

October 30, 2020

Advice 5988-E

(Pacific Gas and Electric Company ID U 39 E)

Public Utilities Commission of the State of California

Subject: Advice Letter Modifying Electric Rule 21 Pursuant to Decision 20-09-035 for Working Group 2 and 3

Purpose

Pacific Gas and Electric Company (PG&E) hereby submits this Tier 1 Advice Letter ("AL") to update Electric Rule 21 - *Generating Facility Interconnections* - in compliance with the California Public Utilities Commission ("CPUC", "Commission") Decision ("D.") D.20-09-035¹ ("WG 2 & 3 Decision") Ordering Paragraph ("OP") 55 and other OPs as described below.

Background**Rulemaking 17-07-007**

On July 13, 2017, The Commission adopted Order Instituting Rulemaking (R.) 17-07-007 to consider refinements to Electric Tariff Rule 21 of Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), and Southern California Edison Company (SCE) (jointly, Utilities) regarding the interconnection of distributed energy resources.²

ACR Scoping Memo

On October 2, 2017, the Commission issued Scoping Memo of Assigned Commissioner and Administrative Law Judge (Scoping Memo) set forth the scope and schedule of the proceeding. It established the working group process, whereby resolution of the technical issues of the proceeding would be proposed by Working Groups One through Six. In

¹ [Decision 20-09-035](#) - Date of Issuance 9/30/2020 - *Decision Adopting Recommendations from Working Groups Two, Three, and Subgroup*

² The Rule 21 tariff describes the interconnection, operating, and metering requirements for certain generating and storage facilities seeking to connect to the electric distribution system. Rule 21 provides customers access to the electric grid to install generating or storage facilities while protecting the safety and reliability of the distribution and transmission systems at the local and system levels. (See R.17-07-007 at p2.)

addition, four issues were assigned to the Smart Inverter Working Group, including issues 5 and 6.³

Working Group 2

On February 14, 2018, a Ruling directed that Working Group Two would begin on March 15, 2018 and required that it subsequently file its recommendations report on September 15, 2018. The Ruling also reassigned Issue 6 to Working Group Two.

On August 15, 2018, the Administrative Law Judge issued a Ruling allowing additional time for Working Group Two to resolve issues, including sub-issues encountered, and delaying the filing of the recommendations report to October 31, 2018.

On October 31, 2018, the Working Group 2 final report was issued.⁴

On November 7, 2018, the Administrative Law Judge facilitated a workshop to discuss the recommendations provided in the Working Group 2 Final Report.

On December 7, 2018, in response to the November 7, 2018, workshop on the Working Group Two Report, and parties were directed to respond to questions on the report.

On February 1, 2019, responses to the questions, along with comments on the Working Group Report, were filed by the various parties

On February 22, 2019, replies were filed by the various parties.

Amended Scoping Memo and Working Group 3

On November 16, 2018, a Scoping Memo and Ruling (Amended Scoping Memo) delayed the start of Working Group Three until December 1, 2018 and required Working Group Three to file its recommendations report on June 14, 2019. The Amended Scoping Memo also decreased the number of working groups and redistributed issues across two working groups and the Interconnection Discussion Forum⁵ such that Working Group Three was assigned issues 12, 15, 16, 20, 22, 23, 24, 27 28, and New Issues A and B.

³ The Smart Inverter Working Group (SIWG) grew out of a collaboration between the Commission and the California Energy Commission in early 2013. The collaboration identified the development of advanced inverter functionality as an important strategy to mitigate the impact of high penetrations of distributed energy resources. [as explained in footnote 2 in D. 20-09-035]

⁴ Working Group Two Final [Report](#) filed jointly by the Utilities.

⁵ In Resolution Administrative Law Judge-347, the Commission established the Interconnection Discussion Forum (formerly known as the Rule 21 Working Group) as a venue to encourage discussion and collaboration between the Utilities and developers. [as explained in footnote 3 in D. 20-09-035]

On June 13, 2019, the Working Group Three Final Report⁶ was issued followed by a workshop.

A November 27, 2019 Ruling directed parties to respond to questions on the Working Group Three Report.

On January 13, 2020, the various parties filed responses to the questions contained in the November 27, 2019, ruling, along with comments to the Working Group Three Report.

On January 27, 2020, various parties filed replies to the responses and Working Group Three Report comments

Vehicle to Grid Subgroup

An August 23, 2019 Ruling issued in R. 17-07-007 and in R.18-12-006 (the *Rulemaking to Continue the Development of Rates and Infrastructure for Vehicle Electrification*) established the V2G AC Subgroup with meetings to begin on September 11, 2019. The purpose of this subgroup is to discuss and identify existing standards to fulfill safety requirements for the interconnection of mobile inverters. The ruling directed a final recommendations report from the subgroup to be filed on December 6, 2019.

A workshop on the subgroup report was held on December 17, 2019.

On December 11, 2019, the V2G Final Report was issued⁷.

On January 6, 2020, the following parties filed comments to the December 6, 2019, Final V2G AC subgroup report.

On January 13, 2020, various parties filed replies to the comments on the V2G AC subgroup report.

Decision 20-09-035

On August 20, 2020, a proposed decision was issued on Working Groups Two and Three. On September 9, 2020 comments were received. On September 22, 2020, replies were received.

On September 24, 2020, the Commission voted out D.20-09-035. D.20-09-035 based on the recommendations of Working Groups Two and Three and the Vehicle-to-Grid Alternating Current Interconnection Subgroup (V2G AC Subgroup).

⁶ Working Group Three Final [Report](#) filed by SDG&E

⁷ Final [Report](#) of the Vehicle to Grid Alternating Current Interconnection Subgroup.

D. 20-09-035 OP 55 requires:

“55. Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company shall update their respective Electric Rule 21 Tariff and, where necessary, Rules 2, 15, and 16 Tariffs, in compliance with the Ordering Paragraphs of this decision by submitting three advice letters pursuant to the table below. The table provides the list of the ordering Paragraphs (OP) in this decision requiring changes to Rule 21. The table also indicates whether the advice letter associated with each ordering paragraph is required to be Tier 1 or Tier 2 and provides the deadline for submitting the Advice Letter.”

Distilling down the referenced table at the end referred to in OP 55 to only include the items germane to this 30-day Advice Letter, the following Ordering Paragraphs will be addressed. However, the table appears to have incorrect references⁸ based on the context of discussion as noted in the red text.

<u>OP</u>	Tier 1 Submit 30 days after issuance of decision
7	X
13	X
14	X
47 46	X (for 27a.i)
50 49	X
51 50	X
53 52	X (SCE only) ⁹

⁸ Energy Division was provided notice of these discrepancies in mid-October. It seems the ordering paragraphs in the table after OP 22 should be decremented by 1 since the proposed decision was revised before the CPUC meeting, and the OP 22 was deleted in the final decision. The ALJ is working on getting a corrected decision issued, according to Energy Division.

⁹ OP 53 in the table, which when corrected refers to OP 52 in the final decision, only applies to SCE. OP 52 states: “Proposal A-B 4 is adopted for customers of Southern California Edison (SCE) only. SCE shall revise its Rule 21 tariff to require SCE customers applying for interconnection with a power control system to use only the systems on a pre-approved list.”

Therefore, based on the above identified Ordering Paragraphs, PG&E proposes the tariff revision addressed below.

Tariff Changes

1. Ordering Paragraph 7 – Skipping Screens K, L and M

Ordering Paragraph 7 requires:

“Option B of Proposal 8i is adopted whereby non-exporting projects of all sizes skip Interconnection Rule 21 Screens K, L, and M. Proposal 8i will be revisited during the ratesetting phase of Rulemaking 17-07-007. “

PG&E proposes to change Rule 21: Engineering Screens, Section G.1. subsections k, l, m (Original sheets **149 - 151**). Note: added Options 7 and 8 are discussed below in this Advice Letter's Section 5 on OP 49 and Section 6 on OP 50 below.

G. ENGINEERING REVIEW DETAILS

1. INITIAL REVIEW SCREENS

Screen I: Will power be exported across the PCC?

- If Yes, Continue to Screen J. This includes Options 5, ~~and 6~~ and 8 below.
- If No, ~~skip screens K, L, and M. then~~ **skip screens K, L, and M.** ~~then~~ To ensure that the Generating Facility does not export across the PCC, the Generating Facility must incorporate one of the ~~following four options~~ **Options 1, 2, 3, 4, or 7** shown below. Following that selection, Initial Review is complete.

Option 1 (“Reverse Power Protection”): To ensure power is never exported across the PCC, a reverse power Protective Function may be provided. The default setting for this Protective Function shall be 0.1% (export) of the service transformer's rating, with a maximum 2.0 second time delay. For multiple tariff interconnections refer to Section J.8.

Option 2 (“Minimum Power Protection”): To ensure at least a minimum amount of power is imported across the PCC at all times (and, therefore, that power is not exported), an under-power Protective Function may be provided. The default setting for this Protective Function shall be 5% (import) of Generating Facility's total Gross Rating, with a maximum 2.0 second time delay.

Option 3 (Certified Non Islanding Protection): To ensure the incidental export of power is limited to acceptable levels, this option requires that all

of the following conditions be met: a) the total Gross Capacity of the Generating Facility must be no more than 25% of the nominal ampere rating of Producer's service equipment; b) the total Gross Capacity of the Generating Facility must be no more than 50% of Producer's service transformer capacity rating (this capacity requirement does not apply to Customers taking primary service without an intervening transformer); and c) the Generating Facility must be Certified as Non-Islanding.

The ampere rating of the Customer's service equipment to be used in this evaluation will be that rating for which the customer's utility service was originally sized or for which an upgrade has been approved. It is not the intent of this provision to allow increased export simply by increasing the size of the customer's service panel, without separate approval for the resize.

Option 4 (Relative Generating Facility Rating): This option, when used, requires the Net Rating of the Generating Facility to be so small in comparison to its host facility's minimum load, that the use of additional Protective Functions is not required to ensure that power will not be exported to Distribution Provider's Distribution or Transmission System. This option requires the Generating Facility capacity to be no greater than 50% of Producer's verifiable minimum Host Load over the past 12 months.

Option 5: Inadvertent Export as described in Section M.

Option 6: Inadvertent Export utilizing UL-1741 or UL-1741 SA listed grid support (Non-Islanding) inverters as described in Section Mm.

Option 7: Non-Export utilizing Certified Power Control Systems as described in Section Mm1

Option 8: Inadvertent Export utilizing Certified Power Control Systems as described in Section Mm2

Significance:

1. If it can be assured that the Generating Facility will not export power, Distribution Provider's Distribution or Transmission System does not need to be studied for load-carrying capability or Generating Facility power flow effects on Distribution Provider voltage regulators.
2. This Screen permits the use of reverse-power or minimum-power relaying as a Non-Islanding Protective Function (Option 1, 2, and 3).
3. This Screen allows, under certain defined conditions, for Generating Facilities that incorporate Certified Non-Islanding protection to qualify for interconnection through the Fast Track process without implementing reverse power or minimum power Protective Functions (Option 3).

j. Screen J: Is the Gross Rating of the Generating Facility 11 kVA or less?

- If Yes (pass), skip Screens K, L and M; Initial Review is complete.

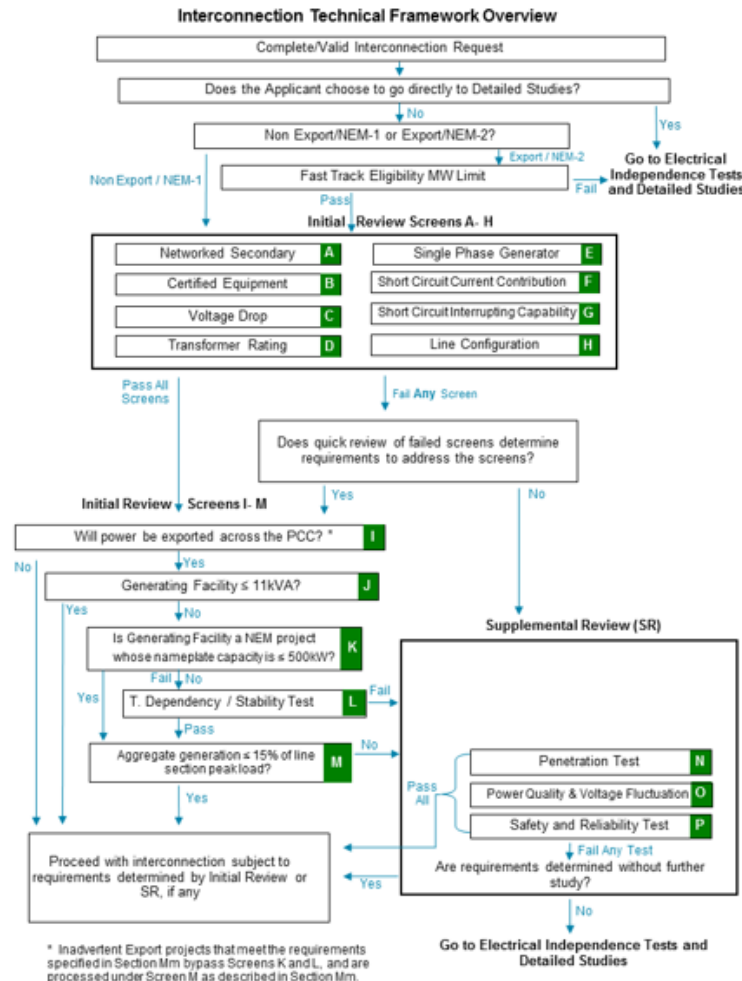
- If No (fail), continue to Screen K.ⁱ

Significance: The Generating Facility will have a minimal impact on fault current levels and any potential line overvoltages from loss of Distribution Provider's Distribution System neutral grounding.

- ⁱ Inadvertent Export systems that meet the requirements specified in Section Mm bypass Screens K and L, and are processed under Screen M as described in Section Mm.

A note is added to the end of the Engineering Screen Flowchart (Original sheet 140).

G. ENGINEERING REVIEW DETAILS



- * Non-Export AC/DC Converter installations that have a complete and valid Interconnection Request will be eligible to bypass screens B through D and F through M. If Generating Facility meets the conditions in Screen I below (Section G.1.i), skip Screens K, L and M.

2. Ordering Paragraph 13 – New Smart Inverter Capabilities

Ordering Paragraph 13 requires:

*“Proposal 8q is adopted. Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company shall update **Screen P** of the Rule 21 Interconnection Application Process to account for new smart inverter capabilities.”*

[Emphasis added]

D. 20-09-035 explains:

“Specifically, Rule 21 at Section G.2.c would be amended to add the following example of an item that may be considered under Screen P: ‘Will the proposed system cause any voltage impacts considering the settings of the Volt-Var function and the characteristics of the circuit segment?’”¹⁰

Note that D. 20-09-035 on page 48 notes:

*“Also a consensus proposal, we adopt Proposal 8q, but we revise it to update **Screen O, not Screen P**, to account for new smart inverter capabilities....”*

[Emphasis added]

It is PG&E’s understand that the Ordering Paragraph was intent to refer to Screen O. Also, in the D. 20-09-035 discussion behind OP 13, it discusses “voltage impacts” (see quote above) - Screen O refers to “Voltages Tests” whereas Screen P refers to “Safety and Reliability Tests,” which is consistent with the apparent intent.

PG&E revised Rule 21 Section G.2.b that describes Screen O. (Original Sheet **157**)

G. ENGINEERING REVIEW DETAILS

2. SUPPLEMENTAL REVIEW SCREENS (Cont’d.)

b. Screen O: Power Quality and Voltage Tests

In aggregate with existing Generating Facility capacity on the Line Section, distribution circuit, and/or substation.

¹⁰ D. 20-09-035 p33

- i) Can it be determined within the Supplemental Review that the voltage regulation on the line section can be maintained in compliance with Commission Rule 2 and/or Conservation Voltage Regulation voltage requirements under all system conditions?
- ii) Can it be determined within the Supplemental Review that the voltage fluctuation is within acceptable limits as defined by IEEE 1453 or utility practice similar to IEEE1453
- iii) Can it be determined within the Supplemental Review that the harmonic levels meet IEEE 519 limits at the Point of Common Coupling (PCC)?

iv) Are any voltage impacts created by the project mitigated considering the settings of the Volt-Var function and the characteristics of the circuit segment?

- If yes to all of the above (pass), continue to Screen P.
- If no to any of the above (fail), a quick review of the failure may determine the requirements to address the failure; otherwise Electrical Independence Tests and Detailed Studies are required. Continue to Screen P. (Note: If Electrical Independence tests and Detailed Studies are required, Applicants will continue to the Electrical Independence Tests and Detailed Studies after review of the remaining Supplemental Review Screens.)

Significance: Adverse voltages and undesirable interference may be experienced by other Customers on Distribution Provider's Distribution System caused by operation of the Generating Facility(ies).

3. Ordering Paragraph 14 - Supplemental Review Pre-Pay

Ordering Paragraph 14 requires:

"Proposal 8r is adopted. Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company shall revise the Rule 21 Interconnection Application Process to allow a customer to pre-pay for Supplemental Review when paying for Initial Review."

The text further explains:

"Proposal 8r, supported by all working group participants, would add an upfront option to allow a customer to pre-pay for Supplemental Review"

when paying for Initial Review and opt to proceed straight to Supplemental Review without the optional Initial Results meeting, thus combining the two processes.”¹¹

PG&E makes the following changes to Table E.1 (Original sheet **55**)

TABLE E.1

Summary of Interconnection Request Fees, Deposits and Exemptions

Generating Facility Type	Interconnection Request Fee	Supplemental Review Fee	Detailed Study Deposit	Additional Commissioning Test Verification	Cost Envelope Option Deposit****
Non-Net Energy Metering and > 1 MW NEM-2	\$800	\$2,500*	<p>For a Generating Facility with a Gross Nameplate Rating of 5 MW or less and applying to the Independent Study Process, \$10,000 for a System Impact Study or the DGS Phase I Interconnection Study in the case of the Distribution Group Study Process; and \$15,000 for an Interconnection Facilities Study or DGS Phase II Interconnection Study in the case of the Distribution Group Study Process.</p> <p>For a Generating Facility with a Gross Nameplate Rating above 5 MW, \$50,000 plus \$1,000 per MW of electrical output of the Generating Facility, or the increase in electrical output of the existing Generation Facility, as applicable, rounded up to the nearest whole MW, up to a maximum of \$250,000.</p>	\$150/Person Hour**	\$2,500
≤ 1 MW NEM2***	\$145	\$0	\$0	N/A	\$2,500
NEM-1	\$0	\$0	\$0	N/A	\$2,500
Solar ≤ 1MW or less that does not sell power to Distribution Provider (per D.01-07-027) nor participate in NEM-1 or NEM-2	First \$5,000 of study fees waived			\$150/Person Hour**	\$2,500

* Optional \$1,000 additional fault current study fee pursuant to Section F.2.c.ii. The Supplemental Review fee payment may optionally be pre-paid at the time of application submission as allowed by D.20-09-035 OP14. This fee is non-refundable.

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

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

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

Page Break

¹¹ D. 20-09-035 p33

PG&E makes the following changes to Section E.3 (Original Sheet **56**)

E. INTERCONNECTION REQUEST SUBMISSION PROCESS (Cont'd.)

3. INTERCONNECTION REQUEST FEE AND STUDY DEPOSIT

The Interconnection Request fee shall be waived for NEM-1 Interconnection Requests and for non-NEM solar-powered Generating Facilities that do not sell power per Commission Decision 01-07-027. NEM-1 Generating Facilities are also exempt from any costs associated with Interconnection Studies.

NEM-2 Applicants are required to pay any applicable Interconnection Request fees and costs associated with Interconnection Studies pursuant to Table E.1. As noted in the table, SASH participants are exempt from the NEM-2 Interconnection Request Fee and NEM-2 ≤ 1 MW Applicants are exempt from costs associated with Interconnection Studies.

Interconnection Study fees for non-NEM solar ≤ 1 MW Generating Facilities interconnecting to the Distribution System that do not sell power will be waived up to the amount of \$5,000.

The Interconnection Customer must pay the Interconnection Request Fee as outlined in Table E.1 with the Application. The Interconnection Customer may pay the Supplemental Review Fee outlined in Table E.1 concurrently with the Interconnection Request Fee, or separately upon completion of the Initial Review.

For Interconnection Customers that pay the Supplemental Review Fee concurrently with the Interconnection Request Fee, the Supplemental Review, if required, will be performed following the Initial Review. The Optional Initial Review Results Meeting will not be held, but the Optional Supplemental Review Results Meeting may be held following completion of the Supplemental Review. Only one study report will be provided.

PG&E makes the following changes to Section F.1.b (Sheet **71**)

F. REVIEW PROCESS FOR INTERCONNECTION REQUESTS (Cont'd.)

1. OVERVIEW OF THE INTERCONNECTION REVIEW PROCESS (Cont'd.)

b. Fast Track Review

Fast Track evaluation allows for rapid review of the Interconnection of those Generating Facilities that do not require Detailed Study. Regardless of study process, all Generating Facilities shall be designed to meet the applicable requirements of Section H which identifies Generating Facility Design and Operation Requirements.

Fast Track review consists of an Initial Review and, if required, a Supplemental Review. The need for Supplemental Review will be determined based on the results of Initial Review Screens A through M in Section G.1. Applicants that successfully pass Initial Review Screens A through M will be allowed to interconnect without Supplemental Review.

Non-Export AC/DC Converter installations that have a complete and valid Interconnection Request will be eligible to bypass screens B through D and F through M.

If Supplemental Review is required, **unless the Applicant has pre-paid the Supplemental Review fee**, Distribution Provider will notify Applicant and Applicant must pay a nonrefundable Supplemental Review fee, per Table E-1 or withdraw its Interconnection Request. Supplemental Review shall consist of the application of Screens N through P in Section G.2. Applicants that pass Screens N through P will be allowed to interconnect without additional review.

PG&E makes the following changes to Section F.2.a (Original Sheet **75**)

F. REVIEW PROCESS FOR INTERCONNECTION REQUESTS (Cont'd.)

2. FAST TRACK INTERCONNECTION REVIEW PROCESS

a. Initial Review (Cont'd.)

For Interconnection Requests that fail Initial Review, Distribution Provider shall provide the technical reason, data and analysis supporting the Initial Review results in writing and provide Applicant the option to either attend an Initial Review results meeting or proceed directly to Supplemental Review, **unless the Applicant has pre-paid the Supplemental Review fee**. NEM-1 and ≤ 1 MW NEM-2 Applicants covered under Section D.13.a, **and Applicants that have pre-paid the Supplemental Review fee**, shall proceed directly to Supplemental Review without an Initial Review results

meeting. Applicant shall notify Distribution Provider within ten (10) Business Days following such notification whether to (i) proceed to an Initial Review results meeting, (ii) proceed to Supplemental Review, or (iii) withdraw the Interconnection Request. Applicant may request one extension of no more than ten (10) Business Days to respond. If Applicant fails to notify Distribution Provider within ten (10) Business Days of such notification, or at the end of the extension, if one was requested, the Interconnection Request shall be deemed withdrawn.

No changes may be made to the planned Point of Interconnection or Generating Facility size included in the Interconnection Request during the Fast Track Process, unless such changes are agreed to by Distribution Provider. Where agreement has not been reached, Applicants choosing to change the Point of Interconnection or Generating Facility size must reapply and submit a new Interconnection Request.

Applicants that elect to proceed to Supplemental Review, **unless the Applicant has pre-paid the Supplemental Review fee**, shall provide a nonrefundable Supplemental Review fee set forth in Section E.2.c with their response. The Supplemental Review fee shall be waived for Interconnection Requests requesting Interconnection of NEM-1 or ≤ 1 MW NEM-2 Generating Facilities and for solar-powered non-NEM ≤ 1 MW Generating Facilities that do not sell power to Distribution Provider, per Commission D.01-07-027.

PG&E makes the following changes to Section F.2.b (Sheet **76**)

F. REVIEW PROCESS FOR INTERCONNECTION REQUESTS (Cont'd.)

2. FAST TRACK INTERCONNECTION REVIEW PROCESS (Cont'd.)

b. Optional Initial Review Results Meeting

Within five (5) Business Days of Applicant's request for an Initial Review results meeting, Distribution Provider shall contact Applicant and offer to convene a meeting at a mutually acceptable time to review the Initial Review screen analysis and related results to determine what modifications, if any, may permit the Generating Facility to be connected safely and reliably without Supplemental Review.

In the event the Applicant has pre-paid the Supplemental Review fee, the Distribution Provider will proceed, if necessary, with Supplemental Review upon completion of Initial Review and shall not be required to offer an Initial Review results meeting.

PG&E makes the following changes to Section 2.c.ii pre-pay (Original sheet **77-78**)

F. REVIEW PROCESS FOR INTERCONNECTION REQUESTS (Cont'd.)

2. FAST TRACK INTERCONNECTION REVIEW PROCESS (Cont'd.)

c. Supplemental Review

Supplemental Review

- i) If Applicant requests Supplemental Review and submits a nonrefundable Supplemental Review fee, if required, Distribution Provider shall complete Supplemental Review within twenty (20) Business Days, absent extraordinary circumstances, following authorization and receipt of the fee. Supplemental Review determines if (i) the Generating Facility qualifies for Fast Track Interconnection, or (ii) the Generating Facility requires Detailed Study. **If the Applicant paid the Supplemental Review fee concurrently with the Initial Review Fee, Distribution Provider will complete the Supplemental Review, if required, within twenty (20) Business Days from the completion of the Initial Review.**
- ii) If the Applicant chooses to move to Supplemental Review **or has pre-paid the non-refundable Supplemental Review fee**, they have the option to elect that the Distribution Provider provide a fault current study as part of the Supplemental Review. This fault current study would extend the Supplemental Review time by up to ten (10) Business Days, and would require an additional nonrefundable fee of \$1,000.

This fault current study will determine if the Generating Facility can detect phase and ground faults on the Distribution Provider's Distribution System or the distribution feeder breaker where the Applicant proposes to connect the Generating Facility. The result of the fault current study will determine if direct transfer trip (DTT) will be required from the Distribution System to the Generating Facility site. Note that for Applicants proposing to interconnect to the Distribution System where there is expected to be power backfeed to the Transmission System, DTT from the transmission may still be required and a Detailed Interconnection Study will be required to make this determination.

Should the Applicant request a Supplemental Review results meeting, as described in Section F.2d, the optional fault current study analysis and related results shall, at the Applicant's request, be reviewed to determine what modifications, if any, may permit the Generating Facility to be connected safely and reliably.

If the Applicant chooses to move to Supplemental Review, **or has pre-paid the non-refundable Supplemental Review fee**, they have the option to elect that the Distribution Provider provide a fault current study as part of the Supplemental Review. This fault current study would extend the Supplemental Review time by up to ten (10)

Business Days, and would require an additional nonrefundable fee of \$1,000. ~~(Cont'd.)~~

Also, PG&E proposes to include the question

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

_____ Yes _____ No

in the following PG&E Filed Forms:

- 79-1174 - *Rule 21 Exporting Generator Interconnection Request*
- 79-1174-02 - *Rule 21 Generator Interconnection Application* (includes NEM-2)
- 79-1145 - *Rule 21 Exporting Generator Interconnection Request*

4. Ordering Paragraph 46 – Changing Smart Inverters Default Settings

Ordering Paragraph 46 requires:

“46. Proposal 27a is adopted. Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company (Utilities) shall revise Rule 21 to:

- i) specifically allow smart inverter default settings to be changed;*
- ii) account for IEEE 1547 and IEEE 1547.1 updates being developed by the Smart Inverter Working Group; and*
- iii) establish a process for requesting and approving non default inverter settings.*

*Utilities shall include Rule 21 language changes necessary to implement Proposals **27a.i) and 27a.iii)** as directed in Ordering Paragraph 56 below.”*
[formatting and emphasis added]

From page 146 of D.20-09-035:

“5.8.2. Issue 27: Proposal 27a Proposal 27a would add language to Rule 21 to clarify that “with mutual agreement, changes to default settings are allowed.” Further, the proposal would also allow for a revision to Rule 21 to account for IEEE 1547-2018 and IEEE 1547.1-2020 updated requirements and a process for requesting and approving non default inverter settings.

Proposal 27a is a consensus proposal. The Working Group Three Report explains that this proposal would clarify that Utilities may approve the full range of alternative smart inverter settings that could be useful for facilitating interconnection or providing grid services.³¹³ This proposal recognizes that there is no current process to request and receive permission for non-default settings to provide these grid services and thus allows for a future process to occur.

³¹³ *Id.* [Working Group Three Report] at 113.”

From the Working Group Three report¹²:

“Proposal 27-a. Consensus Add within Rule 21 Section Hh language that states “with mutual agreement, changes to default settings are allowed.” And within six months after release of an updated UL 1741 standard that includes IEEE 1547.1-2019, take the following two actions:

- (1) update Rule 21 to account for IEEE 1547 and IEEE 1547.1 requirements; and*
- (2) determine the process for requesting and approving inverter settings that are **different from the default settings**, including modifications to generating facility inverter settings requested by either the distribution provider or by the Generating Facility owner or operator. ²³*

[formatting and emphasis added]

²³ *Reference is made to IEEE 1547.1-2019 in Proposal 27-a due to the expectation that the forthcoming update to IEEE 1547.1 will be released in 2019. Should the release be delayed into 2020, this proposal should be adjusted to state, “And within six months after release of an updated UL 1741 standard that includes IEEE 1547.1-2020...”*

It appears for this advice letter it can be assumed proposals “27a.i) and 27a.iii)” refer to the WG3 report 27-a (1) and 27-a (2), as both discuss changes to IEEE 1547 and IEEE 1547.1 and default settings.

¹² Working Group Three Report, p110

OP 55 requires the utilities to address OP 46¹³ section i) (see above) in this advice letter.

PG&E makes the following changes to the start of Section Hh (Original sheet **182**)

Hh. SMART INVERTER GENERATING FACILITY DESIGN AND OPERATING REQUIREMENTS

Section H shall continue to be used for interconnection of inverter based technologies until September 8, 2017. Following such date, Section Hh shall apply for interconnection of inverter based technologies. Until such date, Section Hh may be used in all or in part, for inverter based technologies by mutual agreement of the Distribution Provider and the Applicant.

The inverter requirements are intended to be consistent with UL 1741 - Supplement SA using Section Hh of Rule 21 as the source requirement document and ANSI/IEEE 1547-2003 and 1547a Standard for Interconnecting Distributed Resources with Electric Power Systems (IEEE 1547 including amendment 1547a), where possible. In the event of conflict between this Rule, and UL 1741 - Supplement SA, and/or IEEE 1547-2003 or IEEE 1547a, this Rule shall take precedence. Exceptions are taken to IEEE 1547 Clauses 4.1.4.2 Distribution Secondary Spot Networks and Clauses 4.1.8.1 or 5.1.3.1, which address Protection from Electromagnetic Interference. Rule 21 does not adopt the Generating Facility power limitation of 10 MW incorporated in IEEE 1547.

The Smart Inverter default settings and default activation states may be modified upon mutual agreement between Applicant and Distribution Provider.

5. Ordering Paragraph 49 – PCS for Non-Export and Limited Export

Ordering Paragraph 49 Language requires:

“Proposal A-B 1 is adopted.

*Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company (Utilities) shall modify their Rule 21 tariffs to allow the use of a power control system for **non-export and limited export interconnection applications.***

¹³ D. 20-09-035 OP 55 references the table at the end of the decision that includes the note “(for 27a.i).”

*Rule 21 shall be modified to establish the following five specifications that generating facilities must meet to be treated as **non-export or limited export**:*

- i) use a power control system that passes the requirements of the Underwriters Laboratory (UL) Power Control Systems Certification Requirements Decision (CRD) test protocol;*
- ii) use a power control system that has an open-loop response time of no more than two seconds, as provided in the control systems specification data sheets, and must be able to reduce export power to the approved export limit within two seconds of exceeding the approved export limit;*
- iii) Use only UL 1741 certified and/or UL 1741 SA listed grid-support non-islanding inverters;*
- iv) set the power control system to zero-export or some non-zero controlled maximum export value; and*
- v) maintain voltage fluctuations at the limits specified in Electric Rule 2.*

*Once meeting these five specifications, Utilities shall evaluate **non-export** interconnection applications as such:*

- a power control system can demonstrate non-export operations under Screen I; Screen D shall be omitted;*
- and Screens F and G shall be reviewed based on the generating facility's gross nameplate rating.*

*Once meeting these five specifications, Utilities shall evaluate **limited-export** interconnections applications as such:*

- limited export value can determine G will be based on the generating facility's nameplate rating. the impacts to the grid and in Screens D, I, J, K, M, N, O, and P;*
- and Screens F and G will be based on the generating facility's nameplate rating."*
[formatting and emphasis added]

PG&E modified Section G.1.i to include Option 7 and 8 (for OP 49 and 50). These Changes shown in this Advice Letter's Section 1 above, regarding OP 7.

Also, PG&E additions are made in Rule 21 to include new Section Mm1. (After original sheet **254**)

Mm1. NON-EXPORT UTILIZING CERTIFIED POWER CONTROL SYSTEMS

Generating Facilities that use certified power control systems to meet the non-export requirements shall meet the following six specifications.

- i. Uses a power control system that has passed the requirements of the most recent UL Power Control Systems CRD test protocol;
- ii. The power control system has an open-loop response time of no more than 2(two) seconds as provided in the power control system specification and certification data sheets;
- iii. The Generating Facility uses only UL 1741 certified and/or UL 1741 SA listed grid-support non-islanding inverters;
- iv. The power control system is set to zero-export;
- v. The power control system must reduce export to below zero export in two seconds or less;
- vi. The operation of the Generating Facility power control system shall maintain voltage fluctuations limits specified in Electric Rule 2.

Once satisfying the first six specifications above, the evaluation of a **non-export** Generating Facility requesting interconnection under this section shall also:

- i. Omit evaluation for Screen D.
- ii. Utilize the Generating Facility's gross nameplate rating for Screens F and G

Once satisfying the first six specifications above, the evaluation of a limited **export** Generating Facility requesting interconnection under this section shall also utilize the:

- i. Approved limited export value to determine the impacts to the grid and in Screens D, I, J, K, M, N, O, and P;
- ii. Generating Facility's gross nameplate rating for Screens F and G.

6. Ordering Paragraph 50 - PCS for Inadvertent Export

Ordering Paragraph 50 requires:

*“Proposal A-B 2 is adopted. Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company (Utilities) shall modify their Rule 21 tariffs to allow the use of **a power control system for non-export and limited-export applications**.*

*Rule 21 tariffs shall be modified to require that, to be treated as **inadvertent export**, a generating facility must meet the following six specifications:*

- i) use a power control system that passed testing in conformance with the Underwriters Laboratory (UL) Power Control Systems Certification Requirements Decision (CRD) test protocol;*
- ii) use a power control system with an open-loop response time of no more than ten seconds as provided in the control systems’ specification data-sheets;*
- iii) use only UL 1741 SA certified and/or UL 1741 SA listed grid-support non-islanding inverters;*
- iv) use a power control system set to zero-export or some non-zero controlled maximum export value;*
- v) maintain voltage fluctuations to the limits specified in Electric Rule 2; and*
- vi) have a nameplate capacity equal to or less than 1,000 kilovolt amperes.*

Upon meeting the six specifications, the Utilities shall

- review the facility as such: apply Screens A through M using the aggregate nameplate inverter rate;*
- during Supplemental Review the applicant shall identify, within 15 days, the frequency of inadvertent export, the real power level in watts of inadvertent export and the time duration of inadvertent export;*
- if distribution upgrades are identified, Screen P shall recognize power control parameters taking into account local feeder conditions;*

- *and only the largest facility in the line section shall be used for aggregate evaluation for subsequent interconnection requests.*

Utilities shall consider a customer's operating profile and the magnitude, duration, and frequency of anticipated export during the review of Screen P."

[formatting and emphasis added]

PG&E modified Section G.1.i to include Option 7 and 8 (changes shown in this Advice Letter's Section 1 for OP 7 – see above)

These changes are reflected in new Rule 21 Section Mm2 (Added after original sheet **254** and after new Section Mm1 is added as described in this advice letter section 5 on OP 49 above)

Mm2. INADVERTENT EXPORT UTILIZING CERTIFIED POWER CONTROL SYSTEMS

Generating Facilities that use certified power control systems to meet the inadvertent export requirements shall meet the following seven specifications:

- i. The Generating Facility aggregate maximum gross nameplate capacity shall not exceed 1000KVA;
- ii. Use power control systems that have passed the requirements of the most recent UL Power Control Systems CRD test protocol;
- iii. The power control system has an open-loop response time of no more than 10(ten) seconds as provided in the control system specification and certification data sheets;
- iv. The Generating Facility uses only UL 1741 certified and/or UL 1741 SA listed grid-support non-islanding inverters;
- v. The power control system is set to zero-export;
- vi. The power control system must reduce export to below zero export in 10(ten) seconds or less;
- vii. The operation of the Generating Facility power control system shall maintain voltage fluctuations limits specified in Electric Rule 2.

The Distribution Provider evaluating Generating Facilities requesting interconnection under this section shall:

- i. Apply Screens A through M using the aggregate inverter nameplate rating;
- ii. If Supplemental Review is required, within 15 BD days of being notified by the Distribution Provider, the applicant shall identify and provide to the Distribution Provider the frequency of inadvertent export, the real power level in watts of inadvertent export and the time duration of inadvertent export;
- iii. If distribution upgrades are identified, Screen P shall recognize power control parameters taking into account local feeder conditions, customer's operating profile and the magnitude, duration, and frequency of anticipated export during the review of Screen P;
- iv. Complete Supplemental Review within 15 days of receiving the required information specified under ii. above in this section;
- v. If the Interconnection Customer does not provide the operating profile information within the specified 15 Business Days, Distribution Provider will perform Supplemental Review based on information included in the Interconnection Request within 30 Business Days of the request for customer operating profile information;
- vi. Only the largest facility operating under this Rule 21 section in the line section shall be used for aggregate evaluation for subsequent interconnection requests.

7. Other Changes

The Rule 21 Table of contents is updated to reflect the other tariff changes shown in this advice letter.

For convenience of the reader, PG&E has included redline revisions in Attachment 2. Where Sample Forms have been revised, the entire Sample Form is included in Attachment A (clean version), but the redline version in Attachment B only includes the pages where the modification has occurred, and excludes pages of the form where only the advice letter number and date has been updated within the footer of the page to reflect this advice letter.

Protests

*****Due to the COVID-19 pandemic and the shelter at home orders, PG&E is currently unable to receive protests or comments to this advice letter via U.S. mail or fax. Please submit protests or comments to this advice letter to EDTariffUnit@cpuc.ca.gov and PGETariffs@pge.com*****

Any party wishing to protest this submittal may do so by letter sent via U.S. mail, facsimile or E-mail, no later than November 19, 2020, 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

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

Pursuant to General Order (GO) 96-B, Rule 5.1, this advice letter is submitted with a Tier 1 designation. PG&E requests that this Tier 1 advice submittal become effective upon date of submittal, which is October 30, 2020. PG&E is implementing the changes to its online generator interconnection application portal reflecting the above changes to be made effective upon the date of submission of this Advice Letter.

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 list for R.17-07-007 (Rule .21), R. 14-07-002 (NEM Successor) and R.19-09-009 (Microgrid). Address changes to the General Order 96-B service list should be directed to PG&E at email address PGETariffs@pge.com. For changes to any other service list, please contact the Commission's Process Office at (415) 703-2021 or at Process_Office@cpuc.ca.gov. Send all electronic approvals to PGETariffs@pge.com. Advice letter submittals can also be accessed electronically at: <http://www.pge.com/tariffs/>.

_____/S/

Erik Jacobson
Director, Regulatory Relations

cc: Service List R.17-07-007
Service List R.14-07-002
Service List R.19-09-009

Attachments:

Attachment A –Clean version of updated Tariffs
Attachment B – Redline Tariff Revisions



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: Kimberly Loo

Phone #: (415)973-4587

E-mail: PGETariffs@pge.com

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

EXPLANATION OF UTILITY TYPE

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

(Date Submitted / Received Stamp by CPUC)

Advice Letter (AL) #: 5988-E

Tier Designation: 1

Subject of AL: Advice Letter Modifying Electric Rule 21 Pursuant to Decision 20-09-035 for Working Group 2 and 3

Keywords (choose from CPUC listing): Compliance

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

If AL submitted in compliance with a Commission order, indicate relevant Decision/Resolution #: D.20-09-035

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: 10/30/20

No. of tariff sheets: 34

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 proposed¹: N/A

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

¹Discuss in AL if more space is needed.

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.
47682-E	Electric Sample Form 79-1145 Rule 21 Exporting Generator Interconnection Request Sheet 1	47128-E
47683-E	Electric Sample Form No. 79-1174 Rule 21 Generator Interconnection Application Sheet 1	47132-E
47684-E	Electric Sample Form No. 79-1174-02 Rule 21 Generator Interconnection Application Sheet 1	47133-E
47685-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 14	42311-E
47686-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 55	42352-E
47687-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 56	42353-E
47688-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 57	42354-E
47689-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 58	42355-E
47690-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 59	42356-E
47691-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 71	42368-E
47692-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 75	42372-E
47693-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 76	42373-E
47694-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 77	42374-E

Cal P.U.C. Sheet No.	Title of Sheet	Cancelling Cal P.U.C. Sheet No.
47695-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 78	42375-E
47696-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 140	42437-E
47697-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 149	42446-E
47698-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 151	42448-E
47699-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 157	42454-E
47700-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 182	42479-E
47701-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 254	
47702-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 255	
47703-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 256	
47704-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 257	42551-E
47705-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 258	42552-E
47706-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 259	42553-E
47707-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 260	42554-E
47708-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 261	42555-E

Cal P.U.C. Sheet No.	Title of Sheet	Cancelling Cal P.U.C. Sheet No.
47709-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 262	46741-E
47710-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 263	46796-E
47711-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 264	47191-E
47712-E	ELECTRIC RULE NO. 21 GENERATING FACILITY INTERCONNECTIONS Sheet 265	42559-E
47713-E	ELECTRIC TABLE OF CONTENTS Sheet 1	45476-E
47714-E	ELECTRIC TABLE OF CONTENTS Sheet 20	47206-E
47715-E	ELECTRIC TABLE OF CONTENTS Sheet 24	47208-E



Electric Sample Form 79-1145

Rule 21 Exporting Generator
Interconnection Request

Sheet 1

**Please Refer to Attached
Sample Form**

PG&E'S RULE 21 EXPORTING GENERATOR INTERCONNECTION REQUEST

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

☐ Detailed Study Process
☐ Fast Track Process

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

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

3. Applicant provides the following information:

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

Project Name:

Project Location:

Street Address:

City, State:

County:

Zip Code:

GPS Coordinates:

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

Maximum net megawatt electrical output (MW): _____ or

Net Megawatt increase (MW): _____

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

_____ Cogeneration	_____ MW
_____ Reciprocating Engine	_____ MW
_____ Biomass	_____ MW

PG&E'S RULE 21 EXPORTING GENERATOR INTERCONNECTION REQUEST

Disconnect Switch Manufacturer: _____
Disconnect Switch Model Number: _____
Disconnect Switch Rating (amps): _____

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

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

_____ Yes _____ No

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

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

- 7 Representative of Applicant to contact:

[To be completed by Applicant]

Name:

Title:

Company Name:

Street Address:

City, State:

Zip Code:

Phone Number:

Fax Number:

Email Address:

PG&E'S RULE 21
EXPORTING GENERATOR INTERCONNECTION REQUEST

8. If the Applicant also requires new Distribution Service, the Distribution Provider will coordinate these efforts with this application. The Applicant must also complete a PG&E Application for Service. Additional fees may be required if a service or line extension is required (in accordance with PG&E Electric Rules 15 and 16). Please contact PG&E's Building and Renovation Services Center (BRSC): 1-800-743-7782 to initiate the application for the new Distribution Service. Additional information will be required in conjunction with an application for new Distribution Service.

9. Applicant should be aware that if Applicant has not yet received Rule 21 Screen Q results from PG&E by March 15 following submittal of this IR, Applicant will need to submit, if Applicant voluntarily chooses to do so, an Interconnection Request under PG&E's FERC Wholesale Distribution Tariff (WDT) by the close of the CAISO cluster application window(refer to <http://www.caiso.com/docs/2002/06/11/2002061110300427214.html> for the exact date) in order to participate in the Transmission Cluster Study for the year. An application under WDT will not impact the results of this Rule 21 study.

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

11. This Interconnection Request is submitted by:

Legal name of Applicant: _____

By (signature): _____

Name (type or print): _____

Title: _____

Date: _____

PG&E'S RULE 21 EXPORTING GENERATOR INTERCONNECTION REQUEST

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

GENERATING FACILITY DATA

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

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

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

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

1. Provide electronic copies of the following:

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

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

2. Generating Facility General Information:

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

PG&E'S RULE 21

EXPORTING GENERATOR INTERCONNECTION REQUEST

3. Synchronous Generator –Information:

3A Generator Information:

(Please repeat the following for each generator)

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

3B Excitation System Information:

(Please repeat the following for each generator)

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

PG&E'S RULE 21

EXPORTING GENERATOR INTERCONNECTION REQUEST

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

3C Turbine-Governor Information:

(Please repeat the following for each generator)

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

A. Steam, gas or combined-cycle turbines:

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

B. Hydro turbines:

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

PG&E'S RULE 21

EXPORTING GENERATOR INTERCONNECTION REQUEST

- (3) Average cross-sectional area of the penstock: _____ ft²
- (4) Typical maximum head (vertical distance from the bottom of the penstock, at the gate, to the water level): _____ ft
- (5) Is the water supply run-of-the-river or reservoir: _____
- (6) Water flow rate at the typical maximum head: _____ ft³/sec
- (7) Average energy rate: _____ kW-hrs/acre-ft
- (8) Estimated yearly energy production: _____ kW-hrs

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

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

3D Short Circuit Duty Information:

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

- X_d – Direct Axis Synchronous Reactance: _____ p.u.
- X'_d – Direct Axis Transient Reactance: _____ p.u.
- X''_d – Direct Axis Subtransient Reactance: _____ p.u.
- X₂ – Negative Sequence Reactance: _____ p.u.
- X₀ – Zero Sequence Reactance: _____ p.u.

Generator Grounding (select one for each model):

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

4. Induction Generator Information:

PG&E'S RULE 21 EXPORTING GENERATOR INTERCONNECTION REQUEST

(Please repeat the following for each generator)

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

5. Wind Turbine Generator (WTG) Information:

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

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

PG&E'S RULE 21

EXPORTING GENERATOR INTERCONNECTION REQUEST

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

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

6. Inverter Based Generation Systems Information:

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

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

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

7. Step-Up Transformer Data:

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

PG&E'S RULE 21

EXPORTING GENERATOR INTERCONNECTION REQUEST

8. Plant-Level Reactive Power Compensation Data:

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

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

9. Load Flow and Dynamic Models:

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

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

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

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

PG&E'S RULE 21 EXPORTING GENERATOR INTERCONNECTION REQUEST

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

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

PG&E'S RULE 21 EXPORTING GENERATOR INTERCONNECTION REQUEST

TABLE 1

TRANSFORMER DATA (Provide for each level of transformation)

UNIT _____

NUMBER OF TRANSFORMERS _____ PHASE _____

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

CURRENT TRANSFORMER RATIOS

H _____ X _____ Y _____ N _____

PERCENT EXCITING CURRENT 100 % Voltage; _____ 110% Voltage _____

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



San Francisco, California

Cal. P.U.C. Sheet No. 47683-E
Cal. P.U.C. Sheet No. 47132-E

Sheet 1

<i>Advice</i>	5988-E
<i>Decision</i>	D.20-09-035

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

<i>Submitted</i>	<u>October 30, 2020</u>
<i>Effective</i>	<u>October 30, 2020</u>
<i>Resolution</i>	



INTERCONNECTION APPLICATION (Form 79-1174)

ATTACHMENT INFO

CUSTOMER AND PROJECT INFORMATION

Part I - Selecting the Study Process¹

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

www.energy.ca.gov 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.

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

____ Yes ____ No

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.

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



INTERCONNECTION APPLICATION (Form 79-1174)

ATTACHMENT INFO

CUSTOMER AND PROJECT INFORMATION

- ☐ 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.
- ☐ 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	
<input type="checkbox"/> Yes <input type="checkbox"/> No			
Does Installer have Contractors State License Board (CSLB) Number?		Contractors State License Board Number	



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

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 size² (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):

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 INFO

CUSTOMER AND PROJECT INFORMATION

- ☐ 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/>.



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.



INTERCONNECTION APPLICATION (Form 79-1174)

ATTACHMENT NX

NON-EXPORT

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



INTERCONNECTION APPLICATION (Form 79-1174)

ATTACHMENT NX

NON-EXPORT

- ☐ 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 Nameplate¹ 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
<p>Please indicate the number of each "type" and quantity of Generator being installed</p> <p>Be sure all Generators classified as one "type" are identical in all respects.</p> <p>If only one type of Generator is to be used, only one column needs to be completed.</p>				
<p>A - Generator/Inverter Manufacturer</p> <p>Enter the brand name of the Generator.</p>				
<p>B - Generator/Inverter Model</p> <p>Enter the model name or number assigned by the manufacturer of the Generator.</p>				
<p>C - Generator/Inverter Software Version</p> <p>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.</p>				
<p>D - Is the Generator/Inverter certified?</p> <p>Is the Generator Certified by a Nationally Recognized Testing Laboratory (NRTL) according to Rule 21?</p> <p>Answer "Yes" only if the Generator manufacturer can or has provided certification data.</p> <p>See PG&E's Rule 21, Section L for additional information regarding Generator certification.</p>	<p style="text-align: center;">____ Yes</p> <p style="text-align: center;">____ No</p>	<p style="text-align: center;">____ Yes</p> <p style="text-align: center;">____ No</p>	<p style="text-align: center;">____ Yes</p> <p style="text-align: center;">____ No</p>	<p style="text-align: center;">____ Yes</p> <p style="text-align: center;">____ No</p>

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.	<div>Manufacturer</div> <div>Model #.</div> <div>Quantity</div>	<div>Manufacturer</div> <div>Model #.</div> <div>Quantity</div>	<div>Manufacturer</div> <div>Model #.</div> <div>Quantity</div>	<div>Manufacturer</div> <div>Model #.</div> <div>Quantity</div>
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 _____



INTERCONNECTION APPLICATION (Form 79-1174) ATTACHMENT T1

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
<p>Please indicate the number of each "type" and quantity of Generator being installed</p> <p>Be sure all Generators classified as one "type" are identical in all respects.</p> <p>If only one type of Generator is to be used, only one column needs to be completed.</p>				
<p>A - Generator/Inverter Manufacturer</p> <p>Enter the brand name of the Generator.</p>				
<p>B - Generator/Inverter Model</p> <p>Enter the model name or number assigned by the manufacturer of the Generator.</p>				
<p>C - Generator/Inverter Software Version</p> <p>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.</p>				
<p>D - Is the Inverter certified?</p> <p>Is the Generator Certified by a Nationally Recognized Testing Laboratory (NRTL) according to Rule 21?</p> <p>Answer "Yes" only if the Generator manufacturer can or has provided certification data.</p> <p>See PG&E's Rule 21, Section L for additional information regarding Generator certification.</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>



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: _____ (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 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
<p>Please indicate the number of each “type” and quantity of Generator being installed.</p> <p>Be sure all Generators classified as one “type” are identical in all respects.</p> <p>If only one type of Generator is to be used, only one column needs to be completed.</p>				
<p>A - Generator/Inverter Manufacturer</p> <p>Enter the brand name of the Generator.</p>				
<p>B - Generator/Inverter Model</p> <p>Enter the model name or number assigned by the manufacturer of the Generator.</p>				
<p>C - Generator/Inverter Software Version</p> <p>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.</p>				
<p>D - Is the Generator/Inverter certified?</p> <p>Is the Generator Certified by a Nationally Recognized Testing Laboratory (NRTL) according to Rule 21?</p> <p>Answer “Yes” only if the Generator manufacturer can or has provided certification data.</p> <p>See PG&E’s Rule 21, Section L for additional information regarding Generator certification.</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>



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
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
<p>L - (MP) Neutral Grounding System Used (Choose One)</p> <p>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.</p> <p>If the grounding method used at this facility is not listed, please attach additional descriptive information.</p>	<p>___ Ungrounded</p> <p>___ Solidly Grounded</p> <p>___ Ground Resistor</p> <p>___ Ohms</p>	<p>___ Ungrounded</p> <p>___ Solidly Grounded</p> <p>___ Ground Resistor</p> <p>___ Ohms</p>	<p>___ Ungrounded</p> <p>___ Solidly Grounded</p> <p>___ Ground Resistor</p> <p>___ Ohms</p>	<p>___ Ungrounded</p> <p>___ Solidly Grounded</p> <p>___ Ground Resistor</p> <p>___ Ohms</p>
<p>M – <i>Synchronous Generators Only</i>: 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.</p>				
<p>Synchronous Reactance: _____ (Xd %)</p> <p>Transient Reactance: _____ (Xd %)</p> <p>Subtransient Reactance: _____ (Xd %)</p>	<p>_____ (Xd %)</p> <p>_____ (Xd %)</p> <p>_____ (Xd %)</p>	<p>_____ (Xd %)</p> <p>_____ (Xd %)</p> <p>_____ (Xd %)</p>	<p>_____ (Xd %)</p> <p>_____ (Xd %)</p> <p>_____ (Xd %)</p>	<p>_____ (Xd %)</p> <p>_____ (Xd %)</p> <p>_____ (Xd %)</p>
<p>N - <i>Induction Generators Only</i>:</p> <p>Locked Rotor Current: _____ (Amps)</p> <p>Stator Resistance: _____ (%)</p> <p>Stator Leakage Reactance: _____ (%)</p> <p>Rotor Resistance: _____ (%)</p> <p>Rotor Leakage Reactance: _____ (%)</p> <p>If the Generator is of an induction design, please provide the "locked rotor current" value supplied by the manufacturer.</p> <p>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.</p> <p>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.</p>	<p>_____ (Amps)</p> <p>_____ (%)</p> <p>_____ (%)</p> <p>_____ (%)</p> <p>_____ (%)</p>	<p>_____ (Amps)</p> <p>_____ (%)</p> <p>_____ (%)</p> <p>_____ (%)</p> <p>_____ (%)</p>	<p>_____ (Amps)</p> <p>_____ (%)</p> <p>_____ (%)</p> <p>_____ (%)</p> <p>_____ (%)</p>	<p>_____ (Amps)</p> <p>_____ (%)</p> <p>_____ (%)</p> <p>_____ (%)</p> <p>_____ (%)</p>



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



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
<p>Please indicate the number of each "type" and quantity of Generator being installed.</p> <p>Be sure all Generators classified as one "type" are identical in all respects.</p> <p>If only one type of Generator is to be used, only one column needs to be completed.</p>				
<p>A - Generator/Inverter Manufacturer</p> <p>Enter the brand name of the Generator.</p>				
<p>B - Generator/Inverter Model</p> <p>Enter the model name or number assigned by the manufacturer of the Generator.</p>				
<p>C - Generator/Inverter Software Version</p> <p>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.</p>				
<p>D - Is the Generator/Inverter certified?</p> <p>Is the Generator Certified by a Nationally Recognized Testing Laboratory (NRTL) according to Rule 21?</p> <p>Answer "Yes" only if the Generator manufacturer can or has provided certification data.</p> <p>See PG&E's Rule 21, Section L for additional information regarding Generator certification.</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>



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
Generator Information	Existing	Existing	New	New



INTERCONNECTION APPLICATION (Form 79-1174)

ATTACHMENT T4

FUEL CELL TECHNOLOGY

	Generator type 1	Generator type 2	Generator type 1	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.	<input type="checkbox"/> Ungrounded <input type="checkbox"/> Solidly Grounded <input type="checkbox"/> Ground Resistor <input type="checkbox"/> Ohms	<input type="checkbox"/> Ungrounded <input type="checkbox"/> Solidly Grounded <input type="checkbox"/> Ground Resistor <input type="checkbox"/> Ohms	<input type="checkbox"/> Ungrounded <input type="checkbox"/> Solidly Grounded <input type="checkbox"/> Ground Resistor <input type="checkbox"/> Ohms	<input type="checkbox"/> Ungrounded <input type="checkbox"/> Solidly Grounded <input type="checkbox"/> Ground Resistor <input type="checkbox"/> 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) <input type="checkbox"/> Yes <input type="checkbox"/> No	Manufacturer Model # Rating (amps) <input type="checkbox"/> Yes <input type="checkbox"/> No	Manufacturer Model # Rating (amps) <input type="checkbox"/> Yes <input type="checkbox"/> No	Manufacturer Model # Rating (amps) <input type="checkbox"/> Yes <input type="checkbox"/> No
P - Lineside Tap PG&E has special requirements for a lineside tap. Contact PG&E at: Rule21Gen@PGE.com for more information.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> 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
<p># Please indicate the number of each "type" and quantity of Generator being installed.</p> <p>Be sure all Generators classified as one "type" are identical in all respects.</p> <p>If only one type of Generator is to be used, only one column needs to be completed.</p>				
<p>A - Generator/Inverter Manufacturer</p> <p>Enter the brand name of the Generator.</p>				
<p>B - Generator/Inverter Model</p> <p>Enter the model name or number assigned by the manufacturer of the Generator.</p>				
<p>C - Generator/Inverter Software Version</p> <p>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.</p>				
<p>D - Is the Generator/Inverter certified?</p> <p>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.</p> <p>See PG&E's Rule 21, Section L for additional information regarding Generator certification.</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>



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: <hr/> Rated kW Discharge: <hr/> Max kW Discharge: <hr/> <hr/> <hr/> <hr/>	Max kWh Capacity: <hr/> Rated kW Discharge: <hr/> Max kW Discharge: <hr/> <hr/> <hr/> <hr/>	Max kWh Capacity: <hr/> Rated kW Discharge: <hr/> Max kW Discharge: <hr/> <hr/> <hr/> <hr/>	Max kWh Capacity: <hr/> Rated kW Discharge: <hr/> Max kW Discharge: <hr/> <hr/> <hr/> <hr/>
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-Coupled 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:

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



INTERCONNECTION APPLICATION (Form 79-1174)

ATTACHMENT P1

RES- BCT

- ☐ 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)	(Required field for All Accounts)	(Required Field for All Accounts)
	Generator Account	Benefiting Account	Designated Account Check <u>only one</u> account <u>Must not be a generator account</u>			PG&E Service Agreement Number	Otherwise Applicable Rate Schedule (OAS) under RES-BCT	Bill Credit Allocation Percentage (to the nearest whole percentage)
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
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



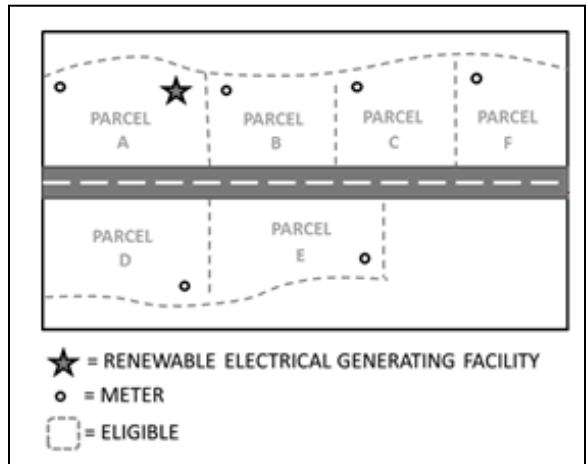
INTERCONNECTION APPLICATION (Form 79-1174) ATTACHMENT P3

NEM LOAD AGGREGATION

- 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 the 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.



INTERCONNECTION APPLICATION (Form 79-1174)

ATTACHMENT P3

NEM 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 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								
<i>(For Standard NEM Solar/Wind less than 30kW) - 110% of Total Annual kWh</i>								
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: _____



INTERCONNECTION APPLICATION (Form 79-1174)

ATTACHMENT P4

NEMV

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 Troublemaker 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 Benefitting 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 Benefitting 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*: https://www.pge.com/tariffs/assets/pdf/tariffbook/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 Benefitting 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



INTERCONNECTION APPLICATION (Form 79-1174)

ATTACHMENT L

NEMV

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.



**Pacific Gas and
Electric Company®**

U 39

San Francisco, California

Revised
Cancelling Revised

Cal. P.U.C. Sheet No. 47684-E
Cal. P.U.C. Sheet No. 47133-E

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

Sheet 1

**Please Refer to Attached
Sample Form**

Advice 5988-E
Decision D.20-09-035

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

<i>Submitted</i>	<u>October 30, 2020</u>
<i>Effective</i>	<u>October 30, 2020</u>
<i>Resolution</i>	<u> </u>

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 following¹ 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.ca.gov 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>.

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

the proposed Generating Facility. When applicable per Rule 21, unless exempted by CPUC Decision, a non-refundable Interconnection Request fee shall be invoiced and must be paid by Interconnection Customer. Pursuant to PG&E's Rule 21, there may be additional study and other costs; see PG&E's Rule 21, Sections E.2.c and E.3., for more information regarding interconnection of a generator to PG&E's Electric System.

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

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

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

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

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

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

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

4. **Variance Request** - A variance request will be required for anything outside Electric Rule 21³, PG&E's Greenbook⁴, 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:

https://www.pge.com/en_US/for-our-business-partners/interconnection-renewables/interconnections-renewables.page?ctx=large-business

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

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

³ Rule 21 can be found at: https://www.pge.com/tariffs/assets/pdf/tariffbook/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:
https://www.pge.com/en_US/large-business/services/alternatives-to-pge/distribution-handbook.page

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

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

Part IV Attachments / On-Line Form - Overview

Table 1 - Summary of the attachment to this form.

		Attachment	Project Type
EXPORT	1	INFO	Customer Project Information
	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

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

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

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

Category			Non-Export	NEMEXP	RES-BCT	NEM2A	NEMFC	NEM2V	NEMVMASH
	Main (79-1184)	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 Process¹.
- ☐ 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.

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

_____ Yes _____ No

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).

¹ See Electric Rule 21 for FAST TRACK requirements.



INTERCONNECTION APPLICATION (Form 79-1174-02)

ATTACHMENT INFO

CUSTOMER AND PROJECT INFORMATION

- 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.



INTERCONNECTION APPLICATION (Form 79-1174-02)

ATTACHMENT INFO

CUSTOMER AND PROJECT INFORMATION

- ☐ 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	
<input type="checkbox"/> Yes <input type="checkbox"/> 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.



INTERCONNECTION APPLICATION (Form 79-1174-02)

ATTACHMENT NX

NON-EXPORT

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 Nameplate¹ 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
<p>Please indicate the number of each "type" and quantity of Generator being installed</p> <p>Be sure all Generators classified as one "type" are identical in all respects.</p> <p>If only one type of Generator is to be used, only one column needs to be completed.</p>				
<p>A - Generator/Inverter Manufacturer</p> <p>Enter the brand name of the Generator.</p>				
<p>B - Generator/Inverter Model</p> <p>Enter the model name or number assigned by the manufacturer of the Generator.</p>				
<p>C - Generator/Inverter Software Version</p> <p>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.</p>				
<p>D - Is the Generator/Inverter certified?</p> <p>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.</p> <p>See PG&E's Rule 21, Section L for additional information regarding Generator certification.</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>

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.	<div>Manufacturer</div> <div>Model #.</div> <div>Quantity</div>	<div>Manufacturer</div> <div>Model #.</div> <div>Quantity</div>	<div>Manufacturer</div> <div>Model #.</div> <div>Quantity</div>	<div>Manufacturer</div> <div>Model #.</div> <div>Quantity</div>
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)

- | | | |
|---|--------------------------------------|-------------------------------------|
| <input type="checkbox"/> Residential | <input type="checkbox"/> Educational | <input type="checkbox"/> Industrial |
| <input type="checkbox"/> Commercial | <input type="checkbox"/> Military | <input type="checkbox"/> Non-Profit |
| <input type="checkbox"/> Other Government | | |



INTERCONNECTION APPLICATION (Form 79-1174-02) ATTACHMENT T1

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	Existing Generator type 1	Existing Generator type 2	New Generator type 1	New Generator type 2
<p>Please indicate the number of each "type" and quantity of Generator being installed</p> <p>Be sure all Generators classified as one "type" are identical in all respects.</p> <p>If only one type of Generator is to be used, only one column needs to be completed.</p>	<p>Type: _____</p> <p>Qty.: _____</p>	<p>Type: _____</p> <p>Qty.: _____</p>	<p>Type: _____</p> <p>Qty.: _____</p>	<p>Type: _____</p> <p>Qty.: _____</p>
<p>A - Generator/Inverter Manufacturer</p> <p>Enter the brand name of the Generator.</p>				
<p>B - Generator/Inverter Model</p> <p>Enter the model name or number assigned by the manufacturer of the Generator.</p>				
<p>C - Generator/Inverter Software Version</p> <p>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.</p>				
<p>D - Is the Inverter certified?</p> <p>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.</p> <p>See PG&E's Rule 21, Section L for additional information regarding Generator certification.</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>
<p>E - Generator Design</p> <p>Please indicate the design of each Generator.</p> <p>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.</p>	<p>____ Synch</p> <p>____ Induct.</p> <p>____ Inverter</p>	<p>____ Synch</p> <p>____ Induct.</p> <p>____ Inverter</p>	<p>____ Synch</p> <p>____ Induct.</p> <p>____ Inverter</p>	<p>____ Synch</p> <p>____ Induct.</p> <p>____ Inverter</p>



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.	<input type="checkbox"/> Ungrounded <input type="checkbox"/> Solidly Grounded <input type="checkbox"/> Ground Resistor <input type="checkbox"/> Ohms	<input type="checkbox"/> Ungrounded <input type="checkbox"/> Solidly Grounded <input type="checkbox"/> Ground Resistor <input type="checkbox"/> Ohms	<input type="checkbox"/> Ungrounded <input type="checkbox"/> Solidly Grounded <input type="checkbox"/> Ground Resistor <input type="checkbox"/> Ohms	<input type="checkbox"/> Ungrounded <input type="checkbox"/> Solidly Grounded <input type="checkbox"/> Ground Resistor <input type="checkbox"/> Ohms
M - Induction Generators Only: Locked Rotor Current: _____ (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.	_____ (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) _____ <input type="checkbox"/> Yes <input type="checkbox"/> No	Manufacturer _____ Model # _____ Rating (amps) _____ <input type="checkbox"/> Yes <input type="checkbox"/> No	Manufacturer _____ Model # _____ Rating (amps) _____ <input type="checkbox"/> Yes <input type="checkbox"/> No	Manufacturer _____ Model # _____ Rating (amps) _____ <input type="checkbox"/> Yes <input type="checkbox"/> No
P - Lineside Tap PG&E has special requirements for a lineside tap. Contact PG&E at: Rule21Gen@PGE.com for more information.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> 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.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> 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
<p>Please indicate the number of each "type" and quantity of Generator being installed.</p> <p>Be sure all Generators classified as one "type" are identical in all respects.</p> <p>If only one type of Generator is to be used, only one column needs to be completed.</p>				
<p>A - Generator/Inverter Manufacturer</p> <p>Enter the brand name of the Generator.</p>				
<p>B - Generator/Inverter Model</p> <p>Enter the model name or number assigned by the manufacturer of the Generator.</p>				
<p>C - Generator/Inverter Software Version</p> <p>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.</p>				
<p>D - Is the Generator/Inverter certified?</p> <p>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.</p> <p>See PG&E's Rule 21, Section L for additional information regarding Generator certification.</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>
<p>F - Gross Nameplate Rating (kVA)</p> <p>This is the capacity value normally supplied by the manufacturer and stamped on the Generator's nameplate.</p> <p>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.</p>				



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
<p>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.</p> <p>Synchronous Reactance: _____ (Xd %)</p> <p>Transient Reactance: _____ (Xd %)</p> <p>Subtransient Reactance: _____ (Xd %)</p>				
<p>N - Induction Generators Only:</p> <p>Locked Rotor Current: _____ (Amps)</p> <p>Stator Resistance: _____ (%)</p> <p>Stator Leakage Reactance: _____ (%)</p> <p>Rotor Resistance: _____ (%)</p> <p>Rotor Leakage Reactance: _____ (%)</p> <p>If the Generator is of an induction design, please provide the "locked rotor current" value supplied by the manufacturer.</p> <p>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.</p> <p>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.</p>				
<p>O - Short Circuit Current Produced by Generator</p>	_____ (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>P – For Generators that are Started as a “Motor” Only: This information is needed only for Generators that are started by “motoring” the generator.</p> <p>See PG&E’s Rule 21, Sections L.3.d. and L.7.b. for significance and additional information.</p> <p>If this question was answered in Part IV, question C of this Application, it need not be answered here.</p> <p>1. In-Rush Current:</p> <p>2. Host Customer’s Service Entrance Panel (Main Panel) Continuous Current Rating:</p>	<p>(Amps)</p> <p>(Amps)</p>	<p>(Amps)</p> <p>(Amps)</p>	<p>(Amps)</p> <p>(Amps)</p>	<p>(Amps)</p> <p>(Amps)</p>
<p>Q – Prime Mover Type</p> <p>Please indicate the type and fuel used as the prime mover or source of energy for the Generator.</p> <p>1 = Natural Gas 2 = Diesel Fueled 3 = Other Fuel</p>	<p>1 2 3</p>	<p>1 2 3</p>	<p>1 2 3</p>	<p>1 2 3</p>
<p>R - AC Disconnect</p> <p>For systems requiring an AC Disconnect only, please include the requested information about the AC Disconnect.</p> <p>See PG&E’s Rule 21, Section H.1.d</p> <p>Located within 10 feet of the PG&E meter?</p>	<p>Manufacturer</p> <p>Model #</p> <p>Rating (amps)</p> <p>Yes No</p>	<p>Manufacturer</p> <p>Model #</p> <p>Rating (amps)</p> <p>Yes No</p>	<p>Manufacturer</p> <p>Model #</p> <p>Rating (amps)</p> <p>Yes No</p>	<p>Manufacturer</p> <p>Model #</p> <p>Rating (amps)</p> <p>Yes No</p>
<p>S - Lineside Tap</p> <p>PG&E has special requirements for a lineside tap.</p> <p>Contact PG&E at: Rule21Gen@PGE.com for more information.</p>	<p>Yes No</p>	<p>Yes No</p>	<p>Yes No</p>	<p>Yes No</p>
<p>T – Warranty or Service Agreement</p> <p>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.</p>	<p>Yes No</p>	<p>Yes No</p>	<p>Yes No</p>	<p>Yes No</p>



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
<p>Please indicate the number of each "type" and quantity of Generator being installed.</p> <p>Be sure all Generators classified as one "type" are identical in all respects.</p> <p>If only one type of Generator is to be used, only one column needs to be completed.</p>				
<p>A - Generator/Inverter Manufacturer</p> <p>Enter the brand name of the Generator.</p>				
<p>B - Generator/Inverter Model</p> <p>Enter the model name or number assigned by the manufacturer of the Generator.</p>				
<p>C - Generator/Inverter Software Version</p> <p>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.</p>				
<p>D - Is the Generator/Inverter certified?</p> <p>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.</p> <p>See PG&E's Rule 21, Section L for additional information regarding Generator certification.</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>



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
Generator Information	Existing	Existing	New	New



INTERCONNECTION APPLICATION (Form 79-1174-02)

ATTACHMENT T4

FUEL CELL TECHNOLOGY

	Generator type 1	Generator type 2	Generator type 1	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.	<input type="checkbox"/> Ungrounded <input type="checkbox"/> Solidly Grounded <input type="checkbox"/> Ground Resistor <input type="checkbox"/> Ohms	<input type="checkbox"/> Ungrounded <input type="checkbox"/> Solidly Grounded <input type="checkbox"/> Ground Resistor <input type="checkbox"/> Ohms	<input type="checkbox"/> Ungrounded <input type="checkbox"/> Solidly Grounded <input type="checkbox"/> Ground Resistor <input type="checkbox"/> Ohms	<input type="checkbox"/> Ungrounded <input type="checkbox"/> Solidly Grounded <input type="checkbox"/> Ground Resistor <input type="checkbox"/> Ohms
M - Short Circuit Current Produced by Generator	<u> </u> (Amps)	<u> </u> (Amps)	<u> </u> (Amps)	<u> </u> (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?	<u> </u> Manufacturer <u> </u> Model # <u> </u> Rating (amps) <input type="checkbox"/> Yes <input type="checkbox"/> No	<u> </u> Manufacturer <u> </u> Model # <u> </u> Rating (amps) <input type="checkbox"/> Yes <input type="checkbox"/> No	<u> </u> Manufacturer <u> </u> Model # <u> </u> Rating (amps) <input type="checkbox"/> Yes <input type="checkbox"/> No	<u> </u> Manufacturer <u> </u> Model # <u> </u> Rating (amps) <input type="checkbox"/> Yes <input type="checkbox"/> No
P - Lineside Tap PG&E has special requirements for a lineside tap. Contact PG&E at: Rule21Gen@PGE.com for more information.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> 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.	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> 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
<p>Please indicate the number of each "type" and quantity of Generator being installed.</p> <p>Be sure all Generators classified as one "type" are identical in all respects.</p> <p>If only one type of Generator is to be used, only one column needs to be completed.</p>				
<p>A - Generator/Inverter Manufacturer</p> <p>Enter the brand name of the Generator.</p>				
<p>B - Generator/Inverter Model</p> <p>Enter the model name or number assigned by the manufacturer of the Generator.</p>				
<p>C - Generator/Inverter Software Version</p> <p>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.</p>				
<p>D - Is the Generator/Inverter certified?</p> <p>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.</p> <p>See PG&E's Rule 21, Section L for additional information regarding Generator certification.</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>	<p>____ Yes</p> <p>____ No</p>
<p>E - Generator Design</p> <p>Please indicate the design of each Generator.</p> <p>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.</p>	<p>____ Synch</p> <p>____ Induct.</p> <p>____ Inverter</p>	<p>____ Synch</p> <p>____ Induct.</p> <p>____ Inverter</p>	<p>____ Synch</p> <p>____ Induct.</p> <p>____ Inverter</p>	<p>____ Synch</p> <p>____ Induct.</p> <p>____ Inverter</p>



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:	Max kWh Capacity:	Max kWh Capacity:	Max kWh Capacity:
	Rated kW Discharge: _____	Rated kW Discharge: _____	Rated kW Discharge: _____	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-Coupled configurations, see sizing note below).	<div style="border-bottom: 1px solid black; text-align: center;">Manufacturer</div> <div style="border-bottom: 1px solid black; text-align: center;">Model #</div> <div style="border-bottom: 1px solid black; text-align: center;">Quantity of Units</div>	<div style="border-bottom: 1px solid black; text-align: center;">Manufacturer</div> <div style="border-bottom: 1px solid black; text-align: center;">Model #</div> <div style="border-bottom: 1px solid black; text-align: center;">Quantity of Units</div>	<div style="border-bottom: 1px solid black; text-align: center;">Manufacturer</div> <div style="border-bottom: 1px solid black; text-align: center;">Model #</div> <div style="border-bottom: 1px solid black; text-align: center;">Quantity of Units</div>	<div style="border-bottom: 1px solid black; text-align: center;">Manufacturer</div> <div style="border-bottom: 1px solid black; text-align: center;">Model #</div> <div style="border-bottom: 1px solid black; text-align: center;">Quantity of Units</div>
R - Lineside Tap PG&E has special requirements for a lineside tap. Contact PG&E at: Rule21Gen@PGE.Com for more information.	<div style="text-align: center;">____ Yes</div> <div style="text-align: center;">____ No</div>	<div style="text-align: center;">____ Yes</div> <div style="text-align: center;">____ No</div>	<div style="text-align: center;">____ Yes</div> <div style="text-align: center;">____ No</div>	<div style="text-align: center;">____ Yes</div> <div style="text-align: center;">____ No</div>
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.	<div style="text-align: center;">____ Yes</div> <div style="text-align: center;">____ No</div>	<div style="text-align: center;">____ Yes</div> <div style="text-align: center;">____ No</div>	<div style="text-align: center;">____ Yes</div> <div style="text-align: center;">____ No</div>	<div style="text-align: center;">____ Yes</div> <div style="text-align: center;">____ No</div>

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.



INTERCONNECTION APPLICATION (Form 79-1174-02)

ATTACHMENT P1

RES- BCT

-02

- ☐ 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)			Account Address (required field)	For Benefiting and Generating Account, List Name on Account,	(Required field for All Accounts)	(Required field for All Accounts)	(Required Field for All Accounts)
	Generator Account	Benefiting Account	Designated Account Check <u>only one</u> account <u>Must not be a generator account</u>			PG&E Service Agreement Number	Otherwise Applicable Rate Schedule (OAS) under RES-BCT	Bill Credit Allocation Percentage (to the nearest whole percentage)
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
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



INTERCONNECTION APPLICATION (Form 79-1174-02)

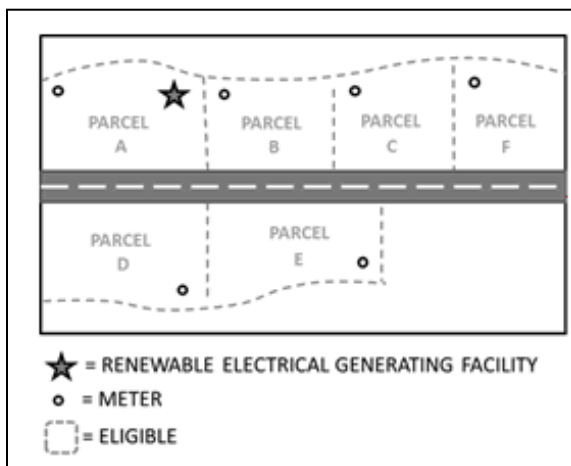
ATTACHMENT P3

NEM2 LOAD AGGREGATION

- 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 the 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: _____

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)



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

- ☐ 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 Troublemaker 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
(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 79-1174-02)

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 Benefitting 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 Benefitting 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*: https://www.pge.com/tariffs/assets/pdf/tariffbook/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 Benefitting 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:

<input type="checkbox"/> Locked Room/Gate	<input type="checkbox"/> Meter located inside of facility/residence
<input type="checkbox"/> Unrestrained animal at meter or AC disconnect switch location	<input type="checkbox"/> 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	(Required field for Common Area Accounts and Generator Account only)	(Required field for Common Area Accounts and Generator Account only)	(Required Field for Common Area Accounts and Residential Accounts)
	Common Area	Residential Unit	Generator Account (only 1)		For Common Area and Generator Accounts, Owner's Name (Name on PG&E Account)	PG&E Meter Number	Otherwise Applicable Rate Schedule (OAS) under NEMVMASH	Solar Energy Allocation Percentage
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
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:

<input type="checkbox"/> Locked Room/Gate	<input type="checkbox"/> Meter located inside of facility/residence
<input type="checkbox"/> Unrestrained animal at meter or AC disconnect switch location	<input type="checkbox"/> 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.

Please complete this application in its entirety



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 complete this application in its entirety



INTERCONNECTION APPLICATION (Form 79-1174-02)

ATTACHMENT P6

NEMVMASH DEVELOPMENT

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 corresponding generator number)	Generator Capacity (must total to no more than 1 MW)	Common Area	Residential Unit					
1	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>					
2	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>					
3	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>					
4	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>					
5	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>					
6	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>					
7	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>					
8	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>					
9	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>					
10	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>					
11	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>					
12	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>					
13	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>					
14	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>					
15	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>					
Total Solar Generation this page						Total Solar Energy Allocation Percentage for this page				



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 14

TABLE OF CONTENTS (Cont'd.)

M.	INADVERTENT EXPORT	248	
Mm.	INADVERTENT EXPORT FOR INTERCONNECTION REQUESTS UTILIZING UL-1741 CERTIFIED OR SA LISTED GRID SUPPORT (NONISLANDING) INVERTERS	250	
Mm1.	NON-EXPORT UTILIZING CERTIFIED POWER CONTROL SYSTEMS	254	(N)
Mm2.	INADVERTENT EXPORT UTILIZING CERTIFIED POWER CONTROL SYSTEMS	255	(N)
N.	EXPEDITED INTERCONNECTION PROCESS FOR NON- EXPORT ENERGY STORAGE GENERATING FACILITIES	257	(T)
1.	ELIGIBILITY REQUIREMENTS	257	
2.	GENERATING FACILITY ELIGIBILITY CRITERIA	258	
O.	AC/DC CONVERTER ELIGIBILITY CRITERIA	259	
Appendix A	Forms Associated with Rule 2 Generating Facility Interconnections	260	
Appendix B	Unit Cost Guide	265	(T)

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 55

E. INTERCONNECTION REQUEST SUBMISSION PROCESS (Cont'd.)

2. INTERCONNECTION REQUEST PROCESS (Cont'd.)

c. Applicant Completes an Interconnection Request (Cont'd.)

TABLE E.1

Summary of Interconnection Request Fees, Deposits and Exemptions

<u>Generating Facility Type</u>	<u>Interconnection Request Fee</u>	<u>Supplemental Review Fee</u>	<u>Detailed Study Deposit</u>	<u>Additional Commissioning Test Verification</u>	<u>Cost Envelope Option Deposit****</u>
Non-Net Energy Metering and > 1 MW NEM-2	\$800	\$2,500*	For a Generating Facility with a Gross Nameplate Rating of 5 MW or less and applying to the Independent Study Process, \$10,000 for a System Impact Study or the DGS Phase I Interconnection Study in the case of the Distribution Group Study Process; and \$15,000 for an Interconnection Facilities Study or DGS Phase II Interconnection Study in the case of the Distribution Group Study Process. For a Generating Facility with a Gross Nameplate Rating above 5 MW, \$50,000 plus \$1,000 per MW of electrical output of the Generating Facility, or the increase in electrical output of the existing Generation Facility, as applicable, rounded up to the nearest whole MW, up to a maximum of \$250,000.	\$150/Person Hour**	\$2,500
≤ 1 MW NEM-2***	\$145	\$0	\$0	N/A	\$2,500
NEM-1	\$0	\$0	\$0	N/A	\$2,500
Solar ≤ 1MW or less that does not sell power to Distribution Provider (per D.01-07-027) nor participate in NEM-1 or NEM-2	First \$5,000 of study fees waived			\$150/Person Hour**	\$2,500

* Optional \$1,000 additional fault current study fee pursuant to Section F.2.c.ii. The Supplemental Review fee can be pre-paid at the time of application submission as allowed by D.20-09-035 OP 14. This fee is non-refundable. (T)

** Plus additional costs for travel, lodging and meals. (T)

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

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

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 56

E. INTERCONNECTION REQUEST SUBMISSION PROCESS (Cont'd.)

2. INTERCONNECTION REQUEST PROCESS (Cont'd.)

d. Site Exclusivity

Documentation of Site Exclusivity must be submitted with the Interconnection Request. This requirement does not apply to Applicants with NEM-1 Generating Facilities, NEM-2 \leq 1 MW Generating Facilities, or Non-Export Generating Facilities.

3. INTERCONNECTION REQUEST FEE AND STUDY DEPOSIT

The Interconnection Request fee shall be waived for NEM-1 Interconnection Requests and for non-NEM solar-powered Generating Facilities that do not sell power per Commission Decision 01-07-027. NEM-1 Generating Facilities are also exempt from any costs associated with Interconnection Studies.

NEM-2 Applicants are required to pay any applicable Interconnection Request fees and costs associated with Interconnection Studies pursuant to Table E.1. As noted in the table, SASH participants are exempt from the NEM-2 Interconnection Request Fee and NEM-2 \leq 1 MW Applicants are exempt from costs associated with Interconnection Studies.

Interconnection Study fees for non-NEM solar \leq 1 MW Generating Facilities interconnecting to the Distribution System that do not sell power will be waived up to the amount of \$5,000.

The Interconnection Customer must pay the Interconnection Request Fee as outlined in Table E.1 with the Application. The Interconnection Customer may pay the Supplemental Review Fee outlined in Table E.1 concurrently with the Interconnection Request Fee, or separately upon completion of the Initial Review.

(N)

For Interconnection Customers that pay the Supplemental Review Fee concurrently with the Interconnection Request Fee, the Supplemental Review, if required, will be performed following the Initial Review. The Optional Initial Review Results Meeting will not be held, but the Optional Supplemental Review Results Meeting may be held following completion of the Supplemental Review. Only one study report will be provided.

(N)

(L)

(L)

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 57

E. INTERCONNECTION REQUEST SUBMISSION PROCESS (Cont'd.)

3. INTERCONNECTION REQUEST FEE AND STUDY DEPOSIT (Cont'd.)

a. Detailed Study Deposit

(T)

i) Detailed Study Deposit

(L)

To proceed with Detailed Study, Applicant must submit a Detailed Study deposit.

For a Generating Facility with a Gross Nameplate Rating of 5 MW or less, Applicant must submit a Detailed Study deposit of \$10,000 for the Interconnection System Impact Study or the DGS Phase I Interconnection Study, and where an Interconnection Facilities Study or DGS Phase II Interconnection Study in the case of the Distribution Group Study Process is required, an additional \$15,000 deposit must be submitted as required in Section F.3.b.vi or F.3.c.viii.

(L)

For a Generating Facility with a Gross Nameplate Rating above 5 MW, Applicant must submit a Detailed Study deposit equal to \$50,000 plus \$1,000 per MW of electrical output of the Generating Facility, or the increase in electrical output of the existing Generating Facility, as applicable, rounded up to the nearest whole MW, up to a maximum of \$250,000.

ii) Use of Detailed Study Deposit

The Detailed Study deposit shall be applied to pay for prudent costs incurred by Distribution Provider, the CAISO, or third parties at the direction of Distribution Provider or CAISO, as applicable, to perform and administer the Interconnection Studies. Deposit amounts that exceed the prudent costs incurred by Distribution Provider shall be refunded to Applicant within sixty (60) Calendar Days following either the execution of the Generator Interconnection Agreement or project withdrawal as described in more detail below.

The interconnection study costs for a Distribution Study Group shall be allocated equally among the Interconnection Requests within the Distribution Study Group, except as provided in (3) below.

The Detailed Study deposits shall be refundable as follows:

(L)

(L)

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 58

E. INTERCONNECTION REQUEST SUBMISSION PROCESS (Cont'd.)

3. INTERCONNECTION REQUEST FEE AND STUDY DEPOSIT (Cont'd.)

a. Detailed Study Deposit (Cont'd.)

ii) Use of Detailed Study Deposit (Cont'd.)

- (1) Should an Interconnection Request be withdrawn by Applicant or be deemed withdrawn by Distribution Provider by written notice under Section F.6 on or before thirty (30) Calendar Days following the scoping meeting, Distribution Provider shall refund to Applicant any portion of Applicant's Detailed Study deposit that exceeds the costs Distribution Provider, CAISO, and third parties have incurred on Applicant's behalf, including interest from the date of receipt by Distribution Provider to the date of payment to Applicant. The applicable interest shall be one-twelfth of the Federal Reserve three-month Commercial Paper Rate – Non-Financial, from the Federal Reserve Statistical Release H.15 (expressed as an annual rate).

(L)
|
(L)

- (2) Should an Interconnection Request that has been moved into the Detailed Study Process be withdrawn by Applicant or be deemed withdrawn by Distribution Provider by written notice under Section F.6 more than thirty (30) Calendar Days after the scoping meeting, but on or before thirty (30) Calendar

Days following the results meeting for the Interconnection System Impact Study, or DGS Phase I Interconnection Study, Distribution Provider shall refund to Applicant the difference between (i) Applicant's Detailed Study deposit and (ii) the greater of (a) the costs Distribution Provider, CAISO, and third parties have incurred on Applicant's behalf or (b) one-half of the original Detailed Study deposit up to a maximum of \$100,000, including interest from the date of receipt by Distribution Provider to the date of payment to Applicant. The applicable interest shall be one-twelfth of the Federal Reserve three-month Commercial Paper Rate – Non-Financial, from the Federal Reserve Statistical Release H.15 (expressed as an annual rate).

(L)
|
(L)

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 59

E. INTERCONNECTION REQUEST SUBMISSION PROCESS (Cont'd.)

3. INTERCONNECTION REQUEST FEE AND STUDY DEPOSIT (Cont'd.)

a. Detailed Study Deposit (Cont'd.)

ii) Use of Detailed Study Deposit (Cont'd.)

- (3) Should an Interconnection Request be withdrawn by Applicant or be deemed withdrawn by Distribution Provider by written notice under Section F.6 at any time more than thirty (30) Calendar Days after the results meeting for the Interconnection System Impact Study, or DGS Phase I Interconnection Study, or thirty (30) Calendar Days after issuance of the final Interconnection System Impact Study report or DGS Phase I Interconnection Study report if a results meeting is not held, the Detailed Study deposit shall be non-refundable. (L)
- (4) Upon execution of a Generator Interconnection Agreement by an Applicant and Distribution Provider, Distribution Provider shall refund to Applicant any portion of Applicant's detailed study deposit that exceeds the costs Distribution (L)
- (5) Provider, CAISO, and third parties have incurred on Applicant's behalf, including interest from the date of receipt by Distribution Provider to the date of payment to Applicant. The applicable interest shall be one-twelfth of the Federal Reserve three-month Commercial Paper Rate – Non-Financial, from the Federal Reserve Statistical Release H.15 (expressed as an annual rate). (T)

iii) Impact of Withdrawal

- (1) Notwithstanding the foregoing, an Applicant that withdraws or is deemed to have withdrawn its Interconnection Request shall be obligated to pay to Distribution Provider all costs in excess of the Detailed Study deposit that have been prudently incurred or irrevocably have been committed to be incurred with respect to that Interconnection Request prior to withdrawal. Distribution Provider will reimburse the CAISO or third parties, as applicable, for all work performed on behalf of the withdrawn Interconnection Request at Distribution Provider's direction. Applicant must pay all monies due before it is allowed to obtain any Interconnection Study data or results. Any proceeds of the Detailed Study deposit not otherwise reimbursed to Applicant or applied to costs incurred or irrevocably committed to be incurred for the interconnection studies shall be applied as directed by the Commission. Where an Applicant with remaining proceeds from a Detailed Study deposit cannot be located, such remaining proceeds shall escheat to the State pursuant to the Unclaimed Property Law commencing with the California Code of Civil Procedure § 1500.

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 71

F. REVIEW PROCESS FOR INTERCONNECTION REQUESTS (Cont'd.)

1. OVERVIEW OF THE INTERCONNECTION REVIEW PROCESS (Cont'd.)

b. Fast Track Review

Fast Track evaluation allows for rapid review of the Interconnection of those Generating Facilities that do not require Detailed Study. Regardless of study process, all Generating Facilities shall be designed to meet the applicable requirements of Section H which identifies Generating Facility Design and Operation Requirements.

Fast Track review consists of an Initial Review and, if required, a Supplemental Review. The need for Supplemental Review will be determined based on the results of Initial Review Screens A through M in Section G.1. Applicants that successfully pass Initial Review Screens A through M will be allowed to interconnect without Supplemental Review.

Non-Export AC/DC Converter installations that have a complete and valid Interconnection Request will be eligible to bypass screens B through D and F through M.

If Supplemental Review is required, unless the Applicant has pre-paid the Supplemental Review fee, Distribution Provider will notify Applicant and Applicant must pay a nonrefundable Supplemental Review fee, per Table E-1 or withdraw its Interconnection Request. Supplemental Review shall consist of the application of Screens N through P in Section G.2. Applicants that pass Screens N through P will be allowed to interconnect without additional review.

(T)
(T)

If Supplemental Review reveals that a proposed Generating Facility cannot be interconnected to Distribution Provider's Distribution System by means of Fast Track evaluation, Distribution Provider will notify Applicant that Detailed Study will be required.

Failure to pass Fast Track evaluation means only that further review and/or study are required before the Generating Facility can be interconnected with Distribution Provider's Distribution System. It does not mean that the Generating Facility cannot be interconnected.

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 75

F. REVIEW PROCESS FOR INTERCONNECTION REQUESTS (Cont'd.)

2. FAST TRACK INTERCONNECTION REVIEW PROCESS

a. Initial Review (Cont'd.)

For Interconnection Requests that fail Initial Review, Distribution Provider shall provide the technical reason, data and analysis supporting the Initial Review results in writing and provide Applicant the option to either attend an Initial Review results meeting or proceed directly to Supplemental Review, unless the Applicant has pre-paid the Supplemental Review fee. NEM-1 and ≤ 1 MW NEM-2 Applicants covered under Section D.13.a, and Applicants that have pre-paid the Supplemental Review fee, shall proceed directly to Supplemental Review without an Initial Review results meeting. Applicant shall notify Distribution Provider within ten (10) Business Days following such notification whether to (i) proceed to an Initial Review results meeting, (ii) proceed to Supplemental Review, or (iii) withdraw the Interconnection Request. Applicant may request one extension of no more than ten (10) Business Days to respond. If Applicant fails to notify Distribution Provider within ten (10) Business Days of such notification, or at the end of the extension, if one was requested, the Interconnection Request shall be deemed withdrawn.

(T)
|
(T)

No changes may be made to the planned Point of Interconnection or Generating Facility size included in the Interconnection Request during the Fast Track Process, unless such changes are agreed to by Distribution Provider. Where agreement has not been reached, Applicants choosing to change the Point of Interconnection or Generating Facility size must reapply and submit a new Interconnection Request.

Applicants that elect to proceed to Supplemental Review, unless the Applicant has pre-paid the Supplemental Review fee, shall provide a nonrefundable Supplemental Review fee set forth in Section E.2.c with their response. The Supplemental Review fee shall be waived for Interconnection Requests requesting Interconnection of NEM-1 or ≤ 1 MW NEM-2 Generating Facilities and for solar-powered non-NEM ≤ 1 MW Generating Facilities that do not sell power to Distribution Provider, per Commission D.01-07-027.

(T)
(T)

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 76

F. REVIEW PROCESS FOR INTERCONNECTION REQUESTS (Cont'd.)

2. FAST TRACK INTERCONNECTION REVIEW PROCESS (Cont'd.)

b. Optional Initial Review Results Meeting

Within five (5) Business Days of Applicant's request for an Initial Review results meeting, Distribution Provider shall contact Applicant and offer to convene a meeting at a mutually acceptable time to review the Initial Review screen analysis and related results to determine what modifications, if any, may permit the Generating Facility to be connected safely and reliably without Supplemental Review.

In the event the Applicant has pre-paid the Supplemental Review fee, the Distribution Provider will proceed, if necessary, with Supplemental Review upon completion of Initial Review and shall not be required to offer an Initial Review results meeting.

(N)
|
(N)

If modifications that obviate the need for Supplemental Review are identified, and Applicant and Distribution Provider agree to such modifications, Distribution Provider shall provide Applicant with a Generator Interconnection Agreement within fifteen (15) Business Days of the Initial Review results meeting if no Interconnection Facilities or Distribution Upgrades are required. If Interconnection Facilities or Distribution Upgrades are required, Distribution Provider shall provide Applicant with a non-binding cost estimate of any Interconnection Facilities or Distribution Upgrades within fifteen (15) Business Days of the Initial Review results meeting. For those Interconnection Requests where Applicant has selected the Cost Envelope Option, within ten (10) Business Days of providing Applicant the non-binding cost estimate for the required Interconnection Facilities and/or Distribution Upgrades, Applicant shall provide the Distribution Provider the Cost Envelope Option deposit, in accordance with Section F.7.a.i.3. If Applicant fails to provide the Cost Envelope Option deposit in accordance with Section F.7.a.i.3, Applicant's request for the Cost Envelope Option shall be deemed withdrawn and the Interconnection Request shall not be eligible for the Cost Envelope Option.

For all Interconnection Requests that pass Initial Review, refer to Section F.2.e for cost responsibility and time frames for completing the Generator Interconnection Agreement.

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 77

F. REVIEW PROCESS FOR INTERCONNECTION REQUESTS (Cont'd.)

2. FAST TRACK INTERCONNECTION REVIEW PROCESS (Cont'd.)

b. Optional Initial Review Results Meeting (Cont'd.)

If Applicant and Distribution Provider are unable to identify or agree to modifications that enable Applicant to pass Initial Review, Applicant shall notify Distribution Provider within ten (10) Business Days of the Initial Review results meeting whether it would like to proceed with Supplemental Review or withdraw its Interconnection Request. Applicant may request one extension of no more than ten (10) Business Days to respond. If Applicant fails to notify Distribution Provider within ten (10) Business Days of the Initial Review results meeting, or at the end of the extension, if one was requested, the Interconnection Request shall be deemed withdrawn.

c. Supplemental Review

- i) If Applicant requests Supplemental Review and submits a nonrefundable Supplemental Review fee, if required, Distribution Provider shall complete Supplemental Review within twenty (20) Business Days, absent extraordinary circumstances, following authorization and receipt of the fee. Supplemental Review determines if (i) the Generating Facility qualifies for Fast Track Interconnection, or (ii) the Generating Facility requires Detailed Study. If the Applicant paid the Supplemental Review fee concurrently with the Initial Review Fee, Distribution Provider will complete the Supplemental Review, if required, within twenty (20) Business Days from the completion of the Initial Review.
- ii) If the Applicant chooses to move to Supplemental Review or has pre-paid the non-refundable Supplemental Review fee, they have the option to elect that the Distribution Provider provide a fault current study as part of the Supplemental Review. This fault current study would extend the Supplemental Review time by up to ten (10) Business Days, and would require an additional nonrefundable fee of \$1,000.

This fault current study will determine if the Generating Facility can detect phase and ground faults on the Distribution Provider's Distribution System or the distribution feeder breaker where the Applicant proposes to connect the Generating Facility. The result of the fault current study will determine if direct transfer trip (DTT) will be required from the Distribution System to the Generating Facility site. Note that for Applicants proposing to interconnect to the Distribution System where there is expected to be power backfeed to the Transmission System, DTT from the transmission may still be required and a Detailed Interconnection Study will be required to make this determination.

(T)
—
(T)

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 78

F. REVIEW PROCESS FOR INTERCONNECTION REQUESTS (Cont'd.)

2. FAST TRACK INTERCONNECTION REVIEW PROCESS (Cont'd.)

c. Supplemental Review (Cont'd.)

- ii) Should the Applicant request a Supplemental Review results meeting, as described in Section F.2d, the optional fault current study analysis and related results shall, at the Applicant's request, be reviewed to determine what modifications, if any, may permit the Generating Facility to be connected safely and reliably.

If the Applicant chooses to move to Supplemental Review, or has pre-paid the non-refundable Supplemental Review fee, or has pre-paid the non-refundable Supplemental Review fee they have the option to elect that the Distribution Provider provide a fault current study as part of the Supplemental Review. This fault current study would extend the Supplemental Review time by up to ten (10) Business Days, and would require an additional nonrefundable fee of \$1,000.

(T)

(T)

(T)

The Applicant must provide the following data to Distribution Provider when requesting Supplemental Review in order to select this option:

Generator:

MVA Rating
kV Rating
Base MVA
Base kV
Xd" (direct axis subtransient reactance)
Xd' (direct axis transient reactance)
Xd (Synchronous reactance)
X2 (Negative Sequence reactance)
X0 (Zero Sequence reactance)

XFMR Data:

Winding configuration (delta-Wye grd or Wye grd-Delta)
MVA Rating
KV Rating
Base MVA
Base KV
Z1 HV-LV
Z0 HV-LV

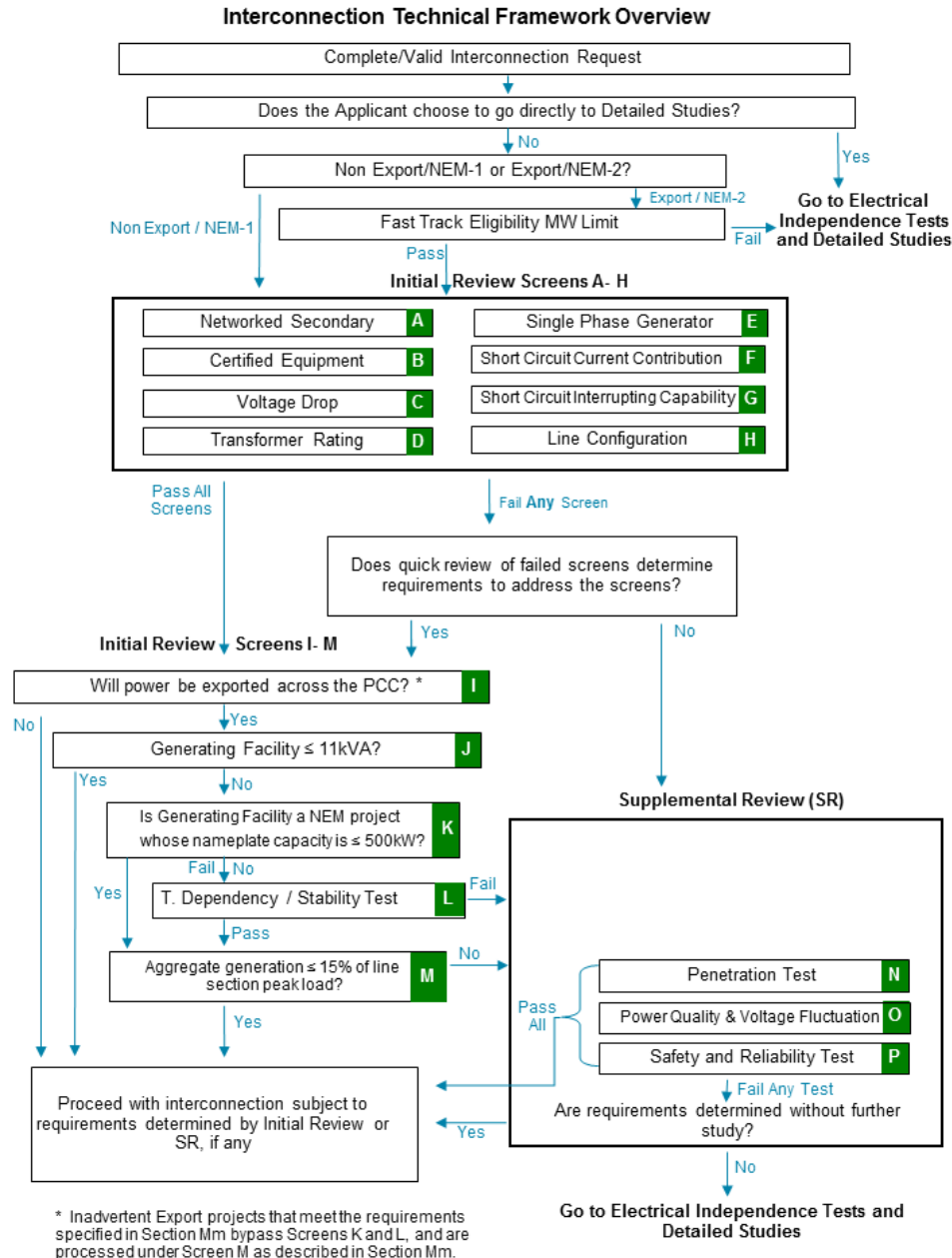
(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 140

G. ENGINEERING REVIEW DETAILS



- * Non-Export AC/DC Converter installations that have a complete and valid Interconnection Request will be eligible to bypass screens B through D and F through M. If Generating Facility meets the conditions in Screen I below (Section G.1.i), skip Screens K, L and M. (T)
(T)

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 149

G. ENGINEERING REVIEW DETAILS (Cont'd.)

1. INITIAL REVIEW SCREENS (Cont'd.)

- h. Screen H: Is the line configuration compatible with the Interconnection type? (Cont'd.)

Significance: If the primary distribution line serving the Generating Facility is of a “three-wire” configuration, or if the Generating Facility’s distribution transformer is single-phase and connected in a line-to-neutral configuration, then there is no concern about overvoltages to Distribution Provider’s, or other Customer’s equipment caused by loss of system neutral grounding during the operating time of the Non-Islanding Protective Function.

- i. Screen I: Will power be exported across the PCC?

- If Yes, Continue to Screen J. This includes Options 5, 6 and 8 below. (T)
(T)
- If No, skip screens K, L, and M. To ensure that the Generating Facility does not export across the PCC, the Generating Facility must incorporate one of the Options 1, 2, 3, 4 or 7 shown below. (T)
(T) Following that selection, Initial Review is complete.

Option 1 (“Reverse Power Protection”): To ensure power is never exported across the PCC, a reverse power Protective Function may be provided. The default setting for this Protective Function shall be 0.1% (export) of the service transformer’s rating, with a maximum 2.0 second time delay. For multiple tariff interconnections refer to Section J.8.

(Continued)

Advice	5988-E	Issued by	Submitted	October 30, 2020
Decision	D.20-09-035	Robert S. Kenney	Effective	October 30, 2020
		Vice President, Regulatory Affairs	Resolution	



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 151

G. ENGINEERING REVIEW DETAILS (Cont'd.)

1. INITIAL REVIEW SCREENS (Cont'd.)

i. Screen I: Will power be exported across the PCC? (Cont'd.)

Option 4 (Relative Generating Facility Rating): This option, when used, requires the Net Rating of the Generating Facility to be so small in comparison to its host facility's minimum load, that the use of additional Protective Functions is not required to ensure that power will not be exported to Distribution Provider's Distribution or Transmission System. This option requires the Generating Facility capacity to be no greater than 50% of Producer's verifiable minimum Host Load over the past 12 months.

Option 5: Inadvertent Export as described in Section M.

Option 6: Inadvertent Export utilizing UL-1741 or UL-1741 SA listed grid support (Non-Islanding) inverters as described in Section Mm.

Significance:

1. If it can be assured that the Generating Facility will not export power, Distribution Provider's Distribution or Transmission System does not need to be studied for load-carrying capability or Generating Facility power flow effects on Distribution Provider voltage regulators.
2. This Screen permits the use of reverse-power or minimum-power relaying as a Non-Islanding Protective Function (Option 1, 2, and 3).
3. This Screen allows, under certain defined conditions, for Generating Facilities that incorporate Certified Non-Islanding protection to qualify for interconnection through the Fast Track process without implementing reverse power or minimum power Protective Functions (Option 3).

Option 7: Non-Export utilizing Certified Power Control Systems as described in Section Mm1.

(N)

Option 8: Inadvertent Export utilizing Certified Power Control Systems as described in Section Mm2.

(N)

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 157

G. ENGINEERING REVIEW DETAILS (Cont'd.)

2. SUPPLEMENTAL REVIEW SCREENS (Cont'd.)

b. Screen O: Power Quality and Voltage Tests (Cont'd.)

In aggregate with existing Generating Facility capacity on the Line Section, distribution circuit, and/or substation. (Cont'd.)

iii) Can it be determined within the Supplemental Review that the harmonic levels meet IEEE 519 limits at the Point of Common Coupling (PCC)?

iv) Are any voltage impacts created by the project mitigated considering the settings of the Volt-Var function and the characteristics of the circuit segment?

(N)
|
(N)

- If yes to all of the above (pass), continue to Screen P.
- If no to any of the above (fail), a quick review of the failure may determine the requirements to address the failure; otherwise Electrical Independence Tests and Detailed Studies are required. Continue to Screen P. (Note: If Electrical Independence tests and Detailed Studies are required, Applicants will continue to the Electrical Independence Tests and Detailed Studies after review of the remaining Supplemental Review Screens.)

Significance: Adverse voltages and undesirable interference may be experienced by other Customers on Distribution Provider's Distribution System caused by operation of the Generating Facility(ies).

c. Screen P: Safety and Reliability Tests

Does the location of the proposed Generating Facility or the aggregate generation capacity on the Line Section create impacts to safety or reliability that cannot be adequately addressed without Detailed Study?

- If yes (fail), review of the failure may determine the requirements to address the failure; otherwise Electrical Independence Tests and Detailed Studies are required. Continue to Section G.3.
- If no (pass), Supplemental Review is complete.

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 182

**Hh. SMART INVERTER GENERATING FACILITY DESIGN AND OPERATING
REQUIREMENTS (Cont'd.)**

The inverter requirements are intended to be consistent with UL 1741 - Supplement SA using Section Hh of Rule 21 as the source requirement document and ANSI/IEEE 1547-2003 and 1547a Standard for Interconnecting Distributed Resources with Electric Power Systems (IEEE 1547 including amendment 1547a), where possible. In the event of conflict between this Rule, and UL 1741 - Supplement SA, and/or IEEE 1547-2003 or IEEE 1547a, this Rule shall take precedence. Exceptions are taken to IEEE 1547 Clauses 4.1.4.2 Distribution Secondary Spot Networks and Clauses 4.1.8.1 or 5.1.3.1, which address Protection from Electromagnetic Interference. Rule 21 does not adopt the Generating Facility power limitation of 10 MW incorporated in IEEE 1547.

The Smart Inverter default settings and default activation states may be modified upon mutual agreement between Applicant and Distribution Provider. (N)
(N)

**1. GENERAL INTERCONNECTION AND PROTECTIVE FUNCTION
REQUIREMENTS**

The Protective Functions and requirements of this Rule are designed to protect Distribution Provider's Distribution and Transmission System and not the Generating Facility. A Producer shall be solely responsible for providing adequate protection for its Generating Facility and Interconnection Facilities. Producer's Protective Functions shall not impact the operation of other Protective Functions on Distribution Provider's Distribution and Transmission System in a manner that would affect Distribution Provider's capability of providing reliable service to its customers.

a. Protective Functions Required

Smart Inverters operating in parallel with Distribution Provider's Distribution or Transmission System shall be equipped with the following Protective Functions to sense abnormal conditions on Distribution Provider's Distribution or Transmission System and cause the Smart Inverter to be automatically disconnected from Distribution Provider's Distribution or Transmission System or to prevent the Smart Inverter from being connected to Distribution Provider's Distribution or Transmission System inappropriately:

- (i) Over and under voltage trip functions and over and under frequency trip functions;

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 254

(N)
(N)

Mm1. NON-EXPORT UTILIZING CERTIFIED POWER CONTROL SYSTEMS

(N)

Generating Facilities that use certified power control systems to meet the **non-export** requirements shall meet the following six specifications.

- i. Uses a power control system that has passed the requirements of the most recent UL Power Control Systems CRD test protocol;
- ii. The power control system has an open-loop response time of no more than 2(two) seconds as provided in the power control system specification and certification data sheets;
- iii. The Generating Facility uses only UL 1741 certified and/or UL 1741 SA listed grid-support non-islanding inverters;
- iv. The power control system is set to zero-export;
- v. The power control system must reduce export to below zero export in two seconds or less;
- vi. The operation of the Generating Facility power control system shall maintain voltage fluctuations limits specified in Electric Rule 2.

Once satisfying the first six specifications above, the evaluation of a **non-export** Generating Facility requesting interconnection under this section shall also:

- i. Omit evaluation for Screen D.
- ii. Utilize the Generating Facility's gross nameplate rating for Screens F and G

Once satisfying the first six specifications above, the evaluation of a **limited export** Generating Facility requesting interconnection under this section shall also utilize the:

- i. Approved limited export value to determine the impacts to the grid and in Screens D, I, J, K, M, N, O, and P;
- ii. Generating Facility's gross nameplate rating for Screens F and G.

(N)

(Continued)



U 39

**Pacific Gas and
Electric Company®**

San Francisco, California

Revised Cal. P.U.C. Sheet No. 47702-E

ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONSSheet 255 (N)
(N)**Mm2. INADVERTENT EXPORT UTILIZING CERTIFIED POWER CONTROL SYSTEMS (N)**

Generating Facilities that use certified power control systems to meet the inadvertent export requirements shall meet the following seven specifications:

- i. The Generating Facility aggregate maximum gross nameplate capacity shall not exceed 1000KVA;
- ii. Use power control systems that have passed the requirements of the most recent UL Power Control Systems CRD test protocol;
- iii. The power control system has an open-loop response time of no more than 10(ten) seconds as provided in the control system specification and certification data sheets;
- iv. The Generating Facility uses only UL 1741 certified and/or UL 1741 SA listed grid-support non-islanding inverters;
- v. The power control system is set to zero-export;
- vi. The power control system must reduce export to below zero export in 10(ten) second or less;
- vii. The operation of the Generating Facility power control system shall maintain voltage fluctuations limits specified in Electric Rule 2.

The Distribution Provider evaluating Generating Facilities requesting interconnection under this section shall:

- i. Apply Screens A through M using the aggregate inverter nameplate rating;
- ii. If Supplemental Review is required, within 15 BD days of being notified by the Distribution Provider, the applicant shall identify and provide to the Distribution Provider the frequency of inadvertent export, the real power level in watts of inadvertent export and the time duration of inadvertent export;
- iii. If distribution upgrades are identified, Screen P shall recognize power control parameters taking into account local feeder conditions, customer's operating profile and the magnitude, duration, and frequency of anticipated export during the review of Screen P;

(N)

(Continued)

Advice 5988-E
Decision D.20-09-035Issued by
Robert S. Kenney
Vice President, Regulatory AffairsSubmitted October 30, 2020
Effective October 30, 2020
Resolution



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 256

(N)
(N)

**Mm2. INADVERTENT EXPORT UTILIZING CERTIFIED POWER CONTROL
SYSTEMS (Cont'd)**

(N)

The Distribution Provider evaluating Generating Facilities requesting
interconnection under this section shall (Cont'd):

- iv. Complete Supplemental Review within 15 days of receiving the required
information specified under ii. above in this section;
- v. If the Interconnection Customer does not provide the operating profile
information within the specified 15 Business Days, Distribution Provider will
perform Supplemental Review based on information included in the
Interconnection Request within 30 Business Days of the request for customer
operating profile information;
- vi. Only the largest facility operating under this Rule 21 section in the line section
shall be used for aggregate evaluation for subsequent interconnection
requests.

(N)

(Continued)

Advice 5988-E
Decision D.20-09-035

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

Submitted October 30, 2020
Effective October 30, 2020
Resolution _____



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 257

N. EXPEDITED INTERCONNECTION PROCESS FOR NON-EXPORT ENERGY STORAGE GENERATING FACILITIES

(L)

Applicants with Interconnection Requests for Non-Export Energy Storage Generating Facilities who meet the requirements outlined below are eligible for expedited interconnection in accordance with the Fast Track Process technical review requirements of Section F.2.¹ Applicants with Non-Export AC/DC Converters that meet the requirements outlined in O. below are also eligible.

1. ELIGIBILITY REQUIREMENTS

Applicants seeking to interconnect a Generating Facility under the provisions of this Section N must meet the following eligibility requirements.

- a. Applicant must electronically submit a completed Interconnection Request, including completing all application fields and submitting all supporting documentation necessary to facilitate the expedited review as required by Distribution Provider. Such documentation may include, but is not limited to, single line diagrams with specific details, manufacturer data sheets for proposed equipment, description of control systems, validation of the right to do business in the state, etc. Distribution Provider shall clearly communicate these requirements as part of the application process. Applicant shall select this process option in the Interconnection Request.
- b. Applicant's Generating Facility must meet the requirements outlined in Section N.2 below.
- c. Applicant's Interconnection Request must be eligible for and select the Fast Track Process.
- d. Applicant's Interconnection Request must pass Fast Track Initial Review and not require any Interconnection Facilities, Distribution Upgrades or Network Upgrades to remain eligible under this Section. As such, Interconnection Requests that select the Cost Envelope Option are not eligible.
- e. Applicants selecting this section shall use the corresponding interconnection agreement type provided for eligible Generating Facilities.

¹ In accordance with Advice 4941-E-A, the provisions provided for in Section N are being implemented under a pilot approach with a July 1, 2017 through June 30, 2018 reporting period. As such, the provisions may be continued, modified and/or withdrawn as determined by the Commission

(L)

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 258

- N. EXPEDITED INTERCONNECTION PROCESS FOR NON-EXPORT ENERGY STORAGE GENERATING FACILITIES (Cont'd.) (L)
2. GENERATING FACILITY ELIGIBILITY CRITERIA
- An Applicant's Generating Facility must meet and adhere to the following criteria.
- a. The Generating Facility must be comprised solely of the following specific categories of generation technology: Non-Exporting battery storage.
 - b. The Generating Facility must have an aggregate maximum inverter nameplate rating of no greater than 500 kW. There is no limitation on an energy storage device's kWh capacity rating.
 - c. The Generating Facility must be located behind an existing single retail meter and Point of Common Coupling with a single, clearly marked and accessible disconnect. No other Generators, other than isolated back-up Generators, may be at the same Point of Interconnection or Point of Common Coupling.
 - d. The Generating Facility must utilize Option 3 or Option 4 to meet the non-export protection requirements of Screen I in Section G.1.i.
 - e. The Generating Facility must have a single or coordinated control system for all charging functions if utilizing multiple inverters. The control system must also ensure that there is no increase in the Interconnection Customer's existing peak load demand.
 - f. The Generating Facility must utilize only inverter-based, UL 1741 and UL 1741 SA-listed equipment. Additionally, all installed equipment must meet Distribution Provider's current electric service requirements with no violations or variances. (L)

(Continued)

Advice 5988-E
Decision D.20-09-035

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

Submitted	October 30, 2020
Effective	October 30, 2020
Resolution	



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 259

O. Non-Export AC/DC CONVERTER ELIGIBILITY CRITERIA

(T)

Applicants with Non-Export AC/DC Converters who meet the eligibility criteria below qualify for the expedited interconnection process outlined in Section N of this Rule.

1. The Non-Export AC/DC Converter must have an aggregate maximum inverter nameplate rating of no greater than 500 kW. There is no limitation on an energy storage device's kWh capacity rating.
2. Applicant's Interconnection Request must be eligible for and select the Fast Track Process.
3. Applicant's Interconnection Request must pass Fast Track Initial Review and not require any Interconnection Facilities, Distribution Upgrades or Network Upgrades to remain eligible under this Section.
4. Applicants selecting this section shall use the corresponding interconnection agreement type provided for Non-Export AC/DC Converters eligible under this Section. As such, Interconnection Requests that select the Cost Envelope Option are not eligible.
5. Applicant's Non-Export AC/DC converter must meet the Certification requirements in the Section C Definition of "Non-Export AC/DC Converters".

(T)

(Continued)

Advice 5988-E
Decision D.20-09-035

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

Submitted	October 30, 2020
Effective	October 30, 2020
Resolution	



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 260

Appendix A Forms Associated with Rule 21 Generating Facility Interconnections			
Form Number	Title	Associated Tariffs	Use Guidance
Pre-Application Request			
79-1181	Rule 21 Pre-Application Report Request	Rule 21	For Generator Developer to request basic info about local distribution circuit
Study Agreement			
79-1162	Rule 21 Detailed Study Agreement	Rule 21	Independent Study and Distribution Group Study Process Study Agreement
NEM and Non-Export Interconnection Forms			
79-978	Interconnection Agreement for Net Energy Metering of Solar or Wind Electric Generating Facilities of 1,000 kW or Less, Other Than Facilities of 30 kW or Less	NEM, Rule 21	Solar and/or Wind > 30 kW and ≤ 1 MW expanded NEM used with Form 79-1174-02
79-978-02	Interconnection Agreement for Net Energy Metering (NEM2) of Solar or Wind Electric Generating Facilities of 1,000 Kilowatts or Less, Other than Facilities of 30 Kilowatts or Less	NEM2, Rule 21	Solar and/or Wind > 30 kW and ≤ 1 MW expanded NEM2 used with Form 79-1174-02
79-997	Interconnection Agreement for Net Energy Metering of Biogas Digester Generating Facilities	NEM, Rule 21	NEMBIO (Closed to new applicants), NEMBIOA Interconnection Agreement used with Form 79-1174
79-1010	Interconnection Agreement for Net Energy Metering of Fuel Cell Generating Facilities	NEM, Rule 21	NEMFC Interconnection Agreement used with Form 79-1174
79-1069	Generating facility Interconnection Agreement (Multiple Tariff)	NEM, Rule 21	NEMMT Interconnection Agreement used with Form 79-1174
79-1069-02	Generating Facility Interconnection Agreement (Multiple Tariff NEM2MT)	NEM2, Rule 21	NEM2MT Interconnection Agreement used with Form 79-1174-02
79-1109 ***	Virtual Net Energy Metering Application and Interconnection Agreement For The Building Owner of Multifamily Affordable Housing With A Solar Generating Facility of 1 Megawatt or Less	NEM, Rule 21	NEMV Interconnection Agreement used with Form 79-974

(L)

(L)

(Continued)

Advice 5988-E
Decision D.20-09-035

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

Submitted October 30, 2020
Effective October 30, 2020
Resolution



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 261

Appendix A (Cont'd.) Forms Associated with Rule 21 Generating Facility Interconnections			
Form Number	Title	Associated Tariffs	Use Guidance
NEM and Non-Export Interconnection Forms (Cont'd.)			
79-1109-02***	NEM2VMSH Virtual Net Energy Metering Application and Interconnection Agreement for the Building Owner of Multifamily Affordable Housing with a Solar Generating Facility of 1 Megawatt or Less	NEM2VMSH, Rule 21	NEM2VMSH Interconnection Agreement used with Form 79-1174-02
79-1151A	Net Energy Metering Interconnection for Solar And/or Wind Electric Generating Facilities Of 30 Kilowatts Or Less Agreement and Customer Authorization	NEM, Rule 21	NEMS Interconnection Agreement be used with 79-1151B Application
79-1151A-02	Agreement And Customer Authorization - Net Energy Metering (NEM2) Internconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less	NEM2, Rule 21	NEM2S Application to be used with 79-1151A Interconnection Agreement
79-1151B	Net Energy Metering Interconnection For Solar And/or Wind Electric Generating Facilities Of 30 Kilowatts Or Less Application	NEM, Rule 21	NEMS Application to be used with 79-1151A Interconnection Agreement
79-1151B-02	Application - Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less	NEM2, Rule 21	NEM2S Application to be used with 79-1151A-02 Interconnection Agreement
79-1124***	Eligible Low Income Development Virtual Net Energy Metering Application and Interconnection Agreement for Multifamily Affordable Housing with Solar Generation Totaling 1 Megawatt or Less	NEMVMASH, Rule 21	NEMVMASH Interconnection Agreement
79-1124-02***	Eligible Low Income Development Virtual Net Energy Metering (NEM2VMSH) Application and Interconnection Agreement for Multifamily Affordable Housing with Solar Generation Totaling 1 Megawatt or Less	NEM2VMSH, Rule 21	NEM2VMSH Interconnection Agreement
79-1131***	NEMV Application and Interconnection Agreement for a Solar (PV) or Wind Generating Facility of 1 MW or Less <i>Serving Multiple Tenants Served at a Single Property Delivery Point</i>	NEM, Rule 21	NEMV Interconnection Agreement
79-1131-02***	NEM2V Application and Interconnection Agreement for a Solar (PV) or Wind Generating Facility of 1 MW or Less <i>Serving Multiple Tenants Served at a Single Property Delivery Point</i>	NEM2V, Rule 21	NEM2V Interconnection Agreement

(L)

(L)

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 262

Appendix A (Cont'd.) Forms Associated with Rule 21 Generating Facility Interconnections			
Form Number	Title	Associated Tariffs	Use Guidance
NEM and Non-Export Interconnection Forms (Cont'd.)			
79-1137	Interconnection Agreement for Net Energy Metering for a Renewable Electrical Generation Facility of 1,000 kW or Less, Except Solar or Wind (SB 489)	NEM, Rule 21	NEMV, NEMEXP, NEMEXPM Interconnection Agreement typically used with Forms 79-974 and 79-1142 Applications
79-1137-02	Interconnection Agreement for Net Energy Metering (NEM2/NEM2V) for a Renewable Electricity Generation Facility of 1,000 Kilowatts or Less, Except Solar or Wind	NEM2, NEM2V, Rule 21	NEM2V, NEM2EXP, NEM2EXPM Interconnection Agreement typically used with Forms 79-1174-02
79-1142 ***	NEMV Interconnection Application for a Renewable Electrical Generation Facility of 1 Megawatt or Less	NEM, Rule 21	Used with Form 79-1137 (L)
79-973	Generating Facility Interconnection Agreement For Non-Export Generating Facilities (Rule 21 Interconnection Agreement)	Rule 21	Interconnection Agreement used for RESBCT and non-NEM generation with Application 79-974 and 79-1112
79-992	Customer Generation Agreement (Third party Generator on Premises, Non-Exporting)	Rule 21	Used with Forms 79-1174
79-1070	Export Addendum to Generating Facility Interconnection Agreement for Non-Export Generating Facilities (Form 79-973) Sized 2 Megawatts or Less	Rule 21	Export addendum used with Form 79-973
79-1136	PG&E Interconnection Agreement For an Existing Small Generating Facility Interconnecting to the Distribution System under Rule 21	Rule 21	Used for existing QFs with Form 79-974 (L)
79-1192	Interconnection Agreement for Non-Export Storage Generating Facilities 500KW or Less	Rule 21	Used for expedited interconnection of non-export energy storage, pursuant to Rule 21 Section N, PG&E AL 4941-E & E-A and D.16-06-052, & Attachment C, Section II.1
79-1199	Agreement And Customer Authorization Non-Export Stand-Alone Energy Storage Of 30 Kilowatts Or Less	Rule 21	Interconnection Agreement For non-export storage ≤ 30 kW
79-1206-02	Eligible Low-Income Development Virtual Net Energy Metering (NEM2VSOM) Interconnection Agreement For The Solar On Multifamily Affordable Housing (SOMAH) Program With Solar Generation Totaling 1 Mw Or Less	NEM2VSOM	NEM2VSOM Interconnection agreement for solar 1 MW or less.

(L)

(L)

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 263

Appendix A (Cont'd.) Forms Associated with Rule 21 Generating Facility Interconnections			
Form Number	Title	Associated Tariffs	Use Guidance
Other NEM and Non-Export Forms (Cont'd.)			
79-1130	Request to Opt-out of / Opt-in to Compensation for Surplus Electricity	NEM	AB 920- Opt not to receive compensation for net annual excess energy
79-1202 ****	Load Aggregation Appendix	NEM, NEM2, Rule 21	Use as an Appendix with Form 79-1151A, 79-1151A-02, 79-978, 79-978-02, 79-1137, 79-1137-02, 79-1069 or 79-1069-02
79-1155	Schedules NEM, NEMV, NEMVMASH, Net Surplus Electricity (NSE) Renewable Energy Credits Compensation	NEM, Rule 21	
79-1155-02	Schedules NEM2, NEM2V, NEM2VMASH, Net Surplus Electricity (NSE) Renewable Energy Credits Compensation	NEM2 NEM2V NEM2VMASH, Rule 21	
79-1174	Rule 21 Generator Interconnection Application	NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21	Rule 21 customer interconnection application form for expanded net-energy metered (all NEM > 30 kw and all non-Solar/Wind NEM), NEMFC, NEMV, NEMVMASH, RES-BCT, and non-export and limited export Rule 21 generation. (Standard NEM for solar and/or wind ≤ 30 kw will continue to use the 79-1151B application.)
79-1174-02	Rule 21 Generator Interconnection Application	NEM2 (NEM2EXP, NEM2MT and NEM2A), NEMFC, NEM2V, NEM2VMASH, RES-BCT, Rule 21	Rule 21 customer interconnection application form for expanded net-energy metered (all NEM2 > 30 kw and all non-Solar/Wind NEM), NEMFC, NEM2V, NEM2VMASH, RES-BCT, and non-export and limited export Rule 21 generation. (Standard NEM for solar and/or wind ≤ 30 kw will continue to use the 79-1151B application.)

(L)

(L)

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 264

Appendix A (Cont'd.) Forms Associated with Rule 21 Generating Facility Interconnections			
Form Number	Title	Associated Tariffs	Use Guidance
Export for Sale Interconnection Forms			
79-1145	Rule 21 Exporting Generator Interconnection Request	Rule 21	Preferred online application: https://www.pge.com/en_US/large-business/services/alternatives-to-pge/electric-generation-interconnection.page
79-1197	Local Government Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) Re-Allocation Request	RES-BCT	Use to establish RES-BCT benefiting account re-allocations
79-1198-02	Interconnection Agreement For Net Energy Metering (NEM2) And Renewable Electrical Generating Facility Sized Greater Than 1,000 Kw	NEM2	FT and Detailed Study Interconnection Agreement for >1MW NEM2 Generating Facilities
79-1200	Rule 21 Generator Interconnection Agreement For Exporting Generating Facilities	Rule 21	FT and Detailed Study Interconnection Agreement for Exporting Generating Facilities
Other Agreements			
79-280	Agreement for Installation of Allocation of Special Facilities for Parallel Operation of Non-Utility-Owned Generation and/or Electrical Standby Service (Electric Rules 2 and 21)	Rule 21	Special Facilities Agreement to be used with Form 79-702
79-702	Appendix A: Detail of Special Facilities Charges to be used in concert with form 79-280	Rule 21	Used with Form 79-280

*** The application section of these forms is replaced by 79-1174.

**** For NEMA expanded customers, use the online 79-1174 form.

(Continued)

Advice 5988-E
Decision D.20-09-035

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

Submitted October 30, 2020
Effective October 30, 2020
Resolution



San Francisco, California

Cal. P.U.C. Sheet No. 47712-E
Cal. P.U.C. Sheet No. 42559-E

Sheet 265

(L)

(L)

The Unit Cost Guide shall include the anticipated cost of procuring and installing Interconnection Facilities and Distribution Upgrades generally utilized by the Applicant. An annual adjustment shall be performed within the Unit Cost Guide for five (5) years to account for the anticipated timing of procurement to accommodate a potential range of Commercial Operation Dates.

The Unit Cost Guide shall be updated annually in accordance with the process set forth in D.16-06-052.

(Continued)

<i>Submitted</i>	<u>October 30, 2020</u>
<i>Effective</i>	<u>October 30, 2020</u>
<i>Resolution</i>	



ELECTRIC TABLE OF CONTENTS

Sheet 1

TABLE OF CONTENTS

SCHEDULE	TITLE OF SHEET	CAL P.U.C. SHEET NO.	
Title Page.....		47713-E	(T)
Rate Schedules	44680,44681,44682,44683,44684,44685,43935,44177-E		
Preliminary Statements.....	44686,44687,42856*,43670,41723,40591,44040-E		
Rules	43022,45477,45478, 47714-E		(T)
Maps, Contracts and Deviations.....	37960-E		
Sample Forms... 40925*,37631, 47715 ,41573*, 37632,41152*,41153,37769,44035,40671,37169-E			(T)

(Continued)

<i>Advice</i>	5988-E	<i>Issued by</i>	<i>Submitted</i>	October 30, 2020
<i>Decision</i>	D.20-09-035	Robert S. Kenney	<i>Effective</i>	October 30, 2020
		<i>Vice President, Regulatory Affairs</i>	<i>Resolution</i>	



San Francisco, California

Cal. P.U.C. Sheet No. 47714-E
Cal. P.U.C. Sheet No. 47206-E

Sheet 20

RULE	TITLE OF SHEET	CAL P.U.C. SHEET NO.
Rules (Cont'd)		
Rule 21	Generating Facility Interconnections.....	(T)
42298,42299,42300,42301,42302,42303,42304,42305,	
42306,42307,42308,42309,42310, 47685 ,42312,42313,42314,42315,42316,42317,	
42318,42319,42320,42321,42322,42323,42324,42325,42326,42327,42328,42329,	
42330,42331,42332,42333,42334,42335,42336,42337,42338,42339,42340,42341,	
42342,42343,42344,42345,42346,42347,42348,42349,42350,42351, 47686,47687 ,	(T)
 47688,47689,47690 ,42357,42358,42359,42360,42361,42362,42363,42364,42365,	
42366,42367, 47691 ,42369,42370,42371, 47692,47693,47694,47695 ,42376,42377,	(T)
42378,42379,42380,42381,42382,42383,42384,42385,42386,42387,42388,42389,	
42390,42391,42392,42393,42394,42395,42396,42397,42398,42399,42400,42401,	
42402,42403,42404,42405,42406,42407,42408,42409,42410,42411,42412,42413,	
42414,42415,42416,42417,42418,42419,42420,42421,42422,42423,42424,42425,	
42426,42427,42428,42429,42430,42431,42432,42433,42434,42435,42436, 47696 ,	(T)
42438,42439,42440,42441,42442,42443,42444,42445, 47697 ,42447, 47698 ,42449,	
42450,42451,42452,42453, 47699 ,42455,42456,42457,42458,42459,42460,42461,	(T)
42462,42463,42464,42465,42466,42467,42468,42469,42470,42471,42472,42473,	
42474,42475,42476,42477,42478, 47700 ,42480,42481,42482,42483,42484,42485,	(T)
42486,42487,42488,42489,42490,42491,42492,43700,43701,43702,43703,43704,	
46381,43706,42500,46382,44783,44784,46383,43709,46384,43711,43712,43713,	
42510,42511,42512,42513,42514,42515,42516,42517,42518,42519,42520,42521,	
42522,42523,42524,42525,42526,42527,42528,42529,42530,42531,42532,42533,	
42534,42535,42536,42537,42538,42539,42540,42541,42542,42543,42544,42545,	
42546,42547,42548,42549,42550, 47701,47702,47703,47704,47705,47706,47707 ,	(T)
 47708,47709,47710,47711,47712-E	(T)
Rule 22	Direct Access Service.....	
33491,29165,29166,29167,29168,29169,29170,29171,14896,	
30872,30873,32758,32992,32993,32994,32995,30879,30880,30881,30882,30883,	
30884,30885,30886,30887,30888,30889,30890,30891,30892,30893,30894,30895,	
43002,30897,30898,30899,30900,30901,30902,30903,30904,30905,30906,30907,	
30908,30910,30911,30912,30913,30914,30915,33492,30493,30494,30495,30496,	
30497,30498,30923,30924,30925,30926,33499,33500,33501,33502,33503-E	
Rule 22.1	Direct Access Service Switching Exemption Rules.....	
44759,32404,44760,44761,	
44762,44763,44764,44765,44766,44767,	
44768,44769,44770,44771,44772,44773,44774-E	
Rule 23	Standby Service.....	
25527*,25528*,32810,25530*,25531*25532*,25533*,25534*,	
30933,29202,25537*,25538*,29471,25540*,25541*,25542*,25543*,25544*,	
29472,27268,30934,30935,30936,30937,30938,30939,35427,30941,30942,	
30943,30944,30945,30946,30947,30948,30949,30950,30951,30952,43003,	
43004,30955,30956,30957,30958,32811,30960,30961,30962-E	
Rule 23.2	Community Choice Aggregation Open Season	25575,25576,25577,27270,27271-E
Rule 24	Direct Participation Demand Response	33694,36693,35814,35856,36694,36695,
33818,36696,35820,36697,36698,35823,36699,35825,36700,36701,35828,35829,	
35830,35831,35832,35833,35834,35835,35836,35837,36702,35839,35840,36703-E	
Rule 25	Release Of Customer Data To Third Parties	34333,34334,34335,34336,34337-E
Rule 27	Privacy and Security Protections for Energy Usage Data	32189,32190,32191,32192,32193,
32194,32195,32196,32197,32198,32199,32200,32201,32202,32203,32204,32205-E	
Rule 27.1	Access to Energy Usage and Usage-Related Data While	
	Protecting Privacy of Personal Data	34311,34312,34313,34314,34315-E
Rule 28	Mobilehome Park Utility Upgrade Program.....	47192,40142,34629,34630,
34631,34632,35416,35417-E	

(Continued)



ELECTRIC TABLE OF CONTENTS

Sheet 24

FORM	TITLE OF SHEET	CAL P.U.C. SHEET NO.
Sample Forms		
Rule 20 Replacement of Overhead with Underground Electric Facilities		
79-1113	Agreement to Perform Tariff Schedule Related Work, Rule 20A Electric Panel Service Conversions.....	42818-E
Sample Forms		
Rule 21 Generating Facility Interconnections		
79-280	Agreement for Installation or Allocation of Special Facilities for Parallel Operation of Nonutility Owned Generation and/or Electrical Standby Service (Electric Rule 2 and 21)	47137-E
79-702	Agreement for Installation or Allocation of Special Facilities for Parallel Operation of Nonutility- Owned Generation and/or Electrical Standby Service (Electric Rule 2 and 21) – Appendix A, Detail of Special Facilities Charges.....	42838-E
79-973	Generating Facility Interconnection Agreement	41146-E
79-1070	Addendum to Form 79-973 – Export Addendum for Generators Sized 2 Megawatts or Less	35467-E
79-988	Generating Facility Interconnection Agreement Third Party Non-Exporting	35464-E
79-992	Generating Facility Interconnection Agreement Third Party Generation or Premise Non-Exporting	41149-E
79-1100	Electric Rule 21 – Agreement to Install Applicant Requested NGOM Special Facilities for Solar Performance Metering.....	32139-E
79-1136	PG&E Interconnection Agreement For An Existing Small Generating Facility Interconnecting to the Distribution System Under Rule 21	41130-E
79-1145	Rule 21 Exporting Generator Interconnection Request.....	47682-E (T)
79-1162	Rule 21 Detailed Study Agreement.....	34142-E
79-1174	Rule 21 Generator Interconnection Application.....	47683-E (T)
79-1174-02	Rule 21 Generator Interconnection Application.....	47684-E (T)
79-1181	Rule 21 Pre-Application Report Request	42837-E
79-1191	Generating Facility Interconnection Agreement For Local Government Renewable Energy Self- Generation Bill Credit Transfer (RES-BCT).....	47135-E
79-1197	Local Government Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) Re- Allocation Request	43941-E
79-1198-02	Interconnection Agreement for Net Energy Metering (NEM2) and Renewable Electrical Generating Facility Sized Greater than 1,000 kW	47136-E
79-1199	Agreement and Customer Authorization Non-Export Standalone Energy Storage of 30 Kilowatts or Less	43943-E
79-1200	Rule 21 Generator Interconnection Agreement for Exporting Generating Facilities	43944-E
79-1204	Pilot Pedestal Program Application	46113-E

(Continued)

Attachment B

Redline Tariff Revisions

For convenience of the reader, PG&E has included redline revisions in Attachment 2. Where Sample Forms have been revised, the entire Sample Form is included in Attachment A (clean version), but the redline version in Attachment B only includes the pages where the modification has occurred, and excludes pages of the form where only the advice letter number and date has been updated within the footer of the page to reflect this advice letter.



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

Sheet 1

**Please Refer to Attached
Sample Form**

PG&E'S RULE 21 EXPORTING GENERATOR INTERCONNECTION REQUEST

Disconnect Switch Manufacturer: _____
Disconnect Switch Model Number: _____
Disconnect Switch Rating (amps): _____

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

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

Yes No

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

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

- 7 Representative of Applicant to contact:

[To be completed by Applicant]

Name:

Title:

Company Name:

Street Address:

City, State:

Zip Code:

Phone Number:

Fax Number:

Email Address:



**Pacific Gas and
Electric Company®**

U 39

San Francisco, California

Revised
Cancelling Revised

Cal. P.U.C. Sheet No. 47683-E
Cal. P.U.C. Sheet No. 47132-E

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

Sheet 1

**Please Refer to Attached
Sample Form**

Advice 5988-E
Decision D20-09-035

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

Submitted October 30, 2020
Effective October 30, 2020
Resolution _____



INTERCONNECTION APPLICATION (Form 79-1174)

ATTACHMENT INFO

CUSTOMER AND PROJECT INFORMATION

Part I - Selecting the Study Process¹

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

www.energy.ca.gov 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.

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

Yes No

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.

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



U 39

**Pacific Gas and
Electric Company®**

San Francisco, California

Revised
Cancelling Revised

Cal. P.U.C. Sheet No. 47684-E
Cal. P.U.C. Sheet No. 47133-E

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

Sheet 1

**Please Refer to Attached
Sample Form**

Advice 5988-E
Decision D20-09-035

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

Submitted October 30, 2020
Effective October 30, 2020
Resolution



INTERCONNECTION APPLICATION (Form 79-1174-02)

ATTACHMENT INFO

CUSTOMER AND PROJECT INFORMATION

Part I - Selecting the Study Process

Please check one:

- ☐ Fast Track Process¹.
- ☐ 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.

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

Yes No

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).

¹ See Electric Rule 21 for FAST TRACK requirements.



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 14

TABLE OF CONTENTS (Cont'd.)

M.	INADVERTENT EXPORT	248
Mm.	INADVERTENT EXPORT FOR INTERCONNECTION REQUESTS UTILIZING UL-1741 CERTIFIED OR SA LISTED GRID SUPPORT (NONISLANDING) INVERTERS	250
<u>Mm1.</u>	<u>NON-EXPORT UTILIZING CERTIFIED POWER CONTROL SYSTEMS</u>	<u>254</u>
<u>Mm2.</u>	<u>INADVERTENT EXPORT UTILIZING CERTIFIED POWER CONTROL SYSTEMS</u>	<u>255</u>
N.	EXPEDITED INTERCONNECTION PROCESS FOR NON- EXPORT ENERGY STORAGE GENERATING FACILITIES	<u>257</u> <u>4</u>
1.	ELIGIBILITY REQUIREMENTS	<u>257</u> <u>4</u>
2.	GENERATING FACILITY ELIGIBILITY CRITERIA	<u>258</u> <u>5</u>
O.	AC/DC CONVERTER ELIGIBILITY CRITERIA	<u>259</u> <u>6</u>
Appendix A	Forms Associated with Rule 2 Generating Facility Interconnections	<u>260</u> <u>57</u>
Appendix B	Unit Cost Guide	<u>265</u> <u>2</u>

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 55

E. INTERCONNECTION REQUEST SUBMISSION PROCESS (Cont'd.)

2. INTERCONNECTION REQUEST PROCESS (Cont'd.)

c. Applicant Completes an Interconnection Request (Cont'd.)

TABLE E.1

Summary of Interconnection Request Fees, Deposits and Exemptions

<u>Generating Facility Type</u>	<u>Interconnection Request Fee</u>	<u>Supplemental Review Fee</u>	<u>Detailed Study Deposit</u>	<u>Additional Commissioning Test Verification</u>	<u>Cost Envelope Option Deposit****</u>
Non-Net Energy Metering and > 1 MW NEM-2	\$800	\$2,500*	For a Generating Facility with a Gross Nameplate Rating of 5 MW or less and applying to the Independent Study Process, \$10,000 for a System Impact Study or the DGS Phase I Interconnection Study in the case of the Distribution Group Study Process; and \$15,000 for an Interconnection Facilities Study or DGS Phase II Interconnection Study in the case of the Distribution Group Study Process. For a Generating Facility with a Gross Nameplate Rating above 5 MW, \$50,000 plus \$1,000 per MW of electrical output of the Generating Facility, or the increase in electrical output of the existing Generation Facility, as applicable, rounded up to the nearest whole MW, up to a maximum of \$250,000.	\$150/Person Hour**	\$2,500
≤ 1 MW NEM-2***	\$145	\$0	\$0	N/A	\$2,500
NEM-1	\$0	\$0	\$0	N/A	\$2,500
Solar ≤ 1MW or less that does not sell power to Distribution Provider (per D.01-07-027) nor participate in NEM-1 or NEM-2	First \$5,000 of study fees waived			\$150/Person Hour**	\$2,500

* Optional \$1,000 additional fault current study fee pursuant to Section F.2.c.ii. The Supplemental Review fee can be pre-paid at the time of application submission as allowed by D.20-09-035 OP 14. This fee is non-refundable.

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

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

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

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 56

E. INTERCONNECTION REQUEST SUBMISSION PROCESS (Cont'd.)

2. INTERCONNECTION REQUEST PROCESS (Cont'd.)

d. Site Exclusivity

Documentation of Site Exclusivity must be submitted with the Interconnection Request. This requirement does not apply to Applicants with NEM-1 Generating Facilities, NEM-2 \leq 1 MW Generating Facilities, or Non-Export Generating Facilities.

3. INTERCONNECTION REQUEST FEE AND STUDY DEPOSIT

The Interconnection Request fee shall be waived for NEM-1 Interconnection Requests and for non-NEM solar-powered Generating Facilities that do not sell power per Commission Decision 01-07-027. NEM-1 Generating Facilities are also exempt from any costs associated with Interconnection Studies.

NEM-2 Applicants are required to pay any applicable Interconnection Request fees and costs associated with Interconnection Studies pursuant to Table E.1. As noted in the table, SASH participants are exempt from the NEM-2 Interconnection Request Fee and NEM-2 \leq 1 MW Applicants are exempt from costs associated with Interconnection Studies.

Interconnection Study fees for non-NEM solar \leq 1 MW Generating Facilities interconnecting to the Distribution System that do not sell power will be waived up to the amount of \$5,000.

The Interconnection Customer must pay the Interconnection Request Fee as outlined in Table E.1 with the Application. The Interconnection Customer may pay the Supplemental Review Fee outlined in Table E.1 concurrently with the Interconnection Request Fee, or separately upon completion of the Initial Review.

For Interconnection Customers that pay the Supplemental Review Fee concurrently with the Interconnection Request Fee, the Supplemental Review, if required, will be performed following the Initial Review. The Optional Initial Review Results Meeting will not be held, but the Optional Supplemental Review Results Meeting may be held following completion of the Supplemental Review. Only one study report will be provided.

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 57

E. INTERCONNECTION REQUEST SUBMISSION PROCESS (Cont'd.)

3. INTERCONNECTION REQUEST FEE AND STUDY DEPOSIT (Cont'd.)

a. Detailed Study Deposit ~~(Cont'd.)~~

i) Detailed Study Deposit

To proceed with Detailed Study, Applicant must submit a Detailed Study deposit.

For a Generating Facility with a Gross Nameplate Rating of 5 MW or less, Applicant must submit a Detailed Study deposit of \$10,000 for the Interconnection System Impact Study or the DGS Phase I Interconnection Study, and where an Interconnection Facilities Study or DGS Phase II Interconnection Study in the case of the Distribution Group Study Process is required, an additional \$15,000 deposit must be submitted as required in Section F.3.b.vi or F.3.c.viii.

For a Generating Facility with a Gross Nameplate Rating above 5 MW, Applicant must submit a Detailed Study deposit equal to \$50,000 plus \$1,000 per MW of electrical output of the Generating Facility, or the increase in electrical output of the existing Generating Facility, as applicable, rounded up to the nearest whole MW, up to a maximum of \$250,000.

ii) Use of Detailed Study Deposit

The Detailed Study deposit shall be applied to pay for prudent costs incurred by Distribution Provider, the CAISO, or third parties at the direction of Distribution Provider or CAISO, as applicable, to perform and administer the Interconnection Studies. Deposit amounts that exceed the prudent costs incurred by Distribution Provider shall be refunded to Applicant within sixty (60) Calendar Days following either the execution of the Generator Interconnection Agreement or project withdrawal as described in more detail below.

The interconnection study costs for a Distribution Study Group shall be allocated equally among the Interconnection Requests within the Distribution Study Group, except as provided in (3) below.

The Detailed Study deposits shall be refundable as follows:

(Continued)

Advice	5187-E-A	Issued by	Date Filed	May 31, 2018
Decision	16-06-052	Robert S. Kenney	Effective	June 30, 2018
		Vice President, Regulatory Affairs	Resolution	



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 58

E. INTERCONNECTION REQUEST SUBMISSION PROCESS (Cont'd.)

3. INTERCONNECTION REQUEST FEE AND STUDY DEPOSIT (Cont'd.)

a. Detailed Study Deposit (Cont'd.)

ii) Use of Detailed Study Deposit (Cont'd.)

(1) Should an Interconnection Request be withdrawn by Applicant or be deemed withdrawn by Distribution Provider by written notice under Section F.6 on or before thirty (30) Calendar Days following the scoping meeting, Distribution Provider shall refund to Applicant any portion of Applicant's Detailed Study deposit that exceeds the costs Distribution Provider, CAISO, and third parties have incurred on Applicant's behalf, including interest from the date of receipt by Distribution Provider to the date of payment to Applicant. The applicable interest shall be one-twelfth of the Federal Reserve three-month Commercial Paper Rate – Non-Financial, from the Federal Reserve Statistical Release H.15 (expressed as an annual rate).

(2) Should an Interconnection Request that has been moved into the Detailed Study Process be withdrawn by Applicant or be deemed withdrawn by Distribution Provider by written notice under Section F.6 more than thirty (30) Calendar Days after the scoping meeting, but on or before thirty (30) Calendar

Days following the results meeting for the Interconnection System Impact Study, or DGS Phase I Interconnection Study, Distribution Provider shall refund to Applicant the difference between (i) Applicant's Detailed Study deposit and (ii) the greater of (a) the costs Distribution Provider, CAISO, and third parties have incurred on Applicant's behalf or (b) one-half of the original Detailed Study deposit up to a maximum of \$100,000, including interest from the date of receipt by Distribution Provider to the date of payment to Applicant. The applicable interest shall be one-twelfth of the Federal Reserve three-month Commercial Paper Rate – Non-Financial, from the Federal Reserve Statistical Release H.15 (expressed as an annual rate).

(Continued)

Advice 5187-E-A
Decision 16-06-052

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

Date Filed	May 31, 2018
Effective	June 30, 2018
Resolution	



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 59

E. INTERCONNECTION REQUEST SUBMISSION PROCESS (Cont'd.)

3. INTERCONNECTION REQUEST FEE AND STUDY DEPOSIT (Cont'd.)

a. Detailed Study Deposit (Cont'd.)

ii) Use of Detailed Study Deposit (Cont'd.)

(3) Should an Interconnection Request be withdrawn by Applicant or be deemed withdrawn by Distribution Provider by written notice under Section F.6 at any time more than thirty (30) Calendar Days after the results meeting for the Interconnection System Impact Study, or DGS Phase I Interconnection Study, or thirty (30) Calendar Days after issuance of the final Interconnection System Impact Study report or DGS Phase I Interconnection Study report if a results meeting is not held, the Detailed Study deposit shall be non-refundable.

(4) Upon execution of a Generator Interconnection Agreement by an Applicant and Distribution Provider, Distribution Provider shall refund to Applicant any portion of Applicant's detailed study deposit that exceeds the costs Distribution

(54) Provider, CAISO, and third parties have incurred on Applicant's behalf, including interest from the date of receipt by Distribution Provider to the date of payment to Applicant. The applicable interest shall be one-twelfth of the Federal Reserve three-month Commercial Paper Rate – Non-Financial, from the Federal Reserve Statistical Release H.15 (expressed as an annual rate).

iii) Impact of Withdrawal

(1) Notwithstanding the foregoing, an Applicant that withdraws or is deemed to have withdrawn its Interconnection Request shall be obligated to pay to Distribution Provider all costs in excess of the Detailed Study deposit that have been prudently incurred or irrevocably have been committed to be incurred with respect to that Interconnection Request prior to withdrawal. Distribution Provider will reimburse the CAISO or third parties, as applicable, for all work performed on behalf of the withdrawn Interconnection Request at Distribution Provider's direction. Applicant must pay all monies due before it is allowed to obtain any Interconnection Study data or results. Any proceeds of the Detailed Study deposit not otherwise reimbursed to Applicant or applied to costs incurred or irrevocably committed to be incurred for the interconnection studies shall be applied as directed by the Commission. Where an Applicant with remaining proceeds from a Detailed Study deposit cannot be located, such remaining proceeds shall escheat to the State pursuant to the Unclaimed Property Law commencing with the California Code of Civil Procedure § 1500.

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 71

F. REVIEW PROCESS FOR INTERCONNECTION REQUESTS (Cont'd.)

1. OVERVIEW OF THE INTERCONNECTION REVIEW PROCESS (Cont'd.)

b. Fast Track Review

Fast Track evaluation allows for rapid review of the Interconnection of those Generating Facilities that do not require Detailed Study. Regardless of study process, all Generating Facilities shall be designed to meet the applicable requirements of Section H which identifies Generating Facility Design and Operation Requirements.

Fast Track review consists of an Initial Review and, if required, a Supplemental Review. The need for Supplemental Review will be determined based on the results of Initial Review Screens A through M in Section G.1. Applicants that successfully pass Initial Review Screens A through M will be allowed to interconnect without Supplemental Review.

Non-Export AC/DC Converter installations that have a complete and valid Interconnection Request will be eligible to bypass screens B through D and F through M.

If Supplemental Review is required, unless the Applicant has pre-paid the Supplemental Review fee, Distribution Provider will notify Applicant and Applicant must pay a nonrefundable Supplemental Review fee, per Table E-1 or withdraw its Interconnection Request. Supplemental Review shall consist of the application of Screens N through P in Section G.2. Applicants that pass Screens N through P will be allowed to interconnect without additional review.

If Supplemental Review reveals that a proposed Generating Facility cannot be interconnected to Distribution Provider's Distribution System by means of Fast Track evaluation, Distribution Provider will notify Applicant that Detailed Study will be required.

Failure to pass Fast Track evaluation means only that further review and/or study are required before the Generating Facility can be interconnected with Distribution Provider's Distribution System. It does not mean that the Generating Facility cannot be interconnected.

(Continued)

Advice	5187-E-A	Issued by	Date Filed	May 31, 2018
Decision	16-06-052	Robert S. Kenney	Effective	June 30, 2018
		Vice President, Regulatory Affairs	Resolution	



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 75

F. REVIEW PROCESS FOR INTERCONNECTION REQUESTS (Cont'd.)

2. FAST TRACK INTERCONNECTION REVIEW PROCESS

a. Initial Review (Cont'd.)

For Interconnection Requests that fail Initial Review, Distribution Provider shall provide the technical reason, data and analysis supporting the Initial Review results in writing and provide Applicant the option to either attend an Initial Review results meeting or proceed directly to Supplemental Review, unless the Applicant has pre-paid the Supplemental Review fee. NEM-1 and ≤ 1 MW NEM-2 Applicants covered under Section D.13.a, and Applicants that have pre-paid the Supplemental Review fee, shall proceed directly to Supplemental Review without an Initial Review results meeting. Applicant shall notify Distribution Provider within ten (10) Business Days following such notification whether to (i) proceed to an Initial Review results meeting, (ii) proceed to Supplemental Review, or (iii) withdraw the Interconnection Request. Applicant may request one extension of no more than ten (10) Business Days to respond. If Applicant fails to notify Distribution Provider within ten (10) Business Days of such notification, or at the end of the extension, if one was requested, the Interconnection Request shall be deemed withdrawn.

No changes may be made to the planned Point of Interconnection or Generating Facility size included in the Interconnection Request during the Fast Track Process, unless such changes are agreed to by Distribution Provider. Where agreement has not been reached, Applicants choosing to change the Point of Interconnection or Generating Facility size must reapply and submit a new Interconnection Request.

Applicants that elect to proceed to Supplemental Review, unless the Applicant has pre-paid the Supplemental Review fee, shall provide a nonrefundable Supplemental Review fee set forth in Section E.2.c with their response. The Supplemental Review fee shall be waived for Interconnection Requests requesting Interconnection of NEM-1 or ≤ 1 MW NEM-2 Generating Facilities and for solar-powered non-NEM ≤ 1 MW Generating Facilities that do not sell power to Distribution Provider, per Commission D.01-07-027.

(Continued)

Advice 5187-E-A
Decision 16-06-052

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

Date Filed	May 31, 2018
Effective	June 30, 2018
Resolution	



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 76

F. REVIEW PROCESS FOR INTERCONNECTION REQUESTS (Cont'd.)

2. FAST TRACK INTERCONNECTION REVIEW PROCESS (Cont'd.)

b. Optional Initial Review Results Meeting

Within five (5) Business Days of Applicant's request for an Initial Review results meeting, Distribution Provider shall contact Applicant and offer to convene a meeting at a mutually acceptable time to review the Initial Review screen analysis and related results to determine what modifications, if any, may permit the Generating Facility to be connected safely and reliably without Supplemental Review.

In the event the Applicant has pre-paid the Supplemental Review fee, the Distribution Provider will proceed, if necessary, with Supplemental Review upon completion of Initial Review and shall not be required to offer an Initial Review results meeting.

If modifications that obviate the need for Supplemental Review are identified, and Applicant and Distribution Provider agree to such modifications, Distribution Provider shall provide Applicant with a Generator Interconnection Agreement within fifteen (15) Business Days of the Initial Review results meeting if no Interconnection Facilities or Distribution Upgrades are required. If Interconnection Facilities or Distribution Upgrades are required, Distribution Provider shall provide Applicant with a non-binding cost estimate of any Interconnection Facilities or Distribution Upgrades within fifteen (15) Business Days of the Initial Review results meeting. For those Interconnection Requests where Applicant has selected the Cost Envelope Option, within ten (10) Business Days of providing Applicant the non-binding cost estimate for the required Interconnection Facilities and/or Distribution Upgrades, Applicant shall provide the Distribution Provider the Cost Envelope Option deposit, in accordance with Section F.7.a.i.3. If Applicant fails to provide the Cost Envelope Option deposit in accordance with Section F.7.a.i.3, Applicant's request for the Cost Envelope Option shall be deemed withdrawn and the Interconnection Request shall not be eligible for the Cost Envelope Option.

For all Interconnection Requests that pass Initial Review, refer to Section F.2.e for cost responsibility and time frames for completing the Generator Interconnection Agreement.

(Continued)

Advice	5187-E-A	Issued by	Date Filed	May 31, 2018
Decision	16-06-052	Robert S. Kenney	Effective	June 30, 2018
		Vice President, Regulatory Affairs	Resolution	



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 78

F. REVIEW PROCESS FOR INTERCONNECTION REQUESTS (Cont'd.)

2. FAST TRACK INTERCONNECTION REVIEW PROCESS (Cont'd.)

b. Optional Initial Review Results Meeting (Cont'd.)

If Applicant and Distribution Provider are unable to identify or agree to modifications that enable Applicant to pass Initial Review, Applicant shall notify Distribution Provider within ten (10) Business Days of the Initial Review results meeting whether it would like to proceed with Supplemental Review or withdraw its Interconnection Request. Applicant may request one extension of no more than ten (10) Business Days to respond. If Applicant fails to notify Distribution Provider within ten (10) Business Days of the Initial Review results meeting, or at the end of the extension, if one was requested, the Interconnection Request shall be deemed withdrawn.

c. Supplemental Review

- i) If Applicant requests Supplemental Review and submits a nonrefundable Supplemental Review fee, if required, Distribution Provider shall complete Supplemental Review within twenty (20) Business Days, absent extraordinary circumstances, following authorization and receipt of the fee. Supplemental Review determines if (i) the Generating Facility qualifies for Fast Track Interconnection, or (ii) the Generating Facility requires Detailed Study. If the Applicant paid the Supplemental Review fee concurrently with the Initial Review Fee, Distribution Provider will complete the Supplemental Review, if required, within twenty (20) Business Days from the completion of the Initial Review.
- ii) If the Applicant chooses to move to Supplemental Review or has pre-paid the non-refundable Supplemental Review fee, they have the option to elect that the Distribution Provider provide a fault current study as part of the Supplemental Review. This fault current study would extend the Supplemental Review time by up to ten (10) Business Days, and would require an additional nonrefundable fee of \$1,000.

This fault current study will determine if the Generating Facility can detect phase and ground faults on the Distribution Provider's Distribution System or the distribution feeder breaker where the Applicant proposes to connect the Generating Facility. The result of the fault current study will determine if direct transfer trip (DTT) will be required from the Distribution System to the Generating Facility site. Note that for Applicants proposing to interconnect to the Distribution System where there is expected to be power backfeed to the Transmission System, DTT from the transmission may still be required and a Detailed Interconnection Study will be required to make this determination.

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 78

F. REVIEW PROCESS FOR INTERCONNECTION REQUESTS (Cont'd.)

2. FAST TRACK INTERCONNECTION REVIEW PROCESS (Cont'd.)

c. Supplemental Review (Cont'd.)

- ii) Should the Applicant request a Supplemental Review results meeting, as described in Section F.2d, the optional fault current study analysis and related results shall, at the Applicant's request, be reviewed to determine what modifications, if any, may permit the Generating Facility to be connected safely and reliably.

If the Applicant chooses to move to Supplemental Review, or has pre-paid the non-refundable Supplemental Review fee, they have the option to elect that the Distribution Provider provide a fault current study as part of the Supplemental Review. This fault current study would extend the Supplemental Review time by up to ten (10) Business Days, and would require an additional nonrefundable fee of \$1,000. ~~(Cont'd.)~~

The Applicant must provide the following data to Distribution Provider when requesting Supplemental Review in order to select this option:

Generator:

MVA Rating
kV Rating
Base MVA
Base kV
Xd" (direct axis subtransient reactance)
Xd' (direct axis transient reactance)
Xd (Synchronous reactance)
X2 (Negative Sequence reactance)
X0 (Zero Sequence reactance)

XFMR Data:

Winding configuration (delta-Wye grd or Wye grd-Delta)
MVA Rating
KV Rating
Base MVA
Base KV
Z1 HV-LV
Z0 HV-LV

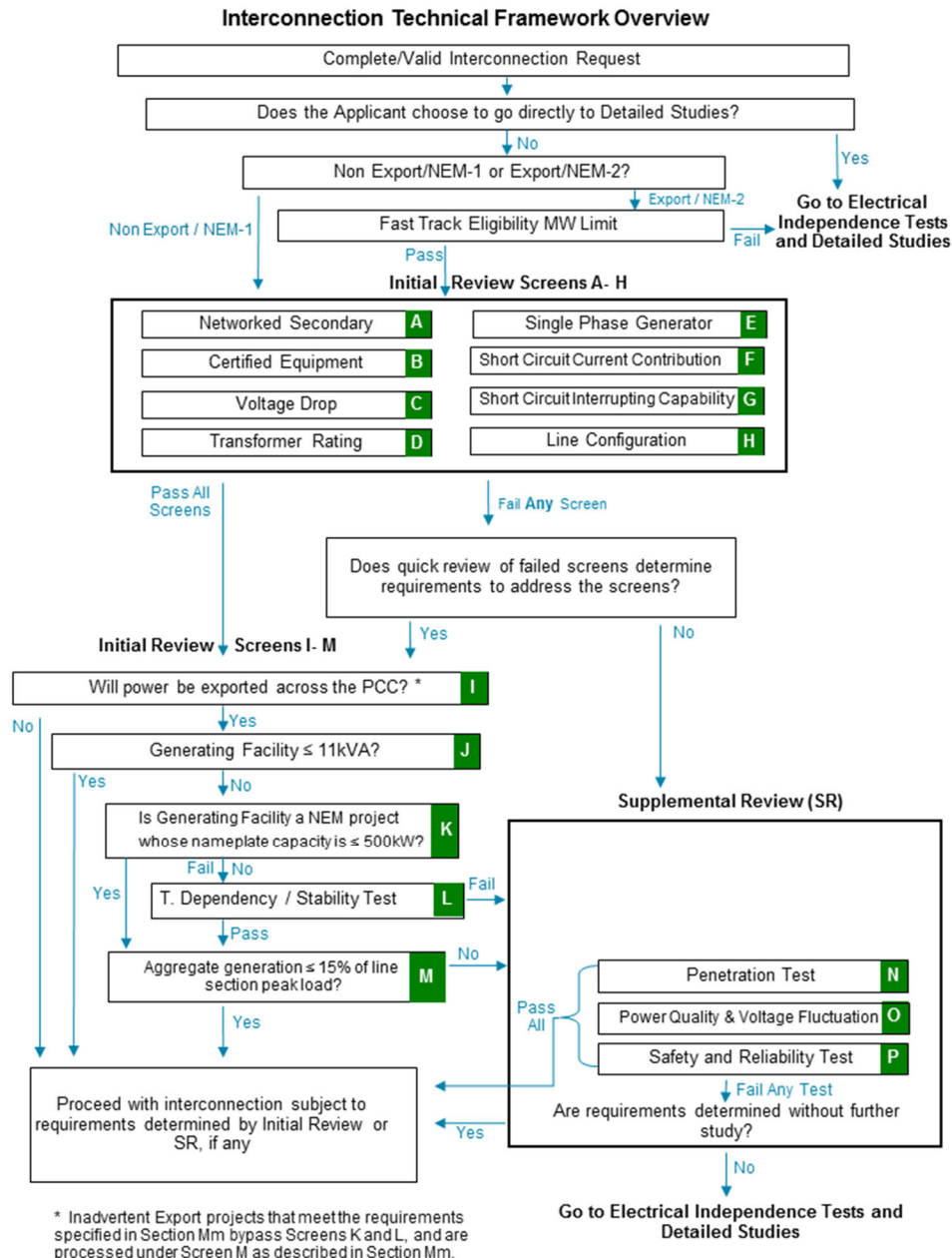
(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 140

G. ENGINEERING REVIEW DETAILS



* Non-Export AC/DC Converter installations that have a complete and valid Interconnection Request will be eligible to bypass screens B through D and F through M. If Generating Facility meets the conditions in Screen I below (Section G.1.i), skip Screens K, L and M.

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 149

G. ENGINEERING REVIEW DETAILS (Cont'd.)

1. INITIAL REVIEW SCREENS (Cont'd.)

- h. Screen H: Is the line configuration compatible with the Interconnection type? (Cont'd.)

Significance: If the primary distribution line serving the Generating Facility is of a “three-wire” configuration, or if the Generating Facility’s distribution transformer is single-phase and connected in a line-to-neutral configuration, then there is no concern about overvoltages to Distribution Provider’s, or other Customer’s equipment caused by loss of system neutral grounding during the operating time of the Non-Islanding Protective Function.

- i. Screen I: Will power be exported across the PCC?

- If Yes, Continue to Screen J. This includes Options ~~5, and 6~~ and 8 below.
- If No, ~~skip screens K, L, and M. then to~~ To ensure that the Generating Facility does not export across the PCC, the Generating Facility must incorporate one of the Options 1, 2, 3, 4 or 7 ~~the first four options~~ shown below. Following that selection, Initial Review is complete.

Option 1 (“Reverse Power Protection”): To ensure power is never exported across the PCC, a reverse power Protective Function may be provided. The default setting for this Protective Function shall be 0.1% (export) of the service transformer’s rating, with a maximum 2.0 second time delay. For multiple tariff interconnections refer to Section J.8.

(Continued)

Advice 5187-E-A
Decision 16-06-052

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

Date Filed	May 31, 2018
Effective	June 30, 2018
Resolution	



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 151

G. ENGINEERING REVIEW DETAILS (Cont'd.)

1. INITIAL REVIEW SCREENS (Cont'd.)

i. Screen I: Will power be exported across the PCC? (Cont'd.)

Option 4 (Relative Generating Facility Rating): This option, when used, requires the Net Rating of the Generating Facility to be so small in comparison to its host facility's minimum load, that the use of additional Protective Functions is not required to ensure that power will not be exported to Distribution Provider's Distribution or Transmission System. This option requires the Generating Facility capacity to be no greater than 50% of Producer's verifiable minimum Host Load over the past 12 months.

Option 5: Inadvertent Export as described in Section M.

Option 6: Inadvertent Export utilizing UL-1741 or UL-1741 SA listed grid support (Non-Islanding) inverters as described in Section Mm.
Significance:

1. If it can be assured that the Generating Facility will not export power, Distribution Provider's Distribution or Transmission System does not need to be studied for load-carrying capability or Generating Facility power flow effects on Distribution Provider voltage regulators.
2. This Screen permits the use of reverse-power or minimum-power relaying as a Non-Islanding Protective Function (Option 1, 2, and 3).
3. This Screen allows, under certain defined conditions, for Generating Facilities that incorporate Certified Non-Islanding protection to qualify for interconnection through the Fast Track process without implementing reverse power or minimum power Protective Functions (Option 3).

Option 7: Non-Export utilizing Certified Power Control Systems as described in Section Mm1.

Option 8: Inadvertent Export utilizing Certified Power Control Systems as described in Section Mm2.

(Continued)

Advice 5187-E-A
Decision 16-06-052

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

Date Filed	May 31, 2018
Effective	June 30, 2018
Resolution	



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 157

G. ENGINEERING REVIEW DETAILS (Cont'd.)

2. SUPPLEMENTAL REVIEW SCREENS (Cont'd.)

b. Screen O: Power Quality and Voltage Tests (Cont'd.)

In aggregate with existing Generating Facility capacity on the Line Section, distribution circuit, and/or substation. (Cont'd.)

iii) Can it be determined within the Supplemental Review that the harmonic levels meet IEEE 519 limits at the Point of Common Coupling (PCC)?

iv) Are any voltage impacts created by the project mitigated considering the settings of the Volt-Var function and the characteristics of the circuit segment?

- If yes to all of the above (pass), continue to Screen P.
- If no to any of the above (fail), a quick review of the failure may determine the requirements to address the failure; otherwise Electrical Independence Tests and Detailed Studies are required. Continue to Screen P. (Note: If Electrical Independence tests and Detailed Studies are required, Applicants will continue to the Electrical Independence Tests and Detailed Studies after review of the remaining Supplemental Review Screens.)

Significance: Adverse voltages and undesirable interference may be experienced by other Customers on Distribution Provider's Distribution System caused by operation of the Generating Facility(ies).

c. Screen P: Safety and Reliability Tests

Does the location of the proposed Generating Facility or the aggregate generation capacity on the Line Section create impacts to safety or reliability that cannot be adequately addressed without Detailed Study?

- If yes (fail), review of the failure may determine the requirements to address the failure; otherwise Electrical Independence Tests and Detailed Studies are required. Continue to Section G.3.
- If no (pass), Supplemental Review is complete.

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 182

**Hh. SMART INVERTER GENERATING FACILITY DESIGN AND OPERATING
REQUIREMENTS (Cont'd.)**

The inverter requirements are intended to be consistent with UL 1741 - Supplement SA using Section Hh of Rule 21 as the source requirement document and ANSI/IEEE 1547-2003 and 1547a Standard for Interconnecting Distributed Resources with Electric Power Systems (IEEE 1547 including amendment 1547a), where possible. In the event of conflict between this Rule, and UL 1741 - Supplement SA, and/or IEEE 1547-2003 or IEEE 1547a, this Rule shall take precedence. Exceptions are taken to IEEE 1547 Clauses 4.1.4.2 Distribution Secondary Spot Networks and Clauses 4.1.8.1 or 5.1.3.1, which address Protection from Electromagnetic Interference. Rule 21 does not adopt the Generating Facility power limitation of 10 MW incorporated in IEEE 1547.

The Smart Inverter default settings and default activation states may be modified upon mutual agreement between Applicant and Distribution Provider.

**1. GENERAL INTERCONNECTION AND PROTECTIVE FUNCTION
REQUIREMENTS**

The Protective Functions and requirements of this Rule are designed to protect Distribution Provider's Distribution and Transmission System and not the Generating Facility. A Producer shall be solely responsible for providing adequate protection for its Generating Facility and Interconnection Facilities. Producer's Protective Functions shall not impact the operation of other Protective Functions on Distribution Provider's Distribution and Transmission System in a manner that would affect Distribution Provider's capability of providing reliable service to its customers.

a. Protective Functions Required

Smart Inverters operating in parallel with Distribution Provider's Distribution or Transmission System shall be equipped with the following Protective Functions to sense abnormal conditions on Distribution Provider's Distribution or Transmission System and cause the Smart Inverter to be automatically disconnected from Distribution Provider's Distribution or Transmission System or to prevent the Smart Inverter from being connected to Distribution Provider's Distribution or Transmission System inappropriately:

- (i) Over and under voltage trip functions and over and under frequency trip functions;

(Continued)

Advice 5187-E-A
Decision 16-06-052

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

Date Filed	May 31, 2018
Effective	June 30, 2018
Resolution	



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 253

Mm1. NON-EXPORT UTILIZING CERTIFIED POWER CONTROL SYSTEMS

Generating Facilities that use certified power control systems to meet the **non-export** requirements shall meet the following six specifications.

- i. Uses a power control system that has passed the requirements of the most recent UL Power Control Systems CRD test protocol;
- ii. The power control system has an open-loop response time of no more than 2(two) seconds as provided in the power control system specification and certification data sheets;
- iii. The Generating Facility uses only UL 1741 certified and/or UL 1741 SA listed grid-support non-islanding inverters;
- iv. The power control system is set to zero-export;
- v. The power control system must reduce export to below zero export in two seconds or less;
- vi. The operation of the Generating Facility power control system shall maintain voltage fluctuations limits specified in Electric Rule 2.

Once satisfying the first six specifications above, the evaluation of a **non-export** Generating Facility requesting interconnection under this section shall also:

- i. Omit evaluation for Screen D.
- ii. Utilize the Generating Facility's gross nameplate rating for Screens F and G

Once satisfying the first six specifications above, the evaluation of a **limited export** Generating Facility requesting interconnection under this section shall also utilize the:

- i. Approved limited export value to determine the impacts to the grid and in Screens D, I, J, K, M, N, O, and P;
- ii. Generating Facility's gross nameplate rating for Screens F and G.

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 253

Mm2. INADVERTENT EXPORT UTILIZING CERTIFIED POWER CONTROL SYSTEMS

Generating Facilities that use certified power control systems to meet the inadvertent export requirements shall meet the following seven specifications:

- i. The Generating Facility aggregate maximum gross nameplate capacity shall not exceed 1000KVA;
- ii. Use power control systems that have passed the requirements of the most recent UL Power Control Systems CRD test protocol;
- iii. The power control system has an open-loop response time of no more than 10(ten) seconds as provided in the control system specification and certification data sheets;
- iv. The Generating Facility uses only UL 1741 certified and/or UL 1741 SA listed grid-support non-islanding inverters;
- v. The power control system is set to zero-export;
- vi. The power control system must reduce export to below zero export in 10(ten) seconds or less;
- vii. The operation of the Generating Facility power control system shall maintain voltage fluctuations limits specified in Electric Rule 2.

The Distribution Provider evaluating Generating Facilities requesting interconnection under this section shall:

- i. Apply Screens A through M using the aggregate inverter nameplate rating;
- ii. If Supplemental Review is required, within 15 BD days of being notified by the Distribution Provider, the applicant shall identify and provide to the Distribution Provider the frequency of inadvertent export, the real power level in watts of inadvertent export and the time duration of inadvertent export;
- iii. If distribution upgrades are identified, Screen P shall recognize power control parameters taking into account local feeder conditions, customer's operating profile and

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 253

the magnitude, duration, and frequency of anticipated export during the review of Screen P;

- iv. Complete Supplemental Review within 15 days of receiving the required information specified under ii. above in this section;
- v. If the Interconnection Customer does not provide the operating profile information within the specified 15 Business Days, Distribution Provider will perform Supplemental Review based on information included in the Interconnection Request within 30 Business Days of the request for customer operating profile information;
- vi. Only the largest facility operating under this Rule 21 section in the line section shall be used for aggregate evaluation for subsequent interconnection requests.

(Continued)

Advice	5187-E-A	Issued by	Date Filed	May 31, 2018
Decision	16-06-052	Robert S. Kenney	Effective	June 30, 2018
		Vice President, Regulatory Affairs	Resolution	



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 253

N. EXPEDITED INTERCONNECTION PROCESS FOR NON-EXPORT ENERGY STORAGE GENERATING FACILITIES

Applicants with Interconnection Requests for Non-Export Energy Storage Generating Facilities who meet the requirements outlined below are eligible for expedited interconnection in accordance with the Fast Track Process technical review requirements of Section F.2.¹ Applicants with Non-Export AC/DC Converters that meet the requirements outlined in O. below are also eligible.

1. ELIGIBILITY REQUIREMENTS

Applicants seeking to interconnect a Generating Facility under the provisions of this Section N must meet the following eligibility requirements.

- a. Applicant must electronically submit a completed Interconnection Request, including completing all application fields and submitting all supporting documentation necessary to facilitate the expedited review as required by Distribution Provider. Such documentation may include, but is not limited to, single line diagrams with specific details, manufacturer data sheets for proposed equipment, description of control systems, validation of the right to do business in the state, etc. Distribution Provider shall clearly communicate these requirements as part of the application process. Applicant shall select this process option in the Interconnection Request.
- b. Applicant's Generating Facility must meet the requirements outlined in Section N.2 below.
- c. Applicant's Interconnection Request must be eligible for and select the Fast Track Process.
- d. Applicant's Interconnection Request must pass Fast Track Initial Review and not require any Interconnection Facilities, Distribution Upgrades or Network Upgrades to remain eligible under this Section. As such, Interconnection Requests that select the Cost Envelope Option are not eligible.
- e. Applicants selecting this section shall use the corresponding interconnection agreement type provided for eligible Generating Facilities.

¹ In accordance with Advice 4941-E-A, the provisions provided for in Section N are being implemented under a pilot approach with a July 1, 2017 through June 30, 2018 reporting period. As such, the provisions may be continued, modified and/or withdrawn as determined by the Commission

(Continued)

Advice	5187-E-A	Issued by	Date Filed	May 31, 2018
Decision	16-06-052	Robert S. Kenney	Effective	June 30, 2018
		Vice President, Regulatory Affairs	Resolution	



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 255

N. EXPEDITED INTERCONNECTION PROCESS FOR NON-EXPORT ENERGY STORAGE GENERATING FACILITIES (Cont'd.)

2. GENERATING FACILITY ELIGIBILITY CRITERIA

An Applicant's Generating Facility must meet and adhere to the following criteria.

- a. The Generating Facility must be comprised solely of the following specific categories of generation technology: Non-Exporting battery storage.
- b. The Generating Facility must have an aggregate maximum inverter nameplate rating of no greater than 500 kW. There is no limitation on an energy storage device's kWh capacity rating.
- c. The Generating Facility must be located behind an existing single retail meter and Point of Common Coupling with a single, clearly marked and accessible disconnect. No other Generators, other than isolated back-up Generators, may be at the same Point of Interconnection or Point of Common Coupling.
- d. The Generating Facility must utilize Option 3 or Option 4 to meet the non-export protection requirements of Screen I in Section G.1.i.
- e. The Generating Facility must have a single or coordinated control system for all charging functions if utilizing multiple inverters. The control system must also ensure that there is no increase in the Interconnection Customer's existing peak load demand.
- f. The Generating Facility must utilize only inverter-based, UL 1741 and UL 1741 SA-listed equipment. Additionally, all installed equipment must meet Distribution Provider's current electric service requirements with no violations or variances.

(Continued)

<i>Advice</i>	5187-E-A	<i>Issued by</i>	<i>Date Filed</i>	May 31, 2018
<i>Decision</i>	16-06-052	Robert S. Kenney	<i>Effective</i>	June 30, 2018
		<i>Vice President, Regulatory Affairs</i>	<i>Resolution</i>	



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 256

O. Non-Export AC/DC CONVERTER ELIGIBILITY CRITERIA

Applicants with Non-Export AC/DC Converters who meet the eligibility criteria below qualify for the expedited interconnection process outlined in Section N of this Rule.

1. The Non-Export AC/DC Converter must have an aggregate maximum inverter nameplate rating of no greater than 500 kW. There is no limitation on an energy storage device's kWh capacity rating.
2. Applicant's Interconnection Request must be eligible for and select the Fast Track Process.
3. Applicant's Interconnection Request must pass Fast Track Initial Review and not require any Interconnection Facilities, Distribution Upgrades or Network Upgrades to remain eligible under this Section.
4. Applicants selecting this section shall use the corresponding interconnection agreement type provided for Non-Export AC/DC Converters eligible under this Section. As such, Interconnection Requests that select the Cost Envelope Option are not eligible.
5. Applicant's Non-Export AC/DC converter must meet the Certification requirements in the Section C Definition of "Non-Export AC/DC Converters".

(Continued)

Advice 5187-E-A
Decision 16-06-052

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

<i>Date Filed</i>	May 31, 2018
<i>Effective</i>	June 30, 2018
<i>Resolution</i>	



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 257

Appendix A Forms Associated with Rule 21 Generating Facility Interconnections			
Form Number	Title	Associated Tariffs	Use Guidance
Pre-Application Request			
79-1181	Rule 21 Pre-Application Report Request	Rule 21	For Generator Developer to request basic info about local distribution circuit
Study Agreement			
79-1162	Rule 21 Detailed Study Agreement	Rule 21	Independent Study and Distribution Group Study Process Study Agreement
NEM and Non-Export Interconnection Forms			
79-978	Interconnection Agreement for Net Energy Metering of Solar or Wind Electric Generating Facilities of 1,000 kW or Less, Other Than Facilities of 30 kW or Less	NEM, Rule 21	Solar and/or Wind > 30 kW and ≤ 1 MW expanded NEM used with Form 79-1174-02
79-978-02	Interconnection Agreement for Net Energy Metering (NEM2) of Solar or Wind Electric Generating Facilities of 1,000 Kilowatts or Less, Other than Facilities of 30 Kilowatts or Less	NEM2, Rule 21	Solar and/or Wind > 30 kW and ≤ 1 MW expanded NEM2 used with Form 79-1174-02
79-997	Interconnection Agreement for Net Energy Metering of Biogas Digester Generating Facilities	NEM, Rule 21	NEMBIO (Closed to new applicants), NEMBIOA Interconnection Agreement used with Form 79-1174
79-1010	Interconnection Agreement for Net Energy Metering of Fuel Cell Generating Facilities	NEM, Rule 21	NEMFC Interconnection Agreement used with Form 79-1174
79-1069	Generating facility Interconnection Agreement (Multiple Tariff)	NEM, Rule 21	NEMMT Interconnection Agreement used with Form 79-1174
79-1069-02	Generating Facility Interconnection Agreement (Multiple Tariff NEM2MT)	NEM2, Rule 21	NEM2MT Interconnection Agreement used with Form 79-1174-02
79-1109 ***	Virtual Net Energy Metering Application and Interconnection Agreement For The Building Owner of Multifamily Affordable Housing With A Solar Generating Facility of 1 Megawatt or Less	NEM, Rule 21	NEMV Interconnection Agreement used with Form 79-974

(Continued)

Advice 5187-E-A
Decision 16-06-052

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

Date Filed May 31, 2018
Effective June 30, 2018
Resolution



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 258

Appendix A (Cont'd.) Forms Associated with Rule 21 Generating Facility Interconnections			
Form Number	Title	Associated Tariffs	Use Guidance
NEM and Non-Export Interconnection Forms (Cont'd.)			
79-1109-02***	NEM2VMSH Virtual Net Energy Metering Application and Interconnection Agreement for the Building Owner of Multifamily Affordable Housing with a Solar Generating Facility of 1 Megawatt or Less	NEM2VMSH, Rule 21	NEM2VMSH Interconnection Agreement used with Form 79-1174-02
79-1151A	Net Energy Metering Interconnection for Solar And/or Wind Electric Generating Facilities Of 30 Kilowatts Or Less Agreement and Customer Authorization	NEM, Rule 21	NEMS Interconnection Agreement be used with 79-1151B Application
79-1151A-02	Agreement And Customer Authorization - Net Energy Metering (NEM2) Internconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less	NEM2, Rule 21	NEM2S Application to be used with 79-1151A Interconnection Agreement
79-1151B	Net Energy Metering Interconnection For Solar And/or Wind Electric Generating Facilities Of 30 Kilowatts Or Less Application	NEM, Rule 21	NEMS Application to be used with 79-1151A Interconnection Agreement
79-1151B-02	Application - Net Energy Metering (NEM2) Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less	NEM2, Rule 21	NEM2S Application to be used with 79-1151A-02 Interconnection Agreement
79-1124***	Eligible Low Income Development Virtual Net Energy Metering Application and Interconnection Agreement for Multifamily Affordable Housing with Solar Generation Totaling 1 Megawatt or Less	NEMVMASH, Rule 21	NEMVMASH Interconnection Agreement
79-1124-02***	Eligible Low Income Development Virtual Net Energy Metering (NEM2VMSH) Application and Interconnection Agreement for Multifamily Affordable Housing with Solar Generation Totaling 1 Megawatt or Less	NEM2VMSH, Rule 21	NEM2VMSH Interconnection Agreement
79-1131***	NEMV Application and Interconnection Agreement for a Solar (PV) or Wind Generating Facility of 1 MW or Less <i>Serving Multiple Tenants Served at a Single Property Delivery Point</i>	NEM, Rule 21	NEMV Interconnection Agreement
79-1131-02***	NEM2V Application and Interconnection Agreement for a Solar (PV) or Wind Generating Facility of 1 MW or Less <i>Serving Multiple Tenants Served at a Single Property Delivery Point</i>	NEM2V, Rule 21	NEM2V Interconnection Agreement

(Continued)

Advice 5187-E-A
Decision 16-06-052

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

Date Filed May 31, 2018
Effective June 30, 2018
Resolution



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 259

Appendix A (Cont'd.) Forms Associated with Rule 21 Generating Facility Interconnections			
Form Number	Title	Associated Tariffs	Use Guidance
NEM and Non-Export Interconnection Forms (Cont'd.)			
79-1137	Interconnection Agreement for Net Energy Metering for a Renewable Electrical Generation Facility of 1,000 kW or Less, Except Solar or Wind (SB 489)	NEM, Rule 21	NEMV, NEMEXP, NEMEXPM Interconnection Agreement typically used with Forms 79-974 and 79-1142 Applications
79-1137-02	Interconnection Agreement for Net Energy Metering (NEM2/NEM2V) for a Renewable Electricity Generation Facility of 1,000 Kilowatts or Less, Except Solar or Wind	NEM2, NEM2V, Rule 21	NEM2V, NEM2EXP, NEM2EXPM Interconnection Agreement typically used with Forms 79-1174-02
79-1142 ***	NEMV Interconnection Application for a Renewable Electrical Generation Facility of 1 Megawatt or Less	NEM, Rule 21	Used with Form 79-1137 (L)
79-973	Generating Facility Interconnection Agreement For Non-Export Generating Facilities (Rule 21 Interconnection Agreement)	Rule 21	Interconnection Agreement used for RESBCT and non-NEM generation with Application 79-974 and 79-1112
79-992	Customer Generation Agreement (Third party Generator on Premises, Non-Exporting)	Rule 21	Used with Forms 79-1174
79-1070	Export Addendum to Generating Facility Interconnection Agreement for Non-Export Generating Facilities (Form 79-973) Sized 2 Megawatts or Less	Rule 21	Export addendum used with Form 79-973
79-1136	PG&E Interconnection Agreement For an Existing Small Generating Facility Interconnecting to the Distribution System under Rule 21	Rule 21	Used for existing QFs with Form 79-974 (L)
79-1192	Interconnection Agreement for Non-Export Storage Generating Facilities 500KW or Less	Rule 21	Used for expedited interconnection of non-export energy storage, pursuant to Rule 21 Section N, PG&E AL 4941-E & E-A and D.16-06-052, & Attachment C, Section II.1
79-1199	Agreement And Customer Authorization Non-Export Stand-Alone Energy Storage Of 30 Kilowatts Or Less	Rule 21	Interconnection Agreement For non-export storage ≤ 30 kW
79-1206-02	Eligible Low-Income Development Virtual Net Energy Metering (NEM2VSOM) Interconnection Agreement For The Solar On Multifamily Affordable Housing (SOMAH) Program With Solar Generation Totaling 1 Mw Or Less	NEM2VSOM	NEM2VSOM Interconnection agreement for solar 1 MW or less.

(Continued)

Advice 5866-E
Decision D.17-12-022

Issued by
Robert S. Kenney
Vice President, Regulatory Affairs

Submitted June 29, 2020
Effective July 29, 2020
Resolution



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 260

Appendix A (Cont'd.) Forms Associated with Rule 21 Generating Facility Interconnections			
Form Number	Title	Associated Tariffs	Use Guidance
Other NEM and Non-Export Forms (Cont'd.)			
79-1130	Request to Opt-out of / Opt-in to Compensation for Surplus Electricity	NEM	AB 920- Opt not to receive compensation for net annual excess energy
79-1202 ****	Load Aggregation Appendix	NEM, NEM2, Rule 21	Use as an Appendix with Form 79-1151A, 79-1151A-02, 79-978, 79-978-02, 79-1137, 79-1137-02, 79-1069 or 79-1069-02
79-1155	Schedules NEM, NEMV, NEMVMASH, Net Surplus Electricity (NSE) Renewable Energy Credits Compensation	NEM, Rule 21	
79-1155-02	Schedules NEM2, NEM2V, NEM2VMASH, Net Surplus Electricity (NSE) Renewable Energy Credits Compensation	NEM2 NEM2V NEM2VMASH, Rule 21	
79-1174	Rule 21 Generator Interconnection Application	NEM (NEMEXP, NEMMT and NEMA), NEMFC, NEMV, NEMVMASH, RES-BCT, Rule 21	Rule 21 customer interconnection application form for expanded net-energy metered (all NEM > 30 kw and all non-Solar/Wind NEM), NEMFC, NEMV, NEMVMASH, RES-BCT, and non-export and limited export Rule 21 generation. (Standard NEM for solar and/or wind ≤ 30 kw will continue to use the 79-1151B application.)
79-1174-02	Rule 21 Generator Interconnection Application	NEM2 (NEM2EXP, NEM2MT and NEM2A), NEMFC, NEM2V, NEM2VMASH, RES-BCT, Rule 21	Rule 21 customer interconnection application form for expanded net-energy metered (all NEM2 > 30 kw and all non-Solar/Wind NEM), NEMFC, NEM2V, NEM2VMASH, RES-BCT, and non-export and limited export Rule 21 generation. (Standard NEM for solar and/or wind ≤ 30 kw will continue to use the 79-1151B application.)

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 261

Appendix A (Cont'd.) Forms Associated with Rule 21 Generating Facility Interconnections			
Form Number	Title	Associated Tariffs	Use Guidance
Export for Sale Interconnection Forms			
79-1145	Rule 21 Exporting Generator Interconnection Request	Rule 21	Preferred online application: https://www.pge.com/en_US/large-business/services/alternatives-to-pge/electric-generation-interconnection.page
79-1197	Local Government Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) Re-Allocation Request	RES-BCT	Use to establish RES-BCT benefiting account re-allocations
79-1198-02	Interconnection Agreement For Net Energy Metering (NEM2) And Renewable Electrical Generating Facility Sized Greater Than 1,000 Kw	NEM2	FT and Detailed Study Interconnection Agreement for >1MW NEM2 Generating Facilities
79-1200	Rule 21 Generator Interconnection Agreement For Exporting Generating Facilities	Rule 21	FT and Detailed Study Interconnection Agreement for Exporting Generating Facilities
Other Agreements			
79-280	Agreement for Installation of Allocation of Special Facilities for Parallel Operation of Non-Utility-Owned Generation and/or Electrical Standby Service (Electric Rules 2 and 21)	Rule 21	Special Facilities Agreement to be used with Form 79-702
79-702	Appendix A: Detail of Special Facilities Charges to be used in concert with form 79-280	Rule 21	Used with Form 79-280

*** The application section of these forms is replaced by 79-1174.

**** For NEMA expanded customers, use the online 79-1174 form.

(Continued)



ELECTRIC RULE NO. 21
GENERATING FACILITY INTERCONNECTIONS

Sheet 262

APPENDIX B

Unit Cost Guide

Distribution Provider shall publish a Unit Cost Guide for facilities generally required to interconnect generation in Distribution Provider's Distribution System. The Unit Cost Guide shall not be binding for actual facility costs and is provided only for additional cost transparency, developer reference, and Distribution Provider's reference when preparing the cost estimate provided in any applicable studies. The Unit Cost Guide shall not replace the estimated cost provided by Distribution Provider in an Interconnection Study or an initial or supplemental review under the Fast Track Process.

The Unit Cost Guide shall include the anticipated cost of procuring and installing Interconnection Facilities and Distribution Upgrades generally utilized by the Applicant. An annual adjustment shall be performed within the Unit Cost Guide for five (5) years to account for the anticipated timing of procurement to accommodate a potential range of Commercial Operation Dates.

The Unit Cost Guide shall be updated annually in accordance with the process set forth in D.16-06-052.

(Continued)

<i>Advice</i>	5187-E-A	<i>Issued by</i>	<i>Date Filed</i>	May 31, 2018
<i>Decision</i>	16-06-052	Robert S. Kenney	<i>Effective</i>	June 30, 2018
		<i>Vice President, Regulatory Affairs</i>	<i>Resolution</i>	

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

AT&T	Downey & Brand	Pioneer Community Energy
Albion Power Company	East Bay Community Energy	
	Ellison Schneider & Harris LLP	Redwood Coast Energy Authority
Alta Power Group, LLC	Energy Management Service	Regulatory & Cogeneration Service, Inc.
Anderson & Poole	Engineers and Scientists of California	SCD Energy Solutions
		San Diego Gas & Electric Company
Atlas ReFuel		
BART	GenOn Energy, Inc.	SPURR
	Goodin, MacBride, Squeri, Schlotz & Ritchie	San Francisco Water Power and Sewer
Barkovich & Yap, Inc.	Green Power Institute	Sempra Utilities
California Cotton Ginners & Growers Assn	Hanna & Morton	
California Energy Commission	ICF	Sierra Telephone Company, Inc.
	IGS Energy	Southern California Edison Company
California Hub for Energy Efficiency	International Power Technology	Southern California Gas Company
Financing	Intestate Gas Services, Inc.	Spark Energy
	Kelly Group	Sun Light & Power
California Alternative Energy and	Ken Bohn Consulting	Sunshine Design
Advanced Transportation Financing	Keyes & Fox LLP	Tecogen, Inc.
Authority	Leviton Manufacturing Co., Inc.	TerraVerde Renewable Partners
California Public Utilities Commission		Tiger Natural Gas, Inc.
Calpine		
	Los Angeles County Integrated	TransCanada
Cameron-Daniel, P.C.	Waste Management Task Force	Utility Cost Management
Casner, Steve	MRW & Associates	Utility Power Solutions
Cenergy Power	Manatt Phelps Phillips	Water and Energy Consulting Wellhead
Center for Biological Diversity	Marin Energy Authority	Electric Company
	McKenzie & Associates	Western Manufactured Housing
		Communities Association (WMA)
Chevron Pipeline and Power	Modesto Irrigation District	Yep Energy
City of Palo Alto	NLine Energy, Inc.	
	NRG Solar	
City of San Jose		
Clean Power Research	Office of Ratepayer Advocates	
Coast Economic Consulting	OnGrid Solar	
Commercial Energy	Pacific Gas and Electric Company	
Crossborder Energy	Peninsula Clean Energy	
Crown Road Energy, LLC		
Davis Wright Tremaine LLP		
Day Carter Murphy		
Dept of General Services		
Don Pickett & Associates, Inc.		
Douglass & Liddell		