule 21<sup>3</sup>, PG&E's Greenbook<sup>4</sup>, or PG&E's Distribution or Transmission Interconnection Handbooks<sup>5,6</sup> stated requirements. (See links below)
5. **Transformer nameplate information** - Provide **transformer nameplate information** (voltages, capacity, winding arrangements, connections, impedance, et cetera), if transformers are used to interconnect the Generating Facility with PG&E's Electric System,
6. **Transfer switch/scheme documentation** - If used to interconnect the Generating Facility with PG&E Electric System, Documentation shall include component descriptions, capacity ratings, and a technical description of how the transfer scheme is intended to operate.
7. **Protective relay documentation** If used to control the interconnection, documentation shall include protection diagrams or elementary drawings showing relay wiring and connections, proposed relay settings, and a description of how the protection scheme is intended to function.

### Part III Application Appendices

**Application Instructions:** Complete this application for the complete Generating Facility and enter this information into PG&E's web-based form. (PG&E strongly recommends preparing all information and materials before starting the online application.) The online web-based form can be found at:

[https://www.pge.com/en\\_US/for-our-business-partners/interconnection-renewables/interconnections-renewables.page?ctx=large-business](https://www.pge.com/en_US/for-our-business-partners/interconnection-renewables/interconnections-renewables.page?ctx=large-business)

Questions concerning PG&E's Online Application process can be directed to the Electric Generation Interconnection Department at [rule21gen@pge.com](mailto:rule21gen@pge.com).

For each new generating facility you are applying to interconnect, please complete and submit the applicable appendices.

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<sup>3</sup> Rule 21 can be found at: [https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC\\_RULES\\_21.pdf](https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_RULES_21.pdf)

<sup>4</sup> PG&E's Greenbook can be found at: <http://www.pge.com/greenbook/>

<sup>5</sup> Distribution Interconnection Handbook (DIH) can be found at: [https://www.pge.com/en\\_US/large-business/services/alternatives-to-pge/distribution-handbook.page](https://www.pge.com/en_US/large-business/services/alternatives-to-pge/distribution-handbook.page)

<sup>6</sup> Transmission Interconnection Handbook (TIH) can be found at: [https://www.pge.com/en\\_US/large-business/services/alternatives-to-pge/third-party-electric-options/electric-transmission-services/transmission-interconnection-handbooks.page](https://www.pge.com/en_US/large-business/services/alternatives-to-pge/third-party-electric-options/electric-transmission-services/transmission-interconnection-handbooks.page)

**Part IV Attachments / On-Line Form - Overview**

Table 1 - Summary of the attachment to this form.

		Attachment	Project Type
	1	A	Customer Project Information
EXPORT	2	B	Non Export
	3	C	Export
TECHNOLOGY	4	D	Solar (PV) Only
	5	E	Wind Only
	6	F	Machine-Based Only
	7	G	Fuel Cell
	8	H	Energy Storage Only
TARIFF PROGRAM	9	I	RES-BCT
	10	J	NEM2A
	11	K	NEMFCA
	12	L	NEM2V
	13	M	NEMVMASH
	14	N	NEMVMASH Development

## RULE 21 GENERATOR INTERCONNECTION APPLICATION (Form 79-1174-02)

Table 2 below summarizes which attachments to this form will be required for each tariffed program.

Table 2 – New Application Form/Attachments as they apply to PG&E’s Various Tariffed Programs

Category			Non-Export	NEMEXP	RES-BCT	NEM2A	NEMFC	NEM2V	NEMVMASH
	Main (79-1174-02)	Customer info	Black	Black	Black	Black	Black	Black	Black
	A	Customer & Project info	Black	Black	Black	Black	Black	Black	Black
Rule 21 - must complete one of these Attachments	B	Non-export	Grey	White	White	White	White	White	White
	C	Export	Grey	Black	Black	Black	Black	Black	Black
Each generating facility must complete one corresponding to technology	D	Solar	Grey	Grey	Grey	Grey	White	Grey	Black
	E	Wind	Grey	White	White	White	White	Grey	White
	F	Machine	Grey	(1)	(1)	(1)	White	(1)	White
	G	Fuel Cell	Grey	(1)	(1)	(1)	(2)	(1)	White
	H	Storage	Grey	(3)	(3)	(3)	(3)	White	White
Complete Attachment that corresponds to tariff program for a generating facility	I	RES-BCT	White	White	Black	White	White	White	White
	J	NEM2A	White	White	White	Black	White	White	White
	K	Fuel Cell Aggregation	White	White	White	White	Black	White	White
	L	NEM2V	White	White	White	White	White	Black	White
	M	NEMVMASH Single building	White	White	White	White	White	White	Black
	N	NEMVMASH development	White	White	White	White	White	White	Black

Black – must be complete.

Grey – at least one option in category must be selected

Note (1) – must be fueled with a renewable (RPS-Eligible) fuel.

Note (2) – may be fueled with a non-renewable fuel.

Note (3) – treatment consistent with Decision 14-05-033, if NEM paired.

If an applicant’s project has multiple generating facilities, they would need to complete all forms/screens relevant for each generating facility in technology and tariff program (e.g. for NEM2MT).



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 4

**APPLICABILITY:** Schedule NEM applies also to specified net energy metering eligible (NEM-eligible) generators in a generating facility comprised of multiple NEM- and non-NEM-eligible generators, served through the same Point of Common Coupling (PCC), where the NEM-eligible generating capacity is not more than 1 MW, or in the case of the CDCR or Armed Forces, for CDCR and Armed Forces accounts satisfying Special Condition 8 or 9, respectively. Such facilities will be referred to as Multiple Tariff Facilities, and any group of generators within such a facility that is subject to the same tariff provisions for billing and metering purposes will be referred to as a Constituent Generator Group. In order to be eligible for this rate schedule in a Multiple Tariff Facility, the customer-generator must meet all the requirements of Special Condition 4 for the schedule NEM-eligible generator, and must also meet any other applicable tariffs.

(Cont'd.)

Due to the complexity of Load Aggregation Arrangements and/or Multiple Tariff Facilities NEM generating facilities interconnecting under the provisions of Special Conditions 4 and 7 may require additional review and/or interconnection facilities and other equipment, and may incur interconnection costs, as provided for in electric Rule 21.

CDCR and Armed Forces Eligible Customer Generators as defined in Special Condition 8 and 9, respectively, are subject to Network and/or Distribution upgrade costs in accordance with Rule 21 Section D.13.e.

A Customer who owns, rents or leases a premises that includes solar and/or wind turbine electrical generating facilities, or a hybrid of both with a capacity of 30kW or less, that were previously approved by PG&E for NEM interconnection prior to the Customer moving in and/or taking electric service with PG&E (Change of party Customer) will take service on this tariff as long as the requirements of this section are met. To be eligible, the Change of party Customer must: 1) ensure that the generating facility is compliant with all applicable safety and performance standards as delineated in PG&E's Electric Rule 21 and other applicable tariffs; 2) understand that PG&E may from time to time release to the California Energy Commission and/or the California Public Utilities Commission, information regarding the Change of party Customer's facility, including Change of party Customer's name and Generating Facility location, capacity and operational characteristics. Any type of Renewable Electrical Generation Facility other than a solar and/or wind turbine electrical generating facilities, or a hybrid of both with a capacity of 30kW or less, may at PG&E's request be required to complete and submit to PG&E a new Interconnection Agreement (79-1220) and/or Affidavit (Appendix C). (T)

Change of party Customers making any modification to previously approved PG&E NEM solar and/or wind turbine electrical generating facilities or other Renewable Electrical Generation Facility are not eligible for this provision and must complete the interconnection process in Special Condition 3 of this tariff.

Change of party Customers also must agree to comply with all rules and requirements of PG&E's Net Energy Metering tariffs.

When the builder/developer of a subdivision sells a new home during the NEM application process, after the builder/developer completes the Net Energy Metering Application and Interconnection Agreement and otherwise meets all of PG&E's requirements for the NEM project, but prior to PG&E providing final written approval for Parallel Operation on Schedule NEM, PG&E may treat the new home owner/Customer as a Change of-party Customer, as defined above.

(Continued)



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 12

SPECIAL  
CONDITIONS:  
(Cont'd.)

3. INTERCONNECTION: Prior to receiving approval for Parallel Operation, the customer-generator must submit a completed PG&E application form and interconnection agreement as follows:

Rate Option	Application	Interconnection Agreement	
NEMS	For Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less:  <i>Application - Net Energy Metering Interconnection for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less (Form 79-1151B)<sup>3</sup></i>	<i>Agreement and Customer Authorization – Net Energy Metering Interconnection for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less (Form 79-1151A)<sup>3</sup></i>	
NEMEXP	For Solar and/or Wind Net Energy Metering Generating Facilities of 1,000 Kilowatts or Less, other than Facilities of 30 Kilowatts or Less:  <i>Online Rule 21 Generator Interconnection Application, (Form 79-1174-02)</i>	<i>Interconnection Agreement for Net Energy Metering of Solar or Wind Electric Generating Facilities of 1,000 Kilowatts or Less, other than Facilities of 30 Kilowatts or Less (Form 79-1220)</i>	(T)
	For Renewable Electrical Generating Facilities other than Solar and/or Wind Electric Generating Facilities of 1,000 Kilowatts or Less:  <i>(same as for Solar and/or Wind NEMEXP)</i>	<i>Interconnection Agreement for Net Energy Metering For A Renewable Electrical Generation Facility Of 1,000 Kilowatts Or Less (Form 79-1220)</i>	(T)
NEMEXPM	For all other commercial, industrial customer-generators, and agricultural customers billed monthly under Special Condition 2 with (i) Solar and/or Wind Generating Facilities of 1,000 Kilowatts or Less, other than Facilities of 30 Kilowatts or Less, (ii) or any other Renewable Electrical Generation Facility of 1,000 Kilowatts or Less:  <i>(same as for NEMEXP)</i>	<i>(same as for NEMEXP)</i>	
NEMMT	For customer-generators taking service as a Multiple Tariff Facility under Special Condition 4 of this tariff:  <i>Online Rule 21 Generator Interconnection Application (Form 79-1174-02)</i>	<i>Generating Facility Interconnection Agreement (Multiple Tariff) (Form 79-1069)</i>	(T)
NEM Inspection Report	To accompany a new interconnection agreement, as required under Special Condition 6 of this tariff:	<i>NEM/NEMVMASH Inspection Report – (Form 79-1125)</i>	

<sup>3</sup> Both the Agreement and Customer Authorization (79-1151A) and Application (79-1151B) forms must have been submitted before PG&E will issue the Permission to Operation (PTO) letter. Information in the Application can be submitted by the Company or Customer in an electronic format, subject to approval by PG&E.

(Continued)



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 13

SPECIAL  
CONDITIONS:  
(Cont'd.)

3. INTERCONNECTION (Cont'd):

Rate Option	Application	Interconnection Agreement	
NEMPS	For NEMPS (Special Condition 8) for projects that meet NEM integrity requirements		
	<i>Online Rule 21 Generator Interconnection Application (Form 79-1174-02)</i>	<b>79-1193 - AGREEMENT AND CUSTOMER AUTHORIZATION Net Energy Metering (NEM) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less with Energy Storage of 10 Kilowatts Or Less or Energy Storage with Power Control System Certification</b>	(T)
NEMCDCR	See Special Condition 8		
NEMUSAF	See Special Condition 9		

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.

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 Renewable Electric Generation Facility. However, a customer may not subsequently add load to that additional service, and if the Renewable Electrical Generation Facility is removed, the additional service, may not be converted to a load account.

(Continued)



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 23

SPECIAL  
CONDITIONS:  
(Cont'd.)

8. California Department of Corrections and Rehabilitation (CDCR)

“Eligible customer-generator” includes the Department of Corrections and Rehabilitation using a renewable electrical generation technology, or a combination of renewable electrical generation technologies, with a total capacity of not more than eight megawatts, that is located on the department’s owned, leased, or rented premises, and is interconnected and operates in parallel with the electrical grid, and is intended primarily to offset part or all of the facility’s own electrical requirements.

The amount of any wind generation exported to the electrical grid shall not exceed 1.35 megawatt at any time. CDCR Eligible Customer Generators are subject to Network and/or Distribution upgrade costs in accordance with Rule 21 Section D.13.e.

CDCR shall use Interconnection Application Form 79-1174-02 to apply under this Special Condition. In addition to submitting the application form, CDCR will notify PG&E at rule21gen@pge.com of the Generating Facility’s size, and if applicable, any allocation between NEM and non-NEM generation.

(T)

9. Armed Forces

For the purposes of this section the Armed Forces includes the United States Army, Navy, Air Force, Marine Corps, and Coast Guard,

Eligible customer-generators pursuant to PUC 2827(b)(4)(C)(ii) shall include a base or facility” if it is an establishment under the jurisdiction of the Armed Forces, is an “eligible customer-generator” if the base or facility uses a renewable electrical generation facility, or a combination of those facilities, that:

(a) is located on premises owned, leased, or rented by the Armed Forces base or facility, and

(b) is interconnected and operates in parallel with the electrical grid,

(c) is intended primarily to offset part or all of the base or facility’s own electrical requirements, and

(d) has a generating capacity that does not exceed the lesser of (i) 12 megawatts or (ii) one megawatt greater than the minimum load of the base or facility over the prior 36 months, and

(Continued)



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 24

SPECIAL  
CONDITIONS:  
(Cont'd.)

9. Armed Forces (Cont'd.)

(e) Unless prohibited by federal law, a renewable electrical generation facility shall not be eligible for net energy metering for privatized military housing pursuant to this subparagraph if the renewable electrical generation facility was procured using a sole source process. A renewable electrical generation facility procured using best value criteria, if otherwise eligible, may be used for net energy metering for privatized military housing pursuant to this subparagraph. For these purposes, "best value criteria" means a value determined by objective criteria and may include, but is not limited to, price, features, functions, and life-cycle costs. Armed Forces applicant will need to attest to this using Form 79-978A.

Customer-generators meeting all of the above condition will be referred to as Armed Forces customer generators.

Armed Forces customer generators shall use the Application and Interconnection Form 79-1174-02 to apply under this Special Condition. In addition to submitting the application form, Armed Forces will notify PG&E at **rule21gen@pge.com** of the Generating Facility's size, and if applicable, any allocation between NEM and non-NEM generation.

(T)



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

SPECIAL  
CONDITIONS:  
(Cont'd.)

11. NEM Paired Storage

c. Types of NEM Paired Storage

1) Integrated Storage: (Cont'd.)

Note that, for battery-based storage, the storage device must **only** be capable of storing energy from the REGF to be considered Integrated Storage.

Integrated Storage apply to both AC-Coupled and DC-Coupled storage systems that satisfy the definition of "No Grid Charging" above. The verification testing procedure is outlined in the PG&E Distribution Generation Interconnection Handbook (DIH).

<u>INTEGRATED STORAGE</u> (By definition the storage device must only be capable of storing energy from the REGF)				
SCENARIO	Billed As	Interconnection Agreements	Inter-connection Costs	Case
AC Coupled Or DC Coupled	billed as if storage and REGF were all one generator (e.g. NEMS, NEMEXP)	<b>≤ 1 MW</b> apply with 79-1174-02 and Interconnection agreement 79-1193	Per 5.i	1A

(T)

2) Directly Connected:

Directly Connected NEM Paired Storage is defined in the RPS guidelines as meeting the following requirements:

(i) The storage device is directly connected to the REGF 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

(ii) The storage device must be operated as part of the NEM eligible facility.

Note that the storage device is **not** required to be exclusively charged by the REGF.

(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.

(T)

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 Grid Export

(Continued)



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 30

SPECIAL  
CONDITIONS:  
(Cont'd.)

11. NEM Paired Storage

c. Types of NEM Paired Storage

2) Directly Connected: (Cont'd.)

- (i) Large AC Coupled storage system ("Large NEM-eligible GFs") (Cont'd.)

Large NEM-eligible GFs must apply with 79-1174-02, either complete interconnection agreement Form 79-1193 (solar and/or wind electric facilities of 30kW or less) or Form 79-1069 (all other REGF with a storage system configurations), and will be billed as described in Section 3.(ii) of this special condition.

(T)

- (ii) Small AC-Coupled storage systems ("Small NEM-eligible GFs")

Small NEM-eligible Generating Facilities (GFs) are NEM-eligible GFs paired with storage sized 10 kW or smaller. For small NEM-eligible GFs, the storage device is not required to be sized to the customer's demand or the NEM generator. Small NEM-eligible GFs have the option to install metering as required for Large NEM-eligible GFs to be billed as described in Section 3.(ii) of this special condition. Otherwise, it will be billed using the estimation methodology describe in Section 3.(i) of this special condition.

Small NEM-eligible GFs must apply with 79-1174-02, either complete interconnection agreement Form 79-1193 (solar and/or wind electric facilities of 30kW or less) or Form 79-1069 (all other REGF with a storage system configurations), when the NEM-eligible GF exceeds 30kW.

(T)

(Continued)



**ELECTRIC SCHEDULE NEM2  
NET ENERGY METERING SERVICE**

Sheet 13

SPECIAL  
CONDITIONS:  
(Cont'd.)

3. INTERCONNECTION: Prior to receiving approval for Parallel Operation, the customer-generator must submit a completed PG&E application form and interconnection agreement as follows:

Rate Option	Application	Interconnection Agreement
NEM2S	For Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less:  <i>Application - Net Energy Metering (NEM2) Interconnection for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less (Form 79-1151B-02)<sup>4</sup></i>	<i>Agreement and Customer Authorization – Net Energy Metering (NEM2) Interconnection for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less (Form 79-1151A-02)<sup>4</sup></i>
NEM2EXP NEM2EXPM	For Solar and/or Wind Net Energy Metering (NEM2) Generating Facilities of 1,000 Kilowatts or Less, other than Facilities of 30 Kilowatts or Less:  <i>Generating Facility Interconnection Application, (Form 79-1174-02)</i>	<i>Interconnection Agreement for Net Energy Metering (NEM2) of Solar or Wind Electric Generating Facilities of 1,000 Kilowatts or Less, other than Facilities of 30 Kilowatts or Less (Form 79-1220)</i>
	For Net Energy Metering (NEM2) non-Solar and/or Wind Generating Facilities of any size, and Solar and/or Wind Generating Facilities greater than 1,000 kW:  <i>Generating Facility Interconnection Application, (Form 79-1174-02)</i>	<i>Interconnection Agreement For Net Energy Metering (NEM2) non-Solar and/or Wind Generating Facilities of any size, and Solar and/or Wind Generating Facilities greater than 1,000 kW (Form 79-1198-02)</i>

(T)

<sup>4</sup> Both the Agreement and Customer Authorization (79-1151A-02) and Application (79-1151B-02) forms must have been submitted before PG&E will issue the Permission to Operation (PTO) letter. Information in the Application can be submitted by the Company or Customer in an electronic format, subject to approval by PG&E.

(Continued)



**ELECTRIC RULE NO. 21  
GENERATING FACILITY INTERCONNECTIONS**

Sheet 55

- E. INTERCONNECTION REQUEST SUBMISSION PROCESS (Cont'd.)
  - 2. INTERCONNECTION REQUEST PROCESS (Cont'd.)
    - c. Applicant Completes an Interconnection Request (Cont'd.)

**TABLE E.1**

**Summary of Interconnection Request Fees, Deposits and Exemptions**

Generating Facility Type	Interconnection Request Fee	Supplemental Review Fee	Detailed Study Deposit	Additional Commissioning Test Verification	Cost Envelope Option Deposit****	Modifications Fee (Table Ee.1) *****
Non-Net Energy Metering and > 1 MW NEM-2	\$800	\$2,500*	For a Generating Facility with a Gross Nameplate Rating of 5 MW or less and applying to the Independent Study Process, \$10,000 for a System Impact Study or the DGS Phase I Interconnection Study in the case of the Distribution Group Study Process; and \$15,000 for an Interconnection Facilities Study or DGS Phase II Interconnection Study in the case of the Distribution Group Study Process.  For a Generating Facility with a Gross Nameplate Rating above 5 MW, \$50,000 plus \$1,000 per MW of electrical output of the Generating Facility, or the increase in electrical output of the existing Generation Facility, as applicable, rounded up to the nearest whole MW, up to a maximum of \$250,000.	\$150/Person Hour**	\$2,500	\$0
≤ 1 MW NEM-2***	\$145	\$0	\$0	N/A	\$2,500	\$0
NEM-1	\$0	\$0	\$0	N/A	\$2,500	n/a
Non-NEM Solar ≤ 1MW*****	First \$5,000 of study fees waived			\$150/Person Hour**	\$2,500	\$0

\* Optional \$1,000 additional fault current study fee pursuant to Section F.2.c.ii. Pursuant to D. 20-09-035, Applicants have the option to pre-pay the non-refundable Supplemental Review Fee (such as concurrently with the Interconnection Request fee) or separately upon completion of the Initial Review.

\*\* Plus additional costs for travel, lodging and meals.

\*\*\* Applicants that participate in the Single-Family Affordable Solar Homes (SASH) program are exempt from the Interconnection Request fee.

\*\*\*\* Interconnection Requests that have selected the Cost Envelope Option and that subsequently qualify for and pass the Fast Track Process evaluation, as well as NEM Generating Facilities and Solar ≤ 1 MW Generating Facilities evaluated under the Independent Study Process, must provide the Cost Envelope Option deposit in accordance with Section F.7 to remain eligible for the Cost Envelope Option.

\*\*\*\*\* The fee will be set to \$0 for now, until PG&E submits a new Advice Letter to increase it. Note: the fee does not apply to NEM-1 nor NEMFC by statute. SASH is also exempt from this fee per D. 16-01-044.

\*\*\*\*\*Solar ≤ 1MW that does not sell power to Distribution Provider (per D.01-07-027) nor participate in NEM-1 or NEM-2.

(Continued)



**ELECTRIC RULE NO. 21**  
**GENERATING FACILITY INTERCONNECTIONS**

Sheet 72

**Ee. MODIFICATION TO INTERCONNECTED GENERATING FACILITIES**

**1. MODIFICATIONS TO EXISTING EQUIPMENT (D.19-03-013 - Type II)**

Certain non-material modifications to existing facilities are permitted as described below in Tables Ee.1, 2 and 3. Modification requests shall incur any incremental fees as noted below. From the date of the proposed modification request is received, the Distribution Provider shall process the request within:

- (a) ten (10) Business Days if no re-study is required
- (b) twenty (20) Business Days if a re-study is required

<b>Table Ee.1 – Replacing existing equipment</b>				
Description of Modification	Notification Required?	Interconnection request is required?	Proceed without PG&E approval?	Fee (See table E.1)
Replace equipment with exact same equipment type	No	No	Yes	n/a
Replace with “like-for-like,” <sup>4</sup> where: 1. system output does not exceed what is listed in the original interconnection agreement and 2. operating mode is not adjusted.	Yes	No	Yes	Modification Fee in Table E.1 <sup>1</sup>
Replacement increases nameplate capacity of the system, but which employ inverter power controls that limit the real power output to the inverter listed size in the original agreement.	Increases nameplate to <100kw <sup>2</sup>	Yes	No	Modification Fee in Table E.1 <sup>1</sup>
	Increases nameplate to >100kw and ≤ 110% of original capacity	Yes	No	Modification Fee in Table E.1 <sup>1</sup>
	Increase nameplate to > 100kw and > 110% of original capacity	No	Yes	E.1 <sup>3</sup>
Replacing equipment such that the system capacity increases and no inverter power controls are employed to limit the real power output to the inverter listed size in the original agreement	No	Yes	No	E.1 <sup>3</sup>
All other scenarios	No	Yes	No	E.1

<sup>1</sup> See Modification Fees in Table E.1.

<sup>2</sup> For projects increasing capacity to less than or equal to 100 kilowatt (kW), pending the creation of certification schemes for inverter power controls (software/firmware) to limit export (per D. 19-03-013, OP6).

<sup>3</sup> “E.1” refers to applicable charges/fees in Rule 21 Table E.1 for a new application.

<sup>4</sup> Like-for-Like is defined in Section C.

(Continued)



**ELECTRIC RULE NO. 21**  
**GENERATING FACILITY INTERCONNECTIONS**

Sheet 284

<b>Appendix A</b> Forms Associated with Generator Interconnection Tariffs Subject to Rule 21			
Form Number	Title	Associated Tariffs	Use Guidance
<b>AUTHORIZATION TO RECEIVE CUSTOMER INFORMATION</b>			
79-1095	Authorization to Receive Customer Information or Act Upon a Customer's Behalf	Rule 21	Authorization for Third Party
<b>PRE-APPLICATION REQUEST</b>			
79-1181	Rule 21 Pre-Application Report Request	Rule 21	For Generator Developer to request basic info about local distribution circuit
<b>COST ENVELOPE</b>			
79-1182	Cost Envelope Option Non-NEM Request	Rule 21	Non-NEM Customer Only
79-1183	Cost Envelope Option Non-NEM Agreement Appendix	Rule 21	Non-NEM Customer Only
79-1184	Cost Envelope Option NEM Request	Rule 21	<b>NEM Customer Only</b>
79-1185	Cost Envelope Option NEM Agreement Appendix	Rule 21	<b>NEM Customer Only</b>
<b>GENERATOR INTERCONNECTION APPLICATION (most Rule 21 programs)</b>			
79-1174-02	Rule 21 Generator Interconnection Application	<ul style="list-style-type: none"> <li>• NEM/NEM2</li> <li>• NEMEXP</li> <li>• NEMMT</li> <li>• NEMA</li> <li>• NEMFC</li> <li>• NEMV/NEMV2,</li> <li>• NEMVMASH/ NEM2VMSH</li> <li>• NEM2VSOM</li> <li>• RES-BCT</li> <li>• Rule 21</li> <li>• Export Non-export</li> </ul>	Rule 21 customer interconnection application form for expanded net-energy metered (all NEM > 30 kw and all non-Solar/Wind NEM), NEMFC, NEMV, NEMVMASH, RES-BCT, and non-export and limited export Rule 21 generation. (Standard NEM for solar and/or wind ≤ 30 kw will continue to use the 79-1151B application.)
79-1174-02A	Rule 21 Generator Interconnection Application – Attachment A Customer and Project Information	NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21	Attachment A to Form 79-1174-02
79-1174-02B	Rule 21 Generator Interconnection Application – Attachment B Non-Export	NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21	Attachment B to Form 79-1174-02

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**ELECTRIC RULE NO. 21**  
**GENERATING FACILITY INTERCONNECTIONS**

Sheet 285

<b>Appendix A (Cont'd.)</b> Forms Associated with Generator Interconnection Tariffs Subject to Rule 21			
Form Number	Title	Associated Tariffs	Use Guidance
<b>GENERATOR INTERCONNECTION APPLICATION (most Rule 21 programs) (Cont'd)</b>			
79-1174-02C	Rule 21 Generator Interconnection Application – Attachment C Export	NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21	Attachment C to Form 79-1174-02
79-1174-02D	Rule 21 Generator Interconnection Application – Attachment D Solar (PV) Technology	NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21	Attachment D to Form 79-1174-02
79-1174-02E	Rule 21 Generator Interconnection Application – Attachment E Wind Turbine Technology	NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21	Attachment E to Form 79-1174-02
79-1174-02F	Rule 21 Generator Interconnection Application – Attachment F Machine-Based Technology	NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21	Attachment F to Form 79-1174-02 Rule 21 Generator Interconnection Application – Attachment F Machine-Based Technology
79-1174-02G	Rule 21 Generator Interconnection Application – Attachment F Machine-Based Technology	NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21	Attachment G to Form 79-1174-02
79-1174-02H	Rule 21 Generator Interconnection Application – Attachment H Energy Storage Technology	NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21	Attachment H to Form 79-1174-02
79-1174-02I	Rule 21 Generator Interconnection Application – Attachment I RES-BCT	NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21	Attachment I to Form 79-1174-02

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**ELECTRIC RULE NO. 21**  
**GENERATING FACILITY INTERCONNECTIONS**

<b>Appendix A (Cont'd.)</b> Forms Associated with Generator Interconnection Tariffs Subject to Rule 21			
Form Number	Title	Associated Tariffs	Use Guidance
<b>STANDARD NEM (Cont'd)</b>			
79-1151B	Application - Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less	Standard NEM	<b>NEM Customer Only</b> Application to be used with 79-1151A Interconnection Agreement
79-1151B-02	Application - Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less	Standard NEM2	NEM2 Application to be used with 79-1151A-02 Interconnection Agreement
79-1217	Agreement And Customer Authorization Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less With Energy Storage Of 10 Kilowatts Or Less	Standard NEM2 + ≤ 10kw storage	Customer Authorization for Third Party Information
79-1193	Agreement and Customer Authorization Net Energy Metering (NEM) Interconnection for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less: with Energy Storage of 10 Kilowatts or Less	Standard NEM + ≤ 10 storage	<b>NEM Customer Only</b> For NEM pair storage scenarios using Power Control Systems to ensure NEM integrity
79-1193-02	Agreement and Customer Authorization Net Energy Metering (NEM2) Interconnection for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less: with Energy Storage of 10 Kilowatts or Less	Standard NEM2 + ≤ 10 storage	For NEM2 pair storage scenarios using Power Control Systems to ensure NEM integrity
79-1218	Agreement And Customer Authorization Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less For New Residential Construction	Standard NEM2 for New Construction	Customer Authorization for Third Party Information for New Residential Construction

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**ELECTRIC RULE NO. 21**  
**GENERATING FACILITY INTERCONNECTIONS**

Sheet 288

<b>Appendix A (Cont'd.)</b> Forms Associated with Generator Interconnection Tariffs Subject to Rule 21			
Form Number	Title	Associated Tariffs	Use Guidance
<b>EXPANDED NEM</b>			
79-1220	Interconnection Agreement for Net Energy Metering (NEM) of a Renewable Electric Generating Facility of 1,000 kW or Less, Except Solar or Wind Facilities of 30 kW or Less, and Virtual Net Energy Metering (NEMV) of a Renewable Electric Generating Facility of 1,000 kW or Less.	Expanded NEM	<b>NEM Customer Only</b> Interconnection Agreement
79-1220-02	Interconnection Agreement for Net Energy Metering (NEM) of a Renewable Electric Generating Facility of 1,000 kW or Less, Except Solar or Wind Facilities of 30 kW or Less, and Virtual Net Energy Metering (NEMV) of a Renewable Electric Generating Facility of 1,000 kW or Less.	Expanded NEM	NEM2 Interconnection Agreement
<b>LARGE NEM ≥ 1MW</b>			
79-1198-02	Interconnection Agreement For Net Energy Metering (NEM2) And Renewable Electrical Generating Facility Sized Greater Than 1,000 Kw	>1MW NEM2	FT and Detailed Study Interconnection Agreement for >1MW NEM2 Generating Facilities
<b>NEMA</b>			
79-1153	NEM Load Aggregation Appendix	NEM – NEMA	<b>NEM Customer Only</b> - Use as an Appendix with Form 79-1151A, 79-1220, or 79-1069
79-1153-02	NEM2A Load Aggregation Appendix	NEM2 – NEM2A	Use as an Appendix with Form 79-1151A-02, 79-1220-02 or 79-1069-02
79-1202 ****	Load Aggregation Appendix	NEM, NEM2, Rule 21	Use as an Appendix with Form 79-1151A, 79-1151A-02, 79-978, 79-978-02, 79-1137, 79-1137-02, 79-1069 or 79-1069-02
<b>NEMMT (Multiple Tariff)</b>			
79-1069	Generating facility Interconnection Agreement (Multiple Tariff)	NEM, Rule 21	<b>NEM Customer Only</b> NEMMT Interconnection Agreement used with Form 79-1174-02
79-1069-02	Generating Facility Interconnection Agreement (Multiple Tariff NEM2MT)	NEM2, Rule 21	NEM2MT Interconnection Agreement used with Form 79-1174-02
<b>MISCELLANEOUS NEM FORMS</b>			
79-1130	Request to Opt-out of / Opt-in to Compensation for Surplus Electricity	NEM	AB 920- Opt not to receive compensation for net annual excess energy
79-1114	NEM 2010 Early True-up Request Form	NEM	<b>NEM Customer Only</b>

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**ELECTRIC RULE NO. 21  
GENERATING FACILITY INTERCONNECTIONS**

Sheet 290

<b>Appendix A (Cont'd.) Forms Associated with Generator Interconnection Tariffs Subject to Rule 21</b>			
Form Number	Title	Associated Tariffs	Use Guidance
<b>RULE 21 NON-EXPORT</b>			
79-973	Generating Facility Interconnection Agreement For Non-Export Generating Facilities (Rule 21 Interconnection Agreement)	Rule 21 Non-Export RES-BCT	Interconnection Agreement used for RESBCT and non-NEM generation with Application 79-1197
79-992	Customer Generation Agreement (Third party Generator on Premises, Non-Exporting)	3-Party Rule 21	Third Party Non-Exporting Interconnection Agreement
79-1070	Export Addendum to Generating Facility Interconnection Agreement for Non-Export Generating Facilities (Form 79-973) Sized 2 Megawatts or Less	Rule 21	Export addendum used with Form 79-973
79-988	Generating Facility Interconnection Agreement (Third Party Non-Exporting)	3-Party Rule 21	Third Party Non-Exporting Interconnection Agreement
79-1212	Rule 21 Non-Export Generator Interconnection Notification	Rule 21	Notification Form for New Non-Export Interconnection
79-1213	Agreement and Customer Authorization Non-Export Generating Facility Sized 30 Kilowatts or Less	Rule 21	Interconnect and Operate a Non-Export Generating Facility
79-1214	Notification-Only Pilot Program Developer Eligibility Application	Rule 21	Eligibility to Participate in the Notification-only Pilot Program
<b>STORAGE</b>			
79-1192	Interconnection Agreement for Non-Export Storage Generating Facilities 500KW or Less	Rule 21	Used for expedited interconnection of non-export energy storage, pursuant to Rule 21 Section N, PG&E AL 4941-E & E-A and D.16-06-052, & Attachment C, Section II.1
79-1199	Agreement And Customer Authorization Non-Export Stand-Alone Energy Storage Of 30 Kilowatts Or Less	Rule 21	Interconnection Agreement For non-export storage ≤ 30 kW
<b>RULE 21 EXPORT FOR SALE INTERCONNECTION FORMS</b>			
79-1145	Rule 21 Exporting Generator Interconnection Request	Rule 21	For Exporting Generator
79-1200	Rule 21 Generator Interconnection Agreement For Exporting Generating Facilities	Rule 21	FT and Detailed Study Interconnection Agreement for Exporting Generating Facilities

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(L)  
  
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(Continued)







**ELECTRIC TABLE OF CONTENTS**

Sheet 1

**TABLE OF CONTENTS**

<b>SCHEDULE</b>	<b>TITLE OF SHEET</b>	<b>CAL P.U.C. SHEET NO.</b>
Title Page.....		<b>53886-E</b> (T)
Rate Schedules.....	52160,52161,53860,52163, <b>53887</b> ,52165,52034,49654,49184-E	(T)
Preliminary Statements.....	49185,48878,50629,50630,53576,50058,53706-E	
Preliminary Statements, Rules.....		53707-E
Rules .....	50633, <b>53888</b> -E	(T)
Rules, Maps, Contracts and Deviations.....		52223-E
Sample Forms.....	50636,49743, <b>53889</b> , <b>53890</b> ,50639,49735,	(T)
.....	<b>53891*</b> ,53589,52256,53961,49309,49310,49311-E	(T)

(Continued)

Advice 6668-E  
Decision

Issued by  
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Submitted  
Effective  
Resolution

August 2, 2022  
August 22, 2022



**ELECTRIC TABLE OF CONTENTS**

Sheet 6

SCHEDULE	TITLE OF SHEET	CAL P.U.C. SHEET NO.
	<b>Rate Schedules</b>	
	<b>Other</b>	
BEV	Business Electric Vehicle .....	46493,52647,46495,52648,47484,46498,46657-E
S	Standby Service .....	40243,46370,40245,52752,52753,52754,52142,52143,52144,52145, 52146,52147,52148,52149,52150,52755,52152,52153,52154,52155-E
SB	Standby Service .....	45639,45640,52756,52757,52758,45644,45645,45646,45647, 45648,45649,45650,45651,52759,45653,45654,45655-E
E-BioMAT	Bioenergy Market Adjusting Tariff .....	43634,43635,41023,43636,43637,43638*, 53113,53114,53115,37751,41026,37753, 37754,42211,37756,41027,41028,41029, 43640,41030,46100,37763,43641-E
E-CHP	Combined Heat and Power PPA .....	30809,30810,30811,30812, 30813-E
E-CHPS	Combined Heat and Power Simplified PPA.....	30814,30815,30816, 30817-E
E-CHPSA	Combined Heat And Power Simplified 500 kW PPA ..	30825,30826,31679,31680,31681,31682-E
E-DCG	DCG Departing Customer Generation, CG .....	52269,52270,37148, 50610,47515,36595,47516,23252*,23253,28405,23255-E
E-DEPART	Departing Customers .....	28859-E
E-DRP	Demand Response Provider Services.....	35430,43626-E
E-ECR	Enhanced Community Renewables (ECR) Program.....	45680,35739,52691, 52692,52693,46522,46523,46524-E
E-GT	Green Tariff (GT) Program.....	45682,52697,52698,52699,46532,46533-E
E-NMDL	New Municipal Departing Load .....	47526,32097,32098,52271,52272,52273,52274, 52275,52276,52277,52278,52279,52280-E
E-NWDL	New WAPA Departing Load.....	47528,52281,52282,52283, 27448,27449,27450,27451,27452-E
E-LORMS	Limited Optional Remote Metering Services .....	20194-E
E-SDL	Split-Wheeling Departing Load.....	28588,52284,28867,52285,27459, 27460,27461,27462,27463, 27464-E
E-STORE	Station Service For Storage Devices.....	40238,40239,40240,40241,40242-E
E-TMDL	Transferred Municipal Departing Load .....	47533,52286,52287, 47535,28961,30659,28608,25887,25888,25889,25890,25891-E
NEM	Net Energy Metering Service .....	37636,36352,50612, <b>53866</b> , (T) 44459,37638,37639,37640,36562,36563,36564, <b>53867,53868</b> ,33910*, 37641,33912*,33913*,35643,47172,35276,48531,36599, <b>53869,53870</b> ,35646, 43186*,45716, <b>53871,53872,53873</b> ,45720,47173,45722,45723-E (T)
NEM2	Net Energy Metering Service .....	50613,47174,50674,50675,46378,42931,42932,42933, 48532,42935,42936,42937, <b>53874</b> ,52980,48533,37810,42939,38161, (T) 38162,42940,47176,37816,42941,38165,52981,50614,50615,47178,45729, 45730,45731,45732,48534,45734,45735,45736,45737,45738,45739,47180-E
NEMFC	Net Energy Metering Service For Fuel Cell Customer-Generators ....	37770,38187,37772,37773, 37774,37775,32446,32447,37824,38231-E
NEMBIO	Net Energy Metering Service for Biogas Customer-Generators.....	30791,27254,27255, 26140,27256,26142,27257,26144,37823-E
NEMCCSF	Net Energy Metering Service for City and County of San Francisco .....	28176,28177, 28178,28179-E
NEMV	Virtual Net Metering for a Multi-Tenant or Multi-Meter Property Served at the Same Service Delivery Point.....	42055,42056,47184,31549,32806, 31551,33921,31553,42058,42059,31556,31557,31558,36565,31560, 42060,36566,32807,42061,31565,42062,33216,42063,44523-E

(Continued)



ELECTRIC TABLE OF CONTENTS

Sheet 20

Table with columns: RULE, TITLE OF SHEET, CAL P.U.C. SHEET NO. Includes entries for Rule 21 (Generating Facility Interconnections), Rule 22 (Direct Access Service), Rule 22.1 (Direct Access Service Switching Exemption Rules), Rule 23 (Standby Service), and Rule 23.2 (Community Choice Aggregation Open Season).

(Continued)



**ELECTRIC TABLE OF CONTENTS**

Sheet 24

<b>FORM</b>	<b>TITLE OF SHEET</b>	<b>CAL P.U.C. SHEET NO.</b>
<b>Sample Forms</b>		
<b>Rule 20 Replacement of Overhead with Underground Electric Facilities</b>		
79-1113	Agreement to Perform Tariff Schedule Related Work, Rule 20A Electric Panel Service Conversions .....	48602-E
<b>Sample Forms</b>		
<b>Rule 21 Generating Facility Interconnections</b>		
79-280	Agreement for Installation or Allocation of Special Facilities for Parallel Operation of Nonutility Owned Generation and/or Electrical Standby Service (Electric Rule 2 and 21) .....	48684-E
79-702	Agreement for Installation or Allocation of Special Facilities for Parallel Operation of Nonutility-Owned Generation and/or Electrical Standby Service (Electric Rule 2 and 21) – Appendix A, Detail of Special Facilities Charges .....	48686-E
79-973	Generating Facility Interconnection Agreement .....	52526-E
79-988	Generating Facility Interconnection Agreement Third Party Non-Exporting .....	50580-E
79-992	Generating Facility Interconnection Agreement Third Party Generation or Premise Non-Exporting .....	49236-E
79-1070	Addendum to Form 79-973 – Export Addendum for Generators Sized 2 Megawatts or Less .....	48582-E
79-1100	Electric Rule 21 – Agreement to Install Applicant Requested NGOM Special Facilities for Solar Performance Metering .....	48592-E
79-1136	PG&E Interconnection Agreement For An Existing Small Generating Facility Interconnecting to the Distribution System Under Rule 21 .....	48619-E
79-1145	Rule 21 Exporting Generator Interconnection Request .....	<b>53862-E</b>
79-1162	Rule 21 Detailed Study Agreement .....	52518-E

(T)

(Continued)

Advice 6668-E  
Decision

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

Submitted  
Effective  
Resolution

August 2, 2022  
August 22, 2022



**ELECTRIC TABLE OF CONTENTS**

Sheet 25

**FORM**

**TITLE OF SHEET**

**CAL P.U.C. SHEET NO.**

**Sample Forms  
Rule 21 Generating Facility Interconnections (Cont'd)**

79-1174-02	Rule 21 Generator Interconnection Application.....	<b>53865-E</b>	(T)
79-1174-02A	Rule 21 Generator Interconnection Application – Attachment A .....	49769-E	
79-1174-02B	Rule 21 Generator Interconnection Application – Attachment B .....	49268-E	
79-1174-02C	Rule 21 Generator Interconnection Application – Attachment C .....	49269-E	
79-1174-02D	Rule 21 Generator Interconnection Application – Attachment D .....	52489-E	
79-1174-02E	Rule 21 Generator Interconnection Application – Attachment E .....	52490-E	
79-1174-02F	Rule 21 Generator Interconnection Application – Attachment F .....	52491-E	
79-1174-02G	Rule 21 Generator Interconnection Application – Attachment G .....	52492-E	
79-1174-02H	Rule 21 Generator Interconnection Application – Attachment H .....	52880-E	
79-1174-02I	Rule 21 Generator Interconnection Application – Attachment I.....	49275-E	
79-1174-02J	Rule 21 Generator Interconnection Application – Attachment J.....	49276-E	
79-1174-02K	Rule 21 Generator Interconnection Application – Attachment K .....	49277-E	
79-1174-02L	Rule 21 Generator Interconnection Application – Attachment L.....	49278-E	
79-1174-02M	Rule 21 Generator Interconnection Application – Attachment M.....	49279-E	
79-1174-02N	Rule 21 Generator Interconnection Application – Attachment N .....	49280-E	
79-1175	Rule 21 Consent to Assignment Form for Non-NEM Projects.....	48657-E	
79-1181	Rule 21 Pre-Application Report Request .....	48663-E	
79-1191	Generating Facility Interconnection Agreement For Local Government Renewable Energy Self- Generation Bill Credit Transfer (RES-BCT).....	49295-E	
79-1197	Local Government Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) Re- Allocation Request .....	48676-E	
79-1198-02	Interconnection Agreement for Net Energy Metering (NEM2) and Renewable Electrical Generating Facility Sized Greater than 1,000 kW .....	50574-E	
79-1199	Agreement and Customer Authorization Non-Export Standalone Energy Storage of 30 Kilowatts or Less .....	48678-E	
79-1200	Rule 21 Generator Interconnection Agreement for Exporting Generating Facilities .....	48679-E	
79-1204	Pilot Pedestal Program Application .....	48680-E	
79-1211	Generating Facility Material Modification Notification Worksheet.....	50316-E	
79-1212	Rule 21 Non-Export Generator Interconnection Notification .....	51182-E	
79-1213	Agreement and Customer Authorization Non-Export Generating Facility Sized 30 Kilowatts or Less .....	51183-E	
79-1214	Notification-Only Pilot Program Developer Eligibility Application .....	51184-E	

(Continued)



**ELECTRIC TABLE OF CONTENTS**

Sheet 28

FORM	TITLE OF SHEET	CAL P.U.C. SHEET NO.
	Sample Forms Net Energy Metering	
79-978	Interconnection Agreement for NEM of Solar or Wind Electric Generating Facilities 1,000 kW or less, other than Residential or Small Commercial Facilities of 10 kW or Less .....	51237-E
79-978-02	Interconnection Agreement for Net Energy Metering (NEM2) of Solar or Wind Electric Generating Facilities of 1,000 Kilowatts or Less, Other than Facilities of 30 Kilowatts or Less .....	51238-E
79-999	Agreement for Limited Optional Remote Metering Service .....	48710-E
79-1002	Customer Generation Departing Nonbypassable Charge .....	52897-E
79-1010	Interconnection Agreement for Net Energy Metering of Fuel Cell Generating Facilities .....	50565-E
79-1069	Generating Facility Interconnection Agreement (Eligible/Non-Eligible Net Generating Facility Export) .....	51227-E
79-1069-02	Generating Facility Interconnection Agreement (Multiple Tariff NEM2MT) .....	51228-E
79-1109	Net Energy Metering Application and Interconnection Agreement for the Building Owner of a Multifamily Affordable Solar Housing Facility with a Solar Generating Facility of 1 Megawatt or Less .....	48598-E
79-1109-02	NEM2VMASH Virtual NEM Application and Interconnection Agreement for the Building Owner of Multifamily Affordable Housing with a Solar Generating Facility of 1 Megawatt or Less .....	48599-E
79-1114	NEM 2010 Early True-up Request Form .....	48603-E
79-1124	Eligible Low Income Development Virtual NEM Application and Interconnection Agreement for Multi-Family Affordable Housing with Solar Generation Totaling 1 Megawatt or Less .....	48609-E
79-1124-02	Eligible Low Income Development Virtual NEM (NEM2VMASH) Application and Interconnection Agreement for Multifamily Affordable Housing with Solar Generation Totaling 1 MW or Less...	48610-E
79-1125	NEM / NEMVMASH Inspection Report .....	48611-E
79-1130	Customer Request Form not to Receive Net Surplus Compensation .....	48616-E
79-1131	NEMV Application and Interconnection Agreement for an Eligible Generating Facility of 1MW or Less Serving Multiple Tenants .....	48617-E
79-1131-02	NEM2V Application and Interconnection Agreement for a Solar (PV) or Wind Generating Facility of 1 MW or Less.....	48618-E
79-1137	Interconnection Agreement for Net Metering for a Renewable Electrical Generation Facility of 1,000 Kilowatts or Less .....	50569-E
79-1137-02	Interconnection Agreement for Net Energy Metering (NEM2/NEM2V) for a Renewable Electricity Generation Facility of 1,000 Kilowatts or Less, Except Solar or Wind .....	50570-E
79-1142	NEMV Interconnection Application for a Renewable Electrical Generation Facility of 1 Megawatt or Less .....	48624-E
79-1151A	Agreement and Customer Authorization – Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less .....	51229-E
79-1151A-02	Agreement And Customer Authorization - Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less .....	51230-E
79-1151B	Application – Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less .....	<b>53863</b> *-E (T)
79-1151B-02	Application - Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less .....	<b>53864</b> *-E (T)
79-1153	NEM Load Aggregation Appendix .....	48635-E
79-1153-02	NEM2A Load Aggregation Appendix .....	49230-E
79-1155	Schedules NEM, NEMV, NEMVMASH, NSE Renewable Energy Credits Compensation .....	48638-E
79-1155-02	Schedules NEM2, NEM2V, NEM2VMASH, Net Surplus Electricity (NSE) Renewable Energy Credits Compensation.....	48639-E
79-1189	Eligible Low Income Development Virtual Net Energy Metering (NEM2VMASH) Interconnection Agreement for Multifamily Affordable Housing with Solar Generation Totaling 1 MW or Less...	48667-E

(Continued)

Advice 6668-E  
August 2, 2022

## **Attachment 2**

### **Redline Tariff Revisions**

**Electric Sample Form 79-1145**  
Rule 21 Exporting Generator  
Interconnection Request

Sheet 1

**Please Refer to Attached  
Sample Form**



# RULE 21 EXPORTING GENERATOR INTERCONNECTION REQUEST

1. The undersigned Applicant submits this request to interconnect its Generating Facility with the Pacific Gas and Electric Company (PG&E or Distribution Provider) Distribution System pursuant to Rule 21 (check only one):

- Detailed Study Process
- Fast Track Process

2. This Interconnection Request is for (check only one):

- A proposed new Generating Facility.
- An increase in the generating capacity or a Material Modification of an existing Generating Facility.

3. Applicant provides the following information:

a. Address (to the extent known) or location, including the county, of the proposed new Generating Facility site or, in the case of an existing Generating Facility, the name and specific location, including the county, of the existing Generating Facility;

Project Name:

Project Location:

Street Address:

City, State:

County:

Zip Code:

GPS Coordinates:

b. Maximum net megawatt electrical output (as defined by section 2.c. of Attachment A to this appendix) of the proposed new Generating Facility or the amount of net megawatt increase in the generating capacity of an existing Generating Facility;

Maximum net megawatt electrical output (MW): \_\_\_\_\_ or

Net Megawatt increase (MW): \_\_\_\_\_

† Information collected on this form is used in accordance with PG&E's Privacy Policy. The Privacy Policy is available at [pge.com/privacy](http://pge.com/privacy).

**PG&E'S RULE 21**  
**EXPORTING GENERATOR INTERCONNECTION REQUEST**

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c. Type of project (i.e., gas turbine, hydro, wind, etc.) and general description of the equipment configuration (if more than one type is chosen, include net MW for each);

___ Cogeneration	___ MW
___ Reciprocating Engine	___ MW
___ Biomass	___ MW
___ Steam Turbine	___ MW
___ Gas Turbine	___ MW
___ Wind	___ MW
___ Hydro	___ MW
___ Inverter Based: (e.g., Photovoltaic, Fuel Cell)	___ MW
If Fuel Cell, please describe primary fuel source:	
___ Combined Cycle	___ MW
___ Other (please describe):	_____

~~d. Proposed In-Service Date, and Other Key Dates (Day/Month/Year) (Dates must be sequential)~~

~~Proposed In-Service Date: \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_~~

~~Proposed Trial Operation Date: \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_~~

~~Proposed Commercial Operation Date: \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_~~

~~Proposed Term of Service (years): \_\_\_\_\_~~

de. Name, address, telephone number, and e-mail address of Applicant (primary person who will be contacted);

Name:  
Title:  
Company Name:  
Street Address:  
City, State:  
Zip Code:  
Phone Number:  
Fax Number:  
Email Address:

ef. Approximate location of the proposed Point of Interconnection (i.e., specify distribution facility interconnection point name, voltage level, and the location of interconnection);

**PG&E'S RULE 21**  
**EXPORTING GENERATOR INTERCONNECTION REQUEST**

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**gf.** Applicant Data (set forth in Attachment A)

*The Applicant shall provide to the Distribution Provider the technical data called for in Attachment A.*

**g.** AC Disconnect Switch. List the AC disconnect switch that will be used at this Generating Facility (enter "N/A" if not applicable)

Disconnect Switch Manufacturer: \_\_\_\_\_

Disconnect Switch Model Number: \_\_\_\_\_

Disconnect Switch Rating (amps): \_\_\_\_\_

4. Application Fee and Detailed Study Deposit as specified in Rule 21 is required to complete this application. Upon receipt of this Interconnection Request and Attachment A, PG&E will send a separate invoice for the applicable fee or deposit. **PLEASE DO NOT INCLUDE ANY CHECKS/MONIES WITH THIS INTERCONNECTION REQUEST.** (Any checks/monies submitted with this IR will be returned to the sender and may result in a delay in the application process.)

Please indicate below if Applicant elects to pre-pay the Supplemental Review Fee:

\_\_\_\_\_ Yes \_\_\_\_\_ No

5. Attach evidence of Site Exclusivity as specified in Rule 21 Section E.2.d as applicable, and name(s), address(es) and contact information of site owner(s).
6. **Interconnection Request Instructions:** Complete this interconnection request and enter this information into PG&E's web-based form. (PG&E strongly recommends preparing all information and materials before starting the online interconnection request.) The online web-based form can be found at:

[https://www.pge.com/en\\_US/large-business/services/alternatives-to-pge/electric-generation-interconnection.page](https://www.pge.com/en_US/large-business/services/alternatives-to-pge/electric-generation-interconnection.page)

Questions concerning PG&E's online interconnection request process can be directed to the Electric **Grideneration** Interconnection Department at **rule21gen@pge.com..**

- 7 Representative of Applicant to contact:

[To be completed by Applicant]

Name:

Title:

Company Name:

Street Address:

City, State:

Zip Code:

Phone Number:

Fax Number:

Email Address:

**PG&E'S RULE 21**  
**EXPORTING GENERATOR INTERCONNECTION REQUEST**

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- 8. If the Applicant also requires new Distribution Service, the Distribution Provider will coordinate these efforts with this application. The Applicant must also complete a PG&E Application for Service. Additional fees may be required if a service or line extension is required (in accordance with PG&E Electric Rules 15 and 16). Please contact PG&E's Building and Renovation Services Center (BRSC): 1-800-743-7782 to initiate the application for the new Distribution Service. Additional information will be required in conjunction with an application for new Distribution Service.
  
- 9. Applicant should be aware that if Applicant has not yet received Rule 21 Screen Q results from PG&E by March 15 following submittal of this IR, Applicant will need to submit, if Applicant voluntarily chooses to do so, an Interconnection Request under PG&E's FERC Wholesale Distribution Tariff (WDT) by the close of the CAISO cluster application window (refer to <http://www.caiso.com/docs/2002/06/11/2002061110300427214.html> for the exact date) in order to participate in the Transmission Cluster Study for the year. An application under WDT will not impact the results of this Rule 21 study.
  
- 10. This agreement at all times shall be subject to such modifications as the California Public Utilities Commission may direct from time to time in the exercise of its jurisdiction.

11. This Interconnection Request is submitted by:

Legal name of Applicant: \_\_\_\_\_

By (signature): \_\_\_\_\_

Name (type or print): \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

# PG&E'S RULE 21 EXPORTING GENERATOR INTERCONNECTION REQUEST

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## Attachment A to PG&E Rule 21 Exporting Generator Interconnection Request

### GENERATING FACILITY DATA

Each Applicant will complete Sections 1 and 2 of this Attachment A.

Each Applicant will complete the applicable data in Sections 3 through 6 of this Attachment A based on the type of generating facility(ies) requesting interconnection. (Section 3 for synchronous generators, Section 4 for induction generators, Section 5 for wind turbine generators, and Section 6 for inverter-based generators).

Each Applicant will complete Sections 7 through 10, as applicable.

At any time, Distribution Provider may require Applicant to provide additional technical data, or additional documentation supporting the technical data provided, as deemed necessary by the Distribution Provider to perform Interconnection Studies, other studies, or evaluations as set forth under Rule 21.

#### 1. Provide electronic copies of the following:

- A. Site drawing to scale, showing generator location and Point of Interconnection with the Distribution Provider's Distribution System.
- B. Single-line diagram showing applicable equipment such as generating units, step-up transformers, auxiliary transformers, switches/disconnects of the proposed interconnection, including the required protection devices and circuit breakers. For wind and photovoltaic generator projects, the one line diagram should include the distribution lines connecting the various groups of generating units, the generator capacitor banks, the step up transformers, the distribution lines, and the substation transformers and capacitor banks at the Point of Interconnection with the Distribution Provider's Distribution System. This one-line drawing must be signed and stamped by a licensed Professional Engineer if the Generating Facility is larger than 50 kW.
- C. AC and DC schematics if available. Required for detailed study process.
- D. Description of operations.

Note: Electronic processing is preferred, however, if submitting via U.S. mail, provide one original print of items in A through D, above.

#### 2. Generating Facility General Information:

- A. Total Generating Facility rated output (MW): \_\_\_\_\_
- B. Generating Facility auxiliary Load (MW): \_\_\_\_\_
- C. Project net capacity (MW): \_\_\_\_\_
- D. Standby Load when Generating Facility is off-line (MW): \_\_\_\_\_
- E. Number of Generating Units: \_\_\_\_\_  
(Please repeat the following items for each generator)
- F. Individual generator rated output (MW for each unit): \_\_\_\_\_
- G. Type (induction, synchronous, D.C. with inverter): \_\_\_\_\_
- H. Phase (3 phase or single phase): \_\_\_\_\_

**PG&E'S RULE 21**  
**EXPORTING GENERATOR INTERCONNECTION REQUEST**

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**3. Synchronous Generator –Information:**

**3A Generator Information:**

(Please repeat the following for each generator)

- A. Manufacturer: \_\_\_\_\_
- B. Year Manufactured: \_\_\_\_\_
- C. Rated Generator speed (rpm): \_\_\_\_\_
- D. Rated MVA: \_\_\_\_\_
- E. Rated Terminal Voltage (kV): \_\_\_\_\_
- F. Rated Generator Power Factor Range: \_\_\_\_\_
- G. Generator Efficiency at Rated Load (%): \_\_\_\_\_
- H. Moment of Inertia (including prime mover): \_\_\_\_\_
- I. Inertia Time Constant (on machine base) H: \_\_\_\_\_ sec or MJ/MVA
- J. SCR (Short-Circuit Ratio - the ratio of the field current required for rated open-circuit voltage to the field current required for rated short-circuit current): \_\_\_\_\_
- K. Please attach generator reactive capability curves.
- L. Rated Hydrogen Cooling Pressure in psig (Steam Units only): \_\_\_\_\_
- M. Please attach a plot of generator terminal voltage versus field current that shows the air gap line, the open-circuit saturation curve, and the saturation curve at full load and rated power factor.

**3B Excitation System Information:**

(Please repeat the following for each generator)

- A. Indicate the Manufacturer \_\_\_\_\_ and Type \_\_\_\_\_ of excitation system used for the generator. For exciter type, please choose from 1 to 9 below or describe the specific excitation system.
  - (1) Rotating DC commutator exciter with continuously acting regulator. The regulator power source is independent of the generator terminal voltage and current.
  - (2) Rotating DC commutator exciter with continuously acting regulator. The regulator power source is bus fed from the generator terminal voltage.
  - (3) Rotating DC commutator exciter with non-continuously acting regulator (i.e., regulator adjustments are made in discrete increments).
  - (4) Rotating AC Alternator Exciter with non-controlled (diode) rectifiers. The regulator power source is independent of the generator terminal voltage and current (not bus-fed).

**PG&E'S RULE 21**  
**EXPORTING GENERATOR INTERCONNECTION REQUEST**

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- (5) Rotating AC Alternator Exciter with controlled (thyristor) rectifiers. The regulator power source is fed from the exciter output voltage.
  - (6) Rotating AC Alternator Exciter with controlled (thyristor) rectifiers.
  - (7) Static Exciter with controlled (thyristor) rectifiers. The regulator power source is bus-fed from the generator terminal voltage.
  - (8) Static Exciter with controlled (thyristor) rectifiers. The regulator power source is bus-fed from a combination of generator terminal voltage and current (compound-source controlled rectifiers system).
  - (9) Other (specify): \_\_\_\_\_
- B. Attach a copy of the block diagram of the excitation system from its instruction manual. The diagram should show the input, output, and all feedback loops of the excitation system.
  - C. Excitation system response ratio (ASA): \_\_\_\_\_
  - D. Full load rated exciter output voltage: \_\_\_\_\_
  - E. Maximum exciter output voltage (ceiling voltage): \_\_\_\_\_
  - F. Other comments regarding the excitation system? \_\_\_\_\_
- 

**3C Turbine-Governor Information:**

(Please repeat the following for each generator)

Please complete Part A for steam, gas or combined-cycle turbines, Part B for hydro turbines, and Part C for both.

A. Steam, gas or combined-cycle turbines:

- (1) List type of unit (Steam, Gas, or Combined-cycle): \_\_\_\_\_
- (2) If steam or combined-cycle, does the turbine system have a reheat process (i.e., both high and low pressure turbines)? \_\_\_\_\_
- (3) If steam with reheat process, or if combined-cycle, indicate in the space provided, the percent of full load power produced by each turbine:  
Low pressure turbine or gas turbine: \_\_\_\_\_ %  
High pressure turbine or steam turbine: \_\_\_\_\_ %
- (4) For combined cycle plants, specify the plant net output capacity (MW) for an outage of the steam turbine or an outage of a single combustion turbine: \_\_\_\_\_

B. Hydro turbines:

- (1) Turbine efficiency at rated load: \_\_\_\_\_ %
- (2) Length of penstock: \_\_\_\_\_ ft

**PG&E'S RULE 21**  
**EXPORTING GENERATOR INTERCONNECTION REQUEST**

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- (3) Average cross-sectional area of the penstock: \_\_\_\_\_ ft<sup>2</sup>
- (4) Typical maximum head (vertical distance from the bottom of the penstock, at the gate, to the water level): \_\_\_\_\_ ft
- (5) Is the water supply run-of-the-river or reservoir: \_\_\_\_\_
- (6) Water flow rate at the typical maximum head: \_\_\_\_\_ ft<sup>3</sup>/sec
- (7) Average energy rate: \_\_\_\_\_ kW-hrs/acre-ft
- (8) Estimated yearly energy production: \_\_\_\_\_ kW-hrs

C. Complete this section for each machine, independent of the turbine type.

- (1) Turbine manufacturer: \_\_\_\_\_
- (2) Maximum turbine power output: \_\_\_\_\_ MW
- (3) Minimum turbine power output (while on line): \_\_\_\_\_ MW
- (4) Governor information:
  - (a) Droop setting (speed regulation): \_\_\_\_\_
  - (b) Is the governor mechanical-hydraulic or electro-hydraulic (Electro-hydraulic governors have an electronic speed sensor and transducer.)? \_\_\_\_\_
  - (c) Other comments regarding the turbine governor system?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**3D Short Circuit Duty Information:**

For each generator, provide the following reactances expressed in p.u. on the generator base:

- X<sub>d</sub> – Direct Axis Synchronous Reactance: \_\_\_\_\_ p.u.
- X'<sub>d</sub> – Direct Axis Transient Reactance: \_\_\_\_\_ p.u.
- X''<sub>d</sub> – Direct Axis Subtransient Reactance: \_\_\_\_\_ p.u.
- X<sub>2</sub> – Negative Sequence Reactance: \_\_\_\_\_ p.u.
- X<sub>0</sub> – Zero Sequence Reactance: \_\_\_\_\_ p.u.

Generator Grounding (select one for each model):

- A. \_\_\_\_\_ Solidly grounded
- B. \_\_\_\_\_ Grounded through an impedance  
(Impedance value in p.u. on generator base. R: \_\_\_\_\_ p.u.  
X: \_\_\_\_\_ p.u.)
- C. \_\_\_\_\_ Ungrounded

**4. Induction Generator Information:**

**PG&E'S RULE 21**  
**EXPORTING GENERATOR INTERCONNECTION REQUEST**

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(Please repeat the following for each generator)

- A. Motoring Power (kW): \_\_\_\_\_
- B.  $I_2^2t$  or K (Heating Time Constant): \_\_\_\_\_
- C. Rotor Resistance,  $R_r$ : \_\_\_\_\_
- D. Stator Resistance,  $R_s$ : \_\_\_\_\_
- E. Stator Reactance,  $X_s$ : \_\_\_\_\_
- F. Rotor Reactance,  $X_r$ : \_\_\_\_\_
- G. Magnetizing Reactance,  $X_m$ : \_\_\_\_\_
- H. Short Circuit Reactance,  $X_d''$ : \_\_\_\_\_
- I. Exciting Current: \_\_\_\_\_
- J. Temperature Rise: \_\_\_\_\_
- K. Frame Size: \_\_\_\_\_
- L. Design Letter: \_\_\_\_\_
- M. Reactive Power Required In Vars (No Load): \_\_\_\_\_
- N. Reactive Power Required In Vars (Full Load): \_\_\_\_\_
- O. Total Rotating Inertia, H: \_\_\_\_\_ Per Unit on kVA Base

**5. Wind Turbine Generator (WTG) Information:**

(Proposed projects may include one or more WTG types. Please repeat the following for each type of WTG).

- A. WTG Manufacturer and Model: \_\_\_\_\_
- B. Number of WTGs: \_\_\_\_\_
- C. WTG Type (check one):
  - \_\_\_\_\_ Type 1 (Squirrel-cage induction generator)
  - \_\_\_\_\_ Type 2 (Wound rotor induction machine with variable rotor resistance)
  - \_\_\_\_\_ Type 3 (Doubly-fed asynchronous generator)
  - \_\_\_\_\_ Type 4 (Full converter interface)
- D. Nameplate Rating (each WTG): \_\_\_\_\_ / \_\_\_\_\_ kW/kVA
- E. Rated Terminal Voltage: \_\_\_\_\_ kV
- F. For Type 1 or Type 2 WTGs:
  - (1) uncompensated power factor at full load: \_\_\_\_\_
  - (2) power factor correction capacitors at full load: \_\_\_\_\_ MVAR
  - (3) number of shunt stages and size: \_\_\_\_\_
  - (4) Please attach capability curve describing reactive power or power factor range from no output to full rated output, including the effect of shunt compensation
- G. For Type 3 or Type 4 WTGs:
  - (1) Maximum under-excited power factor at full load: \_\_\_\_\_
  - (2) Maximum over-excited power factor at full load: \_\_\_\_\_
  - (3) Control mode: \_\_\_\_\_ (voltage control, fixed power factor)
  - (4) Please attach capability curve describing reactive power or power factor range from no output to full rated output

# PG&E'S RULE 21

## EXPORTING GENERATOR INTERCONNECTION REQUEST

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- H. Short Circuit Characteristics: Applicant to provide technical data related to the short circuit characteristics of proposed WTGs for short circuit duty study modeling purposes. For example, the applicant can provide manufacturer short circuit test data showing faulted condition for three phase and single-line-to-ground fault.

Distribution Provider may require testing verification of voltage and harmonic performance during commissioning test of WTG based generation projects.

### 6. Inverter Based Generation Systems Information:

Proposed inverter based generation projects may include one or more types of inverters. Please provide answers to the following for each type of inverter.

- A. Inverter Manufacturer and Model: \_\_\_\_\_
- B. Number of Inverters: \_\_\_\_\_
- C. Nameplate Rating (AC, each inverter): \_\_\_\_\_ / \_\_\_\_\_ kW
- D. Nameplate Voltage Rating (AC): \_\_\_\_\_ kV
- E. Maximum AC line current: \_\_\_\_\_ Amps
- F. Nameplate Power Factor Rating (AC): \_\_\_\_\_
- G. Please attach capability curve describing reactive power or power factor range from no output to full rated output
- H. Inverter control mode (e.g. voltage, power factor, reactive power): \_\_\_\_\_
- I. Short Circuit Characteristics: Applicant to provide technical data related to the short circuit characteristics of proposed inverter based generation systems. For example, the applicant can provide a sinusoidal waveform test data showing faulted condition at the AC side of the inverter for a three phase and single-line-to-ground fault.
- J. Harmonics Characteristics:  
(1) Inverter switching frequency: \_\_\_\_\_  
(2) Harmonic characteristics for each unit up to switching frequency: \_\_\_\_\_  
(3) Harmonic characteristics for aggregate generation facility: \_\_\_\_\_
- K. Inverter disconnection characteristics: Applicant to provide voltage sinusoidal waveform test data which shows the voltage characteristics during disconnection of inverter system from distribution system at 100% and at 50% of rated output.

Distribution Provider may require testing verification of voltage and harmonic performance during commissioning test of the inverter based generation systems.

### 7. Step-Up Transformer Data:

For each step-up transformer (e.g. main step-up transformers, padmount transformers), fill out the data form provided in Table 1.

# PG&E'S RULE 21

## EXPORTING GENERATOR INTERCONNECTION REQUEST

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### 8. Plant-Level Reactive Power Compensation Data:

Provide the following information for plant-level reactive power compensation, if applicable:

- A. Number of individual shunt capacitor banks: \_\_\_\_\_
- B. Individual shunt capacitor bank rated voltage (kV): \_\_\_\_\_
- C. Individual shunt capacitor bank size (kVAR at rated voltage): \_\_\_\_\_
- D. Planned dynamic reactive control devices (SVC, STATCOM): \_\_\_\_\_
- E. Control range: \_\_\_\_\_ kVAR (lead) \_\_\_\_\_ kVAR (lag)
- F. Control mode (e.g. voltage, power factor, reactive power): \_\_\_\_\_
- G. Please provide the overall plant reactive power control strategy

### 9. Load Flow and Dynamic Models:

**Only provide data in this section when requested by the Distribution Provider.**

The WECC Data Preparation Manual for Power Flow Base Cases and Dynamic Stability Data has established power flow and dynamic modeling requirements for generation projects in WECC base cases. In general, if the aggregate sum of generation on a bus exceeds 10 MVA, it should not be netted. Furthermore, the total netted generation in an area should not exceed five percent of the area's total generation. Based on current WECC modeling requirements, the following information will be required for all generation projects whose net capacity is greater than 10 MVA. The following information may also be required for generation projects less than 10 MVA on a case-by-case basis, based on the amount of generation in the area of the requested Point of Interconnection.

- A. Provide load flow model for the generating plant and its interconnection facilities in GE PSLF \*.epc format, including new buses, generators, transformers, interconnection facilities. An equivalent model is required for the plant with generation collector systems. This data should reflect the technical data provided in this Attachment A.
- B. For each generator, governor, exciter, power system stabilizer, WTG, or inverter based generator, select the appropriate dynamic models from the General Electric PSLF Program Manual and provide the required input data. Include any user written \*.p EPCL files to simulate inverter based plants' dynamic responses (typically needed for inverter based PV/wind plants). Provide a completed \*.dyd file that contains the information specified in this section.

The GE PSLF manual is available upon request from GE. There are links within the GE PSLF User's Manual to detailed descriptions of specific models, a definition of each parameter, a list of the output channels, explanatory notes, and a control system block diagram. In addition, GE PSLF modeling information and various modeling guidelines

## PG&E'S RULE 21 EXPORTING GENERATOR INTERCONNECTION REQUEST

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documents have been prepared by the WECC Modeling and Validation Work Group. This information is available on the WECC website ([www.wecc.biz](http://www.wecc.biz)).

If you require assistance in developing the models, we suggest you contact General Electric. Accurate models are important to obtain accurate study results. Costs associated with any changes in facility requirements that are due to differences between model data provided by the generation developer and the actual generator test data, may be the responsibility of the generation developer.

# PG&E'S RULE 21 EXPORTING GENERATOR INTERCONNECTION REQUEST

TABLE 1

TRANSFORMER DATA  
(Provide for each level of transformation)

UNIT \_\_\_\_\_

NUMBER OF TRANSFORMERS \_\_\_\_\_ PHASE \_\_\_\_\_

RATING	H Winding	X Winding	Y Winding
Rated MVA	_____	_____	_____
Connection (Delta, Wye, Gnd.)	_____	_____	_____
Cooling Type (OA,OA/FA, etc.) :	_____	_____	_____
Temperature Rise Rating	_____	_____	_____
Rated Voltage	_____	_____	_____
BIL	_____	_____	_____
Available Taps (% of rating)	_____	_____	_____
Load Tap Changer? (Y or N)	_____	_____	_____
Tap Settings	_____	_____	_____
IMPEDANCE	H-X	H-Y	X-Y
Percent	_____	_____	_____
MVA Base	_____	_____	_____
Tested Taps	_____	_____	_____
WINDING RESISTANCE	H	X	Y
Ohms	_____	_____	_____

CURRENT TRANSFORMER RATIOS

H \_\_\_\_\_ X \_\_\_\_\_ Y \_\_\_\_\_ N \_\_\_\_\_

PERCENT EXCITING CURRENT 100 % Voltage; \_\_\_\_\_ 110% Voltage \_\_\_\_\_

Supply copy of nameplate and manufacturer's test report when available.

**Electric Sample Form 79-1151B** Sheet 1  
APPLICATION  
Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30  
Kilowatts Or Less

**Please Refer to Attached  
Sample Form**



# APPLICATION

## Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

**IMPORTANT NOTES:**

- Customers may not operate their Generating Facility while interconnected to the PG&E system until they receive written permission from PG&E.
- For a non-exporting Generating Facility, RES-BCT facility, or NEM Generating technologies other than 30 kW or less solar or wind, Customers must submit the online Form 79-974 available at [www.pge.com/gen](http://www.pge.com/gen).

**Part I – Generating Facility Information and Responsible Parties**

**A. Customer and Generating Facility Information** (\*as it appears on the PG&E bill):

Electric Service Agreement ID\* \_\_\_\_\_ Meter Number\* \_\_\_\_\_

Is there an electric vehicle charging on site at the above service address?  Yes  No  
 If yes, please indicate how many electric vehicles \_\_\_\_\_

**B. Interconnection Application Type** (check one):

- New NEM Generating Facility interconnection at an existing PG&E service.
- Modify existing PG&E approved Generating Facility interconnection (adding/removing/replacing equipment).
  - Must provide a Custom Single-Line Drawing (SLD) showing the original system and the modified system.
- New interconnection in combination with a new service.
  - An Application for Service must be completed. Additional fees may be required if a service or line extension is required in accordance with PG&E Electric Rules 15 and 16. Please contact PG&E at 1-800-PGE-5000.
  - If this account will be established in a new subdivision, attach a list of lots/addresses and provide the following:

Developer Name \_\_\_\_\_ Development Name \_\_\_\_\_

**C. System Owner** (check one):

- PG&E Customer Owned  
 If PG&E Customer Owned, please answer the following:  
 Property Assessed Clean Energy (PACE) Financed?  Yes  No  
 Indicate the System Cost paid by Customer: \$ \_\_\_\_\_  
 PACE financed by which entity? \_\_\_\_\_

If you have non-PACE financing or a lease, please fill in the information below.

Financial Institution/Lessor Name \_\_\_\_\_

Financial Institution/Lessor Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

- Third Party Owned  
 If Third Party Owned, please answer the following:  
 Claimed Federal Investment Tax Credit (ITC) Cost Basis: \$ \_\_\_\_\_  
 Name of Developer at the time of sale: \_\_\_\_\_  
 Contract Type:  PPA  Lease  Pre-Paid Lease  Other \_\_\_\_\_

**Please complete this agreement in its entirety**

† Information collected on this form is used in accordance with PG&E's Privacy Policy.  
 The Privacy Policy is available at [pge.com/privacy](http://pge.com/privacy).



# APPLICATION

## Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

**D. Rebate Information:**

Did you participate in a California rebate program?  Yes  No

Please indicate the rebate program that you participated in: \_\_\_\_\_

Rebate Amount: \$ \_\_\_\_\_

**Part I – Generating Facility Information and Responsible Parties – Continued**

**E. Contractor Information** (List who is installing the system):  Check this box if self-installed

\_\_\_\_\_  
Company Name California Contractors State License Number

\_\_\_\_\_  
Company Address Phone Number

\_\_\_\_\_  
Email

**Home Improvement Salesperson (HIS) Registration Number Information**

Was a Home Improvement Salesperson (HIS) involved in the development of your project?

Yes  No

*California Public Utilities Commission Decision 21-02-026 requires “the Home Improvement Salesperson (HIS) registration number of solar providers who are required to have a HIS registration number, while enabling solar providers who are not required to have a HIS registration number to indicate they are exempt and to instead provide the applicable contractor’s license.”*

If you checked “Yes” above:

Please provide the Home Improvement Salesperson (HIS) registration number below.

Home Improvement Salesperson (HIS) registration number: \_\_\_\_\_

**F. Preparer of this Application** (if not the PG&E Customer, the Preparer must be authorized to act on behalf of the Customer on the Interconnection Agreement and Customer Authorization Form 79-1151A):

\_\_\_\_\_  
Company Name Preparer Name Date Prepared

**G. Customer Impacted by a Natural or ~~Man~~Human-Made Disaster**

Customers who were taking service on the NEM tariff prior to the total or partial destruction of their system have the option to resume service on the same NEM tariff if a request for reapplication is received within two years from the date of destruction. To be eligible for this provision, all the following must be true:

1. You are the same PG&E customer of record pre-system destruction
2. You are now reapplying with a system that is sized to your most recent 12 months usage, or estimated usage that is determined by building size<sup>1</sup> (if applicable)
3. You are not operating the new (either completely new or partially new) system without written permission from PG&E

<sup>1</sup>Building Size Calculation: Sq Ft X 3.23. Note: 2 watts/sq ft x 1/1,000 watts x 8,760 hrs/yr x 0.19 solar capacity factor = 3.32





# APPLICATION

## Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

Inverter Manufacturer	Model Number	Nameplate Rating kW/unit	CEC <sup>B</sup> Rating kW/unit	Output Voltage	1 or 3 Phase	Qty
PV Panel Manufacturer	Model Number	Nameplate Rating kW/unit	PTC <sup>C</sup> Rating kW/unit	Total Nameplate Capacity kW		Qty

### B.4 Photovoltaic Generator 2:

Inverter Manufacturer	Model Number	Nameplate Rating kW/unit	CEC Rating kW/unit	Output Voltage	1 or 3 Phase	Qty
PV Panel Manufacturer	Model Number	Nameplate Rating kW/unit	PTC Rating kW/unit	Total Nameplate Capacity kW		Qty

### C. Wind Turbine Generating Facility Information

Check this box if the inverter is incorporated in the wind turbine. Then complete the Wind Turbine information below and identify the following: Output Voltage: \_\_\_\_\_(volts); Phase Type:  1  3

### Part II – Description of the Generating Facilities – Continued

Inverter Manufacturer	Model Number	Nameplate Rating kW/unit	CEC Rating kW/unit	Output Voltage	1 or 3 Phase	Qty
Wind Turbine Manufacturer	Model Number	Nameplate Rating kW/unit	CEC Rating kW/unit	Total Nameplate Capacity kW		Qty

### D. AC Disconnect Switch

Check this box if no A/C Disconnect Switch is applicable. See Part III, Section C for requirements.

AC Disconnect Manufacturer	Model Number	Rating (amps)	Qty

If applicable, is/are the AC Disconnect(s) less than 10 ft. of the PG&E electric meter?  Yes  No

<sup>A</sup> California Energy Commission (CEC) ratings are available at [www.consumerenergycenter.org](http://www.consumerenergycenter.org)

<sup>C</sup> PTC: PVUSA Test Conditions. PTC ratings are available at [www.consumerenergycenter.org](http://www.consumerenergycenter.org)

**Please complete this agreement in its entirety**

† Information collected on this form is used in accordance with PG&E's Privacy Policy.

The Privacy Policy is available at [pge.com/privacy](http://pge.com/privacy).



# APPLICATION

## Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

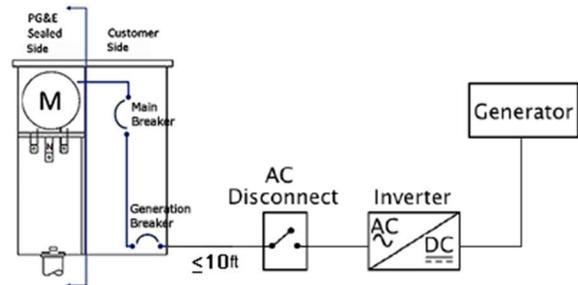
Note: PG&E's Electric and Gas Service Requirements, also known as the "Greenbook" requires the AC Disconnect Switch to be located 10 feet or less from PG&E's electric revenue meter at the point of common coupling or interconnection and easily seen from the panel. If the AC Disconnect Switch is greater than 10 feet or there is more than one AC Disconnect, a variance request must be submitted as outlined in Part II, Section A.

**E. Basic Single-Line Diagram (SLD) for Solar Projects** (check one):

I certify that the SLD below and the PV equipment information in Part II accurately represents the Customer's service, the Generating Facility (and that there are no other Generator Facility(ies)) connected to the service, and the project does not require a Variance Request.

**Utility Service:** (if using the SLD to the right)

Panel Voltage (volts)	Main Breaker (amps)	PV Breaker Size (amps)



I will submit a custom SLD for one or more of the following reasons: there is/are existing Generating Facility(ies) connected to the service, I am modifying an existing Generating Facility, the Basic SLD does not accurately reflect the project, or I am submitting a Variance Request. (See Part III Section D for Custom SLD details.)

~~**F. Service Panel Short Circuit Interrupting Rating (SCIR)** (for total inverter nameplate ratings larger than 11 kW):~~

~~SCIR of the service panel connected to this Generating Facility: \_\_\_\_\_ watts~~



# APPLICATION

## Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

### Part III – Interconnection Guidelines and Document Information

Note: Applications to interconnect systems located in San Francisco or Oakland may require additional analysis to determine whether or not their proposed installation is on PG&E's networked secondary system. Networked secondary systems are in place to provide heightened levels of reliability in densely populated areas and may affect the ability of PG&E to interconnect NEM customers. Please contact Electric Generation Interconnection department at 415-972-5676 or email [redacted] if the proposed installation is in San Francisco where the zip code is 94102, 94103, 94104, 94105, 94107, 94108, 94109, 94111 or 94133 or in Oakland where the zip code is 94607 or 94612, please see [www.pge.com/standardnem](http://www.pge.com/standardnem), under the labeled section "Which Customers Are Not Eligible For Standard NEM Interconnection" and the bullet "Secondary Network Areas In San Francisco and Oakland."

#### A. Documents

In addition to this NEM Interconnection Application, the documents listed below are needed to ensure safe and reliable operation of PG&E's Distribution System and to confirm that Customer's interconnection has been performed in accordance with PG&E's tariffs. Additional forms are available on PG&E's website at [www.pge.com/standardnem](http://www.pge.com/standardnem).

##### Required Documents

- Net Energy Metering (NEM) Interconnection Agreement for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less and Customer Authorization Form 79-1151A.
- Copy of the final, signed, jurisdiction approval (building permit) for Customer's Generating Facility.

##### Additional Documents (if applicable)

- Variance Request (if project deviates from requirements in Part II Section A).
- Custom Single-Line Diagram (SLD) (if project does not meet Part II Section E basic SLD requirements).

Documents and requirements other than those listed above and/or fees *may* be required depending on the specifics of the planned Generating Facility.

#### B. Variance Request (if applicable)

The Customer or the Customer's Contractor can request a Variance Request review from PG&E if the project is unable to meet the requirements described in the Distribution Interconnection Handbook and Greenbook, available at [www.pge.com/dih](http://www.pge.com/dih) and [www.pge.com/greenbook](http://www.pge.com/greenbook). The Variance Request must be submitted with the Interconnection Application and include the following.

1. Description of the proposal for which the Customer is requesting approval.
2. Customer name and project address.
3. Copy of the Custom Single Line Diagram or electrical drawings (Include the equipment, location, and/or distances for the proposed work).
4. Color photos of the Customer's area or section for the proposed work.
5. Manufacturer specification drawings for unapproved equipment that the Customer is requesting an approval.

#### C. AC Disconnect Switch Guidelines

PG&E recommends that customers installing an inverter-based generator consider also installing an AC Disconnect Switch to facilitate maintenance of the Customer's equipment (i.e. inverter, PV arrays, etc.). The AC Disconnect Switch provides the additional benefit of allowing PG&E to isolate the Customer's generator from the utility's Distribution System without having to interrupt service to the customer's facility or residence.

Customers **are not required** to include an AC Disconnect Switch when the facility has a single-phase self-contained electric revenue meter (i.e. 0-320 amp panel). However, if the Customer does not install an AC Disconnect Switch, the revenue meter may be temporarily removed by PG&E due to an emergency or maintenance on PG&E's system to isolate the Customer's generator from the electric distribution system. Removal of the revenue meter will result in loss of electrical service to the Customer's facility or residence.

An AC Disconnect Switch **is required** for a Customer with:

- Inverter-based interconnections having a three-phase self-contained meter or a transformer-rated meter (i.e. all meter panels or switchboards employing the use of potential and current transformers).

**Please complete this agreement in its entirety**



# APPLICATION

## Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

- Non-inverter based generators, including rotating or machine-based generators - irrespective of whether the service meter configuration is transformer-rated or self-contained.
- Inverter and non-inverter based generators that do not have overcurrent protection at the point of interconnection.

### Part III – Interconnection Guidelines and Document Information – Continued

#### D. Custom Single-line Diagram (SLD) (if applicable)

The Custom SLD must include the information below for identified equipment.

1. Manufacturer, model number, nameplate rating, quantity:
  - a) Inverter(s), PV or wind turbine generators, AC Disconnect Switch, generation output meter and instrument transformers.
2. Electrical rating and operating voltages:
  - a) Service panel, circuit breaker, and other Generating Facility protective devices
3. Location of:
  - a) Customer's loads relative to the Generating Facility, and the interconnection with PG&E's Distribution System.
  - b) AC Disconnect Switch.
4. Description of how the power output from the inverter is connected to the main service panel via a branch breaker. The ampere rating of this branch breaker and the main service panel breaker must be compatible with the output rating of the Generating Facility. The output rating is based on the total nameplate rating of the inverter.

**E. Governing Authority.** This form at all times shall be subject to such modifications as the California Public Utilities Commission may direct from time to time in the exercise of its jurisdiction.

Please submit the Agreement and Customer Authorization and Application online at [www.pge.com/standardnem](http://www.pge.com/standardnem).

**Electric Sample Form No. 79-1151B-02** Sheet 1  
Application - Net Energy Metering (NEM2) Interconnection For Solar And/Or  
Wind Electric Generating Facilities Of 30 Kilowatts Or Less

**Please Refer to Attached  
Sample Form**



# APPLICATION Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

## IMPORTANT NOTES:

- Customers may not operate their Generating Facility while interconnected to the PG&E system until they receive written permission from PG&E.
- For a non-exporting Generating Facility, RES-BCT facility, or NEM2 Generating technologies other than 30 kW or less solar or wind, Customers must submit the online Form 79-1174-02 available at [www.pge.com/gen](http://www.pge.com/gen).

### Part I – Generating Facility Information and Responsible Parties

#### A. Customer and Generating Facility Information (\*as it appears on the PG&E bill):

Electric Service Agreement ID\*

Meter Number\*

#### B. Interconnection Application Type (check one):

- New NEM2 Generating Facility interconnection at an existing PG&E service.
- Modify existing PG&E approved Generating Facility interconnection (adding/removing/replacing equipment).
- Must provide a Custom Single-Line Drawing (SLD) showing the original system and the modified system.

#### C. System Owner (check one):

- PG&E Customer Owned

If PG&E Customer Owned, please answer the following:

Property Assessed Clean Energy (PACE) Financed?  Yes  No

PACE financed by which entity? \_\_\_\_\_

Indicate the System Cost paid by Customer: \$ \_\_\_\_\_

If you have non-PACE financing or a lease, please fill in the information below.

Financial Institution/Lessor Name \_\_\_\_\_

Financial Institution/Lessor Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

- Third Party Owned

If Third Party Owned, please answer the following:

Claimed Federal Investment Tax Credit (ITC) Cost Basis: \$ \_\_\_\_\_

Name of Developer at the time of sale: \_\_\_\_\_

Contract Type:  PPA  Lease  Pre-Paid Lease  Other \_\_\_\_\_

#### D. Rebate Information:

Did the Customer participate in a California rebate program?  Yes  No

Please indicate the rebate program that you participated in: \_\_\_\_\_

Rebate Amount: \$ \_\_\_\_\_

**Please complete this agreement in its entirety**

† Information collected on this form is used in accordance with PG&E's Privacy Policy.  
The Privacy Policy is available at [pge.com/privacy](http://pge.com/privacy).



# APPLICATION

## Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

### Part I – Generating Facility Information and Responsible Parties – Continued

**E. Contractor Information** (List who is installing the system):  Check this box if self-installed

Company Name	California Contractors State License Number		
Street Address	City	State	Zip
Email	Phone Number		

**Home Improvement Salesperson (HIS) Registration Number Information**

Was a Home Improvement Salesperson (HIS) involved in the development of your project?

- Yes       No

*California Public Utilities Commission Decision 21-02-026 requires “the Home Improvement Salesperson (HIS) registration number of solar providers who are required to have a HIS registration number, while enabling solar providers who are not required to have a HIS registration number to indicate they are exempt and to instead provide the applicable contractor’s license.”*

If you checked “Yes” above:

Please provide the Home Improvement Salesperson (HIS) registration number below.

Home Improvement Salesperson (HIS) registration number: \_\_\_\_\_

**F. Preparer of this Application** (if not the PG&E Customer, the Preparer must be authorized to act on behalf of the Customer on the Interconnection Agreement and Customer Authorization Form 79-1151-02A):

Company Name	Preparer Name	Date Prepared
--------------	---------------	---------------

### Part II – Description of the Generating Facilities

**A. Variances from Distribution Interconnection Handbook (DIH) and Greenbook Requirements** (check one):  
Generating Facilities must meet the DIH and Greenbook requirements, available at [www.pge.com/dih](http://www.pge.com/dih) and [www.pge.com/greenbook](http://www.pge.com/greenbook). A Variance Request must be submitted with the application for deviations, i.e. line-side tap, AC Disconnect > 10 ft from PG&E meter. (See Part III Section B for information on submitting Variance Request)

- The project meets the DIH and Greenbook Requirements and does not require a Variance Request.  
 The project deviates from the DIH and Greenbook Requirements and I will include a Variance Request.

**B. Photovoltaic (PV) Generating Facility Information**

To avoid application processing delays, the manufacturer and model numbers provided should be the same as they appear on the Go Solar California website: <https://www.energy.ca.gov/programs-and-topics/programs/solar-equipment-lists>.

- B.1 Mounting Method:**     Rooftop       Ground       Mixed
- B.2 Tracking Type:**       Fixed       Single-Axis       Dual-Axis       Mixed

Please complete this agreement in its entirety



# APPLICATION

## Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

---

If fixed, please indicate: Tilt: \_\_\_\_\_ degrees Azimuth: \_\_\_\_\_ degrees

**B.3 Are Performance Monitoring and Reporting Services (PMRS) being utilized?**  Yes  No

Who is receiving the data (check all that apply):  Customer

Third Party (list name) \_\_\_\_\_



# APPLICATION

## Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

### Part II – Description of the Generating Facilities – Continued

#### B.4 Photovoltaic Generator 1:

Inverter Manufacturer	Model Number	Nameplate Rating kW/unit	CEC <sup>A</sup> Rating kW/unit	Output Voltage	1 or 3 Phase	Qty
PV Panel Manufacturer	Model Number	Nameplate Rating kW/unit	PTC <sup>B</sup> Rating kW/unit	Total Nameplate Capacity kW		Qty

#### B.4 Photovoltaic Generator 2:

Inverter Manufacturer	Model Number	Nameplate Rating kW/unit	CEC Rating kW/unit	Output Voltage	1 or 3 Phase	Qty
PV Panel Manufacturer	Model Number	Nameplate Rating kW/unit	PTC Rating kW/unit	Total Nameplate Capacity kW		Qty

#### C. Wind Turbine Generating Facility Information

Check this box if the inverter is incorporated in the wind turbine. Then complete the Wind Turbine information below and identify the following: Output Voltage: \_\_\_\_\_(volts); Phase Type:  1  3

Inverter Manufacturer	Model Number	Nameplate Rating kW/unit	CEC Rating kW/unit	Output Voltage	1 or 3 Phase	Qty
Wind Turbine Manufacturer	Model Number	Nameplate Rating kW/unit	CEC Rating kW/unit	Total Nameplate Capacity kW		Qty

#### D. AC Disconnect Switch

Check this box if no A/C Disconnect Switch is applicable. See Part III, Section C for requirements.

AC Disconnect Manufacturer	Model Number	Rating (amps)	Qty

If applicable, is/are the AC Disconnect(s) within 10 ft. of the PG&E electric meter?  Yes  No

Note: PG&E's Electric and Gas Service Requirements, also known as the "Greenbook" requires the AC Disconnect Switch to be located 10 feet or less from PG&E's electric revenue meter at the point of common coupling or interconnection and easily seen from the panel. If the AC Disconnect Switch is greater than 10 feet or there is more than one AC Disconnect, a variance request must be submitted as outlined in Part II, Section A.

<sup>A</sup> California Energy Commission (CEC) ratings are available at [www.consumerenergycenter.org](http://www.consumerenergycenter.org)

<sup>B</sup> PTC: PVUSA Test Conditions. PTC ratings are available at [www.consumerenergycenter.org](http://www.consumerenergycenter.org)

**Please complete this agreement in its entirety**

# APPLICATION

## Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

### Part II – Description of the Generating Facilities – Continued

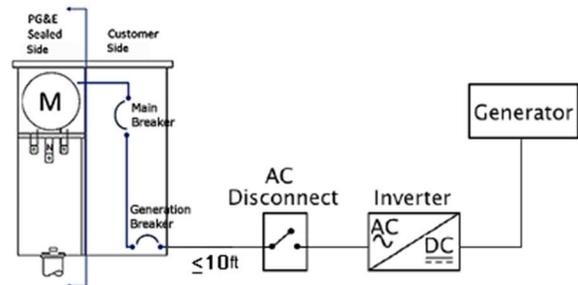
#### E. Basic Single-Line Diagram (SLD) for Solar Projects (check one):

I certify the following:

- 1) SLD below and the PV equipment information in Part II accurately represents the Customer's service,
- 2) the Generating Facility (and that there are no other Generator Facility(ies)) connected to the service, and
- 3) the project does not require a Variance Request.

**Utility Service:** (if using the SLD to the right)

Panel Voltage (volts)	Main Breaker (amps)	PV Breaker Size (amps)



I will submit a custom SLD for one or more of the following reasons: there is/are existing Generating Facility(ies) connected to the service, I am modifying an existing Generating Facility, the Basic SLD does not accurately reflect the project, or I am submitting a Variance Request.  
(See Part III Section D for Custom SLD details.)

~~**F. Service Panel Short Circuit Interrupting Rating (SCIR)** (for total inverter nameplate ratings larger than 11 kW):~~

~~SCIR of the service panel connected to this Generating Facility: \_\_\_\_\_ amps~~

~~**G.F. Customer Impacted by a Natural or ManHuman-Made Disaster**~~

~~Customers who were taking service on the NEM 2 tariff prior to the total or partial destruction of their system have the option to resume service on the same NEM tariff if a request for reapplication is received within two years from the date of destruction. To be eligible for this provision, all the following must be true:~~

- ~~1. You are the same PG&E customer of record pre-system destruction~~
- ~~2. You are now reapplying with a system that is sized to your most recent 12 months usage, or estimated usage that is determined by building size<sup>C</sup> (if applicable)~~
- ~~3. You are not operating the new (either completely new or partially new) system without written permission from PG&E~~
- ~~4. Your NEM Transition Period has not expired at the time of reapplication (see NEM 2 Tariff)~~

~~Based on the above, select the appropriate box:~~

- I am a Customer who was impacted by a Natural or **ManHuman**-Made Disaster as described in the NEM Tariffs and the above statements are true. I will submit my application online at [yourprojects.pge.com](http://yourprojects.pge.com) and will include the complete system currently onsite on the single line diagram. If my previous system was destroyed, I will also state this on the single line diagram.
- I am either ineligible for this provision or this provision does not apply to my application. In either case, I will submit my application online at [yourprojects.pge.com](http://yourprojects.pge.com).

<sup>C</sup>Building Size Calculation: Sq Ft X 3.23. Note: 2 watts/sq ft x 1/1,000 watts x 8,760 hrs/yr x 0.19 solar capacity factor = 3.32

**Please complete this agreement in its entirety**



# APPLICATION

## Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

### Part III – Interconnection Guidelines and Document Information

Note: Applications to interconnect systems located in San Francisco or Oakland may require additional analysis to determine whether or not their proposed installation is on PG&E's networked secondary system. Networked secondary systems are in place to provide heightened levels of reliability in densely populated areas and may affect the ability of PG&E to interconnect NEM2 customers. ~~Please contact PG&E's Solar Customer Service Center at 877-743-4112, or email [SNEMHelp@pge.com](mailto:SNEMHelp@pge.com)!~~ If the proposed installation is in San Francisco where the zip code is 94102, 94103, 94104, 94105, 94107, 94108, 94109, 94111 or 94133 or in Oakland where the zip code is 94607 or 94612, please see [www.pge.com/standardnem](http://www.pge.com/standardnem), under the labeled section "Which Customers Are Not Eligible For Standard NEM Interconnection" and the bullet "Secondary Network Areas In San Francisco and Oakland."

#### A. Documents

In addition to this NEM2 Interconnection Application, the documents listed below are needed to ensure safe and reliable operation of PG&E's Electric System and to confirm that Customer's interconnection has been performed in accordance with PG&E's tariffs. Additional forms are available on PG&E's website at [www.pge.com/standardnem](http://www.pge.com/standardnem).

##### Required Documents

- Net Energy Metering (NEM2) Interconnection Agreement for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less and Customer Authorization Form 79-1151-02A.
- Copy of the final, signed, jurisdiction approval (building permit) for Customer's Generating Facility.

##### Additional Documents (if applicable)

- Variance Request (if project deviates from requirements in Part II Section A).
- Custom Single-Line Diagram (SLD) (if project does not meet Part II Section E basic SLD requirements).

Documents and requirements other than those listed above and/or fees *may* be required depending on the specifics of the planned Generating Facility.

#### B. Variance Request (if applicable)

The Customer or the Customer's Contractor can request a Variance Request review from PG&E if the project is unable to meet the requirements described in the Distribution Interconnection Handbook and Greenbook, available at [www.pge.com/dih](http://www.pge.com/dih) and [www.pge.com/greenbook](http://www.pge.com/greenbook). The Variance Request must be submitted with the Interconnection Application and include the following.

1. Description of the proposal for which the Customer is requesting approval.
2. Customer name and project address.
3. Copy of the Custom Single Line Diagram or electrical drawings (Include the equipment, location, and/or distances for the proposed work).
4. Color photos of the Customer's area or section for the proposed work.
5. Manufacturer specification drawings for unapproved equipment that the Customer is requesting an approval.

#### C. AC Disconnect Switch Guidelines

PG&E recommends that customers installing an inverter-based generator consider also installing an AC Disconnect Switch to facilitate maintenance of the Customer's equipment (i.e. inverter, PV arrays, etc.). The AC Disconnect Switch provides the additional benefit of allowing PG&E to isolate the Customer's generator from the utility's Electric System without having to interrupt service to the customer's facility or residence.

Customers **are not required** to include an AC Disconnect Switch when the facility has a single-phase self-contained electric revenue meter (i.e. 0-320 amp panel). However, if the Customer does not install an AC Disconnect Switch, the revenue meter may be temporarily removed by PG&E due to an emergency or maintenance on PG&E's system to isolate the Customer's generator from the electric distribution system. Removal of the revenue meter will result in loss of electrical service to the Customer's facility or residence.

An AC Disconnect Switch **is required** for a Customer with:

- Inverter-based interconnections having a three-phase self-contained meter or a transformer-rated meter (i.e. all meter panels or switchboards employing the use of potential and current transformers).

**Please complete this agreement in its entirety**



# APPLICATION

## Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

- Non-inverter based generators, including rotating or machine-based generators - irrespective of whether the service meter configuration is transformer-rated or self-contained.
- 

### Part III – Interconnection Guidelines and Document Information - Continued

- Inverter and non-inverter based generators that do not have overcurrent protection at the point of interconnection.

#### D. Custom Single-line Diagram (SLD) (if applicable)

The Custom SLD must include the information below for identified equipment.

1. Manufacturer, model number, nameplate rating, quantity:
  - a) Inverter(s), PV or wind turbine generators, AC Disconnect Switch, generation output meter and instrument transformers.
2. Electrical rating and operating voltages:
  - a) Service panel, circuit breaker, and other Generating Facility protective devices
3. Location of:
  - a) Customer's loads relative to the Generating Facility, and the interconnection with PG&E's Electric System.
  - b) AC Disconnect Switch.
4. Description of how the power output from the inverter is connected to the main service panel via a branch breaker. The ampere rating of this branch breaker and the main service panel breaker must be compatible with the output rating of the Generating Facility. The output rating is based on the total nameplate rating of the inverter.

**E. Governing Authority.** This agreement at all times shall be subject to such modifications as the California Public Utilities Commission may direct from time to time in the exercise of its jurisdiction.

Please submit the Agreement and Customer Authorization and Application online at [www.pge.com/standardnem](http://www.pge.com/standardnem).

**Electric Sample Form No. 79-1174-02**  
Rule 21 Generator Interconnection Application

Sheet 1

**Please Refer to Attached  
Sample Form**

# RULE 21 GENERATOR INTERCONNECTION APPLICATION (Form 79-1174-02)

## Part I - Introduction and Overview

**A. Applicability:** This Generating Facility Interconnection Application (Application) is used to request the interconnection to Pacific Gas and Electric Company's (PG&E) Electric System (over which the California Public Utilities Commission (CPUC) has jurisdiction) one or more of the following<sup>1</sup> tariffs:

- (1) Non-Exporting Generating Facilities;
- (2) NEM2 Solar (PV) (other than PV 30 kW or less)<sup>2</sup>; or RPS Generating Facilities
- (3) NEM2 California Dept. of Corrections & Rehabilitation
- (4) NEM2A – NEM2 Load Aggregation (under Schedule NEM2)
- (5) NEM2MT- generating facilities subject to multiple tariff treatment
- (6) RES-BCT (Renewable Energy Self-Generation Bill Credit Transfer) Generating Facilities;
- (7) NEMFC / NEMFCA Net Energy Metering for Fuel Cells
- (8) NEM2V – Virtual Net Energy Metering
- (9) NEMVMASH (on a single Service Delivery Point, or for a Low Income Development)

Refer to PG&E's Electric Rule 21 and program tariffs to determine the specific requirements for interconnecting a Generating Facility. Capitalized terms used in this Application, and not otherwise defined herein, shall have the same meanings as defined in PG&E's Rule 21 and Rule 1.

Except as noted in the next paragraph, this Application may be used for any Generating Facility to be operated by, or for, a Customer and/or Interconnection Customer to supplement or serve part or all of its electric energy requirements that would otherwise be provided by PG&E, including distributed generation, cogeneration, emergency, backup, standby generation, and certain Net Energy Metered Generating Facilities. While Customers operating Generating Facilities isolated from PG&E's Electric System are not obligated to enter into an Interconnection Agreement with PG&E, parts of this Application will still need to be completed to satisfy PG&E's notice requirements for operating an isolated Generating Facility as specified in the California Health and Safety Code Section 119085 (b).

This Application may not be used to apply for interconnecting Generating Facilities used to participate in transactions where all, or a portion of, the electrical output of the Generating Facility is scheduled with the California Independent System Operator (CAISO). Such transactions may be subject to the jurisdiction of the Federal Energy Regulatory Commission (FERC) and require a different application available from PG&E.

**This Application is not applicable for incentives and/or rebates offered by the Energy Resources Conservation and Development Commission (CEC), the CPUC or any other entity. Please contact those agencies directly or on their respective websites:**

[www.energy.ca.gov](http://www.energy.ca.gov) and [www.cpuc.ca.gov](http://www.cpuc.ca.gov).

<sup>1</sup> Also when included with Energy Storage (e.g., batteries), or when operating under the provisions of PU Code 218, where permitted.

<sup>2</sup> For Net Energy Metering Customers with Solar and/or Wind Electric Generating Facilities less than 30 kW that are not paired with Energy Storage, simpler, shorter forms are available from PG&E (i.e., Forms 79-1151-02 A and B). These forms are available on PG&E's website at <http://www.pge.com/gen>.

## RULE 21 GENERATOR INTERCONNECTION APPLICATION (Form 79-1174-02)

**B. Guidelines and Steps for Interconnection:** This Application must be completed and sent to PG&E along with the additional information indicated in Part II below to initiate PG&E's interconnection review of the proposed Generating Facility. When applicable per Rule 21, unless exempted by CPUC Decision, a non-refundable Interconnection Request fee shall be invoiced and must be paid by Interconnection Customer. Pursuant to PG&E's Rule 21, there may be additional study and other costs; see PG&E's Rule 21, Sections E.2.c and E.3., for more information regarding interconnection of a generator to PG&E's Electric System.

This document is only an Application. Upon acceptance of the Generating Facilities, PG&E will prepare an Interconnection Agreement for execution by the Interconnection Customer, the party that will be responsible for the Generating Facility. PG&E may also require an inspection and testing of the Generating Facility and installation of any related Interconnection Facilities prior to giving the Interconnection Customer written authorization to operate in parallel. **Unauthorized Parallel Operation may be dangerous and may result in injury to persons and/or may cause damage to equipment and/or property for which a Interconnection Customer/Customer may be liable!**

Please note, other approvals may need to be acquired, and/or other agreements may need to be formed with PG&E or regulatory agencies, such as the Air Quality Management Districts and local governmental building and planning commissions, prior to operating a Generating Facility. PG&E's authorization to operate in parallel does not satisfy the need for an Interconnection Customer to acquire such other approvals.

### Part II – Describing the Generating Facility and Host Customer's Electrical Facilities

**Required Documents:** Each of the following documents **is required to be submitted** before this application will be processed. Drawings must conform to accepted engineering standards and must be legible. Electronic documents are preferred.

1. A **Single-line drawing** showing the electrical relationship and descriptions of the significant electrical components such as the primary switchgear, secondary switchboard, protective relays, transformers, generators, circuit breakers, with operating voltages, capacities, and protective functions of the Generating Facility, the Customer's loads, and the interconnection with PG&E's Electric System. Please show the location of all required net generation electric output meter(s) and the A.C. manual operated disconnect switch on the single line drawing, when required.
2. **Site plans and diagrams** showing the physical relationship of the significant electrical components of the Generating Facility such as generators, transformers, primary switchgear/secondary switchboard, and control panels, the Customer's loads and the interconnection with PG&E's Electric System. Please show the location of all required net generation electric output meter(s) and the A.C. manual operated disconnect switch on the site plans, when required.
3. **Disconnect Switch Specification Sheet** - as required in Rule 21 Section H.1.d, along with the disconnect switch specification sheet.

PG&E allows only one AC Disconnect for a generating facility but does make exceptions upon review and approval. Please provide a Variance Letter explaining why multiple AC disconnect switches are needed. This Variance Request will be reviewed in parallel with the Engineering Review.

4. **Variance Request** - A variance request will be required for anything outside Electric Rule 21<sup>3</sup>, PG&E's Greenbook<sup>4</sup>, or PG&E's Distribution or Transmission Interconnection Handbooks<sup>5,6</sup> stated requirements. (See links below)
5. **Transformer nameplate information** - Provide **transformer nameplate information** (voltages, capacity, winding arrangements, connections, impedance, et cetera), if transformers are used to interconnect the Generating Facility with PG&E's Electric System,
6. **Transfer switch/scheme documentation** - If used to interconnect the Generating Facility with PG&E Electric System, Documentation shall include component descriptions, capacity ratings, and a technical description of how the transfer scheme is intended to operate.
7. **Protective relay documentation** If used to control the interconnection, documentation shall include protection diagrams or elementary drawings showing relay wiring and connections, proposed relay settings, and a description of how the protection scheme is intended to function.

## Part III Application Appendices

**Application Instructions:** Complete this application for the complete Generating Facility and enter this information into PG&E's web-based form. (PG&E strongly recommends preparing all information and materials before starting the online application.) The online web-based form can be found at:

[https://www.pge.com/en\\_US/for-our-business-partners/interconnection-renewables/interconnections-renewables.page?ctx=large-business](https://www.pge.com/en_US/for-our-business-partners/interconnection-renewables/interconnections-renewables.page?ctx=large-business)

Questions concerning PG&E's Online Application process can be directed to the Electric Generation Interconnection Department at [rule21gen@pge.com](mailto:rule21gen@pge.com).

For each new generating facility you are applying to interconnect, please complete and submit the applicable appendices.

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<sup>3</sup> Rule 21 can be found at: [https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC\\_RULES\\_21.pdf](https://www.pge.com/tariffs/assets/pdf/tariffbook/ELEC_RULES_21.pdf)

<sup>4</sup> PG&E's Greenbook can be found at: <http://www.pge.com/greenbook/>

<sup>5</sup> Distribution Interconnection Handbook (DIH) can be found at: [https://www.pge.com/en\\_US/for-our-business-partners/services/alternatives-to-pge/distribution-handbook.page](https://www.pge.com/en_US/for-our-business-partners/services/alternatives-to-pge/distribution-handbook.page)

<sup>6</sup> Transmission Interconnection Handbook (TIH) can be found at: [https://www.pge.com/en\\_US/for-our-business-partners/services/alternatives-to-pge/third-party-electric-options/electric-transmission-services/transmission-interconnection-handbooks.page](https://www.pge.com/en_US/for-our-business-partners/services/alternatives-to-pge/third-party-electric-options/electric-transmission-services/transmission-interconnection-handbooks.page)

**Part IV Attachments / On-Line Form - Overview**

Table 1 - Summary of the attachment to this form.

		Attachment	Project Type
	1	A	Customer Project Information
EXPORT	2	B	Non Export
	3	C	Export
TECHNOLOGY	4	D	Solar (PV) Only
	5	E	Wind Only
	6	F	Machine-Based Only
	7	G	Fuel Cell
	8	H	Energy Storage Only
TARIFF PROGRAM	9	I	RES-BCT
	10	J	NEM2A
	11	K	NEMFCA
	12	L	NEM2V
	13	M	NEMVMASH
	14	N	NEMVMASH Development

Table 2 below summarizes which attachments to this form will be required for each tarified program.

Table 2 – New Application Form/Attachments as they apply to PG&E’s Various Tarified Programs

Category			Non-Export	NEMEXP	RES-BCT	NEM2A	NEMFC	NEM2V	NEMVMASH
	Main (79-11841174-02)	Customer info	Black	Black	Black	Black	Black	Black	Black
	A	Customer & Project info	Black	Black	Black	Black	Black	Black	Black
Rule 21 - must complete one of these Attachments	B	Non-export	Grey						
	C	Export	Grey	Black	Black	Black	Black	Black	Black
Each generating facility must complete one corresponding to technology	D	Solar	Grey					Grey	Black
	E	Wind	Grey					Grey	
	F	Machine	Grey	(1)	(1)	(1)		(1)	
	G	Fuel Cell	Grey	(1)	(1)	(1)	(2)	(1)	
	H	Storage	Grey	(3)	(3)	(3)	(3)		
Complete Attachment that corresponds to tariff program for a generating facility	I	RES-BCT			Black				
	J	NEM2A				Black			
	K	Fuel Cell Aggregation					Black		
	L	NEM2V						Black	
	M	NEMVMASH Single building							Black
	N	NEMVMASH development							Black

Black – must be complete.

Grey – at least one option in category must be selected

Note (1) – must be fueled with a renewable (RPS-Eligible) fuel.

Note (2) – may be fueled with a non-renewable fuel.

Note (3) – treatment consistent with Decision 14-05-033, if NEM paired.

If an applicant’s project has multiple generating facilities, they would need to complete all forms/screens relevant for each generating facility in technology and tariff program (e.g. for NEM2MT).



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 4

APPLICABILITY: (Cont'd.) Schedule NEM applies also to specified net energy metering eligible (NEM-eligible) generators in a generating facility comprised of multiple NEM- and non-NEM-eligible generators, served through the same Point of Common Coupling (PCC), where the NEM-eligible generating capacity is not more than 1 MW, or in the case of the CDCR or Armed Forces, for CDCR and Armed Forces accounts satisfying Special Condition 8 or 9, respectively. Such facilities will be referred to as Multiple Tariff Facilities, and any group of generators within such a facility that is subject to the same tariff provisions for billing and metering purposes will be referred to as a Constituent Generator Group. In order to be eligible for this rate schedule in a Multiple Tariff Facility, the customer-generator must meet all the requirements of Special Condition 4 for the schedule NEM-eligible generator, and must also meet any other applicable tariffs.

Due to the complexity of Load Aggregation Arrangements and/or Multiple Tariff Facilities NEM generating facilities interconnecting under the provisions of Special Conditions 4 and 7 may require additional review and/or interconnection facilities and other equipment, and may incur interconnection costs, as provided for in electric Rule 21.

CDCR and Armed Forces Eligible Customer Generators as defined in Special Condition 8 and 9, respectively, are subject to Network and/or Distribution upgrade costs in accordance with Rule 21 Section D.13.e.

A Customer who owns, rents or leases a premises that includes solar and/or wind turbine electrical generating facilities, or a hybrid of both with a capacity of 30kW or less, that were previously approved by PG&E for NEM interconnection prior to the Customer moving in and/or taking electric service with PG&E (Change of party Customer) will take service on this tariff as long as the requirements of this section are met. To be eligible, the Change of party Customer must: 1) ensure that the generating facility is compliant with all applicable safety and performance standards as delineated in PG&E's Electric Rule 21 and other applicable tariffs; 2) understand that PG&E may from time to time release to the California Energy Commission and/or the California Public Utilities Commission, information regarding the Change of party Customer's facility, including Change of party Customer's name and Generating Facility location, capacity and operational characteristics. Any type of Renewable Electrical Generation Facility other than a solar and/or wind turbine electrical generating facilities, or a hybrid of both with a capacity of 30kW or less, may at PG&E's request be required to complete and submit to PG&E a new Interconnection Agreement (79-12204137) and/or Affidavit (Appendix C).

Change of party Customers making any modification to previously approved PG&E NEM solar and/or wind turbine electrical generating facilities or other Renewable Electrical Generation Facility are not eligible for this provision and must complete the interconnection process in Special Condition 3 of this tariff.

Change of party Customers also must agree to comply with all rules and requirements of PG&E's Net Energy Metering tariffs.

When the builder/developer of a subdivision sells a new home during the NEM application process, after the builder/developer completes the Net Energy Metering Application and Interconnection Agreement and otherwise meets all of PG&E's requirements for the NEM project, but prior to PG&E providing final written approval for Parallel Operation on Schedule NEM, PG&E may treat the new home owner/Customer as a Change of-party Customer, as defined above.

(Continued)

Advice Decision 4716-E

Issued by  
**Steven Mainight**  
Senior Vice President  
Regulatory Affairs

Date Filed  
Effective  
Resolution

October 2, 2015  
November 1, 2015



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 12

SPECIAL  
CONDITIONS:  
(Cont'd.)

3. INTERCONNECTION: Prior to receiving approval for Parallel Operation, the customer-generator must submit a completed PG&E application form and interconnection agreement as follows:

Rate Option	Application	Interconnection Agreement
NEMS	For Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less:  <i>Application - Net Energy Metering Interconnection for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less (Form 79-1151B)<sup>3</sup></i>	<i>Agreement and Customer Authorization – Net Energy Metering Interconnection for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less (Form 79-1151A)<sup>3</sup></i>
NEMEXP	For Solar and/or Wind Net Energy Metering Generating Facilities of 1,000 Kilowatts or Less, other than Facilities of 30 Kilowatts or Less:  <i>Online Rule 21 Generator Interconnection Application, (Form 79-1174-02)</i>	<i>Interconnection Agreement for Net Energy Metering of Solar or Wind Electric Generating Facilities of 1,000 Kilowatts or Less, other than Facilities of 30 Kilowatts or Less (Form 79-1220978)</i>
	For Renewable Electrical Generating Facilities other than Solar and/or Wind Electric Generating Facilities of 1,000 Kilowatts or Less:  <i>(same as for Solar and/or Wind NEMEXP)</i>	<i>Interconnection Agreement for Net Energy Metering For A Renewable Electrical Generation Facility Of 1,000 Kilowatts Or Less (Form 79-1220137)</i>
NEMEXPM	For all other commercial, industrial customer-generators, and agricultural customers billed monthly under Special Condition 2 with (i) Solar and/or Wind Generating Facilities of 1,000 Kilowatts or Less, other than Facilities of 30 Kilowatts or Less, (ii) or any other Renewable Electrical Generation Facility of 1,000 Kilowatts or Less:  <i>(same as for NEMEXP)</i>	<i>(same as for NEMEXP)</i>
NEMMT	For customer-generators taking service as a Multiple Tariff Facility under Special Condition 4 of this tariff:  <i>Online Rule 21 Generator Interconnection Application (Form 79-1174-02)</i>	<i>Generating Facility Interconnection Agreement (Multiple Tariff) (Form 79-1069)</i>
NEM Inspection Report	To accompany a new interconnection agreement, as required under Special Condition 6 of this tariff:	<i>NEM/NEMVMASH Inspection Report – (Form 79-1125)</i>

<sup>3</sup> Both the Agreement and Customer Authorization (79-1151A) and Application (79-1151B) forms must have been submitted before PG&E will issue the Permission to Operation (PTO) letter. Information in the Application can be submitted by the Company or Customer in an electronic format, subject to approval by PG&E.

(Continued)



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 13

SPECIAL  
CONDITIONS:  
(Cont'd.)

3. INTERCONNECTION (Cont'd):

Rate Option	Application	Interconnection Agreement
NEMPS	For NEMPS (Special Condition 8) for projects that meet NEM integrity requirements	
	<i>Online Rule 21 Generator Interconnection Application (Form <b>79-1174-02</b>)</i>	<b>79-1193 - AGREEMENT AND CUSTOMER AUTHORIZATION Net Energy Metering (NEM) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less with Energy Storage of 10 Kilowatts Or Less or Energy Storage with Power Control System Certification</b>
NEMCDCR	See Special Condition 8	
NEMUSAF	See Special Condition 9	

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.

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 Renewable Electric Generation Facility. However, a customer may not subsequently add load to that additional service, and if the Renewable Electrical Generation Facility is removed, the additional service, may not be converted to a load account.

(Continued)



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 23

SPECIAL  
CONDITIONS:  
(Cont'd.)

8. California Department of Corrections and Rehabilitation (CDCR)

“Eligible customer-generator” includes the Department of Corrections and Rehabilitation using a renewable electrical generation technology, or a combination of renewable electrical generation technologies, with a total capacity of not more than eight megawatts, that is located on the department’s owned, leased, or rented premises, and is interconnected and operates in parallel with the electrical grid, and is intended primarily to offset part or all of the facility’s own electrical requirements.

The amount of any wind generation exported to the electrical grid shall not exceed 1.35 megawatt at any time. CDCR Eligible Customer Generators are subject to Network and/or Distribution upgrade costs in accordance with Rule 21 Section D.13.e.

CDCR shall use Interconnection Application Form 79-~~1174-02974~~ to apply under this Special Condition. In addition to submitting the application form, CDCR will notify PG&E at rule21gen@pge.com of the Generating Facility’s size, and if applicable, any allocation between NEM and non-NEM generation.

9. Armed Forces

For the purposes of this section the Armed Forces includes the United States Army, Navy, Air Force, Marine Corps, and Coast Guard,

Eligible customer-generators pursuant to PUC 2827(b)(4)(C)(ii) shall include a base or facility” if it is an establishment under the jurisdiction of the Armed Forces, is an “eligible customer-generator” if the base or facility uses a renewable electrical generation facility, or a combination of those facilities, that:

(a) is located on premises owned, leased, or rented by the Armed Forces base or facility, and

(b) is interconnected and operates in parallel with the electrical grid,

(c) is intended primarily to offset part or all of the base or facility’s own electrical requirements, and

(d) has a generating capacity that does not exceed the lesser of (i) 12 megawatts or (ii) one megawatt greater than the minimum load of the base or facility over the prior 36 months, and

(Continued)



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 24

SPECIAL  
CONDITIONS:  
(Cont'd.)

9. Armed Forces (Cont'd.)

(e) Unless prohibited by federal law, a renewable electrical generation facility shall not be eligible for net energy metering for privatized military housing pursuant to this subparagraph if the renewable electrical generation facility was procured using a sole source process. A renewable electrical generation facility procured using best value criteria, if otherwise eligible, may be used for net energy metering for privatized military housing pursuant to this subparagraph. For these purposes, "best value criteria" means a value determined by objective criteria and may include, but is not limited to, price, features, functions, and life-cycle costs. Armed Forces applicant will need to attest to this using Form 79-978A.

Customer-generators meeting all of the above condition will be referred to as Armed Forces customer generators.

Armed Forces customer generators shall use the Application and Interconnection Form 79-[1174-02974](#) to apply under this Special Condition. In addition to submitting the application form, Armed Forces will notify PG&E at [rule21gen@pge.com](mailto:rule21gen@pge.com) of the Generating Facility's size, and if applicable, any allocation between NEM and non-NEM generation.



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

SPECIAL  
CONDITIONS:  
(Cont'd.)

11. NEM Paired Storage

c. Types of NEM Paired Storage

1) Integrated Storage: (Cont'd.)

Note that, for battery-based storage, the storage device must **only** be capable of storing energy from the REGF to be considered Integrated Storage.

Integrated Storage apply to both AC-Coupled and DC-Coupled storage systems that satisfy the definition of "No Grid Charging" above. The verification testing procedure is outlined in the PG&E Distribution Generation Interconnection Handbook (DIH).

<u>INTEGRATED STORAGE</u> (By definition the storage device must only be capable of storing energy from the REGF)				
SCENARIO	Billed As	Interconnection Agreements	Inter-connection Costs	Case
AC Coupled Or DC Coupled	billed as if storage and REGF were all one generator (e.g. NEMS, NEMEXP)	<b>≤ 1 MW</b> apply with 79-1174-02 and Interconnection agreement 79-1193	Per 5.i	1A

2) Directly Connected:

Directly Connected NEM Paired Storage is defined in the RPS guidelines as meeting the following requirements:

(i) The storage device is directly connected to the REGF 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

(ii) The storage device must be operated as part of the NEM eligible facility.

Note that the storage device is **not** required to be exclusively charged by the REGF.

(Continued)



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

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 Grid Export

(Continued)



**ELECTRIC SCHEDULE NEM  
NET ENERGY METERING SERVICE**

Sheet 30

SPECIAL  
CONDITIONS:  
(Cont'd.)

11. NEM Paired Storage

c. Types of NEM Paired Storage

2) Directly Connected: (Cont'd.)

(iv) Large AC Coupled storage system ("Large NEM-eligible GFs")  
(Cont'd.)

Large NEM-eligible GFs must apply with 79-1174-02, either complete interconnection agreement Form 79-1193 (solar and/or wind electric facilities of 30kW or less) or Form 79-1069 (all other REGF with a storage system configurations), and will be billed as described in Section 3.(ii) of this special condition.

(v) Small AC-Coupled storage systems ("Small NEM-eligible GFs")

Small NEM-eligible Generating Facilities (GFs) are NEM-eligible GFs paired with storage sized 10 kW or smaller. For small NEM-eligible GFs, the storage device is not required to be sized to the customer's demand or the NEM generator. Small NEM-eligible GFs have the option to install metering as required for Large NEM-eligible GFs to be billed as described in Section 3.(ii) of this special condition. Otherwise, it will be billed using the estimation methodology describe in Section 3.(i) of this special condition.

Small NEM-eligible GFs must apply with 79-1174-02, either complete interconnection agreement Form 79-1193 (solar and/or wind electric facilities of 30kW or less) or Form 79-1069 (all other REGF with a storage system configurations), when the NEM-eligible GF exceeds 30kW.

(Continued)

Advice 5501-E-B  
Decision 19-01-030

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

Submitted November 8, 2019  
Effective January 6, 2020  
Resolution



**ELECTRIC SCHEDULE NEM2  
NET ENERGY METERING SERVICE**

Sheet 13

SPECIAL  
CONDITIONS:  
(Cont'd.)

3. INTERCONNECTION: Prior to receiving approval for Parallel Operation, the customer-generator must submit a completed PG&E application form and interconnection agreement as follows:

Rate Option	Application	Interconnection Agreement	
NEM2S	For Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less:  <i>Application - Net Energy Metering (NEM2) Interconnection for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less (Form 79-1151B-02)<sup>4</sup></i>	<i>Agreement and Customer Authorization – Net Energy Metering (NEM2) Interconnection for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less (Form 79-1151A-02)<sup>4</sup></i>	
NEM2EXP NEM2EXPM	For Solar and/or Wind Net Energy Metering (NEM2) Generating Facilities of 1,000 Kilowatts or Less, other than Facilities of 30 Kilowatts or Less:  <i>Generating Facility Interconnection Application, (Form 79-1174-02)</i>	<i>Interconnection Agreement for Net Energy Metering (NEM2) of Solar or Wind Electric Generating Facilities of 1,000 Kilowatts or Less, other than Facilities of 30 Kilowatts or Less (Form 79-1220198-02)</i>	(T)
	For Net Energy Metering (NEM2) non-Solar and/or Wind Generating Facilities of any size, and Solar and/or Wind Generating Facilities greater than 1,000 kW:  <i>Generating Facility Interconnection Application, (Form 79-1174-02)</i>	<i>Interconnection Agreement For Net Energy Metering (NEM2) non-Solar and/or Wind Generating Facilities of any size, and Solar and/or Wind Generating Facilities greater than 1,000 kW (Form 79-1198-02)</i>	(T) (T)

<sup>4</sup> Both the Agreement and Customer Authorization (79-1151A-02) and Application (79-1151B-02) forms must have been submitted before PG&E will issue the Permission to Operation (PTO) letter. Information in the Application can be submitted by the Company or Customer in an electronic format, subject to approval by PG&E.

(Continued)



**ELECTRIC RULE NO. 21**  
**GENERATING FACILITY INTERCONNECTIONS**

Sheet 55

- E. INTERCONNECTION REQUEST SUBMISSION PROCESS (Cont'd.)
  - 2. INTERCONNECTION REQUEST PROCESS (Cont'd.)
    - c. Applicant Completes an Interconnection Request (Cont'd.)

**TABLE E.1**

**Summary of Interconnection Request Fees, Deposits and Exemptions**

Generating Facility Type	Interconnection Request Fee	Supplemental Review Fee	Detailed Study Deposit	Additional Commissioning Test Verification	Cost Envelope Option Deposit****	Modifications Fee per (Table Ee.1) *****
Non-Net Energy Metering and > 1 MW NEM-2	\$800	\$2,500*	For a Generating Facility with a Gross Nameplate Rating of 5 MW or less and applying to the Independent Study Process, \$10,000 for a System Impact Study or the DGS Phase I Interconnection Study in the case of the Distribution Group Study Process; and \$15,000 for an Interconnection Facilities Study or DGS Phase II Interconnection Study in the case of the Distribution Group Study Process.  For a Generating Facility with a Gross Nameplate Rating above 5 MW, \$50,000 plus \$1,000 per MW of electrical output of the Generating Facility, or the increase in electrical output of the existing Generation Facility, as applicable, rounded up to the nearest whole MW, up to a maximum of \$250,000.	\$150/Person Hour**	\$2,500	\$0
≤ 1 MW NEM-2***	\$145	\$0	\$0	N/A	\$2,500	\$0
NEM-1	\$0	\$0	\$0	N/A	\$2,500	n/a
Non-NEM Solar ≤ 1MW*****	First \$5,000 of study fees waived			\$150/Person Hour**	\$2,500	\$0

\* Optional \$1,000 additional fault current study fee pursuant to Section F.2.c.ii. Pursuant to D. 20-09-035, Applicants have the option to pre-pay the non-refundable Supplemental Review Fee (such as concurrently with the Interconnection Request fee) or separately upon completion of the Initial Review.

\*\* Plus additional costs for travel, lodging and meals.

\*\*\* Applicants that participate in the Single-Family Affordable Solar Homes (SASH) program are exempt from the Interconnection Request fee.

\*\*\*\* Interconnection Requests that have selected the Cost Envelope Option and that subsequently qualify for and pass the Fast Track Process evaluation, as well as NEM Generating Facilities and Solar ≤ 1 MW Generating Facilities evaluated under the Independent Study Process, must provide the Cost Envelope Option deposit in accordance with Section F.7 to remain eligible for the Cost Envelope Option.

\*\*\*\*\* The fee will be set to \$0 for now, until PG&E submits a new Advice Letter to increase it. Note: the fee does not apply to NEM-1 nor NEMFC by statute. SASH is also exempt from this fee per D. 16-01-044.

\*\*\*\*\*Solar ≤ 1MW that does not sell power to Distribution Provider (per D.01-07-027) nor participate in NEM-1 or NEM-2.

(Continued)



**ELECTRIC RULE NO. 21**  
GENERATING FACILITY INTERCONNECTIONS

Sheet 72

**Ee. MODIFICATION TO INTERCONNECTED GENERATING FACILITIES**

1. MODIFICATIONS TO EXISTING EQUIPMENT (D.19-03-013 - Type II)

Certain non-material modifications to existing facilities are permitted as described below in Tables Ee.1, 2 and 3. Modification requests shall incur any incremental fees as noted below. From the date of the proposed modification request is received, the Distribution Provider shall process the request within:

- (a) ten (10) Business Days if no re-study is required
- (b) twenty (20) Business Days if a re-study is required

<b>Table Ee.1 – Replacing existing equipment</b>				
Description of Modification	Notification Required?	Interconnection request is required?	Proceed without PG&E approval?	Fee (See table E.1)
Replace equipment with exact same equipment type	No	No	Yes	n/a
Replace with “like-for-like,” <sup>4</sup> where: 1. system output does not exceed what is listed in the original interconnection agreement and 2. operating mode is not adjusted.	Yes	No	Yes	Modification Fee in <a href="#">Table E.1</a> <sup>1</sup>
Replacement increases nameplate capacity of the system, but which employ inverter power controls that limit the real power output to the inverter listed size in the original agreement.	Increases nameplate to <100kw <sup>2</sup>	Yes	No	Modification Fee in <a href="#">Table E.1</a> <sup>1</sup>
	Increases nameplate to >100kw and ≤ 110% of original capacity	Yes	No	Modification Fee in <a href="#">Table E.1</a> <sup>1</sup>
	Increase nameplate to > 100kw and > 110% of original capacity	No	Yes	E.1 <sup>3</sup>
Replacing equipment such that the system capacity increases and no inverter power controls are employed to limit the real power output to the inverter listed size in the original agreement	No	Yes	No	E.1 <sup>3</sup>
All other scenarios	No	Yes	No	E.1

<sup>1</sup> See Modification Fees in Table E.1.

<sup>2</sup> For projects increasing capacity to less than or equal to 100 kilowatt (kW), pending the creation of certification schemes for inverter power controls (software/firmware) to limit export (per D. 19-03-013, OP6).

<sup>3</sup> “E.1” refers to applicable charges/fees in Rule 21 Table E.1 for a new application.

<sup>4</sup> Like-for-Like is defined in Section C.

(Continued)



**ELECTRIC RULE NO. 21**  
**GENERATING FACILITY INTERCONNECTIONS**

Sheet 284

<b>Appendix A</b>			
Forms Associated with <del>Rule 21</del>			
<u>Generating Facility Interconnections Generator Interconnection Tariffs Subject to Rule 21</u>			
Form Number	Title	Associated Tariffs	Use Guidance
<b><u>Authorization to Receive Customer Information</u></b>			
<u>79-1095</u>	<u>Authorization to Receive Customer Information or Act Upon a Customer's Behalf</u>	<u>Rule 21</u>	<u>Authorization for Third Party</u>
<b><u>Pre-Application Request</u></b>			
<u>79-1181</u>	<u>Rule 21 Pre-Application Report Request</u>	<u>Rule 21</u>	<u>For Generator Developer to request basic info about local distribution circuit</u>
<b><u>Cost Envelope</u></b>			
<u>79-1182</u>	<u>Cost Envelope Option Non-NEM Request</u>	<u>Rule 21</u>	<u>Non-NEM Customer Only</u>
<u>79-1183</u>	<u>Cost Envelope Option Non-NEM Agreement Appendix</u>	<u>Rule 21</u>	<u>Non-NEM Customer Only</u>
<u>79-1184</u>	<u>Cost Envelope Option NEM Request</u>	<u>Rule 21</u>	<b><u>NEM Customer Only</u></b>
<u>79-1185</u>	<u>Cost Envelope Option NEM Agreement Appendix</u>	<u>Rule 21</u>	<b><u>NEM Customer Only</u></b>
<b><u>Study Agreement</u></b>			
<u>79-1162</u>	<u>Rule 21 Detailed Study Agreement</u>	<u>Rule 21</u>	<u>Independent Study and Distribution Group Study Process Study Agreement</u>
<b><u>Generator Interconnection Application (most Rule 21 programs)</u></b>			
<u>79-1174-02</u>	<u>Rule 21 Generator Interconnection Application</u>	<ul style="list-style-type: none"> <li>• <u>NEM/NEM2</u></li> <li>• <u>NEMEXP</u></li> <li>• <u>NEMMT</u></li> <li>• <u>NEMA</u></li> <li>• <u>NEMFC</u></li> <li>• <u>NEMV/NEMV2</u></li> <li>• <u>NEMVMASH/ NEM2VMSH</u></li> <li>• <u>NEM2VSOM</u></li> <li>• <u>RES-BCT</u></li> <li>• <u>Rule 21</u></li> <li>• <u>Export</u></li> <li>• <u>Non-export</u></li> </ul>	<u>Rule 21 customer interconnection application form for expanded net-energy metered (all NEM &gt; 30 kw and all non-Solar/Wind NEM), NEMFC, NEMV, NEMVMASH, RES-BCT, and non-export and limited export Rule 21 generation. (Standard NEM for solar and/or wind ≤ 30 kw will continue to use the 79-1151B application.)</u>
<u>79-1174-02A</u>	<u>Rule 21 Generator Interconnection Application – Attachment A Customer and Project Information</u>	<u>NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV,</u>	<u>Attachment A to Form 79-1174-02</u>

(Continued)

Advice Large Corrections  
Decision

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

Submitted \_\_\_\_\_  
Effective \_\_\_\_\_  
Resolution \_\_\_\_\_

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(L)  
(N)



**ELECTRIC RULE NO. 21**  
**GENERATING FACILITY INTERCONNECTIONS**

Sheet 284

		<u>NEMVMASH, RES-BCT, Rule 21</u>	
<u>79-1174-02B</u>	<u>Rule 21 Generator Interconnection Application – Attachment B Non-Export</u>	<u>NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21</u>	<u>Attachment B to Form 79-1174-02</u>
<u>79-1174-02C</u>	<u>Rule 21 Generator Interconnection Application – Attachment C Export</u>	<u>NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21</u>	<u>Attachment C to Form 79-1174-02</u>
<u>79-1174-02D</u>	<u>Rule 21 Generator Interconnection Application – Attachment D Solar (PV) Technology</u>	<u>NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21</u>	<u>Attachment D to Form 79-1174-02</u>
<u>79-1174-02E</u>	<u>Rule 21 Generator Interconnection Application – Attachment E Wind Turbine Technology</u>	<u>NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21</u>	<u>Attachment E to Form 79-1174-02</u>
<u>79-1174-02F</u>	<u>Rule 21 Generator Interconnection Application – Attachment F Machine-Based Technology</u>	<u>NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21</u>	<u>Attachment F to Form 79-1174-02</u>
<u>79-1174-02G</u>	<u>Rule 21 Generator Interconnection Application – Attachment G Fuel Cell Technology</u>	<u>NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21</u>	<u>Attachment G to Form 79-1174-02</u>
<u>79-1174-02H</u>	<u>Rule 21 Generator Interconnection Application – Attachment H Energy Storage Technology</u>	<u>NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21</u>	<u>Attachment H to Form 79-1174-02</u>
<u>79-1174-02I</u>	<u>Rule 21 Generator Interconnection Application – Attachment I RES-BCT</u>	<u>NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21</u>	<u>Attachment I to Form 79-1174-02</u>
<u>79-1174-02J</u>	<u>Rule 21 Generator Interconnection Application – Attachment J NEM2 Load Aggregation</u>	<u>NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21</u>	<u>Attachment J to Form 79-1174-02</u>
<u>79-1174-02K</u>	<u>Rule 21 Generator Interconnection Application – Attachment K NEMFC Load Aggregation</u>	<u>NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21</u>	<u>Attachment K to Form 79-1174-02</u>
<u>79-1174-</u>	<u>Rule 21 Generator Interconnection</u>	<u>NEM (NEMEXP,</u>	<u>Attachment L to Form 79-</u>

(Continued)

Advice Large Corrections  
Decision

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

Submitted \_\_\_\_\_  
Effective \_\_\_\_\_  
Resolution \_\_\_\_\_



**ELECTRIC RULE NO. 21**  
**GENERATING FACILITY INTERCONNECTIONS**

<u>02L</u>	<u>Application – Attachment L NEM2V</u>	<u>NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21</u>	<u>1174-02</u>	(N)
<u>79-1174-02M</u>	<u>Rule 21 Generator Interconnection Application – Attachment M NEMVMASH Single Service Delivery Point</u>	<u>NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21</u>	<u>Attachment M to Form 79-1174-02</u>	
<u>79-1174-02N</u>	<u>Rule 21 Generator Interconnection Application – Attachment N NEMVMASH Development</u>	<u>NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21</u>	<u>Attachment N to Form 79-1174-02</u>	
<b><u>NEM and NEM2</u></b>				
<b><u>Standard NEM</u></b>				
<u>79-1151A</u>	<u>Agreement And Customer Authorization Net Energy Metering For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less</u>	<u>Standard NEM</u>	<u><b>NEM Customer Only</b> Interconnection Agreement be used with 79-1151B Application</u>	(L)/(T)
<u>79-1151A-02</u>	<u>Agreement And Customer Authorization - Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less</u>	<u>Standard NEM2</u>	<u>NEM2 Application to be used with 79-1151B-02 Interconnection Agreement</u>	
<u>79-1151B</u>	<u>Application - Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less</u>	<u>Standard NEM</u>	<u><b>NEM Customer Only</b> Application to be used with 79-1151A Interconnection Agreement</u>	
<u>79-1151B-02</u>	<u>Application - Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less</u>	<u>Standard NEM2</u>	<u>NEM2 Application to be used with 79-1151A-02 Interconnection Agreement</u>	(L)/(T)
<u>79-1217</u>	<u>Agreement And Customer Authorization Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less With Energy Storage Of 10 Kilowatts Or Less</u>	<u>Standard NEM2 + &lt; 10kw storage</u>	<u>Customer Authorization for Third Party Information</u>	(N)  (N)

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**ELECTRIC RULE NO. 21**  
**GENERATING FACILITY INTERCONNECTIONS**

Sheet 284

79-1193	<u>Agreement and Customer Authorization Net Energy Metering (NEM) Interconnection for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less: with Energy Storage of 10 Kilowatts or Less</u>	<u>Standard NEM + &lt; 10 storage</u>	<u><b>NEM Customer Only</b></u> <u>For NEM pair storage scenarios using Power Control Systems to ensure NEM integrity</u>	(L)/(T)
79-1193-02	<u>Agreement and Customer Authorization Net Energy Metering (NEM2) Interconnection for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less: with Energy Storage of 10 Kilowatts or Less</u>	<u>Standard NEM2 + &lt; 10 storage</u>	<u>For NEM2 pair storage scenarios using Power Control Systems to ensure NEM integrity</u>	(L)/(T)
79-1218	<u>Agreement And Customer Authorization Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less For New Residential Construction</u>	<u>Standard NEM2 for New Construction</u>	<u>Customer Authorization for Third Party Information for New Residential Construction</u>	(N)
<b>Expanded NEM</b>				
79-1220	<u>Interconnection Agreement for Net Energy Metering (NEM) of a Renewable Electric Generating Facility of 1,000 kW or Less, Except Solar or Wind Facilities of 30 kW or Less, and Virtual Net Energy Metering (NEMV) of a Renewable Electric Generating Facility of 1,000 kW or Less.</u>	<u>Expanded NEM</u>	<u><b>NEM Customer Only</b> Interconnection Agreement</u>	(N)
79-1220-02	<u>Interconnection Agreement for Net Energy Metering (NEM) of a Renewable Electric Generating Facility of 1,000 kW or Less, Except Solar or Wind Facilities of 30 kW or Less, and Virtual Net Energy Metering (NEMV) of a Renewable Electric Generating Facility of 1,000 kW or Less.</u>	<u>Expanded NEM</u>	<u>NEM2 Interconnection Agreement</u>	(N)
<b>Large NEM &gt; 1MW</b>				
79-1198-02	<u>Interconnection Agreement For Net Energy Metering (NEM2) And Renewable Electrical Generating Facility Sized Greater Than 1,000 Kw</u>	<u>&gt;1MW NEM2</u>	<u>FT and Detailed Study Interconnection Agreement for &gt;1MW NEM2 Generating Facilities</u>	(L)

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**ELECTRIC RULE NO. 21**  
**GENERATING FACILITY INTERCONNECTIONS**

<b>NEMA</b>				(N)
<u>79-1153</u>	<u>NEM Load Aggregation Appendix</u>	<u>NEM - NEMA</u>	<u>NEM Customer Only - Use as an Appendix with Form 79-1151A, 79-1220, or 79-1069</u>	
<u>79-1153-02</u>	<u>NEM2A Load Aggregation Appendix</u>	<u>NEM2 – NEM2A</u>	<u>Use as an Appendix with Form 79-1151A-02, 79-1220-02 or 79-1069-02</u>	(N)
<u>79-1202</u> <u>****</u>	<u>Load Aggregation Appendix</u>	<u>NEM, NEM2, Rule 21</u>	<u>Use as an Appendix with Form 79-1151A, 79-1151A-02, 79-978, 79-978-02, 79-1137, 79-1137-02, 79-1069 or 79-1069-02</u>	(L)
<b>NEMMT (Multiple Tariff)</b>				
<u>79-1069</u>	<u>Generating facility Interconnection Agreement (Multiple Tariff)</u>	<u>NEM, Rule 21</u>	<u>NEM Customer Only NEMMT Interconnection Agreement used with Form 79-1174-02</u>	
<u>79-1069-02</u>	<u>Generating Facility Interconnection Agreement (Multiple Tariff NEM2MT)</u>	<u>NEM2, Rule 21</u>	<u>NEM2MT Interconnection Agreement used with Form 79-1174-02</u>	
<b>MISCELLANEOUS NEM FORMS</b>				
<u>79-1130</u>	<u>Request to Opt-out of / Opt-in to Compensation for Surplus Electricity</u>	<u>NEM</u>	<u>AB 920- Opt not to receive compensation for net annual excess energy</u>	(L)
<u>79-1114</u>	<u>NEM 2010 Early True-up Request Form</u>	<u>NEM</u>	<u>NEM Customer Only</u>	(N)   (N)
<u>79-1155</u>	<u>Schedules NEM, NEMV, NEMVMASH, Net Surplus Electricity (NSE) Renewable Energy Credits Compensation</u>	<u>NEM, Rule 21</u>	<u>NEM Customer Only</u>	(T)/(L)   (L)
<u>79-1155-02</u>	<u>Schedules NEM2, NEM2V, NEM2VMSH, Net Surplus Electricity (NSE) Renewable Energy Credits Compensation</u>	<u>NEM2 NEM2V NEM2VMSH, Rule 21</u>	<u>NEM2 Customer Only</u>	(T)/(L)   (L)
<b>NEMFC (Fuel Cell)</b>				
<u>79-1010</u>	<u>Interconnection Agreement for Net Energy Metering of Fuel Cell Generating Facilities</u>	<u>NEM, Rule 21</u>	<u>NEMFC Interconnection Agreement used with Form 79-1174-02</u>	(L)   (L)
<b>NEMV / NEM2V</b>				(N)
<u>See 79-1220 and 79-1220-02</u>		<u>See the Expanded NEM Section Above</u>		
<b>NEMVMASH/NEM2VMSH</b>				
<u>79-1189</u>	<u>Eligible Low Income Development Virtual Net Energy Metering (NEM2VMSH)</u>	<u>NEM2VMSH</u>	<u>NEM2VMSH Interconnection Agreement</u>	

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**ELECTRIC RULE NO. 21**  
**GENERATING FACILITY INTERCONNECTIONS**

Sheet 284

	<u>Interconnection Agreement for Multifamily Affordable Housing with Solar Generation Totaling 1 MW or Less</u>			
<u>79-1125</u>	<u>NEM / NEMV / NEMVMASH Inspection Report</u>	<u>NEM</u>	<u>NEM Customer Only</u>	
<u>79-1195</u>	<u>Eligible Low Income Development Virtual Net Energy Metering (NEMVMASH) Interconnection Agreement for Multifamily Affordable Housing with Solar Generation Totaling 1 MW or Less</u>	<u>NEMVMASH, Rule 21</u>	<u>NEM Customer Only NEMVMASH Interconnection Agreement</u>	(N)
<b><u>NEM2VSOM</u></b>				
<u>79-1206-02</u>	<u>Eligible Low-Income Development Virtual Net Energy Metering (NEM2VSOM) Interconnection Agreement For The Solar On Multifamily Affordable Housing (SOMAH) Program With Solar Generation Totaling 1 Mw Or Less</u>	<u>NEM2VSOM</u>	<u>NEM2VSOM Interconnection agreement for solar 1 MW or less.</u>	(L) (L)
<b><u>RES-BCT</u></b>				
<u>79-1191</u>	<u>Interconnection Agreement for Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) Generating Facility</u>	<u>Rule 21</u>	<u>RES-BCT Interconnection Agreement</u>	(N) (N)
<u>79-1197</u>	<u>Local Government Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) Re-Allocation Request</u>	<u>RES-BCT</u>	<u>Use to establish RES-BCT benefiting account re-allocations</u>	(L) (L)
<b><u>RULE 21 NON-EXPORT</u></b>				
<u>79-973</u>	<u>Generating Facility Interconnection Agreement For Non-Export Generating Facilities</u>	<u>Rule 21 Non-export &amp; RES-BCT</u>	<u>Interconnection Agreement used for RESBCT and non-NEM generation with Application 79-1197</u>	(L)/(T)
<u>79-992</u>	<u>Customer Generation Agreement (Third party Generator on Premises, Non-Exporting)</u>	<u>3-Party Rule 21</u>	<u>Third Party Non-Exporting Interconnection Agreement</u>	(L)/(T)
<u>79-1070</u>	<u>Export Addendum to Generating Facility Interconnection Agreement for Non-Export Generating Facilities (Form 79-973) Sized 2 Megawatts or Less</u>	<u>Rule 21</u>	<u>Export addendum used with Form 79-973</u>	(L) (L)
<u>79-988</u>	<u>Generating Facility Interconnection Agreement (Third Party Non-Exporting)</u>	<u>3-Party Rule 21</u>	<u>Third Party Non-Exporting Interconnection Agreement</u>	(N)
<u>79-1212</u>	<u>Rule 21 Non-Export Generator Interconnection Notification</u>	<u>Rule 21</u>	<u>Notification Form for New Non-Export Interconnection</u>	
<u>79-1213</u>	<u>Agreement and Customer Authorization Non-Export Generating Facility Sized 30 Kilowatts or Less</u>	<u>Rule 21</u>	<u>Interconnect and Operate a Non-Export Generating Facility</u>	
<u>79-1214</u>	<u>Notification-Only Pilot Program Developer Eligibility Application</u>	<u>Rule 21</u>	<u>Eligibility to Participate in the Notification-only Pilot Program</u>	(N)

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**ELECTRIC RULE NO. 21**  
**GENERATING FACILITY INTERCONNECTIONS**

<b>STORAGE</b>				
79-1192	<u>Interconnection Agreement for Non-Export Storage Generating Facilities 500KW or Less</u>	Rule 21	Used for expedited interconnection of non-export energy storage pursuant to Rule 21 Section N, PG&E AL 4941-E & E-A and D.16-06-052, & Attachment C, Section II.1	(L)
79-1199	<u>Agreement And Customer Authorization Non-Export Stand-Alone Energy Storage Of 30 Kilowatts Or Less</u>	Rule 21	Interconnection Agreement For non-export storage ≤ 30 kW	(L)
<b>NEM and Non-Export Interconnection Forms</b>				
79-978	<u>Interconnection Agreement for Net Energy Metering of Solar or Wind Electric Generating Facilities of 1,000 kW or Less, Other Than Facilities of 30 kW or Less</u>	NEM, Rule 21	Solar and/or Wind > 30 kW and ≤ 1 MW expanded NEM used with Form 79-1174-02	(D)
79-978-02	<u>Interconnection Agreement for Net Energy Metering (NEM2) of Solar or Wind Electric Generating Facilities of 1,000 Kilowatts or Less, Other than Facilities of 30 Kilowatts or Less</u>	NEM2, Rule 21	Solar and/or Wind > 30 kW and ≤ 1 MW expanded NEM2 used with Form 79-1174-02	(D)
79-997	<u>Interconnection Agreement for Net Energy Metering of Biogas Digester Generating Facilities</u>	NEM, Rule 21	NEMBIO (Closed to new applicants), NEMBIOA Interconnection Agreement used with Form 79-1174	(D) (L)
79-1010	<u>Interconnection Agreement for Net Energy Metering of Fuel Cell Generating Facilities</u>	NEM, Rule 21	NEMFC Interconnection Agreement used with Form 79-1174	(L)
79-1069	<u>Generating facility Interconnection Agreement (Multiple-Tariff)</u>	NEM, Rule 21	NEMMT Interconnection Agreement used with Form 79-1174	(L)
79-1069-02	<u>Generating Facility Interconnection Agreement (Multiple-Tariff NEM2MT)</u>	NEM2, Rule 21	NEM2MT Interconnection Agreement used with Form 79-1174-02	(D)
79-1109 ***	<u>Virtual Net Energy Metering Application and Interconnection Agreement For The Building Owner of Multifamily Affordable Housing With A Solar Generating Facility of 1 Megawatt or Less</u>	NEM, Rule 21	NEMV Interconnection Agreement used with Form 79-974	(D)

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**ELECTRIC RULE NO. 21**  
**GENERATING FACILITY INTERCONNECTIONS**

Sheet 285

<b>Appendix A (Cont'd.)</b>			
Forms Associated with <u>Generator Interconnection Tariffs Subject to Rule 21</u> <u>Rule 21</u> <u>Generating Facility Interconnections</u>			
Form Number	Title	Associated Tariffs	Use Guidance
<b>NEM and Non-Export Interconnection Forms (Cont'd.)</b>			
79-1193	AGREEMENT AND CUSTOMER AUTHORIZATION-Net Energy Metering (NEM) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less with Energy Storage of 40 Kilowatts Or Less or Energy Storage with Power Control System Certification	NEM	For NEM pair storage scenarios using Power Control Systems to ensure NEM integrity
79-1193-02	AGREEMENT AND CUSTOMER AUTHORIZATION-Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less with Energy Storage of 10 Kilowatts Or Less or Energy Storage with Power Control System Certification	NEM2	For NEM2 pair storage scenarios using Power Control Systems to ensure NEM integrity
79-1199-02***	NEM2VMSH Virtual-Net Energy Metering Application and Interconnection Agreement for the Building Owner of Multifamily Affordable Housing with a Solar Generating Facility of 1 Megawatt or Less	NEM2VMSH, Rule 21	NEM2VMSH Interconnection Agreement used with Form 79-1174-02
79-1151A	Net Energy Metering Interconnection for Solar And/or Wind Electric Generating Facilities Of 30 Kilowatts Or Less Agreement and Customer Authorization	NEM, Rule 21	NEMS Interconnection Agreement be used with 79-1151B Application
79-1151A-02	Agreement And Customer Authorization-Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less	NEM2, Rule 21	NEM2S Application to be used with 79-1151A Interconnection Agreement
79-1151B	Net Energy Metering Interconnection For Solar And/or Wind Electric Generating Facilities Of 30 Kilowatts Or Less Application	NEM, Rule 21	NEMS Application to be used with 79-1151A Interconnection Agreement
79-1151B-02	Application-Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less	NEM2, Rule 21	NEM2S Application to be used with 79-1151A-02 Interconnection Agreement
79-1124***	Eligible Low Income Development Virtual Net Energy Metering Application and Interconnection Agreement for Multifamily Affordable Housing with Solar Generation Totaling 1 Megawatt or Less	NEMVMASH, Rule 21	NEMVMASH Interconnection Agreement

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**ELECTRIC RULE NO. 21**  
**GENERATING FACILITY INTERCONNECTIONS**

Sheet 286

79-1136	<del>PG&amp;E Interconnection Agreement For an Existing Small Generating Facility Interconnecting to the Distribution System under Rule 21</del>	<del>Rule 21</del>	Used for existing QFs with Form 79-974 (L)
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**ELECTRIC RULE NO. 21**  
**GENERATING FACILITY INTERCONNECTIONS**

Sheet 287

<b>Appendix A (Cont'd.)</b>			
Forms Associated <u>Generator Interconnection Tariffs Subject to Rule 21 with Rule 21</u> <u>Generating Facility Interconnections</u>			
Form Number	Title	Associated Tariffs	Use Guidance
<b>Other NEM and Non-Export Forms (Cont'd.)</b>			
<del>79-1192</del>	<del>Interconnection Agreement for Non-Export Storage Generating Facilities 500KW or Less</del>	<del>Rule 21</del>	<del>Used for expedited interconnection of non-export energy storage, pursuant to Rule 21 Section N, PG&amp;E AL 4941-E &amp; E-A and D.16-06-052, &amp; Attachment C, Section H.4</del>
<del>79-1199</del>	<del>Agreement And Customer Authorization Non-Export Stand Alone Energy Storage Of 30 Kilowatts Or Less</del>	<del>Rule 21</del>	<del>Interconnection Agreement For non-export storage ≤ 30 kW</del>
<del>79-1206-02</del>	<del>Eligible Low-Income Development Virtual Net Energy Metering (NEM2VSOM) Interconnection Agreement For The Solar On Multifamily Affordable Housing (SOMAH) Program With Solar Generation Totaling 1 Mw Or Less</del>	<del>NEM2VSOM</del>	<del>NEM2VSOM Interconnection agreement for solar 1-MW or less.</del>
<del>79-1130</del>	<del>Request to Opt-out of / Opt-in to Compensation for Surplus Electricity</del>	<del>NEM</del>	<del>AB 920- Opt not to receive compensation for net annual excess energy</del>
<del>79-1202****</del>	<del>Load Aggregation Appendix</del>	<del>NEM, NEM2, Rule 21</del>	<del>Use as an Appendix with Form 79-1151A, 79-1151A-02, 79-978, 79-978-02, 79-1137, 79-1137-02, 79-1069 or 79-1069-02</del>
<del>79-1155</del>	<del>Schedules NEM, NEMV, NEMVMASH, Net Surplus Electricity (NSE) Renewable Energy Credits Compensation</del>	<del>NEM, Rule 21</del>	
<del>79-1155-02</del>	<del>Schedules NEM2, NEM2V, NEM2VMASH, Net Surplus Electricity (NSE) Renewable Energy Credits Compensation</del>	<del>NEM2 NEM2V NEM2VMASH, Rule 21</del>	
<del>79-1174</del>	<del>Rule 21 Generator Interconnection Application</del>	<del>NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21</del>	<del>Rule 21 customer interconnection application form for expanded net energy metered (all NEM &gt; 30 kw and all non-Solar/Wind NEM), NEMFC, NEMV, NEMVMASH, RES-BCT, and non-export and limited-export Rule 21 generation. (Standard NEM for solar and/or wind ≤ 30 kw will continue to use the 79-1151B application.)</del>

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**PG&E Gas and Electric  
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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.  
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