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September 26, 2019

Advice 5501-E-A
(Pacific Gas and Electric Company ID U 39 E)

Public Utilities Commission of the State of California

Subject: **Supplement to Update to Schedules NEM and NEM2 for Storage Devices Paired With Net Energy Metering Generating Facilities using Alternating or Direct Current Configurations Pursuant to Decision 19-01-030**

Purpose

The purpose of this supplemental advice letter is to make changes to Pacific Gas and Electric Company's (PG&E) Rate Schedules NEM and NEM2 for storage devices paired with net energy metering Generating Facilities using alternating or direct current (DC) configurations, pursuant to California Public Utilities Commission (Commission or CPUC) Decision (D.) 19-01-030.[1] This supplemental makes additional refinements, and addresses concerns raised in the protest of AL 5501-E, and replaces that Advice Letter in its entirety.

Background

In July 2014, the Commission issued D.14-05-033,[2] addressing net energy metering and storage. In the decision the Commission adopted, it used the terminology of the Renewable Portfolio Standard program and noted[3]:

> "Section III.G [of the California Energy Commission (CEC) adopted the seventh edition of the RPS Eligibility Guidebook (Guidebook[4]) establishes two categories of energy storage that 'may be considered an addition or enhancement to a renewable electrical generation facility': 'integrated' and 'directly connected.'"

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1 Decision 19-01-030 January 31, 2019 - *Decision Granting Petition For Modification Of Decision 14-05-033 Regarding Storage Devices Paired With Net Energy Metering Generating Facilities.*

2 Decision 14-05-033 May 15, 2014 - *Decision Regarding Net Energy Metering Interconnection Eligibility For Storage Devices Paired With Net Energy Metering Generation Facilities.*

3 D.14-05-033 at 4, 5.

4 The RPS Eligibility Guidebook (7th Edition, April 2013) is available at http://www.energy.ca.gov/renewables/documents/#rps.

> **Integrated energy storage** is described as "[m]ethods of storing energy from a renewable energy resource that are integrated into the renewable electrical generating facility as part of the generation process…" For battery-based storage, the Guidebook further elaborates that "the storage device must only be capable of storing energy from the renewable generator" to be considered "integrated."[5]
>
> For a storage device to be deemed "**directly connected**," it must be both directly connected to the renewable generator via an internal power line (i.e., power may not be transmitted from the renewable facility to the energy storage via an external distribution line) and the storage device must be operated as part of the RPS eligible facility."[6] (Note: emphasis and paragraph re-formatting added for clarity.)

In addition to the RPS configurations described above, when both storage and inverter-based generation are present, the storage may utilize a single set of inverters[7] shared with the generation. In this case, the solar and storage systems are said to be direct current (DC)-coupled; Alternatively, the storage and generation may each separately have their own sets of inverters. In this case the solar and storage systems are said to be alternating current (AC)-coupled.

Based on the description in D.14-05-033, DC-coupled solar plus storage systems may fall under either the definition of directly connected or integrated energy storage. In order to assure that DC-couple solar plus storage systems is integrated energy storage (i.e. renewably charged and therefore eligible for net energy metering), D.14-05-033 had pointed out that direct current metering could be used to assure the storage was renewably charged. However, since such metering is non-standard, and at the time Commission declined in D.14-05-033 to consider a possible pathway for direct current configurations.[8]

In September 2017, the California Solar & Storage Association (CALSSA)[9] filed a Petition for Modification of D.14-05-033 (Petition)[10] to facilitate the interconnection of DC-coupled solar plus storage systems. But given new technology, it also proposed that AC-coupled solar plus storage systems should be reconsidered as well.

The CALSSA/CALSEIA Petition described two use cases:

1) "no grid charging" (i.e., no grid charging to the storage device)

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5 RPS Guidebook at 64.

6 RPS Guidebook at 65.

7 This may be one set of inverters, instead of a single inverter.

8 D.14.05-033 at 21, "Although we recognize that certain single inverter large GFs with NEM-paired storage devices may not be able to accommodate the metering requirements as described above, we choose not to provide an alternative metering solution for such configurations at this time."

9 CALSSA was at the time of the petition known as the California Solar Energy Industries Association (CALSEIA)

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

For the "no grid charging" use case, the Petition discussed a voltage-controlled configuration of DC-coupled solar plus storage, a virtual net energy metering (VNEM) configuration, a NEM Aggregation (NEM-A) configuration, other unspecified configurations, and related configurations for AC-coupled solar plus storage systems; and

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

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

D.19-01-030 Ordering Paragraph 1.a grants this.[12]

CALSSA/CALSEIA's Petition, as explained to D. 19-01-30, also requested three additional issues be addressed[13].

(1) It asked the Commission to, first:

> …clarify that storage system size for DC-coupled solar plus storage systems is based on the continuous output rating of the storage device, rather than the nameplate (AC) rating of the inverter to which the utilities currently refer to, in order to determine whether a NEM-PS arrangement meets the definition of a 'small' or 'large' system (i.e., whether the paired storage device exceeds 10 kW (AC) maximum discharge capacity).

On this topic, D.19-01-030 concluded "…it is reasonable to measure and determine storage system size in DC-coupled solar plus storage systems as the lesser of the

[11] D.19-01-030 at 2.

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

[13] D.19-01-030 at 6, Section 1.2.2.

shared inverter's nameplate capacity and the storage device's maximum continuous discharge capacity listed on the device's technical specifications sheets. A storage device's maximum continuous discharge capacity may be listed on technical specification sheets using different terminology; the electric IOUs shall use common sense to determine whether a device's technical specification sheet includes the appropriate metric for purposes of determining system size consistent with the guidance provided here, regardless of the terminology used. If that metric is not included, the electric IOUs may rely on the inverter nameplate rating."[14] See also Ordering Paragraph 1.b.[15]

Ordering Paragraph 4 requires the IOU advice letters to "specify that direct current-coupled solar plus storage systems' size will be determined as the lesser of the shared inverter's nameplate capacity and the storage device's maximum continuous discharge capacity listed on the device's technical specifications sheets. The electric IOUs must use common sense to determine whether a device's technical specification sheet includes the appropriate metric for purposes of determining system size consistent with this order. If that metric is not included, the electric IOUs may rely on the inverter nameplate rating."

(2) The second request was to "'leave the door open' for a use case in which NEM-PS systems can also participate in demand response programs."

On this, D.19-01-030 denied this request.[16]

(3) The third request was to "explicitly permit the use of third party-owned metering in lieu of a utility-owned NGOM, in cases where eligible customer-generators opt to install an interval meter directly to the NEM-eligible generator."

On this, D.19-01-030 denied this request.[17]

As discussed in D. 14-05-033, the Commission at the time declined in D.14-05-033 to consider a possible pathway for direct current configurations, chiefly because the options available to ensure NEM integrity of storage were not available. However, CALSSA/CALSEIA's Petition to Modify presented new technical means of ensuring the storage maintained NEM integrity. These were partially contingent on the impending release of a new appendix to the UL 1741 standards regarding Power Control Systems that would discuss means to ensure non-export. In its comments on the D.19-01-03

[14] D.19-01-030 at 20 Section 3.2.
[15] Ordering Paragraph 1.b states. "We approve the proposal of the California Solar & Storage Association, as modified in Section 3.2 of this decision, for specifying the way in which storage system size should be determined in direct current-coupled solar plus storage systems."
[16] D.19-01-030 at 21 Section 3.3.
[17] D.19-02-030 at 21 Section 3.3.

proposed decision, PG&E recommended "delaying use of the Certification Requirements Document (CRD) until it is approved by the UL-1741 Standards Technical Panel."

In its reply comments, CALSSA countered that "[d]elaying use of the CRD until review by the STP is not standard procedure," explaining that "[o]nce approved by UL, a CRD may be used for product certification immediately upon publication…Normally the CRD is used for period of 12 to 24 months prior to incorporation into the encompassing Standard. This period is needed for manufacturers, testing labs, and other users to gain experience using the CRD."[18]

In the issued final decision D.19-01-030, the Commission noted, "We agree it is reasonable to identify publication of the CRD, rather than approval by the Standards Technical Panel, as approval of the national certification standard."[19]

In the time since D.19-01-030 was issued, the CRD for UL 1741 proposed Power Control Systems language[20] for 2020 NEC 705.12[21] has been issued, addressing both non-export and limited export. PG&E notes that having the CRD means that inverters have the capability of being certified as *capable* of non-export (cannot export to the grid) and non-import (cannot charge from the grid)—requirements to ensure that a storage unit paired with PV achieves net energy metering integrity in the two use-cases CALSSA/CALSEIA petitioned to qualify for net energy metering.

However, PG&E is still concerned that inverters just having the capability is insufficient. Logistics about *how* the inverter is setup are just as important to ascertain that the storage is performing in a manner to make it eligible for net energy metering (i.e., no exports if it is not renewably charged). In addition, even with the release of the new UL 1741 standards, there are still questions concerning what is the proper amount of inadvertent export time permitted for a storage system to be non-export.

D.19-01-030 addressed this concern generally when it stated:

> To ensure device settings are configured correctly at installation and not subsequently changed, we recommend the electric IOUs apply the same methods they use currently to ensure smart inverter settings (e.g., voltage and reactive power (volt/var)) are configured correctly at installation and not subsequently changed. For instance, the electric IOUs may require that the NEM-compliant control configuration appear in a device's configuration file as a non-editable value, such that installers would have to select an entirely different configuration file (e.g., a configuration file

[18] Reply Comments of the CALSSA/CALSEIA on the Revised Proposed Decision on NEM Paired Storage, filed January 22, 2019, at 2, 3.

[19] D.19-01-030 at p. 23.

[20] PG&E was informed on a March 11, 2019 an Underwriters Laboratories Inc. (UL) Certification Requirement Decision (CRD)had recently been issued on UL 141 regarding Power Control Systems.

[21] The relevant associated National Electric Code that will be updated.

applicable to Hawaii as opposed to the one applicable to California) in order to modify the NEM-compliant configuration[22,23].

The Commission above anticipates and acknowledges that PG&E and the other IOUs may need to review the setting requirements to conform to the UL CRD. PG&E is in the process of addressing the UL CRD regarding certified Power Control System features that may replace the need for discrete relays for the no-export, non-import and inadvertent export applications, issued in March of 2019, by incorporating these requirements in the Distribution Interconnection Handbook.

Finally, with regards to the impact of D.19-01-030 on NEMA (net energy metering aggregation as defined in Rate Schedules NEM and NEM2), D.19-01-30 notes

> "…that NEM-A is a special condition under the general NEM tariff; therefore, any changes to storage requirements under the NEM tariff that are adopted in this decision would necessarily apply to NEM-A because it is part of the NEM tariff."[24]

The original Advice letter 5501-E was prepared pursuant to D.19-01-30 Ordering Paragraph 4, and submitted March 22, 2019[25] fulfilling the requirement that PG&E "submit a Tier 2 advice letter modifying its respective net energy metering tariffs and interconnection agreement forms, as applicable, to implement the power control-based options as discussed in this decision and reflected in this decision's changes to Decision 14-05-033 for net energy metering generating facilities paired with energy storage devices."

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

CALSSA raised key three issues in its protest:

1. Incorporation of the CRD into the tariffs;
2. Incorporation of a 10 second response time in the tariffs; and
3. Inclusion of AC-coupled systems in the tariff.

Tesla raised four issues in its protest:

1. Inclusion of AC-coupled systems;
2. Incorporation of a 10 second response time in the tariffs;
3. Customers /developers should be able to apply prior to the equipment certification; and

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[22] D.19-01-030 at p. 19.
[23] The IOUs or Independently Owned Utilities are Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company.
[24] D.19-01-030 at 20.
[25] D.19-01-030 Ordering Paragraph 4 requires within 45 days after the issue date of D.19-01-030, i.e., February 5, 2019.

4. The Tariff should be simplified.[26]

PG&E responded to the protests on April 18, 2019. In its conclusion to the protest response, PG&E said:

> PG&E encourages the CPUC adopt PG&E's tariffs as submitted in the Advice Letter and wait for PG&E to file updated tariffs once the CRD is more fully implementable. In the alternative, the CPUC may wish to order PG&E to do what PG&E has always intended to do – work with stakeholders to determine the appropriate settings for testing equipment to be interconnected to PG&E's grid using this CRD. In the latter case, PG&E also urges the CPUC adopt the tariff language as submitted, to ensure that existing solutions for NEMVMASH can be extended to other NEM tariffs. If the CPUC chooses to also order a later Advice Letter incorporating the CRD, PG&E requests that IOUs be required to comply in 120 days.[27]

Following this response, PG&E realized that there was a better way to present the NEM paired stored options and voluntarily agreed to submit this supplement. The supplement now includes tables clearly laying out the options within the integrated storage/directly connected storage framework of the original decision D.14-05-033. The AC-coupled scenarios are clearly included now. As for including the CRD in the tariff, PG&E is willing to work with parties develop standards incorporating the CRD into its Distribution Interconnection Handbook (DIH), which is where the NEMV storage standards where incorporated. However, the CRD in and of itself is not sufficient to assure NEM integrity, additional work by the IOUs with stakeholders will be needed to include related requirements (such as assuring software or firmware can't be reset by a customer). Also, more discussion is needed on the 10 second the requirement to make sure it fulfills both the requirement for safe and reliable service and for NEM integrity (for example, if the 10 second response is repeated sequentially, is that a significant amount of export?). PG&E believes this supplemental Advice Letter clarifies the requirement when compared to its original advice letter, addresses the concerns in the protests as best as it can at this time and PG&E looks forward to working with stakeholder to resolve any remaining details as the understanding of the technical requirements improves.

Tariff Revisions

A. Changes to Schedules NEM and NEM2

General comments on NEM and NEM2 changes:

PG&E, in its proposed NEM and NEM2 tariffs, first incorporates definitions for AC-Coupled and DC-Coupled configurations based on D. 19-01-030. The new D. 19-01-030 sizing criteria for DC-Couple storage is included with its definition. Additionally,

[26] PG&E's Protest Response, page 2
[27] Ibid, page 4

it adds definitions for the use cases, “No Grid Charging” and “No Storage Export”, based on D. 19-01-030.

PG&E, when it originally added the NEM paired storage language to the NEM and NEM2 tariffs[28], structured its section on NEM-paired storage following the original RPS breakout noted in D. 14-05-033 and included only sections for (i) integrated energy storage and (ii) directly connected storage. In this advice letter, PG&E maintains and builds on that structure, incorporating the use-cases for No Grid Charging and No Storage Export under each section, and addresses the AC- and DC-coupled configurations.

When the storage can only be charged from a renewable generator and can export, it is considered integrated with the NEM generator and will be billed in the same manner as a NEM generating facility.

When the storage assurance confirms that it is non-export, it will be treated using the same modified NEMMT provisions that were in the NEM and NEM2 paired storage special condition prior to this advice letter.

Although D. 14-05-030 and D.19-01-033 ordering paragraphs refer to solar generation for NEM paired storage, D. 19-01-033 also included other NEM-eligible generation.[29] PG&E removed any restriction in its special condition to solar only and expanded the provisions to all NEM-eligible generation.

B. Changes to Interconnection Application and Agreement Forms

PG&E propose changes to application forms 79-1174 and 79-1174-02.

Protests

Anyone wishing to protest this submittal may do so by letter sent via U.S. mail, facsimile or E-mail, no later than October 16, 2019, which is 20 days after the date of this submittal. Protests must be submitted to:

CPUC Energy Division
ED Tariff Unit
505 Van Ness Avenue, 4th Floor
San Francisco, California 94102

[28] In Advice Letters 4940-E, 4940-E-A, and 4940-E-B, submitted in October and November of 2016.

[29] See Appendix A of D.19-01-030.

Facsimile: (415) 703-2200
E-mail: EDTariffUnit@cpuc.ca.gov

Copies of protests also should be mailed to the attention of the Director, Energy Division, Room 4004, at the address shown above.

The protest shall also be sent to PG&E either via E-mail or U.S. mail (and by facsimile, if possible) at the address shown below on the same date it is mailed or delivered to the Commission:

Erik Jacobson
Director, Regulatory Relations
c/o Megan Lawson
Pacific Gas and Electric Company
77 Beale Street, Mail Code B13U
P.O. Box 770000
San Francisco, California 94177

Facsimile: (415) 973-3582
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, telephone number, postal address, and (where appropriate) 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

PG&E requests that this Tier 2 advice letter become effective on regular notice, October 26, 2019, which is 30 calendar days after the date of submittal.

Notice

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

/S/
Erik Jacobson
Director, Regulatory Relations

Attachments

cc: Service Lists R.14-07-002, and R.17-07-007
Andy Schwartz, Managing Policy Advisor, Tesla, anschwartz@tesla.com
Brad Heavner, Policy Director CALSSA, elise@calssa.org

California Public Utilities Commission

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 U39E)

Utility type:
☑ ELC ☐ GAS ☐ WATER
☐ PLC ☐ HEAT

Contact Person: Yvonne Yang
Phone #: (415)973-2094
E-mail: PGETariffs@pge.com
E-mail Disposition Notice to: Yvonne.Yang@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) #: 5501-E-A

Tier Designation: 2

Subject of AL: Supplemental to Update to Schedules NEM and NEM2 for Storage Devices Paired With Net Energy Metering Generating Facilities using Alternating or Direct Current Configurations Pursuant to Decision 19-01-030

Keywords (choose from CPUC listing): Compliance, Forms

AL Type: ☐ Monthly ☐ Quarterly ☐ Annual ☑ One-Time ☐ Other:

If AL submitted in compliance with a Commission order, indicate relevant Decision/Resolution #: D.19-01-030

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: 10/26/19

No. of tariff sheets: 25

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[1]: N/A

Pending advice letters that revise the same tariff sheets: N/A

[1]Discuss in AL if more space is needed.

Clear Form

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

CPUC, Energy Division
Attention: Tariff Unit
505 Van Ness Avenue
San Francisco, CA 94102
Email: EDTariffUnit@cpuc.ca.gov

Name: Erik Jacobson, c/o Megan Lawson
Title: Director, Regulatory Relations
Utility Name: Pacific Gas and Electric Company
Address: 77 Beale Street, Mail Code B13U
City: San Francisco, CA 94177
State: California Zip: 94177
Telephone (xxx) xxx-xxxx: (415)973-2093
Facsimile (xxx) xxx-xxxx: (415)973-3582
Email: PGETariffs@pge.com

Name:
Title:
Utility Name:
Address:
City:
State: District of Columbia Zip:
Telephone (xxx) xxx-xxxx:
Facsimile (xxx) xxx-xxxx:
Email:

Clear Form

Cal P.U.C. Sheet No.	Title of Sheet	Cancelling Cal P.U.C. Sheet No.
45407-E	Electric Sample Form No. 79-1174 Rule 21 Generator Interconnection Application Sheet 1	38215-E
45408-E	Electric Sample Form No. 79-1174-02 Rule 21 Generator Interconnection Application Sheet 1	41008-E*
45409-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 26	37642-E
45410-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 27	
45411-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 28	
45412-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 29	
45413-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 30	
45414-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 31	
45415-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 32	
45416-E	ELECTRIC SCHEDULE NEM NET ENERGY METERING SERVICE Sheet 33	37645-E
45417-E	ELECTRIC SCHEDULE NEM2 NET ENERGY METERING SERVICE Sheet 2	37796-E
45418-E	ELECTRIC SCHEDULE NEM2 NET ENERGY METERING SERVICE Sheet 13	37807-E
45419-E	ELECTRIC SCHEDULE NEM2 NET ENERGY METERING SERVICE Sheet 21	37815-E
45420-E	ELECTRIC SCHEDULE NEM2 NET ENERGY METERING SERVICE Sheet 27	43188-E

Cal P.U.C. Sheet No.	Title of Sheet	Cancelling Cal P.U.C. Sheet No.
45421-E	ELECTRIC SCHEDULE NEM2 NET ENERGY METERING SERVICE Sheet 28	42944-E
45422-E	ELECTRIC SCHEDULE NEM2 NET ENERGY METERING SERVICE Sheet 29	
45423-E	ELECTRIC SCHEDULE NEM2 NET ENERGY METERING SERVICE Sheet 30	
45424-E	ELECTRIC SCHEDULE NEM2 NET ENERGY METERING SERVICE Sheet 31	
45425-E	ELECTRIC SCHEDULE NEM2 NET ENERGY METERING SERVICE Sheet 32	
45426-E	ELECTRIC SCHEDULE NEM2 NET ENERGY METERING SERVICE Sheet 33	
45427-E	ELECTRIC SCHEDULE NEM2 NET ENERGY METERING SERVICE Sheet 34	
45428-E	ELECTRIC SCHEDULE NEM2 NET ENERGY METERING SERVICE Sheet 35	40272-E
45429-E	ELECTRIC TABLE OF CONTENTS Sheet 1	45269-E
45430-E	ELECTRIC TABLE OF CONTENTS Sheet 6	44684-E
45431-E	ELECTRIC TABLE OF CONTENTS Sheet 24	43949-E*

Electric Sample Form No. 79-1174 Sheet 1
Rule 21 Generator Interconnection Application

Please Refer to Attached Sample Form

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT INFO
CUSTOMER AND PROJECT INFORMATION

Part I - Selecting the Study Process[1]

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.state.ca.us and www.cpuc.ca.gov.

Please check one:

- ❑ Fast Track Process.
- ❑ Detailed Study (not typical)
  - Will be either an Independent Study Process, Distribution Group Study Process or Transmission Cluster Study Process, dependent upon the Electrical Independence Tests.

Part II – Identifying the Generating Facility Location and Responsible Parties

Project Name:

A. Generating Facility Account Information (What electric service will the Generating Facility be interconnected for parallel operation with PG&E? For aggregated electric accounts provide the primary account and meter information).

Name shown on PG&E service account	Electric Service Agreement ID number - 10-digits	Electric Badge (Meter) Number - 6-10 digits (alpha numeric)

NOTE: ***Customer Electric account must match the customer's utility bill account information.***

Meter Location Street Address	City	State	Zip - 5-digits
		CA	

Please check all that apply:

- ❑ A New Generating Facility interconnection (at an existing service).
- ❑ Physical Changes to an interconnected Generating Facility with previous approval by PG&E (adding PV panels, adding energy storage as an addition or enhancement, changing inverters/turbines or changing load and/or operations).
- ❑ A New interconnection in conjunction 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 or Rule21Gen@pge.com.
- ❑ An Interconnection under Direct Access (DA).
  - Customers applying for interconnection who are served under Direct Access by an Electric Service Provider (ESP) must contact their ESP directly for information regarding the options available under their Direct Access contract.

[1] For selection of Study Process for Exporting Generating Facilities, please complete the Rule 21 Exporting Generating Facility Interconnection Request Form 79-1145.

❑ An Interconnection under Community Choice Aggregation Service (CCA Service).

- Customers applying for interconnection who are served under Community Choice Aggregation Service (CCA Service) by a Community Choice Aggregator (CCA) must contact their CCA directly for information regarding the options available under their CCA Service Program.

❑ An interconnected non-exporting Generating Facility (load always exceeds generation).

B. Customer Account Contact Information -

Mailing Address			
City		State	Zip - 5-digits
( ) -_____	( ) -_____		
Business Phone	Home Phone	Fax	Email

C. Contractor Information (Must be completed even if Contractor will not serve as a PG&E contact).

Contact		Company Name	
Mailing Address			
City		State	Zip - 5-digits
( ) -	( ) -		
Business Phone	Fax	Email	
☐ Yes ☐ No			
Does Installer have Contractors State License Board (CSLB) Number?		Contractors State License Board Number	

D. Project Contact Information (Who is the project manager for this Generating Facility?)

Contact		Company Name	
Mailing Address			
City		State	Zip - 5-digits
( ) -	( ) -		
Business Phone	Fax	Email	

What is the **maximum 3-phase fault current** that will be contributed by the Generating Facility to a 3-phase fault at the Point of Common Coupling (PCC)? (If the Generating Facility is single phase in design, please provide the contribution for a line-to-line fault).	_____ Amps
Please indicate the **short circuit interrupting rating** of the host Customer facility's service panel:	_____ Amps

Refer to PG&E's Rule 21, Section G, for significance and additional information. To determine this value, any transformers and/or significant lengths of interconnecting conductor used between each of the Generators (if there are more than one) that make up the Generating Facility and the PCC must be taken into account. The details, impedance, and arrangement of such transformers and interconnecting conductors should be shown on the single-line diagram that is provided. Consult an electrical engineer or the equipment supplier if assistance is needed in answering this question.

It is expected that most Applicants will want to reserve the flexibility to operate any or all of their Generators in parallel. If the design of the proposed Generating Facility limits the amount of generation that may be interconnected at any time to PG&E's Distribution System, please describe the assumptions used in calculating the maximum fault current contribution value.

E. Customer Impacted by a Natural or Man-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[2] (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 Tariff)

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

☐ I am a Customer who was impacted by a Natural or Man-Made Disaster as described in the NEM Tariffs and the above statements are true. I will submit my application online at https://www.egi-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 https://www.egi-pge.com/ .

[2] 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

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT NX
NON-EXPORT

Interconnection Agreement Type

Please select one option below:

☐ Non-Export A Generating Facility Interconnection Agreement that provides for parallel operation of the Generating Facility, but does not provide for exporting power to PG&E's Distribution System. This non-export agreement, however does allow the occasional and uncompensated export of energy to PG&E's Distribution System for less than 2 seconds in duration.

☐ Uncompensated Export A Generating Facility Interconnection Export Addendum that provides for parallel operation of the Generating Facility and the occasional, continuous, non-compensated, export of generator facilities sized 2 MW or less to PG&E's Distribution System. Continuous export is export greater than 60 seconds in duration. This addendum must be executed in concert with the generating facility interconnection agreement.

Third Party Generating Facility Ownership

☐ Third Party Owned Generating Facility A Generating Facility Interconnection Agreement that provides for parallel operation of the 3rd Party owned Generating Facility, but does not provide for exporting energy to PG&E's Distribution System; as well as a Customer Generation Agreement that defines the relationship between the Customer whose name appears on PG&E's electric service account. If this option is chosen, please complete the Third Party Generating Facility Ownership section below.

Customer Generation Agreement (CGA) (for 3rd Party Generator on Premises) Information (Please identify the PG&E Customer of Record where Generating Facility will be installed). CGA is not applicable to Net Energy Metering (NEM) Applicants because PG&E and the Customer, not the 3rd Party if any, must enter into the Net Energy Metering Interconnection Agreement.

Company Name to be entered on CGA	**Legal Title of Host Facility to be entered on CGA**	
Person Executing the CGA	**Title of Person Executing the CGA**	
	( ) ____ - _____	
Mailing Address	**Phone**	**E-Mail**

Generating Facility Interconnection Agreement (GFIA) for 3rd Party Owner – GFIA Information

☐ Generating Facility Interconnection Agreement (GFIA) for 3rd Party Owner will be executed by Contractor

Please identify the Party that will own the Generating Facility.
This Section is not applicable to Net Energy Metering (NEM) Applicants because PG&E and the Customer, not the 3rd Party if any, must enter into the Net Energy Metering Interconnection Agreement.

Company Name to be entered on GFIA	**Legal Title of Company to be entered on GFIA**	
	( ) ____ - _____	
Mailing Address	**Phone**	**E-Mail**

Part II – Generating Facility Operational Details

Operating Modes:

☐ **Parallel Operation:** The Generating Facility will interconnect and operate "in parallel" with PG&E's Distribution System for more than one (1) second.

Please supply all of the information requested for the Generating Facility. Be sure to supply adequate information including diagrams and written descriptions regarding the protective relays that will be used to detect faults or abnormal operating conditions on PG&E's Distribution System.

☐ **Inadvertent Export:** The Generating Facility will interconnect and operate, providing unscheduled and uncompensated export of real power for a duration exceeding two (2) seconds but fewer than sixty (60) seconds. The expected frequency of "inadvertent export" occurrences should be less than two occurrences per 24-hour period. Protective Functions, technical requirements and operational limitations are described in Rule 21, Section M.

Be sure to supply adequate information including diagrams and written descriptions regarding the switching device or scheme that will be used to limit the parallel operation period to one second or less. Please also describe the back up or protective device and controls that will trip the Generating Facility should the transfer switch or scheme not complete the transfer in one second or less.

☐ **Momentary Parallel Operation (MP):** The Generating Facility will interconnect and operate on a "momentary parallel" basis with PG&E's Distribution System for a duration of one (1) second or less through transfer switches or operating schemes specifically designed and engineered for such operation.

Be sure to supply adequate information including diagrams and written descriptions regarding the switching device or scheme that will be used to limit the parallel operation period to one second or less. Please also describe the back up or protective device and controls that will trip the Generating Facility should the transfer switch or scheme not complete the transfer in one second or less.

☐ **Isolated Operation (I):** The Generating Facility will be "isolated" and prevented from becoming interconnected with PG&E's Distribution System through a transfer switch or operating scheme specifically designed and engineered for such operation.

Be sure to supply adequate information including diagrams and written descriptions regarding the isolating switching device or scheme that will be used to prevent the Generating Facility from operating in parallel with PG&E's Distribution System.

Parallel and Inadvertent Export Options

- ❑ A **reverse-power protection device** will be installed to measure any export of power and trip the Generating Facility or open an intertie breaker to isolate the Generating Facility if limits are exceeded.

- ❑ An **under-power protection device** will be installed to measure the inflow of power and trip or reduce the output of the Generating Facility if limits are not maintained.

- ❑ The Generating Facility Interconnection Facility equipment has been **certified as non-islanding and the incidental export of power will be limited by the design of the interconnection**. If this option is to be used, the nominal ampere rating of the service entrance equipment (service panel rating) that is used by the host Customer facility is: _____.

- ❑ The **Gross Nameplate Rating of the Generating Facility will not exceed 50% of the host Customer facility's minimum electrical load over the past 12 months**. If this option is to be used, the minimum load of the host Customer facility must be stated in the space provided above.

The Generating Facility **completely offset their facility load** by being (a) optimally sized to meet their peak demand with load following functionality on the Generator controls and (b) ensuring conditional (inadvertent) export of electric power from the Generation Facility to Distribution Provider's Distribution or Transmission System occurs no more frequently than twice in any 24 hour period and the exports are greater than 2 seconds but no more than more than 60 seconds.

With the approval of PG&E, a Producer that wishes to retain the option to export power from a Generating Facility to PG&E's Distribution System may use a different protection scheme that provides for the detection of faults and other abnormal operating conditions.

Please indicate

- ❑ Standby / Emergency / Backup – Where the Generating Facility will normally be operated only when PG&E's electric service is not available.

- ❑ Qualifying Facility (QF) Status will be obtained from the FERC for this Generating Facility.

  Instructions and Notes: Parties operating Generating Facilities (QF) complying with all of the requirements for qualification as either a small power production facility or cogeneration facility pursuant to the regulations of the FERC (18 Code of Federal Regulations Part 292, Section 292.203 et seq.) implementing the Public Utility Regulatory Policies Act of 1978 (16 U.S.C.A. Section 796, et seq.), or any successor requirements for Qualifying Facilities, may seek certification from FERC to have the Generating Facility designated as a Qualifying Facility or "QF." In summary, QFs are Generating Facilities using renewable or alternative fuels as a primary energy source or facilities that utilize the thermal energy given off by the generation process for some other useful purpose. QFs enjoy certain rights and privileges not available to non-QF Generating Facilities.

  QF status is not required to interconnect and operate in parallel with PG&E's Distribution System.

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT EX
EXPORT

Describing the Export Operation

Interconnection Service Requirements: (Please select one box below)

☐ Existing Service (currently metered PG&E service)

☐ New Generation-only Service (no load other than ancillary required for Generating Facility)
NEMVMASH participants must select either this option or the next

☐ New Generation-only Meter Tap (at location of existing service)
NEMV applicants must select this option

If new generation-only service is needed, please indicate the requested voltage level: (Please select one box below)

☐ Secondary (up to 480V)

☐ Primary (up to 59 kV)

☐ Transmission (60 kV and up)

Power Export:

Generator Nameplate[1] Export (kW) _____

Maximum Expected Facility Net Export (kW) _____

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.

☐ Is 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?

[1] Please note that for Generating Facilities larger than 1 MW interconnecting to existing secondary voltage services, the revenue meter may require power loss adjustment.

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T1
SOLAR (PV) TECHNOLOGY

Part IV Cont'd - Describing the Generating Facility and Host Customer's Electrical Facilities

For other solar generation technologies not utilizing inverters please use attachment F.

Please complete the following table for the specific generator technology indicated.

Instructions				
Inverter	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
Please indicate the number of each "**type" and quantity** of Generator being installed Be sure all Generators classified as one "type" are identical in all respects. If only one type of Generator is to be used, only one column needs to be completed.				
A - Generator/Inverter Manufacturer Enter the brand name of the Generator.				
B - Generator/Inverter Model Enter the model name or number assigned by the manufacturer of the Generator.				
C - Generator/Inverter Software Version If this Generator's control and or protective functions are dependent on a software program supplied by the manufacturer of the equipment, please provide the version or release number for the software that will be used.				
D - Is the Generator/Inverter certified? Is the Generator Certified by a Nationally Recognized Testing Laboratory (NRTL) according to Rule 21? Answer "Yes" only if the Generator manufacturer can or has provided certification data. See PG&E's Rule 21, Section L for additional information regarding Generator certification.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T1
SOLAR (PV) TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
E - Modules.	Manufacturer Model #. Quantity	Manufacturer Model #. Quantity	Manufacturer Model #. Quantity	Manufacturer Model #. Quantity
F - Gross Nameplate Rating (kVA) This is the capacity value normally supplied by the manufacturer and stamped on the Generator's nameplate. This value is not required where the manufacturer provides only a kW rating. However, where both kVA and kW values are available, please indicate both.				
G - Operating Voltage This value should be the voltage rating designated by the manufacturer and used in this Generating Facility. Please indicate phase-to-phase voltages for 3-phase installations. See PG&E's Rule 21, Section H.2.b. and Table H.1., for additional information.				
H - Power Factor Rating This value should be the nominal power factor rating designated by the manufacturer for the Generator. See PG&E's Rule 21, Section H.2.i. for additional information.				
I - PF Adjustment Range Where the power factor of the Generator is adjustable, please indicate the maximum and minimum operating values. See PG&E's Rule 21, Section H.2.i.				
J - Wiring Configuration Please indicate whether the Generator is a single-phase or three-phase device. See PG&E's Rule 21, Section H.3.				

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T1
SOLAR (PV) TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
K - AC Disconnect For systems requiring an AC Disconnect only, please include the requested information about the AC Disconnect. See PG&E's Rule 21, Section H.1.d	_____ Manufacturer _____ Model # _____ Rating (amps)	_____ Manufacturer _____ Model # _____ Rating (amps)	_____ Manufacturer _____ Model # _____ Rating (amps)	_____ Manufacturer _____ Model # _____ Rating (amps)
Located within 10 feet of the PG&E meter?	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No
L - Lineside Tap PG&E has special requirements for a lineside tap. Contact PG&E at: Rule21Gen@PGE.com for more information.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

Part II Solar Statistics Data Fields

Per Appendix A of CPUC D. 14-11-001, the following data fields must all be completed, in their entirety, in order to initiate PG&E's interconnection review of the proposed Generating Facility. *Only complete Part II if the solar generating facility is serving as part of a Net Energy Metering (NEM) arrangement..*

A. Customer Sector (Check one)

❑ Residential ❑ Educational ❑ Industrial
❑ Commercial ❑ Military ❑ Non-Profit
❑ Other Government

B. Are Performance Monitoring and Reporting Services (PMRS) being utilized?

❑ Yes ❑ No

If yes, please indicate who is receiving the data? (check all that apply)

❑ Customer
❑ 3rd Party (list name) _____

C. Are there electric vehicles charging on site at the above generating facility address?

❑ Yes ❑ No

If yes, please indicate how many electric vehicles _____

SOLAR (PV) TECHNOLOGY

D. System Ownership and Financing

i. System Owner (check one):

❑ PG&E Customer Owned

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

Indicate the System Cost paid by Customer: $_____

Property Assessed Clean Energy (PACE) Financed?

❑ Yes ❑ No

If Yes, PACE financed by which entity? _____

❑ 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 _____

ii. Rebate Information:

Did you participate in a California rebate program? ❑ Yes ❑ No

Please indicate the rebate program that you participated in: _____

Rebate Amount: $_____

E. Additional Generating Facility Information (Solar PV Only)

i. Mounting Method: ❑ Rooftop ❑ Ground ❑ Mixed

ii. Tracking Type: ❑ Fixed ❑ Single-Axis ❑ Dual-Axis ❑ Mixed

If fixed, please indicate: Tilt: _____degrees Azimuth: _____degrees

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T2
WIND TURBINE TECHNOLOGY

Please complete the following table for the specific generator technology indicated.

Instructions				
Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
Please indicate the number of each "**type" and quantity** of Generator being installed Be sure all Generators classified as one "type" are identical in all respects. If only one type of Generator is to be used, only one column needs to be completed.				
A - Generator/Inverter Manufacturer Enter the brand name of the Generator.				
B - Generator/Inverter Model Enter the model name or number assigned by the manufacturer of the Generator.				
C - Generator/Inverter Software Version If this Generator's control and or protective functions are dependent on a software program supplied by the manufacturer of the equipment, please provide the version or release number for the software that will be used.				
D - Is the Inverter certified? Is the Generator Certified by a Nationally Recognized Testing Laboratory (NRTL) according to Rule 21? Answer "Yes" only if the Generator manufacturer can or has provided certification data. See PG&E's Rule 21, Section L for additional information regarding Generator certification.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____Yes ____ No

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T2
WIND TURBINE TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
E - Generator Design Please indicate the design of each Generator. Designate "Inverter" anytime an inverter is used as the interface between the Generator and the electric system regardless of the primary power production/storage device used.	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter
F - Gross Nameplate Rating (kVA) This is the capacity value normally supplied by the manufacturer and stamped on the Generator's nameplate. This value is not required where the manufacturer provides only a kW rating. However, where both kVA and kW values are available, please indicate both.				
G - Operating Voltage This value should be the voltage rating designated by the manufacturer and used in this Generating Facility. Please indicate phase-to-phase voltages for 3-phase installations. See PG&E's Rule 21, Section H.2.b. and Table H.1., for additional information.				
H - Power Factor Rating This value should be the nominal power factor rating designated by the manufacturer for the Generator. See PG&E's Rule 21, Section H.2.i. for additional information.				
I - PF Adjustment Range Where the power factor of the Generator is adjustable, please indicate the maximum and minimum operating values. See PG&E's Rule 21, Section H.2.i.				
J - Wiring Configuration Please indicate whether the Generator is a single-phase or three-phase device. See PG&E's Rule 21, Section H.3.				
K - (MP) 3-Phase Winding Configuration (Choose One) For three-phase generating units, please indicate the configuration of the Generator's windings or inverter systems.	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T2
WIND TURBINE TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
L - (MP) Neutral Grounding System Used (Choose One) Wye connected generating units are often grounded – either through a resistor or directly, depending upon the nature of the electrical system to which the Generator is connected. If the grounding method used at this facility is not listed, please attach additional descriptive information.	___ Ungrounded ___ Solidly Grounded ___ Ground Resistor ___ Ohms	___ Ungrounded ___ Solidly Grounded ___ Ground Resistor ___ Ohms	___ Ungrounded ___ Solidly Grounded ___ Ground Resistor ___ Ohms	___ Ungrounded ___ Solidly Grounded ___ Ground Resistor ___ Ohms
M - *Induction Generators Only:* Locked Rotor Current: ***Stator Resistance:*** Stator Leakage Reactance: Rotor Resistance: Rotor Leakage Reactance: If the Generator is of an induction design, please provide the "locked rotor current" value supplied by the manufacturer. If this value is not available, the stator resistance, stator leakage reactance, rotor resistance, rotor leakage reactance values supplied by the manufacturer may be used to determine the locked rotor current. If the Generator's Gross Nameplate Capacity is 10 MW or greater, PG&E may request additional data to better model the nature and behavior of the Generator with relation to its Distribution System.	_____ (Amps) _____(%) _____(%) _____(%) _____(%)	_____ (Amps) _____(%) _____(%) _____(%) _____(%)	_____ (Amps) _____(%) _____(%) _____(%) _____(%)	_____ (Amps) _____(%) _____(%) _____(%) _____(%)
N - Short Circuit Current Produced by Generator:	_____ (Amps)	_____ (Amps)	_____ (Amps)	_____ (Amps)
O - AC Disconnect For systems requiring an AC Disconnect only, please include the requested information about the AC Disconnect. See PG&E's Rule 21, Section H.1.d Located within 10 feet of the PG&E meter?	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No
P - Lineside Tap PG&E has special requirements for a lineside tap. Contact PG&E at: Rule21Gen@PGE.com for more information.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T3
MACHINE-BASED TECHNOLOGY

Please complete the following table for the specific generator technology indicated.

Instructions				
Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
Please indicate the number of each "**type" and quantity** of Generator being installed. Be sure all Generators classified as one "type" are identical in all respects. If only one type of Generator is to be used, only one column needs to be completed.				
A - Generator/Inverter Manufacturer Enter the brand name of the Generator.				
B - Generator/Inverter Model Enter the model name or number assigned by the manufacturer of the Generator.				
C - Generator/Inverter Software Version If this Generator's control and or protective functions are dependent on a software program supplied by the manufacturer of the equipment, please provide the version or release number for the software that will be used.				
D - Is the Generator/Inverter certified? Is the Generator Certified by a Nationally Recognized Testing Laboratory (NRTL) according to Rule 21? Answer "Yes" only if the Generator manufacturer can or has provided certification data. See PG&E's Rule 21, Section L for additional information regarding Generator certification.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

MACHINE-BASED TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
E - Generator Design Please indicate the design of each Generator. Designate "Inverter" anytime an inverter is used as the interface between the Generator and the electric system regardless of the primary power production/storage device used.	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter
F - Gross Nameplate Rating (kVA) This is the capacity value normally supplied by the manufacturer and stamped on the Generator's nameplate. This value is not required where the manufacturer provides only a kW rating. However, where both kVA and kW values are available, please indicate both.				
G - Operating Voltage This value should be the voltage rating designated by the manufacturer and used in this Generating Facility. Please indicate phase-to-phase voltages for 3-phase installations. See PG&E's Rule 21, Section H.2.b. and Table H.1., for additional information.				
H - Power Factor Rating This value should be the nominal power factor rating designated by the manufacturer for the Generator. See PG&E's Rule 21, Section H.2.i. for additional information.				
I - PF Adjustment Range Where the power factor of the Generator is adjustable, please indicate the maximum and minimum operating values. See PG&E's Rule 21, Section H.2.i.				
J - Wiring Configuration Please indicate whether the Generator is a single-phase or three-phase device. See PG&E's Rule 21, Section H.3.				
K - (MP) 3-Phase Winding Configuration (Choose One) For three-phase generating units, please indicate the configuration of the Generator's windings or inverter systems.	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T3
MACHINE-BASED TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
L - (MP) Neutral Grounding System Used (Choose One) Wye connected generating units are often grounded – either through a resistor or directly, depending upon the nature of the electrical system to which the Generator is connected. If the grounding method used at this facility is not listed, please attach additional descriptive information.	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms
M – *Synchronous Generators Only:* If the Generator is of a synchronous design, please provide the synchronous reactance, transient reactance, and subtransient reactance values supplied by the manufacturer. This information is necessary to determine the short circuit contribution of the Generator and as data in load flow and short circuit computer models of PG&E's Distribution System. If the Generator's Gross Nameplate Capacity is 10 MW or greater, PG&E may request additional data to better model the nature and behavior of the Generator with relation to its Distribution System. Synchronous Reactance: Transient Reactance: Subtransient Reactance:	_____ (Xd %) _____ (Xd %) _____ (Xd %)	_____ (Xd %) _____ (Xd %) _____ (Xd %)	_____ (Xd %) _____ (Xd %) _____ (Xd %)	_____ (Xd %) _____ (Xd %) _____ (Xd %)
N - *Induction Generators Only:* Locked Rotor Current: ***Stator Resistance:*** Stator Leakage Reactance: Rotor Resistance: Rotor Leakage Reactance: If the Generator is of an induction design, please provide the "locked rotor current" value supplied by the manufacturer. If this value is not available, the stator resistance, stator leakage reactance, rotor resistance, rotor leakage reactance values supplied by the manufacturer may be used to determine the locked rotor current. If the Generator's Gross Nameplate Capacity is 10 MW or greater, PG&E may request additional data to better model the nature and behavior of the Generator with relation to its Distribution System.	_____ (Amps) _____(%) _____(%) _____(%) _____(%)	_____ (Amps) _____(%) _____(%) _____(%) _____(%)	_____ (Amps) _____(%) _____(%) _____(%) _____(%)	_____ (Amps) _____(%) _____(%) _____(%) _____(%)

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T3
MACHINE-BASED TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
O - Short Circuit Current Produced by Generator	_____ (Amps)	_____ (Amps)	_____ (Amps)	_____ (Amps)
P – *For Generators that are Started as a "Motor" Only:* This information is needed only for Generators that are started by "motoring" the generator. See PG&E's Rule 21, Sections L.3.d. and L.7.b. for significance and additional information. If this question was answered in Part IV, question C of this Application, it need not be answered here. 1. In-Rush Current: 2. Host Customer's Service Entrance Panel (Main Panel) Continuous Current Rating:	_____ (Amps) _____ (Amps)	_____ (Amps) _____ (Amps)	_____ (Amps) _____ (Amps)	_____ (Amps) _____ (Amps)
Q – Prime Mover Type Please indicate the type and fuel used as the prime mover or source of energy for the Generator. 1 = Natural Gas 2 = Diesel Fueled 3 = Other Fuel	1 2 3	1 2 3	1 2 3	1 2 3
R - AC Disconnect For systems requiring an AC Disconnect only, please include the requested information about the AC Disconnect. See PG&E's Rule 21, Section H.1.d Located within 10 feet of the PG&E meter?	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No
S - Lineside Tap PG&E has special requirements for a lineside tap. Contact PG&E at: Rule21Gen@PGE.com for more information.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T4
FUEL CELL TECHNOLOGY

Part IV Cont'd - Describing the Generating Facility and Host Customer's Electrical Facilities

Please complete the following table for the specific generator technology indicated.

Instructions				
Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
Please indicate the number of each "**type" and quantity** of Generator being installed. Be sure all Generators classified as one "type" are identical in all respects. If only one type of Generator is to be used, only one column needs to be completed.				
A - Generator/Inverter Manufacturer Enter the brand name of the Generator.				
B - Generator/Inverter Model Enter the model name or number assigned by the manufacturer of the Generator.				
C - Generator/Inverter Software Version If this Generator's control and or protective functions are dependent on a software program supplied by the manufacturer of the equipment, please provide the version or release number for the software that will be used.				
D - Is the Generator/Inverter certified? Is the Generator Certified by a Nationally Recognized Testing Laboratory (NRTL) according to Rule 21? Answer "Yes" only if the Generator manufacturer can or has provided certification data. See PG&E's Rule 21, Section L for additional information regarding Generator certification.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T4
FUEL CELL TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
E - Generator Design Please indicate the design of each Generator. Designate "Inverter" anytime an inverter is used as the interface between the Generator and the electric system regardless of the primary power production/storage device used.	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter
F - Gross Nameplate Rating (kVA) This is the capacity value normally supplied by the manufacturer and stamped on the Generator's nameplate. This value is not required where the manufacturer provides only a kW rating. However, where both kVA and kW values are available, please indicate both.				
G - Operating Voltage This value should be the voltage rating designated by the manufacturer and used in this Generating Facility. Please indicate phase-to-phase voltages for 3-phase installations. See PG&E's Rule 21, Section H.2.b. and Table H.1., for additional information.				
H - Power Factor Rating This value should be the nominal power factor rating designated by the manufacturer for the Generator. See PG&E's Rule 21, Section H.2.i. for additional information.				
I - PF Adjustment Range Where the power factor of the Generator is adjustable, please indicate the maximum and minimum operating values. See PG&E's Rule 21, Section H.2.i.				
J - Wiring Configuration Please indicate whether the Generator is a single-phase or three-phase device. See PG&E's Rule 21, Section H.3.				
K - (MP) 3-Phase Winding Configuration (Choose One) For three-phase generating units, please indicate the configuration of the Generator's windings or inverter systems.	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T4
FUEL CELL TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
L - (MP) Neutral Grounding System Used (Choose One) Wye connected generating units are often grounded – either through a resistor or directly, depending upon the nature of the electrical system to which the Generator is connected. If the grounding method used at this facility is not listed, please attach additional descriptive information.	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms
M - Short Circuit Current Produced by Generator	_____ (Amps)	_____ (Amps)	_____ (Amps)	_____ (Amps)
N – Prime Mover Type Please indicate the type and fuel used as the prime mover or source of energy for the Generator. 1 = Natural Gas 2 = Diesel Fueled 3 = Other Fuel	1 2 3	1 2 3	1 2 3	1 2 3
O - AC Disconnect For systems requiring an AC Disconnect only, please include the requested information about the AC Disconnect. See PG&E's Rule 21, Section H.1.d Located within 10 feet of the PG&E meter?	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No
P - Lineside Tap PG&E has special requirements for a lineside tap. Contact PG&E at: Rule21Gen@PGE.com for more information.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T5
ENERGY STORAGE TECHNOLOGY

Please complete the following table for the specific generator technology indicated.

Instructions				
Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
# Please indicate the number of each "**type" and quantity** of Generator being installed. Be sure all Generators classified as one "type" are identical in all respects. If only one type of Generator is to be used, only one column needs to be completed.				
A - Generator/Inverter Manufacturer Enter the brand name of the Generator.				
B - Generator/Inverter Model Enter the model name or number assigned by the manufacturer of the Generator.				
C - Generator/Inverter Software Version If this Generator's control and or protective functions are dependent on a software program supplied by the manufacturer of the equipment, please provide the version or release number for the software that will be used.				
D - Is the Generator/Inverter certified? Is the Generator Certified by a Nationally Recognized Testing Laboratory (NRTL) according to Rule 21? Answer "Yes" only if the Generator manufacturer can or has provided certification data. See PG&E's Rule 21, Section L for additional information regarding Generator certification.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T5
ENERGY STORAGE TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
E - Generator Design Please indicate the design of each Generator. Designate "Inverter" anytime an inverter is used as the interface between the Generator and the electric system regardless of the primary power production/storage device used.	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter	__ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter
F - Gross Nameplate Rating (kVA) This is the capacity value normally supplied by the manufacturer and stamped on the Generator's nameplate. This value is not required where the manufacturer provides only a kW rating. However, where both kVA and kW values are available, please indicate both.				
G - Energy Storage Electrical Source Function (in addition, please complete section: "Additional Information Required for Energy Storage") List (if any) device(s) used to limit discharge (Inverter, Power Control, etc.)	Max kWh Capacity: _____ Rated kW Discharge: _____ Max kW Discharge: _____ _____ _____ _____ _____	Max kWh Capacity: _____ Rated kW Discharge: _____ Max kW Discharge: _____ _____ _____ _____ _____	Max kWh Capacity: _____ Rated kW Discharge: _____ Max kW Discharge: _____ _____ _____ _____ _____	Max kWh Capacity: _____ Rated kW Discharge: _____ Max kW Discharge: _____ _____ _____ _____ _____
H - Operating Voltage This value should be the voltage rating designated by the manufacturer and used in this Generating Facility. Please indicate phase-to-phase voltages for 3-phase installations. See PG&E's Rule 21, Section H.2.b. and Table H.1., for additional information.				

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T5
ENERGY STORAGE TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
I - Power Factor Rating This value should be the nominal power factor rating designated by the manufacturer for the Generator. See PG&E's Rule 21, Section H.2.i. for additional information.				
J - PF Adjustment Range Where the power factor of the Generator is adjustable, please indicate the maximum and minimum operating values. See PG&E's Rule 21, Section H.2.i.				
K - Wiring Configuration Please indicate whether the Generator is a single-phase or three-phase device. See PG&E's Rule 21, Section H.3.				
L - (MP) 3-Phase Winding Configuration (Choose One) For three-phase generating units, please indicate the configuration of the Generator's windings or inverter systems.	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye
M - (MP) Neutral Grounding System Used (Choose One) Wye connected generating units are often grounded – either through a resistor or directly, depending upon the nature of the electrical system to which the Generator is connected. If the grounding method used at this facility is not listed, please attach additional descriptive information.	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms
N - Short Circuit Current Produced by Generator	_____ (Amps)	_____ (Amps)	_____ (Amps)	_____ (Amps)
O – Prime Mover Type Please indicate the type and fuel used as the prime mover or source of energy for the Generator. 1 = Natural Gas 2 = Diesel Fueled 3 = Other Fuel	1 2 3	1 2 3	1 2 3	1 2 3

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T5
ENERGY STORAGE TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
P - AC Disconnect For systems requiring an AC Disconnect only, please include the requested information about the AC Disconnect. See PG&E's Rule 21, Section H.1.d Located within 10 feet of the PG&E meter?	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No
Q - Energy Storage (ES) System (For important sizing information related to DC-Couple configurations, see sizing note below).	_____ Manufacturer _____ Model # _____ Quantity of Units	_____ Manufacturer _____ Model # _____ Quantity of Units	_____ Manufacturer _____ Model # _____ Quantity of Units	_____ Manufacturer _____ Model # _____ Quantity of Units
R - Lineside Tap PG&E has special requirements for a lineside tap. Contact PG&E at: Rule21Gen@PGE.Com for more information.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T5
ENERGY STORAGE TECHNOLOGY

Energy Storage Charging Function:

Rated Charge Demand (Load): _____ kW

Estimated annual Net Energy Usage* of the energy storage device(s): ____ ____ kWh
*Net Energy usage = (kWh input, including charging, storage device auxiliary loads and losses) – (kWh output including discharging)

Will the Distribution System be used to charge the storage device: ☐ Yes ☐ No

If no: Provide technical description of control systems including (e.g. Nationally-certified piece of equipment, Relays/metering):

Source of energy for Charging: _____

Mechanism to prevent charging from the Distribution System: _____

If Yes: Will charging the storage device(s) increase the host facility's existing peak load demand:

☐ Yes ☐ No

If Yes: Provide the following loading information:

Amount of added peak demand: _____ kW

If no: Provide technical description of controls systems including:

Charging periods: _____

Mechanism to prevent charging from the Distribution System during host facility peak:

_____

Expedited Interconnection Process Selection for Non-Export Energy Storage:

☐ This project meets the requirements identified in Rule 21 Section N and this process is being selected for expedited interconnection.

Note on Sizing (DC-Coupled Configurations)

The size of the storage system in DC-coupled NEM-eligible generator plus storage systems is the lesser of the shared inverter's (or inverters') nameplate capacity (capacities summed) and the storage device's (devices') maximum continuous discharge capacity (capacities summed) listed on the device's (devices') technical specifications sheets. A storage device's maximum continuous discharge capacity may be listed on technical specification sheets using different terminology. Note: PG&E will use common sense to determine whether a device's technical specification sheet includes the appropriate metric for purposes of determining system size, regardless of the terminology used. If that metric is not included, PG&E may rely on the inverter's nameplate rating.

For example:

- What is the maximum continuous discharge capability for each storage unit?
  _____ +_____ +_____ +_____ + _____ =.
  total_____
- What is each inverter's nameplate rating?
  _____ +_____ +_____ +_____ + _____ =.
  total_____

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P1
RES- BCT

Part I – Applicability and Purpose

This *LOCAL GOVERNMENT APPLICATION FOR AN ARRANGEMENT TO TAKE SERVICE ON RATE SCHEDULE RES-BCT WITH INTERCONNECTED ELIGIBLE RENEWABLE GENERATION OF NOT MORE THAN 5 MEGAWATTS* ("RES-BCT Application") allows for a Local Government, as defined in Rate Schedule RES-BCT, to apply for an Arrangement, as defined in Rate Schedule RES-BCT, to take service on PG&E's electric Rate Schedule *RES-BCT NET ENERGY METERING SERVICE FOR LOCAL GOVERNMENT REMOTE RENEWABLE SELF GENERATION*.

For the Local Government's Arrangement (as defined in the RES-BCT tariff), this Application allows a Local Government to:

a) Elect one or more Generating Accounts with Eligible Renewable Generating Facilities, as defined in Rate Schedule RES-BCT, where each interconnected Eligible Renewable Generating Facilities at the Arrangement, has a capacity of 5 megawatts (5,000 kW) ("Generating Facility") or less; and

b) Interconnect and operate the Eligible Renewable Generating Facilities under the provisions of PG&E's Electric Rule 21;

c) Elect one or more, but no more than 50, Benefiting Account to receive the Bill Credit, as defined in Rate Schedule RES-BCT from the Generating Accounts in (a); and

d) Elect Bill Credit Allocation Percentages for each of the Generating and Benefiting Accounts.

Local Government has elected to apply for service for its Arrangement on Rate Schedule RES-BCT, which involves the interconnection and operation of its Eligible Renewable Generating Facilities in parallel with PG&E's Electric System, primarily to offset part or all of the Arrangement's own electrical requirements at the affiliated Generating and Benefiting Accounts as listed in Appendix A.

Part II – Designation of Bill Credit Allocation Percentages to RES-BCT Arrangement Accounts

A. Section 1 Instructions

- Complete the section below.

Local Government Name	Address	Date
Name: Contact Name: Contact Title:		

- Is this application for a new Arrangement or a reallocation for an existing Arrangement? (For an existing Arrangement, Local Governments may not change the Credit Allocation Percentages more frequently than once in any 12 month period.

❑ This Appendix A to the RES-BCT Application is for an allocation for the initial new Arrangement.

❑ This Appendix A to the RES-BCT Application is for a reallocation for an existing Arrangement.

- Please use the attached Appendix A Section 2 page to list all Benefiting Accounts that are located in the Arrangement that will be taking service on RES-BCT. Include the Generating Account, and all Benefiting Accounts.

- Please note for each row:

  - **Account Type** - check the one box corresponding to the type of account (that is, Generating or Benefiting Account). There must be at least one Generating Account and one Benefiting Account listed. Every row (account) should have one and only one of these 2 boxes checked. *(Required).* A Rule 21 Application and Interconnection Agreement as described in Section A of the RES-BCT Application will need to be submitted for the Generating Facility at each Generating Account listed below. In the "Designated Account…" column, designate the ONE account to which PG&E should apply any remaining true-up credit as described in the RES-BCT Special Condition 2(h). It may not be the generator account.

  - **Account Address -** Provide an address, including unit number, for all Accounts. *(Required)*

  - **Name** - For Generating and Benefiting Accounts, the Account Holder's name must be entered. *(Required)*

  - **PG&E Account Number -** Enter the PG&E Account number for all accounts. *(Required)*

  - **Otherwise Applicable Rate Schedule** – Enter the PG&E Otherwise Applicable Rate Schedule (OAS) for all accounts. *(Required)*

  - **Bill Credit Allocation Percentage –** For each Generating and Benefiting Account listed, enter the Bill Credit Allocation Percentage to the nearest whole percentage. The total of all Bill Credit Allocation Percentages must equal 100%.

  - **Appendix A, Section 2 Page Numbers –** In the space provided on the bottom of each page, please mark the page number and total number of pages for your Appendix A, Section 2 Account List. (Start with Page 1 and do not count the page numbers for these two instruction pages.) Note that no more than 50 Benefiting Accounts may be included in an Arrangement.

Local Governments are encouraged to not allocate more Bill Credit to an account than will be used annually. If any additional Bill Credit pursuant to RES-BCT Special Condition 2 (c),(d) and (g) remains, PG&E will review the true up bills for the Generating Account and Benefiting Accounts to determine if any charges for the generation component of the energy charge remain to be credited. If yes, PG&E will apply the remaining Bill Credit to the Designated Account. Local Governments are encouraged to not allocate more Bill Credit to an account than will be used annually.

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P1
RES- BCT

B. Section 2

#	Account Type Check only one box for each row *(required field)*			Account Address *(required field)*	For Benefiting and Generating Account, List **Name** on Account,	***(Required field for All Accounts)*** **PG&E Service Agreement Number**	***(Required field for All Accounts)*** **Otherwise Applicable Rate Schedule (OAS) under RES-BCT**	***(Required Field for All Accounts)*** **Bill Credit Allocation Percentage** (to the nearest whole percentage)
	Generator Account	Benefiting Account	Designated Account Check *only one* account Must not be a generator account					
1	❑	❑	❑					
2	❑	❑	❑					
3	❑	❑	❑					
4	❑	❑	❑					
5	❑	❑	❑					
6	❑	❑	❑					
7	❑	❑	❑					
8	❑	❑	❑					
9	❑	❑	❑					
10	❑	❑	❑					
11	❑	❑	❑					
12	❑	❑	❑					
13	❑	❑	❑					
14	❑	❑	❑					
15	❑	❑	❑					
Total Bill Credit Allocation Percentage for all accounts over all pages must equal 100% _____								

Note 1) The capacity of all Eligible Renewable Generating Facilities on each Generating Account in the Arrangement must not total more than 5 megawatts.
Note 2) There must be no more than 50 Benefiting Accounts in an Arrangement.
Note 3) The Monthly Billing Setup Recovery Charge for the Arrangement from the RES-BCT tariff will be billed to each Generating Account listed, unless otherwise note

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P2
NEMFC LOAD AGGREGATION

As governed by Schedule NEMFC Special Condition 4, for purposes of determining if the eligible Fuel Cell Customer-Generator was a net consumer or a net producer of electricity during each Relevant Period PG&E will aggregate the load of the Fuel Cell Customer-Generator's accounts listed below where the Fuel Cell Customer Generator is the customer of record and the following requirements are met: (i) the accounts are on an applicable time-of-use rate schedule, and (ii) the accounts are located on the property where the Eligible Fuel Cell Electrical Generation Facility is located or on property adjacent or contiguous to that property as long as those properties are solely owned, leased, or rented by the Eligible Fuel Cell Customer-Generator; and (iii) all the accounts are served by the same electric commodity service provider. (i.e. the Eligible Fuel Cell Customer- Generator account and all aggregated accounts must all be on bundled service or all on CCA service, or all on DA service.)

	Meter (Badge) Number	Service Agreement ID	Rate Schedule	Address (Street, City, Zip Code)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P3
NEM LOAD AGGREGATION

Part I

This is an appendix to Form 79-1151A, 79-978, 79-1137 or 79-1069 as applicable. As governed by Schedule NEM Special Condition 7, PG&E will aggregate the load of the Customer-Generator's accounts listed below where the Customer-Generator is the customer of record and the accounts continue to meet the requirements of Special Condition 7 of PG&E's NEM tariff as outlined in the Customer Declaration below.

In accordance with this appendix:

(i) Pursuant to Schedule NEM Special Condition 7 the electricity generated by the renewable electrical generation facility and exported to the grid shall be allocated to each of the aggregated meters in proportion to the electrical load served by those meters, and

(ii) One time set up fee of $25 is assessed for each account in the NEMA arrangement (not to exceed $500). A $5 monthly fee will be assessed for each aggregated account. These fees will be billed to the generating account.

Note these fees are subject to change from time to time. Additional monthly fees (for example, but not limited to, minimum charges, meter fees, demand charges) may also apply to each account, as described in that account's otherwise applicable rate schedule,, and

(iii) Customer-Generator shall permanently be ineligible to receive Assembly Bill (AB) 920 net surplus electricity compensation (NSC), and PG&E shall retain any kilowatt hours in excess of the eligible Customer-Generator's electrical load as determined for each aggregated meter individually. (However, if an Aggregated Account that is not a Generating Account is separated from the Arrangement, and subsequently qualifies for NEM, it may be eligible for NSC.)

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.

Part II

In accordance with Schedule NEM, as Customer-Generator you will be required to represent and warrant under penalty of perjury on the interconnection agreement that:

1) The total annual output in kWh of the generator is less than or equal to 110% (for solar and/or wind systems equal to or less than 30 kW) or 100% (for all other technologies and solar and/or wind systems greater than 30 kW) of the annual aggregated electrical load in kWh of the meters associated with the generator account, including the load on the generating account itself (before being offset by the generator); and

2) Each of the aggregated account meters associated with this NEM generator account are located either

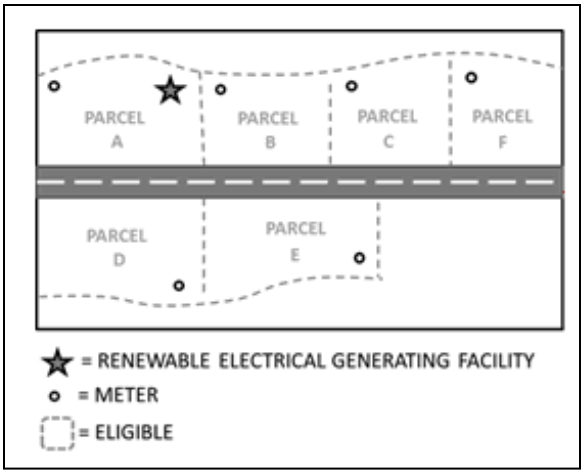
   (i) on the property where the renewable electrical generation facility is located, or

   (ii) are located within an unbroken chain of contiguous parcels that are all solely owned, leased or rented by the customer-generator. For purposes of Load Aggregation, parcels that are divided by a street, highway, or public thoroughfare are considered contiguous, provided they are within an unbroken chain of otherwise contiguous parcels that are all solely owned leased or rented by the customer-generator.

   For example, assume there are five parcels (A, B, C, D, E, and F) that form a cluster of contiguous parcels and D and E are separated from A, B, C and F by a street, highway, or public thoroughfare. For the purposes of participating in Load Aggregation, all five parcels are considered contiguous, provided they are otherwise contiguous and all are solely owned, leased or rented by the customer-generator. Refer to the diagram at left (for illustrative purposes only.)

3) PG&E reserves the right to request a parcel map to confirm the property meets the requirements of 2) above; and

4) You agree to notify PG&E if there is any change of status that makes any of the meters listed in this Appendix ineligible for meter aggregation to ensure that only eligible meters are participating PG&E will require an updated Appendix and Declaration form and



5) In the "Variations on Customer Generator Name" fields on the following table, you may provide all variations of your name. By signing he interconnection agreement you attest that as Customer-Generator, you have sole control of all the parcels establishing contiguity for the Arrangement listed on Page 3 of this Appendix.

Variations on Customer-Generator Name
1)
2)
3)
4)
5)

You will have to sign that you understand that "sole control" means that I solely own, lease or rent each parcel or that I have an irrevocable easement that grants me sole use and control of the entire parcel. I understand that other types of easements are not sufficient to establish contiguity for NEMA.

Part III

A. Second Service For Generator

Requesting Second Service for Generator: ☐ Yes ☐ No

For Load Aggregation Arrangements Requesting an additional service for a Generator Account – 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.

B. Minimum Number of Aggregated Load Accounts

A NEMA Arrangement must have at least two Aggregated Load Accounts. The generator account must have non-generator (existing) load to be counted as an Aggregated Load Account. Generator Accounts interconnected based on Part II A above, will not be counted as an Aggregated Load Account.

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P3
NEM LOAD AGGREGATION

NEM Load Aggregation Worksheet								
Accounts	PARCEL NUMBER	ACCOUNT NAME[1] [2]	SERVICE ADDRESS	ELECTRIC ACCOUNT NUMBER[2]	ELECTRIC SERVICE AGREEMENT NUMBER[2]	ELECTRIC METER NUMBER[2]	ELECTRIC RATE SCHEDULE[2]	ANNUAL KWH LOAD[3]
Generator								
Load Acct 1								
Load Acct 2								
Load Acct 3								
Load Acct 4								
Load Acct 5								
Load Acct 6								
Load Acct 7								
Load Acct 8								
Load Acct 9								
Load Acct 10								
							Total Annual kWh	
							(For Standard NEM Solar/Wind less than 30kW) - 110% of Total Annual kWh	
Estimated Annual kWh Production			**Solar** = CEC-AC[4] rating X 1,664[5] **Wind** = Total Inverter Nameplate Rating X 2,190[6] **Other Technologies** = Total Inverter Nameplate Rating X 7,008[7]					

[1] If this is a new account, enter *NEW*.
[2] As listed on your Billing Statement
[3] For previous twelve months from date of signature. Please also enter the annual kWh for generator account prior to the generator being installed; if none, enter zero.
[4] CEC-AC (kW) = California Energy Commission Alternating Current, refers to inverter efficiency rating (Quantity of PV Modules x PTC Rating of PV Modules x CEC Inverter Efficiency Rating)/1000
[5] Estimated Solar Production = 8,760 hrs/yr X 0.19 solar capacity factor = 1,664
[6] Estimated Wind Production = 8,760 hrs/yr X 0.25 wind capacity factor = 2,190
[7] Estimated Other Technologies = 8,760 hrs/yr X 0.80 other technologies capacity factor = 7,008

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P4
NEMV

Part I - General Facility

A. Are there any other generators interconnected on this account?

- ☐ Yes
  If yes, specify what kind of generator _____
- ☐ No

B. Are there any possible generator meter access issues?

- ☐ Yes **If yes**, check all that apply:

☐ Locked Room/Gate	☐ Meter located inside of facility/residence
☐ Unrestrained animal at meter or AC disconnect switch location	☐ Other (Please explain) _____ _____

- ☐ No

C. Are any of your accounts on a Demand Response program?

Qualified Customers are eligible for the same demand response programs and solar tariffs as NEM customers. Demand response payments to Qualified Customers will be based on the Qualified Customer's metered usage disregarding any contributions from virtually net-metered generation. Similarly, any other demand response programmatic elements that are affected by a customer's load (e.g., program eligibility) should also exclude from consideration any impacts of NEMV generation.

- ☐ Yes
  If yes, what program are you on? _____
- ☐ No.

D. Generator Interconnection Tie-in Point – Does your interconnection satisfy PG&E's Meter Standards?

- ☐ Yes
- ☐ No. Reason: _____

If after review of a customer's NEMV application PG&E determines a site assessment is essential, then PG&E may conduct a site assessment. Please note that entering PG&E sealed sections of their service panels is unsafe and not permitted without PG&E's supervision and express authorization.

E. Are you planning to meet the requirements specified in the PG&E Greenbook (current reference is "VNEM Installation Requirements", Utility Bulletin TD6999B-005, 02/06/2012)?

- ☐ Yes
- ☐ No. Reason: _____

F. Where are you planning to tie in? Can you provide Switchgear cutsheets, detailing the proposed point of connection and bussing modification / clearances, cutsheets of the NGOM socket, to clearly identify proposed tie-in point?

Location: _____

G. Is the currently proposed tie-in point a result of restrictions placed on altering the existing panel or equipment within, as imposed by the local authority having jurisdiction?

- ☐ Yes - What restriction? _____
- ☐ No.

H. Have you confirmed the Ampere Interrupting capacity (AIC) rating of the existing panel?

- ☐ Yes
- ☐ No. Reason: _____

I. Are there existing PG&E gas or other utility's facilities in the vicinity of the proposed point of interconnection?

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P4
NEMV

(Note: Minimum clearances must be maintained from PG&E facilities, as specified in PG&E's Greenbook)

- ☐ Yes - Describe:_____ _____
- ☐ No.

J. Are you going to require PG&E to arrange to de-energize the service panel for you to safely connect the generator to the service panel?

(Note: that the de-energizing process may be as simple as a PG&E Troubleman opening a switch, or as involved as a PG&E crew performing switching, and rearrangement of service wires, and coordinating with neighboring customers that might be impacted by this de-energizing project. **PG&E requires ten (10) business days advance notice prior to performing such a request.)**

- ☐ Yes - Describe:_____ _____
- ☐ No.

K. Can this de-energizing of the service panel be done during normal business hours?

- ☐ Yes
- ☐ No. If not, what time of the week and time of the day do you request this service disconnection to occur?

Mon Tues Wed Thu Fri Sat Sun (circle day of week) ____:_____AM_____/_____PM___ (enter time & circle AM or PM)

Note- the time of de-energizing the service panel will also depend on whether other customers are impacted and their input to the process.

L. What is the duration of the service disconnection requested?

Duration _____

M. Do you need PG&E personnel to stand by while you perform your work?

- ☐ Yes
- ☐ No

N. Will you need to obtain clearance from the local authority having jurisdiction prior to PG&E re-energizing the service panel?

(Note: Some cities/counties require that they have inspected the panel prior to reenergizing. You will need to provide proof of the local authority that your work will not require such approval, or be prepared to provide that to PG&E prior to PG&E re-energizing the panel).

- ☐ Yes
- ☐ No

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P4
NEMV

Part 2 - Designation of NEMV Generating Account and Benefitting Accounts and Their Respective Eligible Energy Credit Allocation

Section 1 Instructions

a. Please ensure the information on the Customer and Project Information for account information represents the owner as per NEMV.

b. Is this an application to establishing the Annual Eligible Energy Credit Allocation for a new NEMV Arrangement or for a change to the Allocation for an existing NEMV facility, as described in either NEMV Special Condition 2 or 3(g)?

- ❑ This application is for an allocation for the initial, new NEMV Arrangement:
- ❑ This application is for a reallocation for an existing NEMV Arrangement:

c. Please use the attached Appendix A, Section 2 page to list all Benefitting Accounts in the Arrangement that will be taking service on NEMV. Alternatively, an Applicant may fill out the table below in a digital format (i.e. spreadsheet) and supply that along with the application and agreement to NEMVGen@pge.com The Benefitting Accounts must be associated with the same Generator Account and all must satisfy the applicable Service Delivery Point requirements in the NEMV Applicability Section to be Eligible for Schedule NEMV.

Please note for each row:

- **Account Type** – (required) – The Generator Account row should be completed for the pertinent information for each column indicated; the Benefitting Account rows should be complete for the pertinent information for each column indicated. If there are more Benefitting Accounts than will fit on one page please use additional sheets as required and number pages accordingly.
- **Account Address – (**required) -- Provide an address, including unit / apartment number, for all Accounts (for the Generator Account you may use the street address of the building upon which the generator will be installed).
- **Occupant's / Owner's Name** – (required) - For the Generator Account enter the Owner's name; for all Benefitting accounts enter the name of the occupant or PG&E customer name for that location.
- **PG&E Meter Number – (**required) **-** Enter the PG&E Meter Numbers for the all benefitting accounts.
- **Otherwise Applicable Rate Schedule** – required -- Enter the PG&E Otherwise Applicable Rate Schedule (OAS) for the Generator Account and all Benefitting Accounts.
- **Eligible Allocation Percentage – (**required) -- For each Benefitting Account listed, enter the Eligible Allocation Percentage to two decimal places. The Eligible Energy Allocation Percentage for each Benefitting Account should be established so that the annual kilowatt hours allocated offsets no more than part or all of the customer's own annual electrical requirements. The total of all Benefitting Account Eligible Allocation Percentages in Appendix A for this NEMV Arrangement must equal exactly 100%. If Owner is changing the Eligible Allocation Percentage on an existing NEMV Arrangement, please list all allocations to confirm they add up to 100% and **circle** the changed allocations.
- **Designated Unallocated Credit Account** " system operator/qualified customer" has the option to designate the disposition of unallocated credits to either: the Common Area Account, or one Benefiting Account. In the NEMV tariff this is referred to as the "Default Account."
- **Appendix A, Section 2 Page Numbers –** In the space provided on the bottom of each page, please mark the page number and total number of pages for your Appendix A, Section 2, Account List. (Start with Page 1 and do not count the page numbers for this instruction page. Also indicate on one of the pages if the allocation is for a new Arrangement or an existing Arrangement).

If Owner would like billing data from a Benefiting Account in order to verify the credit allocation they need the Benefitting Account customer's consent. To facilitate this process, here is a link to the *Authorization to Receive Customer Information or Act Upon a Customer's Behalf*: www.pge.com/tariffs/tm2/pdf/ELEC_FORMS_79-1095.pdf - (Form 79-1095) that would need to be submitted to PG&E prior to release of the Benefitting Account customer's billing data to the Owner.

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P4
NEMV

Section 2

Account Type	**Account Address** *(required field)* **(for Generator Account use street address for building with generator account)**	**Occupant's Name,** *(Required field)* **(Generator Accounts *should be under the Owner's Name* Please use name listed on PG&E Account bill)**	**PG&E Meter Number** *(Required field)*	**Otherwise Applicable Rate Schedule** *(Required field)*	**Eligible Allocation Percentage** (*required* – to 2 decimal places, the sum of all Benefitting Account Allocation must total 100%. For changes to Existing NEMV Arrangements, list all percentages but circle all changed percentages)	**Designated Unallocated Credit Account** (optional – check one Common Area or Benefiting Account to receive unallocated credits)
Generator Account						
Benefitting Accounts						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

Is this a reallocation of an existing NEMV Arrangement? __ Yes ___ No

Part 3 - Generator Interconnection Point Documentation

Applicant shall attach the following Documentation:

- the single line diagram to illustrate connection with the selected option provided in the Metering Standard
- the switchgear, switchboard, or main panel cut-sheets/shop drawings detailing the bussing, any modifications, clearances, and proposed point of interconnection. The proposal must include a signed PE stamp and modifications must be certified by the manufacturer or a qualified third party
- pictures of the point of interconnection (see safety "Note" below).
- the meter socket cut-sheets of the net generation output meter socket
- additional material as specified by PG&E

Note: If after review of a customer's NEMV application PG&E determines a site assessment is needed, then PG&E may conduct a site assessment. Owners are reminded that entering PG&E sealed sections of their service panels is unsafe and not permitted without PG&E's supervision and express authorization.

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P5
NEMVMASH SINGLE SERVICE DELIVERY POINT

Part I - Incentives

If you are applying for a CSI rebate, please check the box for the rebate program under which your NEMVMASH project will receive incentives and understand that you will have to apply for rebates separately.

- ❑ MASH
- ❑ NSHP

Part II - General Facility

A. Are there any other generators interconnected on this account?

- ❑ Yes
  If yes, specify what kind of generator _____
- ❑ No

B. Are there any possible generator meter access issues?

- ❑ Yes **If yes**, check all that apply:

❑ Locked Room/Gate	❑ Meter located inside of facility/residence
❑ Unrestrained animal at meter or AC disconnect switch location	❑ Other (Please explain) _____ _____

- ❑ No

C. Are any of your accounts on a Demand Response program?

(For more information on PG&E's demand response programs see: www.pge.com/demandresponse)

- ❑ Yes
  If yes, what program are you on? _____
- ❑ No.

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P5
NEMVMASH SINGLE SERVICE DELIVERY POINT

Part I - Designation of Generator Accounts, and Their Associated Common Area Accounts and Residential Units With Their respective Solar Energy Credit Allocation

1) Is this application for a new NEMVMASH Eligible Low Income Facility or a reallocation for an existing NEMVMASH facility? (Existing NEMVMASH facility Owners may not reallocate the Solar Allocation Percentages for all Common Area Accounts and all Residential Unit Accounts for a period of 5 years after first being interconnected on NEMVMASH, even if there is a change in Owner. However, after 5 years a reallocation may be requested. Also, a reallocation of credits between the different Common Area Accounts is allowed, and similarly if a residential unit becomes uninhabitable under the terms described in the NEMVMASH tariff in Special Condition 2 g, the Owner may choose to reallocate credits to the other Residential Unit Accounts).

This application is for an allocation for the initial new NEMVMASH Eligible Low Income Facility: ❑

This application is for a reallocation for an existing NEMVMASH Eligible Low Income Facility: ❑

2) For a new NEMVMASH Eligible Low Income Facility, if you applied for the Multifamily Affordable Solar Housing Program (MASH), please enter the percentages in the space provided below from the MASH application.

Solar Allocation Percentage for All <u>Common Area Account(s)</u> Listed in the MASH Incentive Application (only required if applying for MASH Track 1c incentives):	**Solar Allocation Percentage for All <u>Residential Unit Accounts</u> Listed in MASH Incentive Application (only required if applying for MASH Track 1d incentives):**	**Both Percentages Must Total 100%**
%	%	= 100 %

3) Please use the Section 2 to list all accounts that are located in the Eligible Low Income Facility that will be taking service on NEMVMASH. Alternatively, an Applicant may complete the table below in a digital format (i.e. spreadsheet) and supply that along with the application and agreement to NEMVGen@pge.com. Include the Generator Account, all Common Area Accounts (if any) and all Residential Unit Accounts. The Common Area and Residential Unit Accounts must be associated with the same Generator Account and all must satisfy the applicable Service Delivery Point requirements if any, in the NEMVMASH Applicability Section to be Eligible for Schedule NEMVMASH.

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P5
NEMVMASH SINGLE SERVICE DELIVERY POINT

Please note for each row:

- **Account Type** - check the one box corresponding to the type of account (that is, Common Area, Residential Unit or Generator Account). Every row (account) should have one and only one of these 3 boxes checked. *(Required)*

- **Account Address -** Provide an address, including unit number, for all Accounts (for the Generator Account you may use the address of the nearest Common Area Account). *(Required)*

- **Name** - For Common Area Accounts and the Generator Account, the Owner's name must be entered. For Residential Unit Accounts, enter the name of the occupant, if it is known.

- **PG&E Account Number -** Enter the PG&E Account number on all Common Area Accounts and the Generator Account. (Required)

- **Otherwise Applicable Rate Schedule** – Enter the PG&E Otherwise Applicable Rate Schedule (OAS) for all Common Area Accounts and the desired Generator Account. (Required).

- **Solar Allocation Percentage –** For each Common Area Account and Residential Unit Account listed (but not the Generator Account), enter the Solar Allocation Percentage to two decimal places. The Solar Energy Allocation Percentage for each Residential Unit Account must be in proportion to the relative size of each unit, consistent with the manner in which affordable housing rents are established. The total of all Solar Energy Allocation Percentages must equal 100%.

- **Appendix A, Section 2 Page Numbers –** In the space provided on the bottom of each page, please mark the page number and total number of pages for your Appendix A, Section 2 Account List. (Start with Page 1 and do not count the page numbers for these two instruction pages).

  If the Eligible Low Income Facility has been on the MASH program for less than 5 years, verify that: (for all pages included).

  Total of Solar Allocation Percentages for all the Common Area Accounts (if any) _____.

  Total of Solar Allocation Percentage for all the Residential Unit Accounts _____.

  These numbers must match the percentages provided in number 3 above (if receiving MASH incentives), from Line 2, and must add up to 100%.

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P5
NEMVMASH

Section 2

#	Account Type Check only one box for each row *(required field)*			Account Address *(required field)* (for Generator Account use address of nearest common area account)	For Residential Units, Last **Name** of Occupant, if known For Common Area and Generator Accounts, **Owner's Name** (Name on PG&E Account)	*(Required field for Common Area Accounts and Generator Account only)* **PG&E Meter Number**	*(Required field for Common Area Accounts and Generator Account only)* **Otherwise Applicable Rate Schedule (OAS) under NEMVMASH**	*(Required Field for Common Area Accounts and Residential Accounts)* **Solar Energy Allocation Percentage**
	Common Area	Residential Unit	Generator Account (only 1)					
1	❑	❑	❑					
2	❑	❑	❑					
3	❑	❑	❑					
4	❑	❑	❑					
5	❑	❑	❑					
6	❑	❑	❑					
7	❑	❑	❑					
8	❑	❑	❑					
9	❑	❑	❑					
10	❑	❑	❑					
11	❑	❑	❑					
12	❑	❑	❑					
13	❑	❑	❑					
14	❑	❑	❑					
15	❑	❑	❑					
Total Solar Energy Allocation Percentage for this page _____								

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P6
NEMVMASH DEVELOPMENT

Please note that this does not constitute an application for **rebate** and/or **incentive programs**. For more information on these programs and their specific applications, please contact PG&E by phone, or by email using the subject "solar energy" at smarter-energy@pge.com, 1-800-933-9555 (residential) or BusinessCustomerHelp@pge.com, 1-800-468-4743 (commercial/industrial).

For more information on the , Multifamily Affordable Solar Housing (MASH) or the New Solar Homes Partnership (NSHP) for affordable housing, please go to www.pge.com/csi where you will find information about the program, including the program handbook, reservation request forms with the program contract as well as a list of requirements, FAQ's and resources. For additional questions about the California Solar Initiative (CSI), MASH or the NSHP, contact PG&E at solar@pge.com.

If you are applying for a CSI rebate, please check the appropriate box below and continue with this application.

- ☐ I am also applying for a MASH rebate, and understand that I will have to apply for MASH rebates separately.
- ☐ I am also applying for a NSHP rebate, and understand that I will have to apply for the NSHP rebates separately.

Part 1 - General Facility

A. Expected **date** of Project Completion and PG&E Receipt of Final, Signed-Off Building Permit for Generating Facility?

Date: _____

B. Are there any other generators interconnected on this account?

- ☐ Yes
  If yes, specify what kind of generator _____
- ☐ No

C. Are there any possible generator meter access issues?

- ☐ Yes **If yes**, check all that apply:

☐ Locked Room/Gate	☐ Meter located inside of facility/residence
☐ Unrestrained animal at meter or AC disconnect switch location	☐ Other (Please explain) _____

- ☐ No

D. Are any of your accounts on a Demand Response program?

(For more information on PG&E's demand response programs see: www.pge.com/demandresponse)

- ☐ Yes
  If yes, what program are you on? _____
- ☐ No.

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P6
NEMVMASH DEVELOPMENT

Part II - Designation of Generator Accounts, and Their Associated Common Area Accounts and Residential Units With Their respective Solar Energy Credit Allocation

Section 1 Instructions

1) Complete the section below (this information must match the Customer Electric Account Contact Information on the associated *Customer and Project Information (79-001)* for the same NEMVMASH Eligible Low Income Facility.

Eligible Low Income Development Name		
Owner Name	Address	Date

2) Is this application for a new NEMVMASH Eligible Low Income Development or a reallocation for an existing Eligible Low Income Development? Existing NEMVMASH Development Owners may not reallocate the Solar Allocation Percentages for all Common Area Accounts and all Residential Unit Accounts for a period of 5 years after first being interconnected on NEMVMASH, even if there is a change in Owner. However, after 5 years a reallocation may be requested. Also, a reallocation of credits between the different Common Area Accounts is allowed, and similarly if a residential unit becomes uninhabitable under the terms described in the NEMVMASH tariff in Special Condition 2 g, the Owner may choose to reallocate credits to the other Residential Unit Accounts.

This application is for an allocation for the initial new NEMVMASH Eligible Low Income Development: ❑

This application is for a reallocation for an existing NEMVMASH Eligible Low Income Development: ❑

3) A NEMVMASH Eligible Low Income Development on NEMVMASH must either receive incentive funds from the Multifamily Affordable Solar Housing Program (MASH), or the New Solar Homes Partnership (NSHP) for affordable housing, or be eligible to receive funds from the MASH program.

Is this Development receiving funds from either the MASH or NSHP program? Yes ❑ No ❑

If it is not receiving either MASH or NSHP incentives, is it eligible to receive MASH funds? Yes ❑ No ❑

4) For a new NEMVMASH Eligible Low Income Development, if you applied for MASH incentives, please enter the percentages in the space provided below from the MASH application.

Solar Allocation Percentage for All Common Area Account(s) Listed in the MASH Incentive Application (only required if applying for MASH Track 1c incentives):	**Solar Allocation Percentage for All Residential Unit Accounts Listed in MASH Incentive Application (only required if applying for MASH Track 1d incentives):**	**Both Percentages Must Total 100%**
%	%	= 100 %

5) Please use Section 2 to list all accounts that are located in the Eligible Low Income Development that will be taking service on NEMVMASH.

On a building by building basis, please list all participating Generator Accounts, Common Area Accounts (if any) and all Residential Unit Accounts as specified in Section 2.

Please note for each row:

- **Account Type** - check the one box corresponding to the type of account (that is, **Generator Account**, **Common Area** or **Residential Unit**). Every row (account) should have one and only one of these 3 boxes checked. *(Required).* Additionally, Generator accounts must also list the CEC AC rating in the **Generator Capacity** column and be numbered, starting with "1" in the **Generator Number** column. The sum of all generators' capacities listed must not exceed 1 MW.

- **Account Address -** Provide an address, including unit number, for all Accounts (for Generator Accounts without an address please specify location in detail). *(Required)*

- **Name** - For Common Area Accounts and the Generator Account, the Owner's name must be entered. For Residential Unit Accounts, enter the name of the occupant, if it is known.

- **PG&E Account Number -** Enter the PG&E Account number on all Common Area Accounts and Generator Accounts. (Required).

- **Otherwise Applicable Rate Schedule** – Enter the PG&E Otherwise Applicable Rate Schedule (OAS) for all Common Area Accounts and desired Generator Accounts. (Required).

- **Total Solar Generation (**bottom of each page) **–** For each Generator Account total the CEC AC rating. The total of all rating of all Generator Accounts on all pages must equal no more than 1 MW.

- **Solar Allocation Percentage (**bottom of the each page) - For each Common Area Account and Residential Unit Account listed (but not the Generator Account), enter the Solar Allocation Percentage to two decimal places. The Solar Energy Allocation Percentage for each Residential Unit Account must be in proportion to the relative size of each unit, consistent with the manner in which affordable housing rents are established. The total of all Solar Energy Allocation Percentages must equal 100%.

6) If the Eligible Low Income Development has been on the MASH program for less than 5 years, verify that: (for all pages included).

Total of Solar Allocation Percentages for all the Common Area Accounts (if any) _____.

Total of Solar Allocation Percentage for all the Residential Unit Accounts _____.

These numbers must match the percentages provided in number 3 above (if receiving MASH incentives), from Line 2, and must add up to 100%.

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P6
NEMVMASH DEVELOPMENT

Section 2 Please list all participating on a building by building basis.

#	Account Type Check only one box for each row *(required field)*					Account Address *(required field)* (for Generator Accounts without an address please describe location in detail)	Owner's Name *(For Residential Units, Last Name of Occupant, if known* *For Common Area and Generator Accounts. Use Name as shown on PG&E Account)*	PG&E Meter Number *(Required field for Common Area Accounts and Generator Account only)*	Otherwise Applicable Rate Schedule (OAS) under NEMVMASH *(Required field for Common Area Accounts and Generator Account only)*	Solar Energy Allocation Percentage *(up to 2 decimal places. Required Field for Common Area Accounts and Residential Accounts)*
	Generator Account	Generator Number (must complete an Appendix B with a corres-ponding generator number)	Generator Capacity (must total to no more than 1 MW)	Common Area	Residential Unit					
1	❑			❑	❑					
2	❑			❑	❑					
3	❑			❑	❑					
4	❑			❑	❑					
5	❑			❑	❑					
6	❑			❑	❑					
7	❑			❑	❑					
8	❑			❑	❑					
9	❑			❑	❑					
10	❑			❑	❑					
11	❑			❑	❑					
12	❑			❑	❑					
13	❑			❑	❑					
14	❑			❑	❑					
15	❑			❑	❑					
_____ Total Solar Generation this page							Total Solar Energy Allocation Percentage for this page _____			

Electric Sample Form No. 79-1174-02 Sheet 1
Rule 21 Generator Interconnection Application

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[1] tariffs:

(1) Non-Exporting Generating Facilities;
(2) NEM2 Solar (PV) (other than PV 30 KW or less)[2]; 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.state.ca.us and www.cpuc.ca.gov.

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

[1] Also when included with Energy Storage (e.g., batteries), or when operating under the provisions of PU Code 218, where permitted.
[2] 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.

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 makes 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[3], PG&E's Greenbook[4], or PG&E's Distribution or Transmission Interconnection Handbooks[5,6] 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:

http://www.pge.com/mybusiness/customerservice/nonpgeutility/generateownpower/distributedgeneration/generationrule21/

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

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

[3] Rule 21 can be found at: http://www.pge.com/tariffs/tm2/pdf/ELEC_RULES_21.pdf
[4] PG&E's Greenbook can be found at: http://www.pge.com/greenbook/
[5] Distribution Interconnection Handbook (DIH) can be found at: http://www.pge.com/en/mybusiness/services/nonpge/generateownpower/distributedgeneration/interconnectionhandbook/index.page
[6] Transmission Interconnection Handbook (TIH) can be found at: http://www.pge.com/en/mybusiness/services/nonpge/electrictransmission/contractstariffs/handbook/index.page

Part IV Attachments / On-Line Form - Overview

Table 1 - Summary of the attachment to this form.

		Attachment	Project Type
	1	INFO	Customer Project Information
EXPORT	2	NX	Non Export
	3	EX	Export
TECHNOLOGY	4	T1	Solar (PV) Only
	5	T2	Wind Only
	6	T3	Machine-Based Only
	7	T4	Fuel Cell
	8	T5	Energy Storage Only
TARIFF PROGRAM	9	P1	RES-BCT
	10	P2	NEM2A
	11	P3	NEMFCA
	12	P4	NEM2V
	13	P5	NEMVMASH
	14	P6	NEMVMASH Development

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 (79-1184)	Customer info							
	INFO	Customer & Project info							
Rule 21 - must complete one of these Attachments	NX	Non-export							
	EX	Export							
Each generating facility must complete one corresponding to technology	T1	Solar							
	T2	Wind							
	T3	Machine		(1)	(1)	(1)		(1)	
	T4	Fuel Cell		(1)	(1)	(1)	(2)	(1)	
	T5	Storage		(3)	(3)	(3)	(3)		
Complete Attachment that corresponds to tariff program for a generating facility	P1	RES-BCT							
	P2	NEM2A							
	P3	Fuel Cell Aggregation							
	P4	NEM2V							
	P5	NEMVMASH Single building							
	P6	NEMVMASH development							

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).

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT INFO
CUSTOMER AND PROJECT INFORMATION

Part I - Selecting the Study Process

Please check one:

- ☐ Fast Track Process[1].
- ☐ Greater than 1 MW generation facility,
- ☐ Detailed Study (not typical)
  - Will be either an Independent Study Process, Distribution Group Study Process or Transmission Cluster Study Process, dependent upon the Electrical Independence Tests.

Part II – Identifying the Generating Facility Location and Responsible Parties

Project Name:

A. Generating Facility Account Information (What electric service will the Generating Facility be interconnected for parallel operation with PG&E? For aggregated electric accounts provide the primary account and meter information).

Name shown on PG&E service account	Electric Service Agreement ID number - 10-digits	Electric Badge (Meter) Number - 6-10 digits (alpha numeric)

NOTE: ***Customer Electric account must match the customer's utility bill account information.***

		CA	
Meter Location Street Address	City	State	Zip - 5-digits

Please check all that apply:

- ☐ A New Generating Facility interconnection (at an existing service).
- ☐ Physical Changes to an interconnected Generating Facility with previous approval by PG&E (adding PV panels, adding energy storage as an addition or enhancement, changing inverters/turbines or changing load and/or operations).
- ☐ A New interconnection in conjunction 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 or Rule21Gen@pge.com.
- ☐ An Interconnection under Direct Access (DA).
  - Customers applying for interconnection who are served under Direct Access by an Electric Service Provider (ESP) must contact their ESP directly for information regarding the options available under their Direct Access contract.

[1] See Electric Rule 21 for FAST TRACK requirements.

❑ An Interconnection under Community Choice Aggregation Service (CCA Service).

- Customers applying for interconnection who are served under Community Choice Aggregation Service (CCA Service) by a Community Choice Aggregator (CCA) must contact their CCA directly for information regarding the options available under their CCA Service Program.

❑ An interconnected non-exporting Generating Facility (load always exceeds generation).

B. Customer Account Contact Information -

Mailing Address			
City		State	Zip - 5-digits
( ) -_____	( ) -_____		
Business Phone	Home Phone	Fax	Email

C. Contractor Information (Must be completed even if Contractor will not serve as a PG&E contact).

Contact		Company Name	
Mailing Address			
City		State	Zip - 5-digits
( ) -	( ) -		
Business Phone	Fax	Email	
☐ Yes ☐ No			
Does Contractor have Contractors State License Board (CSLB) Number?	Contractors State License Board Number		

D. Project Contact Information (Who is the project manager for this Generating Facility?)

Contact	Company Name
Mailing Address	

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT INFO
CUSTOMER AND PROJECT INFORMATION

City		State	Zip - 5-digits
( ) -	( ) -		
Business Phone	Fax	Email	

What is the **maximum 3-phase fault current** that will be contributed by the Generating Facility to a 3-phase fault at the Point of Common Coupling (PCC)? (If the Generating Facility is single phase in design, please provide the contribution for a line-to-line fault).	_____ Amps
Please indicate the **short circuit interrupting rating** of the host Customer facility's service panel:	_____ Amps

Refer to PG&E's Rule 21, Section G, for significance and additional information. To determine this value, any transformers and/or significant lengths of interconnecting conductor used between each of the Generators (if there are more than one) that make up the Generating Facility and the PCC must be taken into account. The details, impedance, and arrangement of such transformers and interconnecting conductors should be shown on the single-line diagram that is provided. Consult an electrical engineer or the equipment supplier if assistance is needed in answering this question.

It is expected that most Applicants will want to reserve the flexibility to operate any or all of their Generators in parallel. If the design of the proposed Generating Facility limits the amount of generation that may be interconnected at any time to PG&E's Electric System, please describe the assumptions used in calculating the maximum fault current contribution value.

For Customer applying for interconnection under Schedules
i) NEM2 – Net Energy Metering Service (including NEM2A – Load Aggregation,. Or NEM2MT- Multiple Tariff- with a NEM2 eligible generator), or
ii) NEM2V – Virtual Net Energy Metering Service, or
iii) NEM2VMS- Virtual Net Energy Metering For Multifamily Affordable Housing (MASH/NSHP) With Solar Generator(s),
please note, pursuant to California Public Utilities Commission Decision (D.) 16-01-044:

CEC Listed
In order to promote the safety and reliability of the customer's Generating Facility, the applicant certifies that as a part its request for NEM2, that all major solar system components are on the verified equipment list maintained by the California Energy Commission and certifies that other equipment, as determined by PG&E, has safety certification from a nationally recognized testing laboratory.

Warranties or Service Agreements
Applicant certifies as a part of its interconnection request for NEM2 that:
(i) a warranty of at least 10 years has been provided on all equipment and on its installation, or
(ii) a 10-year service warranty or executed "agreement" has been provided ensuring proper maintenance and continued system performance.

Interconnection Fees
Customers on this tariff must pay for the interconnection of their Generation Facilities as provided in Electric Rule 21.

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT NX
NON-EXPORT

Interconnection Agreement Type

Please select one option below:

☐ Non-Export A Generating Facility Interconnection Agreement that provides for parallel operation of the Generating Facility, but does not provide for exporting power to PG&E's Electric System. This non-export agreement, however does allow the occasional and uncompensated export of energy to PG&E's Electric System for less than 2 seconds in duration.

☐ Uncompensated Export A Generating Facility Interconnection Export Addendum that provides for parallel operation of the Generating Facility and the occasional, continuous, non-compensated, export of generator facilities sized 2 MW or less to PG&E's Electric System. Continuous export is export greater than 60 seconds in duration. This addendum must be executed in concert with the generating facility interconnection agreement.

Third Party Generating Facility Ownership

☐ Third Party Owned Generating Facility A Generating Facility Interconnection Agreement that provides for parallel operation of the 3rd Party owned Generating Facility, but does not provide for exporting energy to PG&E's Electric System; as well as a Customer Generation Agreement that defines the relationship between the Customer whose name appears on PG&E's electric service account. If this option is chosen, please complete the Third Party Generating Facility Ownership section below.

Customer Generation Agreement (CGA) (for 3rd Party Generator on Premises) Information (Please identify the PG&E Customer of Record where Generating Facility will be installed). CGA is not applicable to Net Energy Metering 2 (NEM2) Applicants because PG&E and the Customer, not the 3rd Party if any, must enter into the Net Energy Metering Interconnection Agreement.

Company Name to be entered on CGA	**Legal Title of Host Facility to be entered on CGA**	
Person Executing the CGA	**Title of Person Executing the CGA**	
	( ) ____ - _____	
Mailing Address	**Phone**	**E-Mail**

Generating Facility Interconnection Agreement (GFIA) for 3rd Party Owner – GFIA Information

☐ Generating Facility Interconnection Agreement (GFIA) for 3rd Party Owner will be executed by Contractor

Please identify the Party that will own the Generating Facility.
This Section is not applicable to Net Energy Metering 2 (NEM2) Applicants because PG&E and the Customer, not the 3rd Party if any, must enter into the Net Energy Metering 2 Interconnection Agreement.

Company Name to be entered on GFIA	**Legal Title of Company to be entered on GFIA**	
	( ) ____ - _____	
Mailing Address	**Phone**	**E-Mail**

Part II – Generating Facility Operational Details

Operating Modes: Please select one box below:

☐ **Parallel Operation:** The Generating Facility will interconnect and operate "in parallel" with PG&E's Electric System for more than one (1) second.

Please supply all of the information requested for the Generating Facility. Be sure to supply adequate information including diagrams and written descriptions regarding the protective relays that will be used to detect faults or abnormal operating conditions on PG&E's Electric System.

☐ **Inadvertent Export:** The Generating Facility will interconnect and operate, providing unscheduled and uncompensated export of real power for a duration exceeding two (2) seconds but fewer than sixty (60) seconds. The expected frequency of "inadvertent export" occurrences should be less than two occurrences per 24-hour period. Protective Functions, technical requirements and operational limitations are described in Rule 21, Section M.

Be sure to supply adequate information including diagrams and written descriptions regarding the switching device or scheme that will be used to limit the parallel operation period to one second or less. Please also describe the back up or protective device and controls that will trip the Generating Facility should the transfer switch or scheme not complete the transfer in one second or less.

☐ **Momentary Parallel Operation (MP):** The Generating Facility will interconnect and operate on a "momentary parallel" basis with PG&E's Electric System for a duration of one (1) second or less through transfer switches or operating schemes specifically designed and engineered for such operation.

Be sure to supply adequate information including diagrams and written descriptions regarding the switching device or scheme that will be used to limit the parallel operation period to one second or less. Please also describe the back up or protective device and controls that will trip the Generating Facility should the transfer switch or scheme not complete the transfer in one second or less.

☐ **Isolated Operation (I):** The Generating Facility will be "isolated" and prevented from becoming interconnected with PG&E's Electric System through a transfer switch or operating scheme specifically designed and engineered for such operation.

Be sure to supply adequate information including diagrams and written descriptions regarding the isolating switching device or scheme that will be used to prevent the Generating Facility from operating in parallel with PG&E's Electric System.

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT NX
NON-EXPORT

Parallel and Inadvertent Export Options Please select one box below:

- ☐ A **reverse-power protection device** will be installed to measure any export of power and trip the Generating Facility or open an intertie breaker to isolate the Generating Facility if limits are exceeded.
- ☐ An **under-power protection device** will be installed to measure the inflow of power and trip or reduce the output of the Generating Facility if limits are not maintained.
- ☐ The Generating Facility Interconnection Facility equipment has been **certified as non-islanding and the incidental export of power will be limited by the design of the interconnection**. If this option is to be used, the nominal ampere rating of the service entrance equipment (service panel rating) that is used by the host Customer facility is: _____.
- ☐ The **Gross Nameplate Rating of the Generating Facility will not exceed 50% of the host Customer facility's minimum electrical load over the past 12 months**. If this option is to be used, the minimum load of the host Customer facility must be stated in the space provided above.

The Generating Facility **completely offset their facility load** by being (a) optimally sized to meet their peak demand with load following functionality on the Generator controls and (b) ensuring conditional (inadvertent) export of electric power from the Generation Facility to Distribution Provider's Distribution or Transmission System occurs no more frequently than twice in any 24 hour period and the exports are greater than 2 seconds but no more than more than 60 seconds.

With the approval of PG&E, a Producer that wishes to retain the option to export power from a Generating Facility to PG&E's Electric System may use a different protection scheme that provides for the detection of faults and other abnormal operating conditions.

Please indicate:

- ☐ Standby / Emergency / Backup – Where the Generating Facility will normally be operated only when PG&E's electric service is not available.
- ☐ Qualifying Facility (QF) Status will be obtained from the FERC for this Generating Facility.

  Instructions and Notes: Parties operating Generating Facilities (QF) complying with all of the requirements for qualification as either a small power production facility or cogeneration facility pursuant to the regulations of the FERC (18 Code of Federal Regulations Part 292, Section 292.203 et seq.) implementing the Public Utility Regulatory Policies Act of 1978 (16 U.S.C.A. Section 796, et seq.), or any successor requirements for Qualifying Facilities, may seek certification from FERC to have the Generating Facility designated as a Qualifying Facility or "QF." In summary, QFs are Generating Facilities using renewable or alternative fuels as a primary energy source or facilities that utilize the thermal energy given off by the generation process for some other useful purpose. QFs enjoy certain rights and privileges not available to non-QF Generating Facilities.

  QF status is not required to interconnect and operate in parallel with PG&E's Electric System.

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT EX
EXPORT

Describing the Export Operation

Interconnection Service Requirements: (Please select one box below)

☐ Existing Service (currently metered PG&E service)

☐ New Generation-only Service (no load other than ancillary required for Generating Facility)
NEMVMASH participants must select either this option or the next

☐ New Generation-only Meter Tap (at location of existing service)
NEM2V applicants must select this option

If new generation-only service is needed, please indicate the requested voltage level: (Please select one box below)

☐ Secondary (up to 480V)

☐ Primary (up to 59 kV)

☐ Transmission (60 kV and up)

Power Export:

Generator Nameplate[1] Export (kW) _____

Maximum Expected Facility Net Export (kW) _____

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.

☐ Is 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?

[1] Please note that for Generating Facilities larger than 1 MW interconnecting to existing secondary voltage services, the revenue meter may require power loss adjustment.

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T1
SOLAR (PV) TECHNOLOGY

Part I - Describing the Generating Facility and Host Customer's Electrical Facilities

Please complete the following table for the specific generator technology indicated.

Instructions				
Inverter	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
Please indicate the number of each "**type" and quantity** of Generator being installed Be sure all Generators classified as one "type" are identical in all respects. If only one type of Generator is to be used, only one column needs to be completed.				
A - Generator/Inverter Manufacturer Enter the brand name of the Generator.				
B - Generator/Inverter Model Enter the model name or number assigned by the manufacturer of the Generator.				
C - Generator/Inverter Software Version If this Generator's control and or protective functions are dependent on a software program supplied by the manufacturer of the equipment, please provide the version or release number for the software that will be used.				
D - Is the Generator/Inverter certified? Applicant has verified that all major solar system components are on the verified equipment list maintained by the California Energy Commission and other equipment, as determined by PG&E, has been verified by the customer as having safety certification from a nationally recognized testing laboratory. See PG&E's Rule 21, Section L for additional information regarding Generator certification.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T1
SOLAR (PV) TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
E - Modules.	Manufacturer Model #. Quantity	Manufacturer Model #. Quantity	Manufacturer Model #. Quantity	Manufacturer Model #. Quantity
F - Gross Nameplate Rating (kVA) This is the capacity value normally supplied by the manufacturer and stamped on the Generator's nameplate. This value is not required where the manufacturer provides only a kW rating. However, where both kVA and kW values are available, please indicate both.				
G - Operating Voltage This value should be the voltage rating designated by the manufacturer and used in this Generating Facility. Please indicate phase-to-phase voltages for 3-phase installations. See PG&E's Rule 21, Section H.2.b. and Table H.1., for additional information.				
H - Power Factor Rating This value should be the nominal power factor rating designated by the manufacturer for the Generator. See PG&E's Rule 21, Section H.2.i. for additional information.				
I - PF Adjustment Range Where the power factor of the Generator is adjustable, please indicate the maximum and minimum operating values. See PG&E's Rule 21, Section H.2.i.				
J - Wiring Configuration Please indicate whether the Generator is a single-phase or three-phase device. See PG&E's Rule 21, Section H.3.				

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T1
SOLAR (PV) TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
K - AC Disconnect For systems requiring an AC Disconnect only, please include the requested information about the AC Disconnect. See PG&E's Rule 21, Section H.1.d	_____ Manufacturer _____ Model # _____ Rating (amps)	_____ Manufacturer _____ Model # _____ Rating (amps)	_____ Manufacturer _____ Model # _____ Rating (amps)	_____ Manufacturer _____ Model # _____ Rating (amps)
Located within 10 feet of the PG&E meter?	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No
L - Lineside Tap PG&E has special requirements for a lineside tap. Contact PG&E at: Rule21Gen@PGE.com for more information.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No
N - Warranty or Service Agreement Applicant has verified that (i) a warranty of at least 10 years has been provided on all equipment and on its installation, or (ii) have a 10-year service warranty or executed "agreement" ensuring proper maintenance and continued system performance.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

Part II Solar Statistics Data Fields

Per Appendix A of CPUC D. 14-11-001, the following data fields must all be completed, in their entirety, in order to initiate PG&E's interconnection review of the proposed Generating Facility. *Only complete Part II if the solar generating facility is serving as part of a Net Energy Metering (NEM2) arrangement..*

A. Customer Sector (Check one)

❑ Residential ❑ Educational ❑ Industrial
❑ Commercial ❑ Military ❑ Non-Profit
❑ Other Government

SOLAR (PV) TECHNOLOGY

B. Are Performance Monitoring and Reporting Services (PMRS) being utilized?

❑ Yes ❑ No

If yes, please indicate who is receiving the data? (check all that apply)

❑ Customer

❑ 3rd Party (list name) _____

C. Are there electric vehicles charging on site at the above generating facility address?

❑ Yes ❑ No

If yes, please indicate how many electric vehicles _____

D. System Ownership and Financing

i. System Owner (check one):

❑ PG&E Customer Owned

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

Indicate the System Cost paid by Customer: $_____

Property Assessed Clean Energy (PACE) Financed?

❑ Yes ❑ No

If Yes, PACE financed by which entity? _____

❑ 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 _____

ii. Rebate Information:

Did you participate in a California rebate program? ❑ Yes ❑ No

Please indicate the rebate program that you participated in: _____

Rebate Amount: $_____

If you are participating in the Single-family Affordable Solar Home (SASH) program, please provide SASH project number: _____

E. Additional Generating Facility Information (Solar PV Only)

i. Mounting Method: ❑ Rooftop ❑ Ground ❑ Mixed

ii. Tracking Type: ❑ Fixed ❑ Single-Axis ❑ Dual-Axis ❑ Mixed

If fixed, please indicate: Tilt: _____degrees Azimuth: _____degrees

F. Installer's/Vendor's California State Contractor License Number: _____

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T2
WIND TURBINE TECHNOLOGY

Please complete the following table for the specific generator technology indicated.

Instructions				
Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
Please indicate the number of each "**type" and quantity** of Generator being installed Be sure all Generators classified as one "type" are identical in all respects. If only one type of Generator is to be used, only one column needs to be completed.	Type: _____ Qty.: _____	Type: _____ Qty.: _____	Type: _____ Qty.: _____	Type: _____ Qty.: _____
A - Generator/Inverter Manufacturer Enter the brand name of the Generator.				
B - Generator/Inverter Model Enter the model name or number assigned by the manufacturer of the Generator.				
C - Generator/Inverter Software Version If this Generator's control and or protective functions are dependent on a software program supplied by the manufacturer of the equipment, please provide the version or release number for the software that will be used.				
D - Is the Inverter certified? Applicant has verified that all major solar system components are on the verified equipment list maintained by the California Energy Commission and other equipment, as determined by PG&E, has been verified by the customer as having safety certification from a nationally recognized testing laboratory. See PG&E's Rule 21, Section L for additional information regarding Generator certification.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____Yes ____ No
E - Generator Design Please indicate the design of each Generator. Designate "Inverter" anytime an inverter is used as the interface between the Generator and the electric system regardless of the primary power production/storage device used.	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T2
WIND TURBINE TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
F - Gross Nameplate Rating (kVA) This is the capacity value normally supplied by the manufacturer and stamped on the Generator's nameplate. This value is not required where the manufacturer provides only a kW rating. However, where both kVA and kW values are available, please indicate both.				
G - Operating Voltage This value should be the voltage rating designated by the manufacturer and used in this Generating Facility. Please indicate phase-to-phase voltages for 3-phase installations. See PG&E's Rule 21, Section H.2.b. and Table H.1., for additional information.				
H - Power Factor Rating This value should be the nominal power factor rating designated by the manufacturer for the Generator. See PG&E's Rule 21, Section H.2.i. for additional information.				
I - PF Adjustment Range Where the power factor of the Generator is adjustable, please indicate the maximum and minimum operating values. See PG&E's Rule 21, Section H.2.i.				
J - Wiring Configuration Please indicate whether the Generator is a single-phase or three-phase device. See PG&E's Rule 21, Section H.3.				
K - (MP) 3-Phase Winding Configuration (Choose One) For three-phase generating units, please indicate the configuration of the Generator's windings or inverter systems.	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T2
WIND TURBINE TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
L - (MP) Neutral Grounding System Used (Choose One) Wye connected generating units are often grounded – either through a resistor or directly, depending upon the nature of the electrical system to which the Generator is connected. If the grounding method used at this facility is not listed, please attach additional descriptive information.	___ Ungrounded ___ Solidly Grounded ___ Ground Resistor ___ Ohms	___ Ungrounded ___ Solidly Grounded ___ Ground Resistor ___ Ohms	___ Ungrounded ___ Solidly Grounded ___ Ground Resistor ___ Ohms	___ Ungrounded ___ Solidly Grounded ___ Ground Resistor ___ Ohms
M - *Induction Generators Only:* Locked Rotor Current: ***Stator Resistance:*** Stator Leakage Reactance: Rotor Resistance: Rotor Leakage Reactance: If the Generator is of an induction design, please provide the "locked rotor current" value supplied by the manufacturer. If this value is not available, the stator resistance, stator leakage reactance, rotor resistance, rotor leakage reactance values supplied by the manufacturer may be used to determine the locked rotor current. If the Generator's Gross Nameplate Capacity is 10 MW or greater, PG&E may request additional data to better model the nature and behavior of the Generator with relation to its Electric System.	_____ (Amps) _____(%) _____(%) _____(%) _____(%)	_____ (Amps) _____(%) _____(%) _____(%) _____(%)	_____ (Amps) _____(%) _____(%) _____(%) _____(%)	_____ (Amps) _____(%) _____(%) _____(%) _____(%)
N - Short Circuit Current Produced by Generator	_____ (Amps)	_____ (Amps)	_____ (Amps)	_____ (Amps)
O - AC Disconnect For systems requiring an AC Disconnect only, please include the requested information about the AC Disconnect. See PG&E's Rule 21, Section H.1.d Located within 10 feet of the PG&E meter?	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No
P - Lineside Tap PG&E has special requirements for a lineside tap. Contact PG&E at: Rule21Gen@PGE.com for more information.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No
Q – Warranty or Service Agreement Applicant has verified that (i) a warranty of at least 10 years has been provided on all equipment and on its installation, or (ii) have a 10-year service warranty or executed "agreement" ensuring proper maintenance and continued system performance.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T3
MACHINE-BASED TECHNOLOGY

Please complete the following table for the specific generator technology indicated.

Instructions				
Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
Please indicate the number of each "**type" and quantity** of Generator being installed. Be sure all Generators classified as one "type" are identical in all respects. If only one type of Generator is to be used, only one column needs to be completed.				
A - Generator/Inverter Manufacturer Enter the brand name of the Generator.				
B - Generator/Inverter Model Enter the model name or number assigned by the manufacturer of the Generator.				
C - Generator/Inverter Software Version If this Generator's control and or protective functions are dependent on a software program supplied by the manufacturer of the equipment, please provide the version or release number for the software that will be used.				
D - Is the Generator/Inverter certified? Applicant has verified that all major solar system components are on the verified equipment list maintained by the California Energy Commission and other equipment, as determined by PG&E, has been verified by the customer as having safety certification from a nationally recognized testing laboratory. See PG&E's Rule 21, Section L for additional information regarding Generator certification.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No
F - Gross Nameplate Rating (kVA) This is the capacity value normally supplied by the manufacturer and stamped on the Generator's nameplate. This value is not required where the manufacturer provides only a kW rating. However, where both kVA and kW values are available, please indicate both.				

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T3
MACHINE-BASED TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
G - Operating Voltage This value should be the voltage rating designated by the manufacturer and used in this Generating Facility. Please indicate phase-to-phase voltages for 3-phase installations. See PG&E's Rule 21, Section H.2.b. and Table H.1., for additional information.				
H - Power Factor Rating This value should be the nominal power factor rating designated by the manufacturer for the Generator. See PG&E's Rule 21, Section H.2.i. for additional information.				
I - PF Adjustment Range Where the power factor of the Generator is adjustable, please indicate the maximum and minimum operating values. See PG&E's Rule 21, Section H.2.i.				
J - Wiring Configuration Please indicate whether the Generator is a single-phase or three-phase device. See PG&E's Rule 21, Section H.3.				
K - (MP) 3-Phase Winding Configuration (Choose One) For three-phase generating units, please indicate the configuration of the Generator's windings or inverter systems.	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye
L - (MP) Neutral Grounding System Used (Choose One) Wye connected generating units are often grounded – either through a resistor or directly, depending upon the nature of the electrical system to which the Generator is connected. If the grounding method used at this facility is not listed, please attach additional descriptive information.	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T3
MACHINE-BASED TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
M – *Synchronous Generators Only:* If the Generator is of a synchronous design, please provide the synchronous reactance, transient reactance, and subtransient reactance values supplied by the manufacturer. This information is necessary to determine the short circuit contribution of the Generator and as data in load flow and short circuit computer models of PG&E's Electric System. If the Generator's Gross Nameplate Capacity is 10 MW or greater, PG&E may request additional data to better model the nature and behavior of the Generator with relation to its Electric System.				
Synchronous Reactance:	_____ (Xd %)	_____ (Xd %)	_____ (Xd %)	_____ (Xd %)
Transient Reactance:	_____ (Xd %)	_____ (Xd %)	_____ (Xd %)	_____ (Xd %)
Subtransient Reactance:	_____ (Xd %)	_____ (Xd %)	_____ (Xd %)	_____ (Xd %)
N - *Induction Generators Only:*				
Locked Rotor Current:	_____ (Amps)	_____ (Amps)	_____ (Amps)	_____ (Amps)
Stator Resistance:	_____(%)	_____(%)	_____(%)	_____(%)
Stator Leakage Reactance:	_____(%)	_____(%)	_____(%)	_____(%)
Rotor Resistance:	_____(%)	_____(%)	_____(%)	_____(%)
Rotor Leakage Reactance:	_____(%)	_____(%)	_____(%)	_____(%)
If the Generator is of an induction design, please provide the "locked rotor current" value supplied by the manufacturer. If this value is not available, the stator resistance, stator leakage reactance, rotor resistance, rotor leakage reactance values supplied by the manufacturer may be used to determine the locked rotor current. If the Generator's Gross Nameplate Capacity is 10 MW or greater, PG&E may request additional data to better model the nature and behavior of the Generator with relation to its Electric System.				
O - Short Circuit Current Produced by Generator	_____ (Amps)	_____ (Amps)	_____ (Amps)	_____ (Amps)

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T3
MACHINE-BASED TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
P – *For Generators that are Started as a "Motor" Only:* This information is needed only for Generators that are started by "motoring" the generator. See PG&E's Rule 21, Sections L.3.d. and L.7.b. for significance and additional information. If this question was answered in Part IV, question C of this Application, it need not be answered here. 1. In-Rush Current: 2. Host Customer's Service Entrance Panel (Main Panel) Continuous Current Rating:	_____ (Amps) _____ (Amps)	_____ (Amps) _____ (Amps)	_____ (Amps) _____ (Amps)	_____ (Amps) _____ (Amps)
Q – Prime Mover Type Please indicate the type and fuel used as the prime mover or source of energy for the Generator. 1 = Natural Gas 2 = Diesel Fueled 3 = Other Fuel	1 2 3	1 2 3	1 2 3	1 2 3
R - AC Disconnect For systems requiring an AC Disconnect only, please include the requested information about the AC Disconnect. See PG&E's Rule 21, Section H.1.d Located within 10 feet of the PG&E meter?	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No
S - Lineside Tap PG&E has special requirements for a lineside tap. Contact PG&E at: Rule21Gen@PGE.com for more information.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No
T – Warranty or Service Agreement Applicant has verified that (i) a warranty of at least 10 years has been provided on all equipment and on its installation, or (ii) have a 10-year service warranty or executed "agreement" ensuring proper maintenance and continued system performance.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T4
FUEL CELL TECHNOLOGY

Please complete the following table for the specific generator technology indicated.

Instructions				
Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
Please indicate the number of each "**type" and quantity** of Generator being installed. Be sure all Generators classified as one "type" are identical in all respects. If only one type of Generator is to be used, only one column needs to be completed.				
A - Generator/Inverter Manufacturer Enter the brand name of the Generator.				
B - Generator/Inverter Model Enter the model name or number assigned by the manufacturer of the Generator.				
C - Generator/Inverter Software Version If this Generator's control and or protective functions are dependent on a software program supplied by the manufacturer of the equipment, please provide the version or release number for the software that will be used.				
D - Is the Generator/Inverter certified? Applicant has verified that all major solar system components are on the verified equipment list maintained by the California Energy Commission and other equipment, as determined by PG&E, has been verified by the customer as having safety certification from a nationally recognized testing laboratory. See PG&E's Rule 21, Section L for additional information regarding Generator certification.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T4
FUEL CELL TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
E - Generator Design Please indicate the design of each Generator. Designate "Inverter" anytime an inverter is used as the interface between the Generator and the electric system regardless of the primary power production/storage device used.	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter
F - Gross Nameplate Rating (kVA) This is the capacity value normally supplied by the manufacturer and stamped on the Generator's nameplate. This value is not required where the manufacturer provides only a kW rating. However, where both kVA and kW values are available, please indicate both.				
G - Operating Voltage This value should be the voltage rating designated by the manufacturer and used in this Generating Facility. Please indicate phase-to-phase voltages for 3-phase installations. See PG&E's Rule 21, Section H.2.b. and Table H.1., for additional information.				
H - Power Factor Rating This value should be the nominal power factor rating designated by the manufacturer for the Generator. See PG&E's Rule 21, Section H.2.i. for additional information.				
I - PF Adjustment Range Where the power factor of the Generator is adjustable, please indicate the maximum and minimum operating values. See PG&E's Rule 21, Section H.2.i.				
J - Wiring Configuration Please indicate whether the Generator is a single-phase or three-phase device. See PG&E's Rule 21, Section H.3.				
K - (MP) 3-Phase Winding Configuration (Choose One) For three-phase generating units, please indicate the configuration of the Generator's windings or inverter systems.	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T4
FUEL CELL TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
L - (MP) Neutral Grounding System Used (Choose One) Wye connected generating units are often grounded – either through a resistor or directly, depending upon the nature of the electrical system to which the Generator is connected. If the grounding method used at this facility is not listed, please attach additional descriptive information.	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms
M - Short Circuit Current Produced by Generator	_____ (Amps)	_____ (Amps)	_____ (Amps)	_____ (Amps)
N – Prime Mover Type Please indicate the type and fuel used as the prime mover or source of energy for the Generator. 1 = Natural Gas 2 = Diesel Fueled 3 = Other Fuel	1 2 3	1 2 3	1 2 3	1 2 3
O - AC Disconnect For systems requiring an AC Disconnect only, please include the requested information about the AC Disconnect. See PG&E's Rule 21, Section H.1.d Located within 10 feet of the PG&E meter?	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No
P - Lineside Tap PG&E has special requirements for a lineside tap. Contact PG&E at: Rule21Gen@PGE.com for more information.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No
Q – Warranty or Service Agreement Applicant has verified that (i) a warranty of at least 10 years has been provided on all equipment and on its installation, or (ii) have a 10-year service warranty or executed "agreement" ensuring proper maintenance and continued system performance.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T5
ENERGY STORAGE TECHNOLOGY

Please complete the following table for the specific generator technology indicated.

Instructions				
Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
Please indicate the number of each "**type" and quantity** of Generator being installed. Be sure all Generators classified as one "type" are identical in all respects. If only one type of Generator is to be used, only one column needs to be completed.				
A - Generator/Inverter Manufacturer Enter the brand name of the Generator.				
B - Generator/Inverter Model Enter the model name or number assigned by the manufacturer of the Generator.				
C - Generator/Inverter Software Version If this Generator's control and or protective functions are dependent on a software program supplied by the manufacturer of the equipment, please provide the version or release number for the software that will be used.				
D - Is the Generator/Inverter certified? Applicant has verified that all major solar system components are on the verified equipment list maintained by the California Energy Commission and other equipment, as determined by PG&E, has been verified by the customer as having safety certification from a nationally recognized testing laboratory. See PG&E's Rule 21, Section L for additional information regarding Generator certification.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No
E - Generator Design Please indicate the design of each Generator. Designate "Inverter" anytime an inverter is used as the interface between the Generator and the electric system regardless of the primary power production/storage device used.	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter	__ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T5
ENERGY STORAGE TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
F - Gross Nameplate Rating (kVA) This is the capacity value normally supplied by the manufacturer and stamped on the Generator's nameplate. This value is not required where the manufacturer provides only a kW rating. However, where both kVA and kW values are available, please indicate both.				
G - Energy Storage Electrical Source Function (in addition, please complete section: "Additional Information Required for Energy Storage")	Max kWh Capacity: _____ Rated kW Discharge: _____	Max kWh Capacity: _____ Rated kW Discharge: _____	Max kWh Capacity: _____ Rated kW Discharge: _____	Max kWh Capacity: _____ Rated kW Discharge: _____
H - Operating Voltage This value should be the voltage rating designated by the manufacturer and used in this Generating Facility. Please indicate phase-to-phase voltages for 3-phase installations. See PG&E's Rule 21, Section H.2.b. and Table H.1., for additional information.				
I - Power Factor Rating This value should be the nominal power factor rating designated by the manufacturer for the Generator. See PG&E's Rule 21, Section H.2.i. for additional information.				
J - PF Adjustment Range Where the power factor of the Generator is adjustable, please indicate the maximum and minimum operating values. See PG&E's Rule 21, Section H.2.i.				
K - Wiring Configuration Please indicate whether the Generator is a single-phase or three-phase device. See PG&E's Rule 21, Section H.3.				

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T5
ENERGY STORAGE TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
L - (MP) 3-Phase Winding Configuration (Choose One) For three-phase generating units, please indicate the configuration of the Generator's windings or inverter systems.	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye
M - (MP) Neutral Grounding System Used (Choose One) Wye connected generating units are often grounded – either through a resistor or directly, depending upon the nature of the electrical system to which the Generator is connected. If the grounding method used at this facility is not listed, please attach additional descriptive information.	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms
N - Short Circuit Current Produced by Generator:	_____ (Amps)	_____ (Amps)	_____ (Amps)	_____ (Amps)
O – Prime Mover Type Please indicate the type and fuel used as the prime mover or source of energy for the Generator. 1 = Natural Gas 2 = Diesel Fueled 3 = Other Fuel	1 2 3	1 2 3	1 2 3	1 2 3
P - AC Disconnect For systems requiring an AC Disconnect only, please include the requested information about the AC Disconnect. See PG&E's Rule 21, Section H.1.d Located within 10 feet of the PG&E meter?	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T5
ENERGY STORAGE TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
Q - Energy Storage (ES) System (For important sizing information related to DC-Couple configurations, see sizing note below).	_____ Manufacturer _____ Model # _____ Quantity of Units	_____ Manufacturer _____ Model # _____ Quantity of Units	_____ Manufacturer _____ Model # _____ Quantity of Units	_____ Manufacturer _____ Model # _____ Quantity of Units
R - Lineside Tap PG&E has special requirements for a lineside tap. Contact PG&E at: Rule21Gen@PGE.Com for more information.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No
S – Warranty or Service Agreement Applicant has verified that (i) a warranty of at least 10 years has been provided on all equipment and on its installation, or (ii) have a 10-year service warranty or executed "agreement" ensuring proper maintenance and continued system performance.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

Energy Storage Charging Function:

Rated Charge Demand (Load): _____ kW

Estimated annual Net Energy Usage* of the energy storage device(s): ____ ____ kWh

*Net Energy usage = (kWh input, including charging, storage device auxiliary loads and losses) – (kWh output including discharging)

Will the Distribution Grid be used to charge the storage device: ☐ Yes ☐ No

If no: Provide technical description of control systems including (e.g. Nationally-certified piece of equipment, Relays/metering):

Source of energy for Charging: _____

Mechanism to prevent charging from the Distribution System: _____

If Yes: Will charging the storage device(s) increase the host facility's existing peak load demand:

☐ Yes ☐ No

If Yes: Provide the following loading information:

Amount of added peak demand: _____ kW

If no: Provide technical description of controls systems including:

Charging periods: _____

Mechanism to prevent charging from the Distribution System during host facility peak:

_____

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T5
ENERGY STORAGE TECHNOLOGY

Expedited Interconnection Process Selection for Non-Export Energy Storage:

☐ This project meets the requirements identified in Rule 21 Section N and this process is being selected for expedited interconnection.

Note on Sizing (DC-Coupled Configurations)

The size of the storage system in DC-coupled NEM-eligible generator plus storage systems is the lesser of the shared inverter's (or inverters') nameplate capacity (capacities summed) and the storage device's (devices') maximum continuous discharge capacity (capacities summed) listed on the device's (devices') technical specifications sheets. A storage device's maximum continuous discharge capacity may be listed on technical specification sheets using different terminology. Note: PG&E will use common sense to determine whether a device's technical specification sheet includes the appropriate metric for purposes of determining system size, regardless of the terminology used. If that metric is not included, PG&E may rely on the inverter's nameplate rating.

For example:

- What is the maximum continuous discharge capability for each storage unit?
  _____ +_____ +_____ +_____ + _____ =. total_____
- What is each inverter's nameplate rating?
  _____ +_____ +_____ +_____ + _____ =. total_____

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT P1
RES- BCT

-02

Part I – Applicability and Purpose

This *LOCAL GOVERNMENT APPLICATION FOR AN ARRANGEMENT TO TAKE SERVICE ON RATE SCHEDULE RES-BCT WITH INTERCONNECTED ELIGIBLE RENEWABLE GENERATION OF NOT MORE THAN 5 MEGAWATTS* ("RES-BCT Application") allows for a Local Government, as defined in Rate Schedule RES-BCT, to apply for an Arrangement, as defined in Rate Schedule RES-BCT, to take service on PG&E's electric Rate Schedule *RES-BCT NET ENERGY METERING SERVICE FOR LOCAL GOVERNMENT REMOTE RENEWABLE SELF GENERATION*.

For the Local Government's Arrangement (as defined in the RES-BCT tariff), this Application allows a Local Government to:

a) Elect one or more Generating Accounts with Eligible Renewable Generating Facilities, as defined in Rate Schedule RES-BCT, where each interconnected Eligible Renewable Generating Facilities at the Arrangement, has a capacity of 5 megawatts (5,000 kW) ("Generating Facility") or less; and

b) Interconnect and operate the Eligible Renewable Generating Facilities under the provisions of PG&E's Electric Rule 21;

c) Elect one or more, but no more than 50, Benefiting Account to receive the Bill Credit, as defined in Rate Schedule RES-BCT from the Generating Accounts in (a); and

d) Elect Bill Credit Allocation Percentages for each of the Generating and Benefiting Accounts.

Local Government has elected to apply for service for its Arrangement on Rate Schedule RES-BCT, which involves the interconnection and operation of its Eligible Renewable Generating Facilities in parallel with PG&E's Electric System, primarily to offset part or all of the Arrangement's own electrical requirements at the affiliated Generating and Benefiting Accounts as listed in Appendix A.

Part II – Designation of Bill Credit Allocation Percentages to RES-BCT Arrangement Accounts

A. Section 1 Instructions

- Complete the section below.

Local Government Name	Address	Date
Name: Contact Name: Contact Title:		

- Is this application for a new Arrangement or a reallocation for an existing Arrangement? (For an existing Arrangement, Local Governments may not change the Credit Allocation Percentages more frequently than once in any 12 month period.

❑ This Appendix A to the RES-BCT Application is for an allocation for the initial new Arrangement.

❑ This Appendix A to the RES-BCT Application is for a reallocation for an existing Arrangement.

- Please use the attached Appendix A Section 2 page to list all Benefiting Accounts that are located in the Arrangement that will be taking service on RES-BCT. Include the Generating Account, and all Benefiting Accounts.

- Please note for each row:

  - **Account Type** - check the one box corresponding to the type of account (that is, Generating or Benefiting Account). There must be at least one Generating Account and one Benefiting Account listed. Every row (account) should have one and only one of these 2 boxes checked. *(Required).* A Rule 21 Application and Interconnection Agreement as described in Section A of the RES-BCT Application will need to be submitted for the Generating Facility at each Generating Account listed below. In the "Designated Account…" column, designate the ONE account to which PG&E should apply any remaining true-up credit as described in the RES-BCT Special Condition 2(h). It may not be the generator account.

  - **Account Address -** Provide an address, including unit number, for all Accounts. *(Required)*

  - **Name** - For Generating and Benefiting Accounts, the Account Holder's name must be entered. *(Required)*

  - **PG&E Account Number -** Enter the PG&E Account number for all accounts. *(Required)*

  - **Otherwise Applicable Rate Schedule** – Enter the PG&E Otherwise Applicable Rate Schedule (OAS) for all accounts. *(Required)*

  - **Bill Credit Allocation Percentage –** For each Generating and Benefiting Account listed, enter the Bill Credit Allocation Percentage to the nearest whole percentage. The total of all Bill Credit Allocation Percentages must equal 100%.

  - **Appendix A, Section 2 Page Numbers –** In the space provided on the bottom of each page, please mark the page number and total number of pages for your Appendix A, Section 2 Account List. (Start with Page 1 and do not count the page numbers for these two instruction pages.) Note that no more than 50 Benefiting Accounts may be included in an Arrangement.

Local Governments are encouraged to not allocate more Bill Credit to an account than will be used annually. If any additional Bill Credit pursuant to RES-BCT Special Condition 2 (c),(d) and (g) remains, PG&E will review the true up bills for the Generating Account and Benefiting Accounts to determine if any charges for the generation component of the energy charge remain to be credited. If yes, PG&E will apply the remaining Bill Credit to the Designated Account.

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT P1
RES- BCT

-02

B. Section 2

#	Account Type Check only one box for each row *(required field)* Generator Account	Benefiting Account	Designated Account Check *only one* account Must not be a generator account	Account Address *(required field)*	For Benefiting and Generating Account, List **Name** on Account,	*(Required field for All Accounts)* **PG&E Service Agreement Number**	*(Required field for All Accounts)* **Otherwise Applicable Rate Schedule (OAS) under RES-BCT**	*(Required Field for All Accounts)* **Bill Credit Allocation Percentage** (to the nearest whole percentage)
1	❑	❑	❑					
2	❑	❑	❑					
3	❑	❑	❑					
4	❑	❑	❑					
5	❑	❑	❑					
6	❑	❑	❑					
7	❑	❑	❑					
8	❑	❑	❑					
9	❑	❑	❑					
10	❑	❑	❑					
11	❑	❑	❑					
12	❑	❑	❑					
13	❑	❑	❑					
14	❑	❑	❑					
15	❑	❑	❑					
Total Bill Credit Allocation Percentage for all accounts over all pages must equal 100% _____								

Note 1) The capacity of all Eligible Renewable Generating Facilities on each Generating Account in the Arrangement must not total more than 5 megawatts.
Note 2) There must be no more than 50 Benefiting Accounts in an Arrangement.
Note 3) The Monthly Billing Setup Recovery Charge for the Arrangement from the RES-BCT tariff will be billed to each Generating Account listed, unless otherwise note

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT P2
NEMFC LOAD AGGREGATION

As governed by Schedule NEMFC Special Condition 4, for purposes of determining if the eligible Fuel Cell Customer-Generator was a net consumer or a net producer of electricity during each Relevant Period PG&E will aggregate the load of the Fuel Cell Customer-Generator's accounts listed below where the Fuel Cell Customer Generator is the customer of record and the following requirements are met: (i) the accounts are on an applicable time-of-use rate schedule, and (ii) the accounts are located on the property where the Eligible Fuel Cell Electrical Generation Facility is located or on property adjacent or contiguous to that property as long as those properties are solely owned, leased, or rented by the Eligible Fuel Cell Customer-Generator; and (iii) all the accounts are served by the same electric commodity service provider. (i.e. the Eligible Fuel Cell Customer- Generator account and all aggregated accounts must all be on bundled service or all on CCA service, or all on DA service.)

	Meter (Badge) Number	Service Agreement ID	Rate Schedule	Address (Street, City, Zip Code)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT P3
NEM2 LOAD AGGREGATION

Part I

This is an appendix to Form 79-1151-02A, 79-978-02, 79-1137-02 or 79-1069-02 as applicable. As governed by Schedule NEM2 Special Condition 7, PG&E will aggregate the load of the Customer-Generator's accounts listed below where the Customer-Generator is the customer of record and the accounts continue to meet the requirements of Special Condition 7 of PG&E's NEM2 tariff as outlined in the Customer Declaration below.

In accordance with this appendix:

(i) Pursuant to Schedule NEM2 Special Condition 7 the electricity generated by the renewable electrical generation facility and exported to the grid shall be allocated to each of the aggregated meters in proportion to the electrical load served by those meters, and

(ii) One time set up fee of $25 is assessed for each account in the NEMA2 arrangement (not to exceed $500). A $5 monthly fee will be assessed for each aggregated account. These fees will be billed to the generating account.

Note these fees are subject to change from time to time. Additional monthly fees (for example, but not limited to, minimum charges, meter fees, demand charges) may also apply to each account, as described in that account's otherwise applicable rate schedule,, and

(iii) Customer-Generator shall permanently be ineligible to receive Assembly Bill (AB) 920 net surplus electricity compensation (NSC), and PG&E shall retain any kilowatt hours in excess of the eligible Customer-Generator's electrical load as determined for each aggregated meter individually. (However, if an Aggregated Account that is not a Generating Account is separated from the Arrangement, and subsequently qualifies for NEM2, it may be eligible for NSC.)

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.

Part II

In accordance with Schedule NEM2, as Customer-Generator you will be required to represent and warrant under penalty of perjury on the interconnection agreement that:

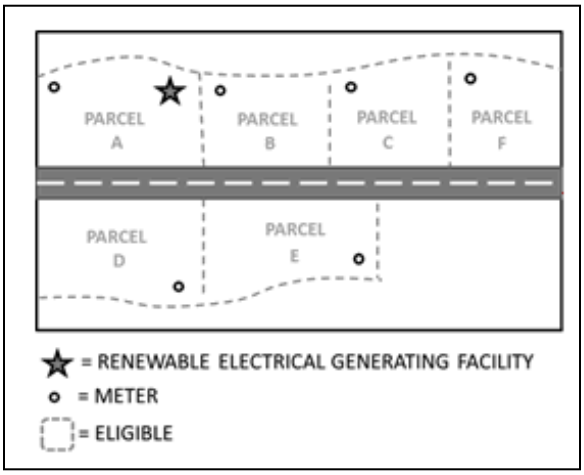
1) The total annual output in kWh of the generator is less than or equal to 110% (for solar and/or wind systems equal to or less than 30 kW) or 100% (for all other technologies and solar and/or wind systems greater than 30 kW) of the annual aggregated electrical load in kWh of the meters associated with the generator account, including the load on the generating account itself (before being offset by the generator); and

2) Each of the aggregated account meters associated with this NEM2 generator account are located either

   (i) on the property where the renewable electrical generation facility is located, or

   (ii) are located within an unbroken chain of contiguous parcels that are all solely owned, leased or rented by the customer-generator. For purposes of Load Aggregation, parcels that are divided by a street, highway, or public thoroughfare are considered contiguous, provided they are within an unbroken chain of otherwise contiguous parcels that are all solely owned leased or rented by the customer-generator.

   For example, assume there are five parcels (A, B, C, D, E, and F) that form a cluster of contiguous parcels and D and E are separated from A, B, C and F by a street, highway, or public thoroughfare. For the purposes of participating in Load Aggregation, all five parcels are considered contiguous, provided they are otherwise contiguous and all are solely owned, leased or rented by the customer-generator. Refer to the diagram at left (for illustrative purposes only.)



3) PG&E reserves the right to request a parcel map to confirm the property meets the requirements of 2) above; and

4) You agree to notify PG&E if there is any change of status that makes any of the meters listed in this Appendix ineligible for meter aggregation to ensure that only eligible meters are participating PG&E will require an updated Appendix and Declaration form and

5) In the "Variations on Customer Generator Name" fields on the following table, you may provide all variations of your name. By signing he interconnection agreement you attest that as Customer-Generator, you have sole control of all the parcels establishing contiguity for the Arrangement listed on Page 3 of this Appendix.

Variations on Customer-Generator Name
1)
2)
3)
4)
5)

You will have to sign that you understand that "sole control" means that I solely own, lease or rent each parcel or that I have an irrevocable easement that grants me sole use and control of the entire parcel. I understand that other types of easements are not sufficient to establish contiguity for NEM2A.

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT P3
NEM2 LOAD AGGREGATION

Part III

A. Second Service For Generator

Requesting Second Service for Generator: ☐ Yes ☐ No

For Load Aggregation Arrangements Requesting an additional service for a Generator Account – 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.

B. Minimum Number of Aggregated Load Accounts

A NEM2A Arrangement must have at least two Aggregated Load Accounts. The generator account must have non-generator (existing) load to be counted as an Aggregated Load Account. Generator Accounts interconnected based on Part II A above, will not be counted as an Aggregated Load Account.

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P3
NEM2 LOAD AGGREGATION

NEM2 Load Aggregation Worksheet								
Accounts	PARCEL NUMBER	ACCOUNT NAME[1] [2]	SERVICE ADDRESS	ELECTRIC ACCOUNT NUMBER[2]	ELECTRIC SERVICE AGREEMENT NUMBER[2]	ELECTRIC METER NUMBER[2]	ELECTRIC RATE SCHEDULE[2]	ANNUAL KWH LOAD[3]
Generator								
Load Acct 1								
Load Acct 2								
Load Acct 3								
Load Acct 4								
Load Acct 5								
Load Acct 6								
Load Acct 7								
Load Acct 8								
Load Acct 9								
Load Acct 10								
							Total Annual kWh	
							(For Standard NEM2 Solar/Wind less than 30kW) - 110% of Total Annual kWh	
Estimated Annual kWh Production				**Solar** = CEC-AC[4] rating X 1,664[5] **Wind** = Total Inverter Nameplate Rating X 2,190[6] **Other Technologies** = Total Inverter Nameplate Rating X 7,008[7]				

[1] If this is a new account, enter *NEW*.
[2] As listed on your Billing Statement
[3] For previous twelve months from date of signature. Please also enter the annual kWh for generator account prior to the generator being installed; if none, enter zero.
[4] CEC-AC (kW) = California Energy Commission Alternating Current, refers to inverter efficiency rating (Quantity of PV Modules x PTC Rating of PV Modules x CEC Inverter Efficiency Rating)/1000
[5] Estimated Solar Production = 8,760 hrs/yr X 0.19 solar capacity factor = 1,664
[6] Estimated Wind Production = 8,760 hrs/yr X 0.25 wind capacity factor = 2,190
[7] Estimated Other Technologies = 8,760 hrs/yr X 0.80 other technologies capacity factor = 7,008

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT P4
NEM2V

Part I - General Facility

A. Are there any other generators interconnected on this account?

- ☐ Yes
  If yes, specify what kind of generator _____
- ☐ No

B. Are there any possible generator meter access issues?

- ☐ Yes **If yes**, check all that apply:

☐ Locked Room/Gate	☐ Meter located inside of facility/residence
☐ Unrestrained animal at meter or AC disconnect switch location	☐ Other (Please explain) _____ _____

- ☐ No

C. Are any of your accounts on a Demand Response program?

Qualified Customers are eligible for the same demand response programs and solar tariffs as NEM2 customers. Demand response payments to Qualified Customers will be based on the Qualified Customer's metered usage disregarding any contributions from virtually net-metered generation. Similarly, any other demand response programmatic elements that are affected by a customer's load (e.g., program eligibility) should also exclude from consideration any impacts of NEM2V generation.

- ☐ Yes
  If yes, what program are you on? _____
- ☐ No.

D. Generator Interconnection Tie-in Point – Does your interconnection satisfy PG&E's Meter Standards?

- ☐ Yes
- ☐ No. Reason: _____

If after review of a customer's NEM2V application PG&E determines a site assessment is essential, then PG&E may conduct a site assessment. Please note that entering PG&E sealed sections of their service panels is unsafe and not permitted without PG&E's supervision and express authorization.

E. Are you planning to meet the requirements specified in the PG&E Greenbook (current reference is "VNEM Installation Requirements", Utility Bulletin TD6999B-005, 02/06/2012)?

- ☐ Yes
- ☐ No. Reason: _____

F. Where are you planning to tie in? Can you provide Switchgear cutsheets, detailing the proposed point of connection and bussing modification / clearances, cutsheets of the NGOM socket, to clearly identify proposed tie-in point?

Location: _____

G. Is the currently proposed tie-in point a result of restrictions placed on altering the existing panel or equipment within, as imposed by the local authority having jurisdiction?

- ☐ Yes - What restriction? _____
- ☐ No.

H. Have you confirmed the Ampere Interrupting capacity (AIC) rating of the existing panel?

- ☐ Yes
- ☐ No. Reason: _____

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT P4
NEM2V

I. Are there existing PG&E gas or other utility's facilities in the vicinity of the proposed point of interconnection? (Note: Minimum clearances must be maintained from PG&E facilities, as specified in PG&E's Greenbook)

- ❑ Yes - Describe:_____ _____
- ❑ No.

J. Are you going to require PG&E to arrange to de-energize the service panel for you to safely connect the generator to the service panel?

(Note: that the de-energizing process may be as simple as a PG&E Troubleman opening a switch, or as involved as a PG&E crew performing switching, and rearrangement of service wires, and coordinating with neighboring customers that might be impacted by this de-energizing project. **PG&E requires ten (10) business days advance notice prior to performing such a request. Fees may apply.)**

- ❑ Yes - Describe:_____ _____
- ❑ No.

K. Can this de-energizing of the service panel be done during normal business hours?

- ❑ Yes
- ❑ No. If not, what time of the week and time of the day do you request this service disconnection to occur?

Mon Tues Wed Thu Fri Sat Sun ____:_____AM_____/_____PM___
(circle day of week) (enter time & circle AM or PM)

Note- the time of de-energizing the service panel will also depend on whether other customers are impacted and their input to the process.

L. What is the duration of the service disconnection requested?

Duration _____

M. Do you need PG&E personnel to stand by while you perform your work?

- ❑ Yes
- ❑ No

N. Will you need to obtain clearance from the local authority having jurisdiction prior to PG&E re-energizing the service panel?

(Note: Some cities/counties require that they have inspected the panel prior to reenergizing. You will need to provide proof of the local authority that your work will not require such approval, or be prepared to provide that to PG&E prior to PG&E re-energizing the panel).

- ❑ Yes
- ❑ No

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT P4
NEM2V

Part 2 - Designation of NEMV Generating Account and Benefitting Accounts and Their Respective Eligible Energy Credit Allocation

Section 1 Instructions

a. Please ensure the information on the Customer and Project Information for account information represents the owner as per NEM2V.

b. Is this an application to establishing the Annual Eligible Energy Credit Allocation for a new NEM2V Arrangement or for a change to the Allocation for an existing NEM2V facility, as described in either NEM2V Special Condition 2 or 3(g)?

- ❑ This application is for an allocation for the initial, new NEM2V Arrangement:
- ❑ This application is for a reallocation for an existing NEM2V Arrangement:

c. Please use the attached Appendix A, Section 2 page to list all Benefitting Accounts in the Arrangement that will be taking service on NEM2V. Alternatively, an Applicant may fill out the table below in a digital format (i.e. spreadsheet) and supply that along with the application and agreement to NEMVGen@pge.com The Benefitting Accounts must be associated with the same Generator Account and all must satisfy the applicable Service Delivery Point requirements in the NEM2V Applicability Section to be Eligible for Schedule NEM2V.

Please note for each row:

- **Account Type** – (required) – The Generator Account row should be completed for the pertinent information for each column indicated; the Benefitting Account rows should be complete for the pertinent information for each column indicated. If there are more Benefitting Accounts than will fit on one page please use additional sheets as required and number pages accordingly.
- **Account Address – (**required) -- Provide an address, including unit / apartment number, for all Accounts (for the Generator Account you may use the street address of the building upon which the generator will be installed).
- **Occupant's / Owner's Name** – (required) - For the Generator Account enter the Owner's name; for all Benefitting accounts enter the name of the occupant or PG&E customer name for that location.
- **PG&E Meter Number – (**required) **-** Enter the PG&E Meter Numbers for the all benefitting accounts.
- **Otherwise Applicable Rate Schedule** – required -- Enter the PG&E Otherwise Applicable Rate Schedule (OAS) for the Generator Account and all Benefitting Accounts.
- **Eligible Allocation Percentage – (**required) -- For each Benefitting Account listed, enter the Eligible Allocation Percentage to two decimal places. The Eligible Energy Allocation Percentage for each Benefitting Account should be established so that the annual kilowatt hours allocated offsets no more than part or all of the customer's own annual electrical requirements. The total of all Benefitting Account Eligible Allocation Percentages in Appendix A for this NEM2V Arrangement must equal exactly 100%. If Owner is changing the Eligible Allocation Percentage on an existing NEM2V Arrangement, please list all allocations to confirm they add up to 100% and **circle** the changed allocations.
- **Designated Unallocated Credit Account** "system operator/qualified customer" has the option to designate the disposition of unallocated credits to either: the Common Area Account, or one Benefiting Account. In the NEM2V tariff this is referred to as the "Default Account."
- **Appendix A, Section 2 Page Numbers –** In the space provided on the bottom of each page, please mark the page number and total number of pages for your Appendix A, Section 2, Account List. (Start with Page 1 and do not count the page numbers for this instruction page. Also indicate on one of the pages if the allocation is for a new Arrangement or an existing Arrangement).

If Owner would like billing data from a Benefiting Account in order to verify the credit allocation they need the Benefitting Account customer's consent. To facilitate this process, here is a link to the *Authorization to Receive Customer Information or Act Upon a Customer's Behalf*: www.pge.com/tariffs/tm2/pdf/ELEC_FORMS_79-1095.pdf - (Form 79-1095) that would need to be submitted to PG&E prior to release of the Benefitting Account customer's billing data to the Owner.

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P4
NEM2V

Section 2

Account Type	**Account Address** *(required field)* **(for Generator Account use street address for building with generator account)**	**Occupant's Name,** *(Required field)* **(Generator Accounts *should be under the Owner's Name* Please use name listed on PG&E Account bill)**	**PG&E Meter Number** *(Required field)*	**Otherwise Applicable Rate Schedule** *(Required field)*	**Eligible Allocation Percentage** (*required* – to 2 decimal places, the sum of all Benefitting Account Allocation must total 100%. For changes to Existing NEM2V Arrangements, list all percentages but circle all changed percentages)	**Designated Unallocated Credit Account** (optional – check one Common Area or Benefiting Account to receive unallocated credits)
Generator Account						
Benefitting Accounts						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

Is this a reallocation of an existing NEM2V Arrangement? __ Yes ___ No

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P4
NEM2V

Part 3 - Generator Interconnection Point Documentation

Applicant shall attach the following Documentation:

- the single line diagram to illustrate connection with the selected option provided in the Metering Standard
- the switchgear, switchboard, or main panel cut-sheets/shop drawings detailing the bussing, any modifications, clearances, and proposed point of interconnection. The proposal must include a signed PE stamp and modifications must be certified by the manufacturer or a qualified third party
- pictures of the point of interconnection (see safety "Note" below).
- the meter socket cut-sheets of the net generation output meter socket
- additional material as specified by PG&E

Note: If after review of a customer's NEM2V application PG&E determines a site assessment is needed, then PG&E may conduct a site assessment. Owners are reminded that entering PG&E sealed sections of their service panels is unsafe and not permitted without PG&E's supervision and express authorization.

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT P5
NEMVMASH SINGLE SERVICE DELIVERY POINT

Part I - Incentives

If you are applying for a CSI rebate, please check the box for the rebate program under which your NEMVMASH project will receive incentives and understand that you will have to apply for rebates separately.

- ❑ MASH
- ❑ NSHP

Part II - General Facility

A. Are there any other generators interconnected on this account?

- ❑ Yes
  If yes, specify what kind of generator _____
- ❑ No

B. Are there any possible generator meter access issues?

- ❑ Yes **If yes**, check all that apply:

❑ Locked Room/Gate	❑ Meter located inside of facility/residence
❑ Unrestrained animal at meter or AC disconnect switch location	❑ Other (Please explain) _____

- ❑ No

C. Are any of your accounts on a Demand Response program?

(For more information on PG&E's demand response programs see: www.pge.com/demandresponse)

- ❑ Yes
  If yes, what program are you on? _____
- ❑ No.

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT P5
NEMVMASH SINGLE SERVICE DELIVERY POINT

Part I - Designation of Generator Accounts, and Their Associated Common Area Accounts and Residential Units With Their respective Solar Energy Credit Allocation

1) Is this application for a new NEMVMASH Eligible Low Income Facility or a reallocation for an existing NEMVMASH facility? (Existing NEMVMASH facility Owners may not reallocate the Solar Allocation Percentages for all Common Area Accounts and all Residential Unit Accounts for a period of 5 years after first being interconnected on NEMVMASH even if there is a change in Owner. However, after 5 years a reallocation may be requested. Also, a reallocation of credits between the different Common Area Accounts is allowed, and similarly if a residential unit becomes uninhabitable under the terms described in the NEMVMASH tariff in Special Condition 2 g, the Owner may choose to reallocate credits to the other Residential Unit Accounts).

This application is for an allocation for the initial new NEMVMASH Eligible Low Income Facility: ❑

This application is for a reallocation for an existing NEMVMASH Eligible Low Income Facility: ❑

2) For a new NEMVMASH Eligible Low Income Facility, if you applied for the Multifamily Affordable Solar Housing Program (MASH), please enter the percentages in the space provided below from the MASH application.

Solar Allocation Percentage for All Common Area Account(s) Listed in the MASH Incentive Application (only required if applying for MASH Track 1a incentives):	**Solar Allocation Percentage for All Residential Unit Accounts Listed in MASH Incentive Application (only required if applying for MASH Track 1b incentives):**	**Both Percentages Must Total 100%**
%	%	= 100 %

3) Please use the Section 2 to list all accounts that are located in the Eligible Low Income Facility that will be taking service on NEMVMASH. Alternatively, an Applicant may complete the table below in a digital format (i.e. spreadsheet) and supply that along with the application and agreement to NEMVGen@pge.com. Include the Generator Account, all Common Area Accounts (if any) and all Residential Unit Accounts. The Common Area and Residential Unit Accounts must be associated with the same Generator Account and all must satisfy the applicable Service Delivery Point requirements if any, in the NEMVMASH Applicability Section to be Eligible for Schedule NEMVMASH.

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT P5
NEMVMASH SINGLE SERVICE DELIVERY POINT

Please note for each row:

- **Account Type** - check the one box corresponding to the type of account (that is, Common Area, Residential Unit or Generator Account). Every row (account) should have one and only one of these 3 boxes checked. *(Required)*

- **Account Address -** Provide an address, including unit number, for all Accounts (for the Generator Account you may use the address of the nearest Common Area Account). *(Required)*

- **Name** - For Common Area Accounts and the Generator Account, the Owner's name must be entered. For Residential Unit Accounts, enter the name of the occupant, if it is known.

- **PG&E Account Number -** Enter the PG&E Account number on all Common Area Accounts and the Generator Account. (Required)

- **Otherwise Applicable Rate Schedule** – Enter the PG&E Otherwise Applicable Rate Schedule (OAS) for all Common Area Accounts and the desired Generator Account. (Required).

- **Solar Allocation Percentage –** For each Common Area Account and Residential Unit Account listed (but not the Generator Account), enter the Solar Allocation Percentage to two decimal places. The Solar Energy Allocation Percentage for each Residential Unit Account must be in proportion to the relative size of each unit, consistent with the manner in which affordable housing rents are established. The total of all Solar Energy Allocation Percentages must equal 100%.

- **Appendix A, Section 2 Page Numbers –** In the space provided on the bottom of each page, please mark the page number and total number of pages for your Appendix A, Section 2 Account List. (Start with Page 1 and do not count the page numbers for these two instruction pages).

  If the Eligible Low Income Facility has been on the MASH program for less than 5 years, verify that: (for all pages included).

  Total of Solar Allocation Percentages for all the Common Area Accounts (if any) _____.

  Total of Solar Allocation Percentage for all the Residential Unit Accounts _____.

  These numbers must match the percentages provided in number 3 above (if receiving MASH incentives), from Line 2, and must add up to 100%.

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT P5
NEMV2MASH

Section 2

#	Account Type Check only one box for each row *(required field)*			Account Address *(required field)* (for Generator Account use address of nearest common area account)	For Residential Units, Last **Name** of Occupant, if known For Common Area and Generator Accounts, **Owner's Name** (Name on PG&E Account)	*(Required field for Common Area Accounts and Generator Account only)* **PG&E Meter Number**	*(Required field for Common Area Accounts and Generator Account only)* **Otherwise Applicable Rate Schedule** (OAS) under NEMVMASH	*(Required Field for Common Area Accounts and Residential Accounts)* **Solar Energy Allocation Percentage**
	Common Area	Residential Unit	Generator Account (only 1)					
1	❑	❑	❑					
2	❑	❑	❑					
3	❑	❑	❑					
4	❑	❑	❑					
5	❑	❑	❑					
6	❑	❑	❑					
7	❑	❑	❑					
8	❑	❑	❑					
9	❑	❑	❑					
10	❑	❑	❑					
11	❑	❑	❑					
12	❑	❑	❑					
13	❑	❑	❑					
14	❑	❑	❑					
15	❑	❑	❑					
Total Solar Energy Allocation Percentage for this page _____								

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT P6
NEMVMASH DEVELOPMENT

Please note that this does not constitute an application for **rebate** and/or **incentive programs**. For more information on these programs and their specific applications, please contact PG&E by phone, or by email using the subject "solar energy" at smarter-energy@pge.com, 1-800-933-9555 (residential) or BusinessCustomerHelp@pge.com, 1-800-468-4743 (commercial/industrial).

For more information on the , Multifamily Affordable Solar Housing (MASH) or the New Solar Homes Partnership (NSHP) for affordable housing, please go to www.pge.com/csi where you will find information about the program, including the program handbook, reservation request forms with the program contract as well as a list of requirements, FAQ's and resources. For additional questions about the California Solar Initiative (CSI), MASH or the NSHP, contact PG&E at solar@pge.com.

If you are applying for a CSI rebate, please check the appropriate box below and continue with this application.

- ☐ I am also applying for a MASH rebate, and understand that I will have to apply for MASH rebates separately.
- ☐ I am also applying for a NSHP rebate, and understand that I will have to apply for the NSHP rebates separately.

Part 1 - General Facility

A. Expected **date** of Project Completion and PG&E Receipt of Final, Signed-Off Building Permit for Generating Facility?

Date: _____

B. Are there any other generators interconnected on this account?

- ☐ Yes
  If yes, specify what kind of generator _____
- ☐ No

C. Are there any possible generator meter access issues?

- ☐ Yes **If yes**, check all that apply:

☐ Locked Room/Gate	☐ Meter located inside of facility/residence
☐ Unrestrained animal at meter or AC disconnect switch location	☐ Other (Please explain) _____ _____

- ☐ No

D. Are any of your accounts on a Demand Response program?

(For more information on PG&E's demand response programs see: www.pge.com/demandresponse)

- ☐ Yes
  If yes, what program are you on? _____
- ☐ No.

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT P6
NEMVMASH DEVELOPMENT

Part II - Designation of Generator Accounts, and Their Associated Common Area Accounts and Residential Units With Their respective Solar Energy Credit Allocation

Section 1 Instructions

1) Complete the section below (this information must match the Customer Electric Account Contact Information on the associated *Customer and Project Information (79-001)* for the same NEMVMASH Eligible Low Income Facility.

Eligible Low Income Development Name		
Owner Name	Address	Date

2) Is this application for a new NEMVMASH Eligible Low Income Development or a reallocation for an existing Eligible Low Income Development? Existing NEMVMASH Development Owners may not reallocate the Solar Allocation Percentages for all Common Area Accounts and all Residential Unit Accounts for a period of 5 years after first being interconnected on NEMVMASH, even if there is a change in Owner. However, after 5 years a reallocation may be requested. Also, a reallocation of credits between the different Common Area Accounts is allowed, and similarly if a residential unit becomes uninhabitable under the terms described in the NEMVMASH tariff in Special Condition 2 g, the Owner may choose to reallocate credits to the other Residential Unit Accounts.

This application is for an allocation for the initial new NEMVMASH Eligible Low Income Development: ❑
This application is for a reallocation for an existing NEMVMASH Eligible Low Income Development: ❑

3) A NEMVMASH Eligible Low Income Development on NEMVMASH must either receive incentive funds from the Multifamily Affordable Solar Housing Program (MASH), or the New Solar Homes Partnership (NSHP) for affordable housing, or be eligible to receive funds from the MASH program.

Is this Development receiving funds from either the MASH or NSHP program? Yes ❑ No ❑
If it is not receiving either MASH or NSHP incentives, is it eligible to receive MASH funds? Yes ❑ No ❑

4) For a new NEMVMASH Eligible Low Income Development, if you applied for MASH incentives, please enter the percentages in the space provided below from the MASH application.

Solar Allocation Percentage for All Common Area Account(s) Listed in the MASH Incentive Application (only required if applying for MASH Track 1a incentives):	**Solar Allocation Percentage for All Residential Unit Accounts Listed in MASH Incentive Application (only required if applying for MASH Track 1b incentives):**	**Both Percentages Must Total 100%**
%	%	= 100 %

5) Please use Section 2 to list all accounts that are located in the Eligible Low Income Development that will be taking service on NEMVMASH.

On a building by building basis, please list all participating Generator Accounts, Common Area Accounts (if any) and all Residential Unit Accounts as specified in Section 2.

Please note for each row:

- **Account Type** - check the one box corresponding to the type of account (that is, **Generator Account**, **Common Area** or **Residential Unit**). Every row (account) should have one and only one of these 3 boxes checked. *(Required).* Additionally, Generator accounts must also list the CEC AC rating in the **Generator Capacity** column and be numbered, starting with "1" in the **Generator Number** column. The sum of all generators' capacities listed must not exceed 1 MW.

- **Account Address -** Provide an address, including unit number, for all Accounts (for Generator Accounts without an address please specify location in detail). *(Required)*

- **Name** - For Common Area Accounts and the Generator Account, the Owner's name must be entered. For Residential Unit Accounts, enter the name of the occupant, if it is known.

- **PG&E Account Number -** Enter the PG&E Account number on all Common Area Accounts and Generator Accounts. (Required).

- **Otherwise Applicable Rate Schedule** – Enter the PG&E Otherwise Applicable Rate Schedule (OAS) for all Common Area Accounts and desired Generator Accounts. (Required).

- **Total Solar Generation (**bottom of each page) **–** For each Generator Account total the CEC AC rating. The total of all rating of all Generator Accounts on all pages must equal no more than 1 MW.

- **Solar Allocation Percentage (**bottom of the each page) - For each Common Area Account and Residential Unit Account listed (but not the Generator Account), enter the Solar Allocation Percentage to two decimal places. The Solar Energy Allocation Percentage for each Residential Unit Account must be in proportion to the relative size of each unit, consistent with the manner in which affordable housing rents are established. The total of all Solar Energy Allocation Percentages must equal 100%.

6) If the Eligible Low Income Development has been on the MASH program for less than 5 years, verify that: (for all pages included).

Total of Solar Allocation Percentages for all the Common Area Accounts (if any) _____.

Total of Solar Allocation Percentage for all the Residential Unit Accounts _____.

These numbers must match the percentages provided in number 3 above (if receiving MASH incentives), from Line 2, and must add up to 100%.

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT P6
NEMVMASH DEVELOPMENT

Section 2 Please list all participating on a building by building basis.

#	Account Type Check only one box for each row *(required field)*					Account Address *(required field)* (for Generator Accounts without an address please describe location in detail)	Owner's Name *(For Residential Units, Last Name of Occupant, if known* *For Common Area and Generator Accounts. Use Name as shown on PG&E Account)*	PG&E Meter Number *(Required field for Common Area Accounts and Generator Account only)*	Otherwise Applicable Rate Schedule (OAS) under NEMVMASH *(Required field for Common Area Accounts and Generator Account only)*	Solar Energy Allocation Percentage *(up to 2 decimal places. Required Field for Common Area Accounts and Residential Accounts)*
	Generator Account	Generator Number (must complete an Appendix B with a corres-ponding generator number)	Generator Capacity (must total to no more than 1 MW)	Common Area	Residential Unit					
1	❑			❑	❑					
2	❑			❑	❑					
3	❑			❑	❑					
4	❑			❑	❑					
5	❑			❑	❑					
6	❑			❑	❑					
7	❑			❑	❑					
8	❑			❑	❑					
9	❑			❑	❑					
10	❑			❑	❑					
11	❑			❑	❑					
12	❑			❑	❑					
13	❑			❑	❑					
14	❑			❑	❑					
15	❑			❑	❑					
_____ Total Solar Generation this page							Total Solar Energy Allocation Percentage for this page _____			

ELECTRIC SCHEDULE NEM Sheet 26
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

11. NEM Paired Storage

a. **Definitions:** (T)

NEM Paired Storage:

NEM Paired Storage is defined as qualifying energy storage devices ("storage system") paired with a REGF that either:

(i) meets the **Renewables Portfolio Standard (RPS) Guidebook**[5] requirements as an "addition or enhancement" as described in Section c. below, or (T)

(ii) is eligible to received certain benefits as is described below by virtue of the fact that it is paired with a REGF although it is not exclusively renewable charged, pursuant to California Public Utilities Commission (CPUC) Decision (D.) 14-04-033 and D.19-01-030. (N)

AC-Coupled:

The REGF has its own inverter or set of inverters; and separately, the storage system has its own inverter or set of inverters, pursuant to CPUC D.19-01-030.

In AC-coupled NEM-eligible GFs paired with storage devices, storage device capacity is determined as the (AC) maximum discharge capacity. The size of the storage system in AC-coupled REGF plus storage systems is the inverter's (or inverters') nameplate capacity (nameplate capacities summed).

DC-Coupled:

The REGF and the storage share the same inverter, or set of inverters, pursuant to CPUC D.19-01-030.

The size of the storage system is the lesser of the shared inverter's (or inverters') nameplate capacity (capacities summed) and the storage device's (devices') maximum continuous discharge capacity (capacities summed) listed on the device's (devices') technical specifications sheets. A storage device's maximum continuous discharge capacity may be listed on technical specification sheets using different terminology; PG&E will use common sense to determine whether a device's technical specification sheet includes the appropriate metric for purposes of determining system size, regardless of the terminology used. If that metric is not included, PG&E will rely on the inverter's nameplate rating. (N)

(L)

(L)

(Continued)

ELECTRIC SCHEDULE NEM Sheet 27
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

11. NEM Paired Storage (N)

a. Definitions (Cont'd.)

No Grid Charging:

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

No Storage Export:

A storage system that uses a voltage-control configuration that is certified either to a national standard or to a utility-approved interim testing procedure, either of which ensures that the storage system cannot export to PG&E's grid. A PG&E approved physical non-export relay or a functionally equivalent non-import configuration to prevent grid power from flowing to the storage device is also permitted. Inadvertent but minor instances of storage export are permitted. (N)

b. Interconnection (L)
(L)

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

See Section c.5 below for additional information (T)/(L)

c. Types of NEM Paired Storage (L)

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

1) Integrated Storage:

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

(Continued)

ELECTRIC SCHEDULE NEM Sheet 28
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

11. NEM Paired Storage (N)

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).

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

(N)

2) Directly Connected: (L)

Directly Connected NEM Paired Storage is defined in the RPS guidelines as meeting the following requirements: (T)/(L)

(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 (T)/(L) (L)

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

Note that the storage device is ***not*** required to be exclusively charged by the REGF. (L) (T)/(L) (L)

(Continued)

ELECTRIC SCHEDULE NEM Sheet 29
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

11. NEM Paired Storage (N)

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, 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.

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 (N)

(Continued)

ELECTRIC SCHEDULE NEM Sheet 30
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

11. NEM Paired Storage (N)

c. Types of NEM Paired Storage

2) Directly Connected: (Cont'd.)

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

Large NEM-eligible GFs must apply with 79-1174, 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.

(iv) 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, 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. (N)

(Continued)

ELECTRIC SCHEDULE NEM Sheet 31
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

11. NEM Paired Storage (N)

c. Types of NEM Paired Storage

2) Directly Connected: (Cont'd.)

DIRECTLY CONNECTED - Table 11.2
(This table covers **storage that is NOT 100% REGF charged**)
For Both AC and DC Coupled Storage
May Include ► No-Grid Charged storage (if other nonrenewable generation present)
► Non Storage Export (if other nonrenewable generation present)
Includes All ► Grid Charged Storage And Storage Exports
All apply with Application 79-1174-02

Includes ► Non-Storage Export with either NGOM or non-export relay equivalent
(if no other nonrenewable generation present)
All apply with Application 79-1174-02

	PV/Wind < 30 kw	**Non-PV/Wind REGF ≤1MW** **>30kW PV/Wind ≤1MW**	**Bill as**	**IC costs**	**Notes**
Storage ≤ 10kw	79-1093-02	79-1069-02	§3i	Per 5.i	Estimation Methodology
Storage > 10kw And < 150%[6]	79-1069-02	79-1069-02	§3ii	Per 5.ii or iii	NGOM, No Grid Charging, No Storage Export[7]
Storage > 10kw And > 150%	Set up and bill as NEMMT (not under NEM-Paired Storage section)				

(N)

[6] the storage system shall have a maximum output power no larger than 150% of the NEM-eligible generator's maximum output capacity.
[7] see definition of "No Grid Charging" storage and "No Storage Export" above in 9.a above.

(Continued)

ELECTRIC SCHEDULE NEM Sheet 32
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

11. NEM Paired Storage (L)

c. Types of NEM Paired Storage

3) Billing for NEM Paired Storage (L)

(i) Estimation Methodology For Small NEM-eligible GFs (T)/(L) (L)

Small NEM-eligible GFs without metering installed (as required for Large NEM-eligible GFs) will use an estimation methodology, which caps maximum allowable NEM bill credits based on a monthly output profile**.** (L) (T)/(L) (T)/(L) (L)

a. California Solar Initiative Expected Performance-Based Buydown (CSI EPBB) calculator, PG&E will establish a maximum cap for NEM-eligible exports for each monthly billing period based on the EPBB production estimate for the customer's NEM-eligible generator. (L) (T)/(L)

The monthly output estimation should align with a customer's billing period (e.g., if the customer's billing date is January 15, the maximum allowed NEM export should be based on a January output estimation.)

b. Any export exceeding this limit would not be eligible for NEM credit and would be forfeited. Peak period exports would be reduced first, followed by partial peak and then off peak as necessary. (L) (T)/(L)

For example, if there was an export to the grid of 150 kWh and the EPBB-based limit for the month was set at 100 kWh, then the excess 50 kWh would be deducted from the actual exports recorded, beginning with exports that occurred during peak periods.

c. In the event the Small NEM-eligible GF is combined with other generation facilities pursuant to Special Condition 4, the billing provision of Special Condition 4 will apply, not this billing estimation methodology. (L) (T)/(L) (T)/(L) (L)

Should a customer decide to opt-out of using this estimation methodology, the customer must install one of the metering requirements described in the Large NEM-eligible GFs section, and the customer may only switch at the start of a new NEM Relevant Period. (L) (T)/(L) (T)/(L) (L)

(ii) Large NEM-eligible GFs are billed consistent with Special Condition 4 with the storage treated as a non-NEM eligible generator. (L) (T)/(L) (L) (L)

(Continued)

ELECTRIC SCHEDULE NEM Sheet 33
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

11. NEM Paired Storage (L)

c. Types of NEM Paired Storage (L)

4) NEM Paired Storage Output Metering Costs (T)/(L)

PG&E will install standard metering equipment whenever possible while interconnecting NEM Paired Storage systems. Standard metering equipment for this purpose comprises a single meter which is a self-contained, single phase, SmartMeter. The fee for installation of standard metering equipment is no more than $600.00. (L)

However, this fee cap does not apply to NEM Paired Storage requiring complex metering solutions. Complex metering solutions include any configuration other than the standard equipment described above. The cost for complex metering varies and is based on actual costs which will be described in the customer's invoice. (L)

5) NEM Paired Storage Interconnection Cost Responsibility (T)/(L)

For the purpose of determining if a NEM Paired Storage REGF exceeds 1 MW criterion, refer to the sizing definition included in the AC-Coupled and DC-Coupled definition at the beginning of this Special Condition. (N) (N)

i. NEM Paired Storage REGF < 1 MW - The storage will have the same interconnection cost responsibility as the NEM generator that it is paired with for a REGF less than or equal to 1 MW. (T)/(L) (T)/(L)

ii. In the event the storage is added at a later date after the permission to operate of the NEM generator it is subsequently paired with, the storage applicant will be required to pay the same interconnection fees and costs that the NEM generator would be required to pay, as provided for in Electric Rule 21. (N) (N)

ELECTRIC SCHEDULE NEM2 Sheet 2
NET ENERGY METERING SERVICE

APPLICABILITY: (Cont'd.)

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

A REGF means a generating facility that generates electricity by using:

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

and any additions or enhancements to the facility using that technology pursuant to paragraph (1) of subdivision (a) of Section 25741 of the Public Resources Code. These renewable sources are defined in the latest version of the California Energy Commission's (CEC's) Renewables Portfolio Standard (RPS) Eligibility Guidebook and the Overall Program Guidebook.[3] (T)

[3] The RPS Guidebooks can be found at: (T)
http://www.energy.ca.gov/renewables/documents/index.html#rps

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 13
NET ENERGY METERING SERVICE

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:	
	Application - Net Energy Metering (NEM2) Interconnection for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less (Form **79-1151B-02**)[4]	*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**)[4]
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:	
	Generating Facility Interconnection Application, (Form **79-1174-02**)	*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* (Form **79-978-02**)
	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:	
	Generating Facility Interconnection Application, (Form **79-1174-02**)	*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 **79-1137-02**)

[4] 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 SCHEDULE NEM2 Sheet 21
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

5. NET SURPLUS ELECTRICITY COMPENSATION (NSC): (Cont'd.) (N)

b. The NSC Rate – The NSC Rate is defined as the simple rolling average of PG&E's default load aggregation point (DLAP) price from 7 a.m. to 5 p.m., for a 12-month period. PG&E shall use the NSC Rate as the value of the electricity portion of its net surplus compensation rate.

PG&E will calculate the NSC Rate each month. It will be effective on the first day of that month and PG&E will use it in the NSC Calculation for any Net Surplus Generators with a Relevant Period completed in that month (True-Up Month).

The DLAP Cutoff Date will be defined as the twentieth (20th) day of the month prior to the True-Up Month.

PG&E will wait five (5) days after the DLAP Cutoff Date for the CAISO to have time to finalize the day-ahead PG&E DLAP prices. The NSC Rate will then be calculated as the simple average of the prices for all hours between 7 a.m. and 5 p.m. over a one (1) year period ending on the DLAP Cutoff Date.

c. Pursuant to D. 11-06-016, PG&E includes a Renewable Attribute Adder (RAA) based on the California Energy Commission (CEC) implementation methodology.

Under the CEC's Renewables Portfolio Standard (RPS) Eligibility Guidebook[5], an ownership verification and tracking process is set forth for Renewable Energy Credits (RECs) created by Net Surplus Generators.

PG&E will pay a RAA for Net Surplus Electricity if the Net Surplus Generator completes Form 79-1155-02 - *Schedules NEM2, NEM2V, NEMV2MSH, Net Surplus Electricity (NSE) Renewable Energy Credits Compensation Form* which requires that each true-up a Net Surplus Generator confirm it or its REC aggregator has:

1) certified ownership of Net Surplus Electricity Renewable Energy Credits associated with their Net Surplus Electricity;
2) obtained certification for the Renewable Portfolio Standards (RPS) eligibility of the Electrical Generation Facility from the CEC and provide evidence of this certification to PG&E; and
3) transferred the ownership of the WREGIS Certificates to PG&E.

The RAA will be calculated using the most recent Western Electricity Coordinating Council (WECC) average renewable premium, based on United States Department of Energy (DOE) published data as submitted via advice letter annually in compliance with Resolution E-4475 and Decision 11-12-018. (N)

[5] The CEC RPS Eligibility Guidebook is available at: http://www.energy.ca.gov/renewables/documents/#rps

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 27
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

8. NEM2 GRANDFATHERING PROVISIONS (Cont'd.)

b. Modifications[6]. REGFs eligible for the 20-year transition period outlined above that are modified and/or repaired shall remain eligible for the remainder of their 20-year transition period as long as the modifications and/or repairs do not increase the REGF by more than the greater of: (T)

1) 10 percent of the REGF's nameplate rating capacity, as established when the REGF was originally interconnected, or

2) 1 kW;

and provided the modifications and/or repairs do not result in the REGF exceeding the Customer's annual onsite load.

c. Transferability. REGF eligible for the 20-year transition period shall not lose their eligibility if transferred to a new owner, operator, or PG&E account, provided the REGF remains at its original location.[7] (T)

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[6] Customers making modifications and/or additions to their REGF that exceed the 10 percent or 1 kW limit referenced above have the option of either metering the additions and/or modifications separately under another eligible tariff or other authorized process, or having the entire REGF served under another eligible tariff, subject to the terms and conditions contained therein. This requirement will only be enforced upon the development of a new NEM Successor Tariff that supersedes D.16-01-044, or by the direction of the CPUC. (T)

[7] The transfer of an existing REGF to a new location is considered a new installation requiring a new Interconnection Agreement that is subject to the applicable tariffs in place at the time the new Interconnection Request is completed. (T)

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 28
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

9. NEM Paired Storage

a. Definitions: (T)

NEM Paired Storage:

NEM Paired Storage is defined as qualifying energy storage devices ("storage system") paired with a REGF that either:

(i) meets the Renewables Portfolio Standard (RPS) Guidebook[5] requirements as an "addition or enhancement" as described in Section c. below, or (T) (N)

(ii) is eligible to received certain benefits as is described this Special Condition by virtue of the fact that it is paired with a REGF although it is not exclusively renewable charged, pursuant to California Public Utilities Commission (CPUC) Decision (D.) 14-04-033 and D.19-01-030.

AC-Coupled:

The REGF has its own inverter or set of inverters; and separately, the storage system has its own inverter or set of inverters, pursuant to CPUC D.19-01-030.

In AC-coupled NEM-eligible GFs paired with storage devices, storage device capacity is determined as the (AC) maximum discharge capacity. The size of the storage system in AC-coupled REGF plus storage systems is the inverter's (or inverters') nameplate capacity (nameplate capacities summed).

DC-Coupled:

The REGF and the storage share the same inverter, or set of inverters, pursuant to CPUC D.19-01-030.

The size of the storage system is the lesser of the shared inverter's (or inverters') nameplate capacity (capacities summed) and the storage device's (devices') maximum continuous discharge capacity (capacities summed) listed on the device's (devices') technical specifications sheets. A storage device's maximum continuous discharge capacity may be listed on technical specification sheets using different terminology; PG&E will use common sense to determine whether a device's technical specification sheet includes the appropriate metric for purposes of determining system size, regardless of the terminology used. If that metric is not included, PG&E will rely on the inverter's nameplate rating. (N)

(L)

(L)

[5] The RPS Guidebooks can be found at: http://www.energy.ca.gov/renewables/documents/index.html#rps

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 29
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

9. NEM Paired Storage (N)

a. Definitions: (Cont'd.)

No Grid Charging:

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

No Storage Export:

A storage system that uses a voltage-control configuration that is certified either to a national standard or to a utility-approved interim testing procedure, either of which ensures that the storage system cannot export to PG&E's grid. A PG&E approved physical non-export relay or a functionally equivalent non-export configuration to prevent grid power from flowing to the storage device is also permitted. Inadvertent but minor instances of storage export are permitted. (N)

b. Interconnection (L)

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

See Section c.5. below for additional information (T)/(L)

c. Types of NEM Paired Storage (L)

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

1) Integrated Storage: (L)

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

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 30
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

9. NEM Paired Storage (L)

c. Types of NEM Paired Storage (L)

1) Integrated Storage: (Cont'd.) (T)/(L)

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

(N)

INTEGRATED STORAGE (By definition the storage device must only be capable of storing energy from the REGF)			
SCENARIO	Billed As	Interconnection Agreements	Interconnection Costs
AC Coupled Or DC Coupled	billed as if storage and REGF were all one generator (e.g. NEMS, NEMEXP)	**≤ 1 MW** apply with 79-1174-02 and Interconnection agreement 79-1193-02	Per 5.i
		> 1 MW apply with 79-1174-02 and Interconnection agreement 79-1162-02 or 79-1198-02	Per 5.ii or iii

(N)

2) Directly Connected: (T)/(L)

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. (T)/(L)

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

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 31
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

9. NEM Paired Storage (N)

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 apply with 79-1174-02, and either complete interconnection agreement Form 79-1193-02 (solar and/or wind electric facilities of 30kW or less) or Form 79-1069-02 (all other REGF with a storage system configurations fulling the requirements of "No Grid Charging"). All configurations will be billed using the estimation methodology as described in Section g.1) of this special condition when no additional metering is installed as described in "Large NEM-Eligible GFs" below.

(ii) DC-Coupled storage system sized greater than 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 79-1069-02 and will be billed as described for Large NEM paired Storage in Section 3)(ii) of this special condition.

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

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

Large NEM-eligible Generating Facilities (GFs) are NEM-eligible GFs paired with storage sized larger than 10 kW. For Large NEM-eligible GFs, the storage system shall have a maximum output power no larger than 150% of the NEM-eligible generator's maximum output capacity.

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

a) install a non-export relay on the storage device(s);

b) install an interval meter for the NEM-eligible generation, meter the load, and meter total energy flows at the point of common coupling;

c) install an interval meter directly to the NEM-eligible generator(s); or

d) or meet the requirements of No Grid Export (N)

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 32
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

9. NEM Paired Storage (N)

c. Types of NEM Paired Storage

2) Directly Connected: (Cont'd.)

(iii) 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 79-1193-02 (solar and/or wind electric facilities of 30kW or less) or Form 79-1069-02 (all other REGF with a storage system configurations), and will be billed as described in Section 3.)(ii) of this special condition.

(iv) 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 the 79-1174-02 (NEM2) and complete the 79-1193-02 (NEM2) when the NEM-Eligible GF is sized 30kW or less or apply with the 79-1174-02 (NEM2) and complete the 79-1069-02 (NEM2) when the NEM-eligible GF exceeds 30kW. (N)

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 33
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

9. NEM Paired Storage (N)

c. Types of NEM Paired Storage

DIRECTLY CONNECTED - Table 11.2
(This table covers **storage that is NOT 100% REGF charged**)
For Both AC and DC Coupled Storage
May Include ► No-Grid Charged storage (if other nonrenewable generation present)
► Non Storage Export (if other nonrenewable generation present)
Includes All ► Grid Charged Storage And Storage Exports
All apply with Application 79-1174-02

Includes ► Non-Storage Export with either NGOM or non-export relay equivalent (if no other nonrenewable generation present)
All apply with Application 79-1174-02

	PV/Wind < 30 kw	**Non-PV/Wind REGF ≤1MW** **>30kW PV/Wind ≤1MW**	**REGF >1Mw**	**Bill as**	**IC costs**	**Notes**
Storage ≤ 10kw	79-1093-02	79-1069-02	79-1078-02	§3i	Per 5.i	Estimation Methodology
Storage > 10kw And < 150%[6]	79-1069-02	79-1069-02	79-1078-02	§3ii	Per 5.ii or iii	**NGOM, No Grid Charging, No Storage Export[7]**
Storage > 10kw And > 150%	Set up and bill as NEMMT (not under NEM-Paired Storage section)					

[6] the storage system shall have a maximum output power no larger than 150% of the NEM-eligible generator's maximum output capacity

[7] see definition of "No Grid Charging" storage and "No Storage Export" above in 9.a above. (N)

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 34
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

9. NEM Paired Storage (L)

c. Types of NEM Paired Storage (L)

3) Billing for NEM Paired Storage (T)/(L)

(i) Estimation Methodology For Small NEM-eligible GFs

Small NEM-eligible GFs without metering installed (as required for Large NEM-eligible GFs) will use an estimation methodology, which caps maximum allowable NEM bill credits based on a monthly output profile**.** (T)/(L) (L) (L)

a. California Solar Initiative Expected Performance-Based Buydown (CSI EPBB) calculator, PG&E will establish a maximum cap for NEM-eligible exports for each monthly billing period based on the EPBB production estimate for the customer's NEM-eligible generator. (T)/(L) (L)

The monthly output estimation should align with a customer's billing period (e.g., if the customer's billing date is January 15, the maximum allowed NEM export should be based on a January output estimation.)

b. Any export exceeding this limit would not be eligible for NEM credit and would be forfeited. Peak period exports would be reduced first, followed by partial peak and then off peak as necessary. (L) (T)/(L) (L)

For example, if there was an export to the grid of 150 kWh and the EPBB-based limit for the month was set at 100 kWh, then the excess 50 kWh would be deducted from the actual exports recorded, beginning with exports that occurred during peak periods.

c. In the event the Small NEM-eligible GF is combined with other generation facilities pursuant to Special Condition 4, the billing provision of Special Condition 4 will apply, not this billing estimation methodology. (L) (T)/(L) (T)/(L) (L)

Should a customer decide to opt-out of using this estimation methodology, the customer must install one of the metering requirements described in the Large NEM-eligible GFs section, and the customer may only switch at the start of a new NEM Relevant Period. (L) (T)/(L) (T)/(L)

(ii) Large NEM-eligible GFs are billed consistent with Special Condition 4 with the storage treated as a non-NEM eligible generator. (T)/(L) (L) (L)

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 35
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

9. NEM Paired Storage (L)

c. Types of NEM Paired Storage (L)

4) NEM Paired Storage Output Metering Costs (T)/(L)

PG&E will install standard metering equipment whenever possible while interconnecting NEM Paired Storage systems. Standard metering equipment for this purpose comprises a single meter which is a self-contained, single phase, SmartMeter. The fee for installation of standard metering equipment is no more than $600.00.

However, this fee cap does not apply to NEM Paired Storage requiring complex metering solutions. Complex metering solutions include any configuration other than the standard equipment described above. The cost for complex metering varies and is based on actual costs which will be described in the customer's invoice. (L)

5) NEM Paired Storage Interconnection Cost Responsibility (T)/(L)

For the purpose of determining if a NEM Paired Storage REGF exceeds 1 MW criterion, refer to the sizing definition included in the AC-Coupled and DC-Coupled definition at the beginning of this Special Condition. (L)

i) NEM Paired Storage REGF < 1 MW - The storage will have the same interconnection cost responsibility as the NEM-eligible GF that it is paired with for a REGF less than or equal to 1 MW. (N)

ii) NEM Paired Storage REGF > 1 MW - The storage will have the same interconnection cost responsibility as the NEM generator that it is paired with for a REGF greater than 1 MW

iii) In the event the storage is added at a later date after the permission to operate of the NEM-eligible GF it is subsequently paired with, the storage applicant will be required to pay the same interconnection fees and costs that the NEM-eligible GF would be required to pay, as provided in Electric Rule 21. (N)

ELECTRIC TABLE OF CONTENTS Sheet 1

TABLE OF CONTENTS

(Continued)

ELECTRIC TABLE OF CONTENTS Sheet 6

(Continued)

ELECTRIC TABLE OF CONTENTS Sheet 6

(Continued)

ELECTRIC TABLE OF CONTENTS Sheet 24

(Continued)

Advice 5501-E-A
September 24, 2019

Attachment 2

Redlined Tariffs

Pacific Gas and Electric Company

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T5
ENERGY STORAGE TECHNOLOGY

Please complete the following table for the specific generator technology indicated.

Instructions				
Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
# Please indicate the number of each "**type" and quantity** of Generator being installed. Be sure all Generators classified as one "type" are identical in all respects. If only one type of Generator is to be used, only one column needs to be completed.				
A - Generator/Inverter Manufacturer Enter the brand name of the Generator.				
B - Generator/Inverter Model Enter the model name or number assigned by the manufacturer of the Generator.				
C - Generator/Inverter Software Version If this Generator's control and or protective functions are dependent on a software program supplied by the manufacturer of the equipment, please provide the version or release number for the software that will be used.				
D - Is the Generator/Inverter certified? Is the Generator Certified by a Nationally Recognized Testing Laboratory (NRTL) according to Rule 21? Answer "Yes" only if the Generator manufacturer can or has provided certification data. See PG&E's Rule 21, Section L for additional information regarding Generator certification.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T5
ENERGY STORAGE TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
E - Generator Design Please indicate the design of each Generator. Designate "Inverter" anytime an inverter is used as the interface between the Generator and the electric system regardless of the primary power production/storage device used.	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter	__ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter
F - Gross Nameplate Rating (kVA) This is the capacity value normally supplied by the manufacturer and stamped on the Generator's nameplate. This value is not required where the manufacturer provides only a kW rating. However, where both kVA and kW values are available, please indicate both.				
G - Energy Storage Electrical Source Function (in addition, please complete section: "Additional Information Required for Energy Storage") List (if any) device(s) used to limit discharge (Inverter, Power Control, etc.)	Max kWh Capacity: _____ Rated kW Discharge: _____ Max kW Discharge: _____ _____ _____ _____ _____	Max kWh Capacity: _____ Rated kW Discharge: _____ Max kW Discharge: _____ _____ _____ _____ _____	Max kWh Capacity: _____ Rated kW Discharge: _____ Max kW Discharge: _____ _____ _____ _____ _____	Max kWh Capacity: _____ Rated kW Discharge: _____ Max kW Discharge: _____ _____ _____ _____ _____
H - Operating Voltage This value should be the voltage rating designated by the manufacturer and used in this Generating Facility. Please indicate phase-to-phase voltages for 3-phase installations. See PG&E's Rule 21, Section H.2.b. and Table H.1., for additional information.				

ENERGY STORAGE TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
I - Power Factor Rating This value should be the nominal power factor rating designated by the manufacturer for the Generator. See PG&E's Rule 21, Section H.2.i. for additional information.				
J - PF Adjustment Range Where the power factor of the Generator is adjustable, please indicate the maximum and minimum operating values. See PG&E's Rule 21, Section H.2.i.				
K - Wiring Configuration Please indicate whether the Generator is a single-phase or three-phase device. See PG&E's Rule 21, Section H.3.				
L - (MP) 3-Phase Winding Configuration (Choose One) For three-phase generating units, please indicate the configuration of the Generator's windings or inverter systems.	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye
M - (MP) Neutral Grounding System Used (Choose One) Wye connected generating units are often grounded – either through a resistor or directly, depending upon the nature of the electrical system to which the Generator is connected. If the grounding method used at this facility is not listed, please attach additional descriptive information.	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms
N - Short Circuit Current Produced by Generator	_____ (Amps)	_____ (Amps)	_____ (Amps)	_____ (Amps)
O – Prime Mover Type Please indicate the type and fuel used as the prime mover or source of energy for the Generator. 1 = Natural Gas 2 = Diesel Fueled 3 = Other Fuel	1 2 3	1 2 3	1 2 3	1 2 3

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T5
ENERGY STORAGE TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
P - AC Disconnect For systems requiring an AC Disconnect only, please include the requested information about the AC Disconnect. See PG&E's Rule 21, Section H.1.d	_____ Manufacturer _____ Model # _____ Rating (amps)	_____ Manufacturer _____ Model # _____ Rating (amps)	_____ Manufacturer _____ Model # _____ Rating (amps)	_____ Manufacturer _____ Model # _____ Rating (amps)
Located within 10 feet of the PG&E meter?	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No
Q - Energy Storage (ES) System (For important sizing information related to DC-Couple configurations, see sizing note below).	_____ Manufacturer _____ Model # _____ Quantity of Units	_____ Manufacturer _____ Model # _____ Quantity of Units	_____ Manufacturer _____ Model # _____ Quantity of Units	_____ Manufacturer _____ Model # _____ Quantity of Units
R - Lineside Tap PG&E has special requirements for a lineside tap. Contact PG&E at: Rule21Gen@PGE.Com for more information.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

INTERCONNECTION APPLICATION (Form 79-1174)
ATTACHMENT T5
ENERGY STORAGE TECHNOLOGY

Energy Storage Charging Function:

Rated Charge Demand (Load): _____ kW

Estimated annual Net Energy Usage* of the energy storage device(s): ____ ____ kWh
*Net Energy usage = (kWh input, including charging, storage device auxiliary loads and losses) – (kWh output including discharging)

Will the Distribution System be used to charge the storage device: ☐ Yes ☐ No

If no: Provide technical description of control systems including (e.g. Nationally-certified piece of equipment, Relays/metering):

Source of energy for Charging: _____

Mechanism to prevent charging from the Distribution System: _____

If Yes: Will charging the storage device(s) increase the host facility's existing peak load demand:

☐ Yes ☐ No

If Yes: Provide the following loading information:

Amount of added peak demand: _____ kW

If no: Provide technical description of controls systems including:

Charging periods: _____

Mechanism to prevent charging from the Distribution System during host facility peak:

_____

Expedited Interconnection Process Selection for Non-Export Energy Storage:

☐ This project meets the requirements identified in Rule 21 Section N and this process is being selected for expedited interconnection.

Note on Sizing (DC-Coupled Configurations)

The size of the storage system in DC-coupled NEM-eligible generator plus storage systems is the lesser of the shared inverter's (or inverters') nameplate capacity (capacities summed) and the storage device's (devices') maximum continuous discharge capacity (capacities summed) listed on the device's (devices') technical specifications sheets. A storage device's maximum continuous discharge capacity may be listed on technical specification sheets using different terminology. Note: PG&E will use common sense to determine whether a device's technical specification sheet includes the appropriate metric for purposes of determining system size, regardless of the terminology used. If that metric is not included, PG&E may rely on the inverter's nameplate rating.

For example:

- What is the maximum continuous discharge capability for each storage unit?
  _____ +_____ +_____ +_____ + _____ =.
  total_____
- What is each inverter's nameplate rating?
  _____ +_____ +_____ +_____ + _____ =.
  total_____

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T5
ENERGY STORAGE TECHNOLOGY

Please complete the following table for the specific generator technology indicated.

Instructions				
Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
Please indicate the number of each "**type" and quantity** of Generator being installed. Be sure all Generators classified as one "type" are identical in all respects. If only one type of Generator is to be used, only one column needs to be completed.				
A - Generator/Inverter Manufacturer Enter the brand name of the Generator.				
B - Generator/Inverter Model Enter the model name or number assigned by the manufacturer of the Generator.				
C - Generator/Inverter Software Version If this Generator's control and or protective functions are dependent on a software program supplied by the manufacturer of the equipment, please provide the version or release number for the software that will be used.				
D - Is the Generator/Inverter certified? Applicant has verified that all major solar system components are on the verified equipment list maintained by the California Energy Commission and other equipment, as determined by PG&E, has been verified by the customer as having safety certification from a nationally recognized testing laboratory. See PG&E's Rule 21, Section L for additional information regarding Generator certification.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No
E - Generator Design Please indicate the design of each Generator. Designate "Inverter" anytime an inverter is used as the interface between the Generator and the electric system regardless of the primary power production/storage device used.	____ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter	__ Synch ____ Induct. ____ Inverter	____ Synch ____ Induct. ____ Inverter

ENERGY STORAGE TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
F - Gross Nameplate Rating (kVA) This is the capacity value normally supplied by the manufacturer and stamped on the Generator's nameplate. This value is not required where the manufacturer provides only a kW rating. However, where both kVA and kW values are available, please indicate both.				
G - Energy Storage Electrical Source Function (in addition, please complete section: "Additional Information Required for Energy Storage")	Max kWh Capacity: _____ Rated kW Discharge: _____	Max kWh Capacity: _____ Rated kW Discharge: _____	Max kWh Capacity: _____ Rated kW Discharge: _____	Max kWh Capacity: _____ Rated kW Discharge: _____
H - Operating Voltage This value should be the voltage rating designated by the manufacturer and used in this Generating Facility. Please indicate phase-to-phase voltages for 3-phase installations. See PG&E's Rule 21, Section H.2.b. and Table H.1., for additional information.				
I - Power Factor Rating This value should be the nominal power factor rating designated by the manufacturer for the Generator. See PG&E's Rule 21, Section H.2.i. for additional information.				
J - PF Adjustment Range Where the power factor of the Generator is adjustable, please indicate the maximum and minimum operating values. See PG&E's Rule 21, Section H.2.i.				
K - Wiring Configuration Please indicate whether the Generator is a single-phase or three-phase device. See PG&E's Rule 21, Section H.3.				

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T5
ENERGY STORAGE TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
L - (MP) 3-Phase Winding Configuration (Choose One) For three-phase generating units, please indicate the configuration of the Generator's windings or inverter systems.	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye	__3 Wire Delta __3 Wire Wye __4 Wire Wye
M - (MP) Neutral Grounding System Used (Choose One) Wye connected generating units are often grounded – either through a resistor or directly, depending upon the nature of the electrical system to which the Generator is connected. If the grounding method used at this facility is not listed, please attach additional descriptive information.	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms	__ Ungrounded __ Solidly Grounded __ Ground Resistor __ Ohms
N - Short Circuit Current Produced by Generator:	_____ (Amps)	_____ (Amps)	_____ (Amps)	_____ (Amps)
O – Prime Mover Type Please indicate the type and fuel used as the prime mover or source of energy for the Generator. 1 = Natural Gas 2 = Diesel Fueled 3 = Other Fuel	1 2 3	1 2 3	1 2 3	1 2 3
P - AC Disconnect For systems requiring an AC Disconnect only, please include the requested information about the AC Disconnect. See PG&E's Rule 21, Section H.1.d Located within 10 feet of the PG&E meter?	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No	_____ Manufacturer _____ Model # _____ Rating (amps) ____ Yes ____ No

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T5
ENERGY STORAGE TECHNOLOGY

Generator Information	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
Q - Energy Storage (ES) System (For important sizing information related to DC-Couple configurations, see sizing note below).	_____ Manufacturer _____ Model # _____ Quantity of Units	_____ Manufacturer _____ Model # _____ Quantity of Units	_____ Manufacturer _____ Model # _____ Quantity of Units	_____ Manufacturer _____ Model # _____ Quantity of Units
R - Lineside Tap PG&E has special requirements for a lineside tap. Contact PG&E at: Rule21Gen@PGE.Com for more information.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No
S – Warranty or Service Agreement Applicant has verified that (i) a warranty of at least 10 years has been provided on all equipment and on its installation, or (ii) have a 10-year service warranty or executed "agreement" ensuring proper maintenance and continued system performance.	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No	____ Yes ____ No

Energy Storage Charging Function:

Rated Charge Demand (Load): _____ kW

Estimated annual Net Energy Usage* of the energy storage device(s): ____ ____ kWh

*Net Energy usage = (kWh input, including charging, storage device auxiliary loads and losses) – (kWh output including discharging)

Will the Distribution Grid be used to charge the storage device: ☐ Yes ☐ No

If no: Provide technical description of control systems including (e.g. Nationally-certified piece of equipment, Relays/metering):~~If no: Provide technical description of control systems including:~~

Source of energy for Charging: _____

Mechanism to prevent charging from the Distribution System: _____

If Yes: Will charging the storage device(s) increase the host facility's existing peak load demand:

☐ Yes ☐ No

If Yes: Provide the following loading information:

Amount of added peak demand: _____ kW

If no: Provide technical description of controls systems including:

Charging periods: _____

Mechanism to prevent charging from the Distribution System during host facility peak:

_____

INTERCONNECTION APPLICATION (Form 79-1174-02)
ATTACHMENT T5
ENERGY STORAGE TECHNOLOGY

Expedited Interconnection Process Selection for Non-Export Energy Storage:

☐ This project meets the requirements identified in Rule 21 Section N and this process is being selected for expedited interconnection.

Note on Sizing (DC-Coupled Configurations)

The size of the storage system in DC-coupled NEM-eligible generator plus storage systems is the lesser of the shared inverter's (or inverters') nameplate capacity (capacities summed) and the storage device's (devices') maximum continuous discharge capacity (capacities summed) listed on the device's (devices') technical specifications sheets. A storage device's maximum continuous discharge capacity may be listed on technical specification sheets using different terminology. Note: PG&E will use common sense to determine whether a device's technical specification sheet includes the appropriate metric for purposes of determining system size, regardless of the terminology used. If that metric is not included, PG&E may rely on the inverter's nameplate rating.

For example:

- What is the maximum continuous discharge capability for each storage unit?
  _____ + _____ + _____ + _____ + _____ =. total _____
- What is each inverter's nameplate rating?
  _____ + _____ + _____ + _____ + _____ =. total _____

ELECTRIC SCHEDULE NEM Sheet 26 (N)
NET ENERGY METERING SERVICE (N)

SPECIAL CONDITIONS: (Cont'd.)

11. NEM Paired Storage (N)

a. **Definitions: ~~of~~**
NEM Paired Storage:
NEM Paired Storage is defined as qualifying energy storage devices ("storage system") paired with a ~~REFG~~ REGF that either:

(i) meets the Renewables Portfolio Standard (RPS) Guidebook[5] requirements as an "addition or enhancement" as described in Section c. below, or.

(ii) is eligible to received certain benefits as is described below by virtue of the fact that it is paired with a REGF although it is not exclusively renewable charged, , pursuant to California Public Utilities Commission (CPUC) Decision (D.) 14-04-033 and D.19-01-030.

AC-Coupled:
The REGF has its own inverter or set of inverters; and separately, the storage system has its own inverter or set of inverters, pursuant to CPUC D.19-01-030.

In AC-coupled NEM-eligible GFs paired with storage devices, storage device capacity is determined as the (AC) maximum discharge capacity. The size of the storage system in AC-coupled REGF plus storage systems is the inverter's (or inverters') nameplate capacity (nameplate capacities summed).

DC-Coupled:
The REGF and the storage share the same inverter, or set of inverters, pursuant to CPUC D.19-01-030.

The size of the storage system is the lesser of the shared inverter's (or inverters') nameplate capacity (capacities summed) and the storage device's (devices') maximum continuous discharge capacity (capacities summed) listed on the device's (devices') technical specifications sheets. A storage device's maximum continuous discharge capacity may be listed on technical specification sheets using different terminology; PG&E will use common sense to determine whether a device's technical specification sheet includes the appropriate metric for purposes of determining system size, regardless of the terminology used. If that metric is not included, PG&E will rely on the inverter's nameplate rating.

No Grid Charging:
A storage system that uses a control configuration that is either certified to a national standard or to a utility-approved interim testing procedure, either of which ensures that the storage system cannot be charged from the PG&E grid. A PG&E approved physical non-import relay or a functionally equivalent non-import configuration to prevent grid power from flowing to the storage device is also permitted. Customers may not have access to software settings, only the installer and the storage (N)

(Continued)

provider would be able to access and select settings profiles. Inadvertent but minor instances of grid import are permitted.

No Storage Export:
A storage system that uses a voltage-control configuration that is certified either to a national standard or to a utility-approved interim testing procedure, either of which ensures that the storage system cannot export to PG&E's grid. A PG&E approved physical non-export relay or a functionally equivalent non-import configuration to prevent grid power from flowing to the storage device is also permitted. Inadvertent but minor instances of storage export are permitted.

b. **Interconnection**

NEM Paired Storage ~~shall~~ will have the same interconnection cost responsibility as the NEM generator that it is paired with ~~be exempt from~~ including charges or fees ~~for~~ related to the ~~:~~

- ~~•~~ interconnection application,
- ~~•~~ Rule 21 engineering ~~supplemental~~ study/review, and/or
- any associated distribution upgrade~~, and~~
- ~~standby.~~

~~for systems under this NEM tariff.~~See Section c.5 below for additional information.

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

(~~i~~1) **Integrated Storage:**
Integrated Energy Storage is defined in the RPS guidelines[5] as methods of storing energy from a renewable energy resource that are integrated into the RE~~F~~GF as part of the generation process.

~~For example~~Note that~~,~~ for battery-based storage, the storage device must ***only*** be capable of storing energy from the RE~~F~~GF to be considered Integrated ~~Energy~~ Storage.

Integrated Storage applies 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).

(Continued)

ELECTRIC SCHEDULE NEM Sheet 26 (N)
NET ENERGY METERING SERVICE (N)

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

~~+ For the purposes of determining the generating facility size, the following methodology applies:~~

~~a) AC Coupled: the combined sizes[9] of the REGF and storage system (AC nameplate)~~

~~b) DC Coupled: the lesser of the shared inverter's nameplate capacity (capacities summed) and the storage device's (devices') maximum continuous discharge capacity (capacities summed) listed on the device's (devices') technical ("storage system") specifications sheet.~~

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

~~[9]. As defined in Special Condition 3.~~

(2~~ii~~). **Directly Connected**

Directly Connected NEM Paired Storage is defined in the RPS guidelines[8] as ~~being both~~meeting the following requirements:

(i) The storage device is directly connected to the RE~~F~~GF 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~~ 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 RE~~F~~GF.

Directly Connected Cases: ~~NEM Paired Storage must meet all~~

(Continued)

~~the requirements in Sections d., e. and f., as applicable in this special condition.~~

(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 ~~3)(i)~~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, 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).

[5] The RPS Guidebooks 7th Edition can be found at:
w.energy.ca.gov/renewables/documents/index.html#rps

(Continued)

ELECTRIC SCHEDULE NEM Sheet 27
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

11. NEM Paired Storage (Cont'd) (N)

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

~~e.~~ 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.

~~(iv)~~ Large NEM-eligible GFs are required to select one of the following:

(a~~i~~) install a non-export relay on the storage device(s);

(b~~ii~~) install an interval meter for the NEM-eligible generation, meter the load, and meter total energy flows at the point of common coupling; ~~or~~

(c~~iii~~) install an interval meter directly to the NEM-eligible generator(s); or ~~.~~

(d) meet the requirements of No Grid Export

Large NEM-eligible GFs must apply with 79-1174~~2~~, 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.. (N)

(iv) Small AC-Coupled ~~NEM Paired S~~storage systems ("Small NEM eligible GFs")

Small NEM-eligible Generating Facilities (GFs) are NEM-eligible GFs paired with storage sized 10kw ~~-~~or smaller. For small NEM-eligible GFs, the storage device ~~Paired Storage~~ is not required to be sized to the customer demand or the NEM generator. ~~–~~Small NEM ~~–~~eligible GFs~~Paired Storage has~~ have the option to install metering as required for Large NEM-eligible GFs ~~Paired Storage or may chose the estimation methodology describe in Section g~~ 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.~~-~~

(Continued)

ELECTRIC SCHEDULE NEM Sheet 27
NET ENERGY METERING SERVICE

Small NEM-eligible GFs must apply with 79-1174, 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. ~~and will be billed as described in Section 3.)(ii) of this special condition..~~

DIRECTLY CONNECTED - Table 11.2
(This table covers **storage that is NOT 100% REGF charged**)
For Both AC and DC Coupled Storage
May Include ► No-Grid Charged storage (if other nonrenewable generation present)
► Non Storage Export (if other nonrenewable generation present)
Includes All ► Grid Charged Storage And Storage Exports
All apply with Application 79-1174-02

Includes ► Non-Storage Export with either NGOM or non-export relay equivalent (if no other nonrenewable generation present)
All apply with Application 79-1174-02

	PV/Wind < 30 kw	**Non-PV/Wind REGF <1MW** **>30kW PV/Wind <1MW**	**Bill as**	**IC costs**	**Notes**
Storage < 10kw	79-1093-02	79-1069-02	§3i	Per 5.i	Estimation Methodology
Storage > 10kw And < 150%[6]	79-1069-02	79-1069-02	§3ii	Per 5.ii or iii	NGOM, No Grid Charging, No Storage Export[7]
Storage > 10kw And > 150%	Set up and bill as NEMMT (not under NEM-Paired Storage section)				

(Continued)

SPECIAL CONDITIONS: (Cont'd.)

(N)

DIRECTLY CONNECTED Table 11.1 (This table covers storage that is NOT 100% REGF charged) For Both AC and DC Couple Storage					
Size	**NGC NSE or GC&GE ++++**	**Billed in**	**Cost Responsibility**	**Agreements+++**	**Case**
<10kw	NGC	Per 3.i	Per 5.i	79-1174 and 79-1193 (pv/wind <30kw) or 79-1069	2.A
	NSE	Per 3.i	Per 5.i	79-1174 and 79-1193 (pv/wind <30kw) or 79-1069	2.B
	GC&GE	Per 3.i	Per 5.i	79-1174 and 79-1069	2.C
>10kw < 1MW	NGC	Per 3.i	Per 5.i	79-1174 and 79-1069	2.D
	NSE	Per 3.i	Per 5.i	79-1174 and 79-1069	2.E
	GC&GE < 150%	Per 3.i	Per 5.i	79-1174 and 79-1069	2.F
	GC&GE > 150%	Per 3.ii	Per 5.i	79-1174 and 79-1069	2.G

++++ NGC= Non-Grid Charged storage (but not exclusively REGF charged)
NSE = No Storage Export
GC&GE = Grid Charged And Grid Exports

[6] the storage system shall have a maximum output power no larger than 150% of the NEM-eligible generator's maximum output capacity

[7] see definition of "No Grid Charging" storage and "No Storage Export" above in 9.a above.

11. NEM Paired Storage (Cont'd)

(N)

3)~~g.~~ **Billing for NEM Paired Storage**

(i) Estimation Methodology For Small NEM-eligible ~~Paired Storage~~GFs

~~Once implemented in PG&E's billing system,~~ Small NEM-eligible GFs ~~Paired Storage~~ without metering installed (as is required for Large NEM-eligible GFs) ~~may~~ will use an estimation methodology, which caps maximum allowable NEM bill credits based on a monthly output profile.

(Continued)

ELECTRIC SCHEDULE NEM Sheet 28 (N)
NET ENERGY METERING SERVICE (N)

~~(~~a.~~A)~~ California Solar Initiative Expected Performance-Based Buydown (CSI EPBB) calculator, PG&E will establish a maximum cap for NEM-eligible exports for each monthly billing period based on the EPBB production estimate for the customer's NEM-eligible generator.

The monthly output estimation should align with a customer's billing period (e.g., if the customer's billing date is January 15, the maximum allowed NEM export should be based on a January output estimation.)

~~(B~~b.~~)~~ Any export exceeding this limit would not be eligible for NEM credit and would be forfeited. Peak period exports would be reduced first, followed by partial peak and then off peak as necessary.

For example, if there was an export to the grid of 150 kWh and the EPBB-based limit for the month was set at 100 kWh, then the excess 50 kWh would be deducted from the actual exports recorded, beginning with exports that occurred during peak periods.

c.~~(C)~~ In the event the Small NEM-eligible GF ~~Paired Storage~~ is combined with other generation facili~~ul~~ties pursuant to Special Condition 4, the billing provision of Special Condition 4 will apply, not this billing estimation methodology.

Should a customer decide to opt-out of using this estimation methodology, the customer metering must install one of the metering requirements described in the Large NEM-eligible GFs section, ~~be as provided in Section e. ii. above,~~ and the customer may only switch at the start of a new NEM Relevant Period.

ii) Large NEM-eligible GFs are are billed consistent with Special Condition 4 with the storage treated as a non-NEM eligible generator.

(Continued)

ELECTRIC SCHEDULE NEM Sheet 29 (N)
NET ENERGY METERING SERVICE (N)

SPECIAL CONDITIONS: (Cont'd.)

11. NEM Paired Storage (Cont'd) (N)

4) ~~h.~~ **NEM Paired Storage Output Metering Costs**

PG&E will install standard metering equipment whenever possible while interconnecting NEM Paired Storage systems. Standard metering equipment for this purpose comprises a single meter which is a self-contained, single phase, SmartMeter. The fee for installation of standard metering equipment is no more than $600.00.

However, this fee cap does not apply to NEM Paired Storage requiring complex metering solutions. Complex metering solutions include any configuration other than the standard equipment described above. The cost for complex metering varies and is based on actual costs which will be described in the customer's invoice.

5) ~~i~~. **NEM Paired Storage Interconnection Cost Responsibility**

For the purpose of determining if a NEM Paired Storage REGF exceeds 1 MW criterion, refer to the sizing definition included in the AC-Coupled and DC-Coupled definition at the beginning of this Special Condition.

i. NEM Paired Storage REGF < 1 MW - ~~–~~The ~~-~~storage will have ~~-~~the same interconnection cost responsibility as the NEM generator that it is paired with for a REGF less than or equal to 1 MW. (N)

ii. In the event the storage is added at a later date after the permission to operate of the NEM generator it is subsequently paired with, the storage applicant will be required to pay the same interconnection fees and costs that the NEM generator would be required to pay, as provided for in Electric Rule 21.

ELECTRIC SCHEDULE NEM2 Sheet 2
NET ENERGY METERING SERVICE

APPLICABILITY: (Cont'd.)

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

A REGF means a generating facility that generates electricity by using:

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

and any additions or enhancements to the facility using that technology pursuant to paragraph (1) of subdivision (a) of Section 25741 of the Public Resources Code. These renewable sources are defined in the latest version of the California Energy Commission's (CEC's) Renewables Portfolio Standard (RPS) Eligibility Guidebook and the Overall Program Guidebook.[43]

[43] The RPS Guidebooks can be found at: http://www.energy.ca.gov/renewables/documents/index.html#rps (N)

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 13
NET ENERGY METERING SERVICE

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: (N)

Rate Option	Application	Interconnection Agreement
NEM2S	For Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less:	
	Application - Net Energy Metering (NEM2) Interconnection for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less (Form **79-1151B-02~~B~~**)[54]	*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~~A~~**)[54]
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:	
	Generating Facility Interconnection Application, (Form **79-1174-02**)	*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* (Form **79-978-02**)
	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:	
	Generating Facility Interconnection Application, (Form **79-1174-02**)	*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 **79-1137-02**)

[54] Both the Agreement and Customer Authorization (79-1151A-~~01~~02~~A~~) and Application (79-1151B-~~01B~~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. (N)

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 21
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

5. NET SURPLUS ELECTRICITY COMPENSATION (NSC): (Cont'd.) (N)

b. The NSC Rate – The NSC Rate is defined as the simple rolling average of PG&E's default load aggregation point (DLAP) price from 7 a.m. to 5 p.m., for a 12-month period. PG&E shall use the NSC Rate as the value of the electricity portion of its net surplus compensation rate.

PG&E will calculate the NSC Rate each month. It will be effective on the first day of that month and PG&E will use it in the NSC Calculation for any Net Surplus Generators with a Relevant Period completed in that month (True-Up Month).

The DLAP Cutoff Date will be defined as the twentieth (20th) day of the month prior to the True-Up Month.

PG&E will wait five (5) days after the DLAP Cutoff Date for the CAISO to have time to finalize the day-ahead PG&E DLAP prices. The NSC Rate will then be calculated as the simple average of the prices for all hours between 7 a.m. and 5 p.m. over a one (1) year period ending on the DLAP Cutoff Date.

c. Pursuant to D. 11-06-016, PG&E includes a Renewable Attribute Adder (RAA) based on the California Energy Commission (CEC) implementation methodology.

Under the CEC's Renewables Portfolio Standard (RPS) Eligibility ~~Guidebook[6]~~Guidebook[5], an ownership verification and tracking process is set forth for Renewable Energy Credits (RECs) created by Net Surplus Generators.

PG&E will pay a RAA for Net Surplus Electricity if the Net Surplus Generator completes Form 79-1155-02 - *Schedules NEM2, NEM2V, NEMV2MSH, Net Surplus Electricity (NSE) Renewable Energy Credits Compensation Form* which requires that each true-up a Net Surplus Generator confirm it or its REC aggregator has:

1) certified ownership of Net Surplus Electricity Renewable Energy Credits associated with their Net Surplus Electricity;
2) obtained certification for the Renewable Portfolio Standards (RPS) eligibility of the Electrical Generation Facility from the CEC and provide evidence of this certification to PG&E; and
3) transferred the ownership of the WREGIS Certificates to PG&E.

The RAA will be calculated using the most recent Western Electricity Coordinating Council (WECC) average renewable premium, based on United States Department of Energy (DOE) published data as submitted via advice letter annually in compliance with Resolution E-4475 and Decision 11-12-018.

[6]~~5~~ The CEC RPS Eligibility Guidebook is available at: http://www.energy.ca.gov/renewables/documents/#rps (N)

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 27
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

8. NEM2 GRANDFATHERING PROVISIONS (Cont'd.) (T)/(L)

b. ~~Modifications~~[1]Modifications[6]. REGFs eligible for the 20-year transition period outlined above that are modified and/or repaired shall remain eligible for the remainder of their 20-year transition period as long as the modifications and/or repairs do not increase the REGF by more than the greater of:

1) 10 percent of the REGF's nameplate rating capacity, as established when the REGF was originally interconnected, or

2) 1 kW;

and provided the modifications and/or repairs do not result in the REGF exceeding the Customer's annual onsite load.

c. Transferability. REGF eligible for the 20-year transition period shall not lose their eligibility if transferred to a new owner, operator, or PG&E account, provided the REGF remains at its original location.[27]

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[16] Customers making modifications and/or additions to their REGF that exceed the 10 percent or 1 kW limit referenced above have the option of either metering the additions and/or modifications separately under another eligible tariff or other authorized process, or having the entire REGF served under another eligible tariff, subject to the terms and conditions contained therein.

[27] The transfer of an existing REGF to a new location is considered a new installation requiring a new Interconnection Agreement that is subject to the applicable tariffs in place at the time the new Interconnection Request is completed. (L)

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 28
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

9. NEM Paired Storage (T)/(L)

a. Definitions:
~~of~~ NEM Paired Storage:
NEM Paired Storage is defined as qualifying energy storage devices ("storage system") paired with a ~~REFG~~REGF that either:

(i) meets the Renewables Portfolio Standard (RPS) Guidebook[5] requirements as an "addition or enhancement" as described in Section c. below, or~~.~~

(ii) is eligible to received certain benefits as is ~~-~~described ~~below~~in this Special Condition by virtue of the fact that it is paired ~~-~~with a REGF although it is not exclusively renewable charged,~~,~~ pursuant to California Public Utilities Commission (CPUC) Decision (D.) 14-04-033 and D.19-01-030.

AC-Coupled:
The REGF has its own inverter or set of inverters; and separately, the storage system has its own inverter or set of inverters, pursuant to CPUC D.19-01-030.

In AC-coupled NEM-eligible GFs paired with storage devices, storage device capacity is determined as the (AC) maximum discharge capacity.~~I~~ The size of the storage system in AC-coupled REGF plus storage systems is the inverter's (or inverters') nameplate capacity (nameplate capacities summed).

DC-Coupled:
The REGF and the storage share the same inverter, or set of inverters, pursuant to CPUC D.19-01-030.

The size of the storage system is the lesser of the shared inverter's (or inverters') nameplate capacity (capacities summed) and the storage device's (devices') maximum continuous discharge capacity (capacities summed) listed on the device's (devices') technical specifications sheets. A storage device's maximum continuous discharge capacity may be listed on technical specification sheets using different terminology; PG&E will use common sense to determine whether a device's technical specification sheet includes the appropriate metric for purposes of determining system size, regardless of the terminology used. If that metric is not included, PG&E will rely on the inverter's nameplate rating.

No Grid Charging:
A storage system that uses a control configuration that is either certified to a national standard or to a utility-approved interim testing procedure, either of which ensures that the storage system cannot be charged from the PG&E grid. A PG&E approved physical non-import relay or a functionally equivalent non-import configuration to prevent grid power from flowing to the storage device is also permitted. Customers may not have access to software settings, only the installer and the storage provider would be able to access and select settings profiles. Inadvertent but

(Continued)

minor instances of grid import are permitted.

[5] The latest RPS Guidebook can be found at:
http://www.energy.ca.gov/renewables/documents/index.html#rps

No Storage Export:
A storage system that uses a voltage-control configuration that is certified either to a national standard or to a utility-approved interim testing procedure, either of which ensures that the storage system cannot export to PG&E's grid. A PG&E approved physical non-export relay or a functionally equivalent non-import configuration to prevent grid power from flowing to the storage device is also permitted. Inadvertent but minor instances of storage export are permitted.

b. **Interconnection**
NEM Paired Storage ~~shall be exempt from~~will have the same interconnection cost responsibility as the NEM generator that it is paired with, including charges or fees ~~for~~ related to the

- interconnection ~~application,~~
- ~~supplemental~~application,

~~supplemental~~Rule 21 engineering study/-review, and/or
- any associated distribution upgrade.~~,~~

See Section c.5 ~~i.~~ below for additional information

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

i) ~~1)~~ **Integrated Storage:**

Integrated Energy Storage is defined in the RPS guidelines[8] as methods of storing energy from a renewable energy resource that are integrated into the ~~REFG~~REGF as part of the generation process.

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

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 28
NET ENERGY METERING SERVICE

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).

INTEGRATED STORAGE (By definition the storage device must only be capable of storing energy from the REGF)				
SCENARIO	Billed As	Interconnection Agreements	Interconnection Costs	
AC Coupled Or DC Coupled	billed as if storage and REGF were all one generator (e.g. NEMS, NEMEXP)	**< 1 MW** apply with 79-1174-02 and Interconnection agreement 79-1193-02	Per 5.i	
		> 1 MW apply with 79-1174-02 and Interconnection agreement 79-1162-02 or 79-1198-02	Per 5.ii or iii	

~~of "No Grid Charging"must utilize Form 79-973 for interconnection and will beif storage device were not present (e.g. NEM2S). a REGF with a storage system that meets the requirement of "No Grid Charging"onkW.H,when determining whether the generating facility exceeds 1MW, at which point the system would be responsible for all interconnection costs, the following methodology applies:~~

~~AC-Coupled: s[9] (AC nameplate)~~

~~DC-Coupled: the lesser of the shared inverter's nameplate capacity (capacities summed) and the storage device's (devices') maximum continuous discharge capacity (capacities summed) listed on the device's (devices') technical specifications sheet.~~

~~[9] As defined in Special Condition 3.~~

(Continued)

2) **Directly Connected:**

Directly Connected NEM Paired Storage is defined in the RPS guidelines[585] ~~as~~ meeting the following requirements:

~~i)~~ (i) ~~a)~~ The storage device is directly connected to the ~~REFG~~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) ~~b)~~ ~~t~~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.

Directly Connected Cases:

i) ~~(i) A~~ 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 apply with 79-1174-02, and either complete interconnection agreement Form 79-1193-02 (solar and/or wind electric facilities of 30kW or less) or Form 79-1069-02 (all other REGF with a storage system configurations fulling the requirements of "No Grid Charging"). All configurations ~~that meet the definition of Integrated Storage will~~ 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~~-~~.

~~d. storage size depend requirements~~

~~Requiremeints differ….nameplate rating.~~

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 79-1069-02, and will be billed as described for Large NEM paired Storage in Section ~~g.2~~3.)(ii) of this special condition.

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

(Continued)

iii) Large AC Coupled storage system ("Large NEM-eligible GFs") ~~Requirements for Large NEM Paired Storage (i.e., All NEM Paired Storage Devices except Solar NEM paired with Storage Sized 10 KW and Smaller)~~

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.

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

~~a.~~ install a non-export relay on the storage device(s);

a.

~~b.~~ ~~ii~~install an interval meter for the NEM-eligible generation, meter the load, and meter total energy flows at the point of common coupling; ~~or~~

b.

c. install an interval meter directly to the NEM-eligible generator(s); or~~.~~

d. or meet the requirements of No Grid Export

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

~~iii)~~iv) 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 the 79-1174-02 (NEM2) and complete the 79-1193-02 (NEM2) when the NEM-Eligible GF is sized 30kW or less or apply with the 79-1174-02

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 28
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(NEM2) and -complete the 79-1069-02 (NEM2) when the NEM-eligible GF exceeds 30kW.

DIRECTLY CONNECTED - Table 11.2
(This table covers **storage that is NOT 100% REGF charged**)
For Both AC and DC Coupled Storage
May Include ► No-Grid Charged storage (if other nonrenewable generation present)
► Non Storage Export (if other nonrenewable generation present)
Includes All ► Grid Charged Storage And Storage Exports
All apply with Application 79-1174-02

Includes ► Non-Storage Export with either NGOM or non-export relay equivalent (if no other nonrenewable generation present)
All apply with Application 79-1174-02

	PV/Wind < 30 kw	**Non-PV/Wind REGF <1MW** **>30kW PV/Wind <1MW**	**REGF >1Mw**	**Bill as**	**IC costs**	**Notes**
Storage < 10kw	79-1093-02	79-1069-02	79-1078-02	§3i	Per 5.i	Estimation Methodology
Storage > 10kw And < 150%[6]	79-1069-02	79-1069-02	79-1078-02	§3ii	Per 5.ii or iii	**NGOM, No Grid Charging, No Storage Export[7]**
Storage > 10kw And > 150%	Set up and bill as NEMMT (not under NEM-Paired Storage section)					

[6] the storage system shall have a maximum output power no larger than 150% of the NEM-eligible generator's maximum output capacity

[7] see definition of "No Grid Charging" storage and "No Storage Export" above in 9.a above.

~~dDIRECTLY CONNECTED - Table 11.1~~

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 28
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(This table covers storage that is NOT 100% REGF charged) For Both AC and DC Couple Storage					
Size	**NGC NSE or GC&GE ++++**	**Billed in**	**Cost Responsibility**	**Agreements+++**	**Case**
<10kw	NGC	Per 3.i	Per 5.i	79-1174-02 and 79-1193-02 (pv/wind <30kw) or 79-1069-02	2.A
	NSE	Per 3.i	Per 5.i	79-1174-02 and 79-1193-02 (pv/wind <30kw) or 79-1069-02	2.B
	GC&GE	Per 3.i	Per 5.i	79-1174-02 and 79-1069-02	2.C
>10kw < 1MW	NGC	Per 3.i	Per 5.i	79-1174-02 and 79-1069-02	2.D
	NSE	Per 3.i	Per 5.i	79-1174-02 and 79-1069-02	2.E
	GC&GE < 150%	Per 3.i	Per 5.i	79-1174-02 and 79-1069-02	2.F
	GC&GE > 150%	Per 3.ii	Per 5.i	79-1174-02 and 79-1069-02	2.G
> 1MW	NGC	Per 3.i	Per 5.ii	apply with 79-1174-02 and Interconnection agreement 79-1162-02 or 79-1198-02	2.H
	NSE	Per 3.i	Per 5.ii	apply with 79-1174-02 and Interconnection agreement 79-1162-02 or 79-1198-02	2.I
	GC&GE < 150%	Per 3.i	Per 5.ii	apply with 79-1174-02 and Interconnection agreement 79-1162-02 or 79-1198-02	2.J
	GC&GE > 150%	Per 3.ii	Per 5.ii	apply with 79-1174-02 and Interconnection agreement 79-1162-02 or 79-1198-02	2.K

++++ NGC= Non-Grid Charged storage (but not exclusively REGF charged)
NSE = No Storage Export
GC&GE = Grid Charged And Grid Exports

(Continued)

3) Billing for NEM Paired Storage

i) Estimation Methodology For Small NEM-eligible GFs

~~Once implemented in PG&E's billing system~~Small NEM-eligible GFs without metering installed (as required for Large NEM-eligible GFs) will use an estimation methodology, which caps maximum allowable NEM bill credits based on a monthly output profile.

a. California Solar Initiative Expected Performance-Based Buydown (CSI EPBB) calculator, PG&E will establish a maximum cap for NEM-eligible exports for each monthly billing period based on the EPBB production estimate for the customer's NEM-eligible generator.

The monthly output estimation should align with a customer's billing period (e.g., if the customer's billing date is January 15, the maximum allowed NEM export should be based on a January output estimation.)

b. Any export exceeding this limit would not be eligible for NEM credit and would be forfeited. Peak period exports would be reduced first, followed by partial peak and then off peak as necessary.

For example, if there was an export to the grid of 150 kWh and the EPBB-based limit for the month was set at 100 kWh, then the excess 50 kWh would be deducted from the actual exports recorded, beginning with exports that occurred during peak periods.

c. In the event the Small NEM-eligible GF is combined with other generation facilities pursuant to Special Condition 4, the billing provision of Special Condition 4 will apply, not this billing estimation methodology.

Should a customer decide to opt-out of using this estimation methodology, the customer must install one of the metering requirements described in the Large NEM-eligible GFs section, and the customer may only switch at the start of a new NEM Relevant Period.

ii) Large NEM-eligible GFs are billed consistent with Special Condition 4 with the storage treated as a non-NEM eligible generator.

4) **NEM Paired Storage Output Metering Costs**

PG&E will install standard metering equipment whenever possible while interconnecting NEM Paired Storage systems. Standard metering equipment for this purpose comprises a single meter which

(Continued)

is a self-contained, single phase, SmartMeter. The fee for installation of standard metering equipment is no more than $600.00.

However, this fee cap does not apply to NEM Paired Storage requiring complex metering solutions. Complex metering solutions include any configuration other than the standard equipment described above. The cost for complex metering varies and is based on actual costs which will be described in the customer's invoice.

5) **NEM Paired Storage Interconnection Cost Responsibility**

For the purpose of determining if a NEM Paired Storage REGF exceeds 1 MW criterion, refer to the sizing definition included in the AC-Coupled and DC-Coupled definition at the beginning of this Special Condition.

NEM Paired Storage REGF < 1 MW -

i) The storage will have the same interconnection cost responsibility as the NEM-eligible GF that it is paired with for a REGF less than or equal to 1 MW..

ii) NEM Paired Storage REGF > 1 MW - The storage will have the same interconnection cost responsibility as the NEM generator that it is paired with for a REGF greater than 1 MW

iii) In the event the storage is added at a later date after the permission to operate of the NEM-eligible GF it is subsequently paired with, the storage applicant will be required to pay the same interconnection fees and costs that the NEM-eligible GF would be required to pay, as provided for in Electric Rule 21.

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 29
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

9. NEM Paired Storage (Cont'd.) (T)/(L)

d. Storage Size Dependent Requirements

Requirements differ depending on the size of the NEM Paired Storage and whether it is paired with a solar generator or not. The storage device size is determined by the inverter alternating current nameplate rating.

e. Requirements for Large NEM Paired Storage (i.e., All NEM Paired Storage Devices except Solar NEM paired with Storage Sized 10 KW and Smaller)

For NEM-paired storage systems with storage devices larger than 10 kW, the NEM Paired Storage shall have a maximum output power no larger than 150% of the NEM-eligible generator's maximum output capacity.

Large NEM Paired Storage systems are required to either:

1) install a non-export relay on the storage device(s);

2) install an interval meter for the NEM-eligible generation, meter the load, and meter total energy flows at the point of common coupling; or

3) install an interval meter directly to the NEM-eligible generator(s).

f. Requirements for Small NEM Paired Storage (i.e., Solar NEM Paired with Storage Devices Sized 10 KW or Smaller)

Small NEM Paired Storage is not required to be sized to the customer demand or the NEM generator. Small NEM Paired Storage has the option to install metering as required for Large NEM Paired Storage or may chose the estimation methodology describe in Section g. (L)

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 30
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

9. NEM Paired Storage (Cont'd.) (T)/(L)

g. Billing for NEM Paired Storage

1) Estimation Methodology For Small NEM Paired Storage

Once implemented in PG&E's billing system, Small NEM Paired Storage may use an estimation methodology, which caps maximum allowable NEM bill credits based on a monthly output profile**.**

a) California Solar Initiative Expected Performance-Based Buydown (CSI EPBB) calculator, PG&E will establish a maximum cap for NEM-eligible exports for each monthly billing period based on the EPBB production estimate for the customer's NEM-eligible generator.

The monthly output estimation should align with a customer's billing period (e.g., if the customer's billing date is January 15, the maximum allowed NEM export should be based on a January output estimation.)

b) Any export exceeding this limit would not be eligible for NEM credit and would be forfeited. Peak period exports would be reduced first, followed by partial peak and then off peak as necessary.

For example, if there was an export to the grid of 150 kWh and the EPBB-based limit for the month was set at 100 kWh, then the excess 50 kWh would be deducted from the actual exports recorded, beginning with exports that occurred during peak periods.

c) In the event the Small NEM Paired Storage is combined with other generation faculties pursuant to Special Condition 4, the billing provision of Special Condition 4 will apply, not this billing estimation methodology.

Should a customer decide to opt-out of using this estimation methodology, the customer metering must be as provided in Section e. ii. above, and the customer may only switch at the start of a new NEM Relevant Period.

2) Large NEM Paired Storage is billed consistent with Special Condition 4 with the storage treated as a non-NEM eligible generator. (L)

(Continued)

ELECTRIC SCHEDULE NEM2 Sheet 31
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

9. NEM Paired Storage (Cont'd.) (T)/(L)

~~h. NEM Paired Storage Output Metering Costs~~

~~PG&E will install standard metering equipment whenever possible while interconnecting NEM Paired Storage systems. Standard metering equipment for this purpose comprises a single meter which is a self-contained, single phase, SmartMeter. The fee for installation of standard metering equipment is no more than $600.00.~~

~~However, this fee cap does not apply to NEM Paired Storage requiring complex metering solutions. Complex metering solutions include any configuration other than the standard equipment described above. The cost for complex metering varies and is based on actual costs which will be described in the customer's invoice.~~

~~i. NEM Paired Storage Interconnection Cost Responsibility~~

~~The storage will have the same interconnection cost responsibility as the NEM generator that it is paired with. In the event the storage is added at a later date after the permission to operate of the NEM generator it is subsequently paired with, the storage applicant will be required to pay the same interconnection fees and costs that the NEM generator would be required to pay, as provided for in Electric Rule 21.~~ (L)

ELECTRIC SCHEDULE NEM2 Sheet 32
NET ENERGY METERING SERVICE

SPECIAL CONDITIONS: (Cont'd.)

10. NEM Paired Storage (Cont'd.) (T)

~~h. NEM Paired Storage Output Metering Costs~~

~~PG&E will install standard metering equipment whenever possible while interconnecting NEM Paired Storage systems. Standard metering equipment for this purpose comprises a single meter which is a self-contained, single phase, SmartMeter. The fee for installation of standard metering equipment is no more than $600.00.~~

~~However, this fee cap does not apply to NEM Paired Storage requiring complex metering solutions. Complex metering solutions include any configuration other than the standard equipment described above. The cost for complex metering varies and is based on actual costs which will be described in the customer's invoice.~~

~~i. NEM Paired Storage Interconnection Cost Responsibility~~

~~The storage will have the same interconnection cost responsibility as the NEM generator that it is paired with. In the event the storage is added at a later date after the permission to operate of the NEM generator it is subsequently paired with, the storage applicant will be required to pay the same interconnection fees and costs that the NEM generator would be required to pay, as provided for in Electric Rule 21.~~

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

AT&T
Albion Power Company
Alcantar & Kahl LLP

Alta Power Group, LLC
Anderson & Poole

Atlas ReFuel
BART

Barkovich & Yap, Inc.
P.C. CalCom Solar
California Cotton Ginners & Growers Assn
California Energy Commission
California Public Utilities Commission
California State Association of Counties
Calpine

Cameron-Daniel, P.C.
Casner, Steve
Cenergy Power
Center for Biological Diversity
City of Palo Alto

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

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

Downey & Brand
East Bay Community Energy
Ellison Schneider & Harris LLP
Energy Management Service

Engineers and Scientists of California

Evaluation + Strategy for Social Innovation
GenOn Energy, Inc.
Goodin, MacBride, Squeri, Schlotz & Ritchie
Green Charge Networks
Green Power Institute
Hanna & Morton
ICF

International Power Technology
Intestate Gas Services, Inc.
Kelly Group
Ken Bohn Consulting
Keyes & Fox LLP
Leviton Manufacturing Co., Inc. Linde
Los Angeles County Integrated Waste Management Task Force
Los Angeles Dept of Water & Power
MRW & Associates
Manatt Phelps Phillips
Marin Energy Authority
McKenzie & Associates

Modesto Irrigation District
Morgan Stanley
NLine Energy, Inc.
NRG Solar

Office of Ratepayer Advocates
OnGrid Solar
Pacific Gas and Electric Company
Peninsula Clean Energy

Pioneer Community Energy
Praxair

Redwood Coast Energy Authority
Regulatory & Cogeneration Service, Inc.
SCD Energy Solutions

SCE
SDG&E and SoCalGas

SPURR
San Francisco Water Power and Sewer
Seattle City Light
Sempra Utilities
Southern California Edison Company
Southern California Gas Company
Spark Energy
Sun Light & Power
Sunshine Design
Tecogen, Inc.
TerraVerde Renewable Partners
Tiger Natural Gas, Inc.

TransCanada
Troutman Sanders LLP
Utility Cost Management
Utility Power Solutions
Utility Specialists

Verizon
Water and Energy Consulting Wellhead Electric Company
Western Manufactured Housing Communities Association (WMA)
Yep Energy