

PUBLIC UTILITIES COMMISSION

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December 19, 2003

Advice Letter 2373E-B

Ms Anita Smith, Rate Analyst
Pacific Gas and Electric Company
77 Beale Street, 10B Mail Code
San Francisco, CA 94177

Subject: Revisions to Electric Rate Schedule E-NET – Net Energy Metering Service and
Electric Rule 21 Generating Facility Interconnections and Associated Documents
to Comply with Assembly Bill 58

Dear Ms Smith:

Advice Letter 2373E-B is effective January 1, 2003. A copy of the advice letter is sent
herewith for your records.

Sincerely,

A handwritten signature in cursive script that reads "Paul Clavin".

Director
Energy Division



Karen A. Tomcala
Vice President
Regulatory Relations

77 Beale Street, Room 1065
San Francisco, CA 94105

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Advice 2373-E-B
(Pacific Gas and Electric Company ID U 39 E)

Public Utilities Commission of the State of California

Subject: Revisions to Electric Rate Schedule E-NET – Net Energy Metering, Electric Rule 21 and Associated Documents to Comply with Assembly Bill 58 – Second Supplemental Filing

Pacific Gas and Electric Company (PG&E) hereby submits this second supplemental filing requesting further revisions to its electric tariffs. This supplemental filing modifies PG&E's August 5, 2003, Advice Filing 2373-E-A, in concurrence with comments from the California Public Utilities Commission ("Energy Division"). The affected tariff sheets are listed on the enclosed Attachment I.¹ This filing supercedes Advice 2373-E and Advice 2373-E-A.

Purpose

The purpose of this filing is to comply with Assembly Bill (AB) 58, which replaces Sections 2827, 2827.7 and adds Section 2827.8 in the California Public Utilities Code. This bill became effective January 1, 2003. In addition, this filing seeks Commission approval for a number of general edits and revisions included at the request of Energy Division staff. In this filing, PG&E submits revisions to:

- Electric Rate Schedule *E-NET-- Net Energy Metering (E-NET)*;
- *Electric Rule 21 -- Generating Facility Interconnections*;
- *Form 79-854, Interconnection Agreement for Net Energy Metering for Residential and Small Commercial Solar or Wind Electric Generating Facilities of 10 Kilowatts or Less*;

¹ PG&E reserves all legal rights to challenge the decisions or statutes under which it has been required to make this advice filing, and nothing in this advice filing constitutes a waiver of such rights. Also, PG&E reserves any additional legal rights to challenge the requirement to make this advice filing by reason of its status as a debtor under Chapter 11 of the Bankruptcy Code, and nothing in this advice filing constitutes a waiver of such rights.

- Form 79-978, *Interconnection Agreement for Net Energy Metering of Solar or Wind Electric Generating Facilities of 1,000 Kilowatts or Less, Other Than Residential or Small Commercial Facilities of 10 Kilowatts or Less*;
- Form 79-994, *Interconnection Application for Net Energy Metering (E-Net) for Residential or Small Commercial Customers with Solar or Wind Electric Generating Facilities of 10 Kilowatts or Less*;
- Form 79-974, *Generating Facility Interconnection Application* and creates a new form;
- Form 79-998, *Expanded Net Energy Metering (E-NET) Supplemental Application*.

As with Advice 2373-E-A, in response to the Energy Division's request, PG&E seeks approval for a January 1, 2003 effective date for this filing.

Background

On September 24, 2002, Governor Davis signed Assembly Bill (AB) 58 into law. It amended Section 2827 of the California Public Utilities Code (PUC) to keep in place the expanded eligibility for the net metering program otherwise set to expire on December 31, 2002.² In addition the new law placed a "cap" on the total rated generating capacity that can be interconnected system wide under electric Rate Schedule E-NET, set new time limits for processing E-NET interconnection application requests, and added language regarding the payment of nonbypassable charges (public benefits charges³ and, depending on Commission action, Department of Water Resource (DWR) charges⁴) on usage displaced by each customer's generator.

Also, AB 58 modified PUC Section 2827.7 to "grandfather" E-NET applicants who obtain all local and/or state permits required to commence construction on or before December 31, 2002, and who complete construction on or before September 30, 2003, under the E-NET terms and conditions in effect on the date the original permits were obtained.

² Without Assembly Bill (AB) 58, only residential and small commercial customers with solar and wind systems 10 kilowatts (kW) or less would have been eligible to apply for Schedule E-NET starting January 1, 2003. With this new law, customers in all classes with solar or wind systems up to and including 1 megawatt (MW) continue to be eligible.

³ See PUC Section 2827(k).

⁴ See PUC Section 2827(l). On April 3, 2003, the Commission issued D. 03-04-030 exempting E-NET customers from DWR charges on departed load (i.e., on usage displaced by the customer's generator).

Finally, AB 58 added PUC Section 2827.8 creating a new wind energy co-metering program for any new E-NET customer with a wind generator larger than 50 kilowatts (kW), up to and including one megawatt (MW).

PG&E filed Advice 2373-E on April 14, 2003. PG&E had several discussions with the Energy Division regarding suggested edits to the tariff and forms. In an effort to achieve consistency PG&E also worked with the other energy utilities regarding many of the suggested edits and with the California Energy Commission's Rule 21 Working Group where applicable.

After additional review and comments from the Energy Division, PG&E filed Advice 2373-E-A, which was to supercede Advice 2373-E. However, Advice 2373-E-A did not include all the revisions requested by the Energy Division staff since some proposed modifications were outside the scope of AB 58 compliance. After further consultations, PG&E agreed to file Advice 2373-E-B, which includes the recommendations from the Energy Division. Though Advice 2373-E-B proposes revisions that are not required by AB 58, it is a complete and practical form of electric Rate Schedule E-NET.

As described previously in Advice 2373-E, PG&E revises Rate Schedule E-NET to:

- a) Remove the sunset date that would otherwise have closed E-NET to new customers other than residential and small commercial customers with system capacities of 10 kW or less;
- b) Add a paragraph in the applicability section setting a cap on the total amount of net metered generation (in kW) that can interconnect with PG&E's grid. The cap is based on one half of one percent of PG&E's aggregate customer peak demand;
- c) Amend wording detailing nonbypassable charges customer-generators are responsible for paying under various conditions. After the CPUC decision on DWR charges, Decision (D.) 03-04-030, PG&E has not included language regarding the obligation of eligible customer-generators to pay those charges in this tariff. However, with respect to Public Purpose Program charges, PG&E has included generic language stating that the Public Purpose Program charge will be applied to usage displaced by the customer's generator "at such time, and in such a manner, as may be approved by the CPUC".⁵ PG&E proposes that such usage would either be estimated based on Commission-approved capacity factors as applied to individual system capacities, or alternatively at the election of customers with generators 30 kW or larger, meter reads. This approach would provide a means of assessing a charge that the legislation makes clear is non-bypassable, without requiring the

⁵ PUC Section 2827(k), added by AB 58, states "Net-metering and co-metering customers shall not be exempt from the public benefits charge."

installation of a second meter. Proposed language making this change was filed separately in Advice 2405-E on August 8, 2003. Advice 2373-E was suspended on April 9, 2003.

- d) Add language regarding wind energy co-metering in Special Condition 5. Customer-generators with wind generating facilities greater than 50 kW up to and including 1 MW must take service under a time-of-use (TOU) otherwise applicable rate schedule (OAS) and must pay for a meter(s) capable of separately measuring total consumption and total export of energy. The net energy supplied by the generating facility will be credited in accordance with the generation component of the energy charge in the customer's TOU OAS, while energy supplied by PG&E to the customer-generator will be charged in accordance with the total TOU OAS. The maximum credit over the annual reconciliation period for wind co-metering customers is capped at the average credit per kilowatt-hour (kWh) exported to the grid, multiplied by total consumption (in kWh).

In addition to the above, as previously described in Advice 2373-E-A, PG&E is proposing to:

- a) Remove the last sentence in Rule 21 Section C.1.h that was proposed in the original advice letter, 2373-E. This language is already proposed in C.1.e. and the CEC Rule 21 Working Group determined that it was not needed in two places.
- b) Make various other edits to Schedule E-NET and related forms as suggested by the Energy Division that relate to AB 58 compliance.
- c) At the request of the Energy Division, change the proposed effective date to January 1, 2003.

Finally, in addition to the above changes, with this filing PG&E proposes to:

- a) Restructure the insurance language in Form 79-978, "Interconnection Agreement for Net Energy Metering of Solar or Wind Electric Generating Facilities of 1,000 Kilowatts or Less, Other Than Residential or Small Commercial Facilities of 10 Kilowatts or Less", Section 9 (Insurance) both updating and making the section easier to read. The requirements and obligations did not change with the rewritten language.
- b) Replaced the language in Section 4 in Form 79-854 with language from Section 3.1 in Form 79-978 in order to be consistent.
- c) Modify formatting on some of the forms in order to simplify them.
- d) Incorporate other edits as agreed upon with the Energy Division that do not necessarily relate to AB 58, and which do not change the meaning of the language in the forms.

Effective Date

At the request of the Energy Division, PG&E requests that this advice filing become effective **January 1, 2003**.

Protest

Anyone wishing to protest this filing should do so by sending a letter via postal mail and facsimile by **November 26, 2003**, which is 20 days after the date of this filing. The protest must state the grounds upon which it is based, including such items as financial and service impact, and should be submitted expeditiously. Protests should be mailed to:

IMC Branch Chief
Energy Division

California Public Utilities Commission
505 Van Ness Avenue, Room 4002
San Francisco, California 94102
Facsimile: (415) 703-2200
E-mail: jjr@cpuc.ca.gov

Copies should also be mailed to the attention of the Director, Energy Division, Room 4005 and Jerry Royer, Energy Division, at the address shown above. It is also requested that a copy of the protest be sent via postal mail and facsimile to Pacific Gas and Electric Company on the same date it is mailed or delivered to the Commission at the address shown below.

Brian K. Cherry
Director, Regulatory Relations

Pacific Gas and Electric Company
P.O. Box 770000 Mail Code B10C
San Francisco, California 94177
Facsimile: (415) 973-7226
E-mail: RxDd@pge.com

The protest shall set forth the grounds upon which it is based and shall be submitted expeditiously. There is no restriction on who may file a protest.

Notice

In accordance with General Order 96-A, Section III, Paragraph G, a copy of this advice letter is being sent electronically and via U.S. mail to parties shown on the attached list, and the service list parties for R. 99-10-025. Address changes should be directed to Sandra Ciach (415) 973-7572. Advice letter filings can also be accessed electronically at:

<http://www.pge.com/tariffs/>

Karen A. Tomcala, SMC

Vice President - Regulatory Relations

Attachments

cc: Service List R. 99-10-025

Cal P.U.C. Sheet No.	Title of Sheet	Cancelling Cal P.U.C. Sheet No.
20840-E	Electric Rate Schedule E-NET – Net Energy Metering Services	18711-E
20841-E	Electric Rate Schedule E-NET (Continued)	New
20842-E	Electric Rate Schedule E-NET (Continued)	18712-E
20843-E	Electric Rate Schedule E-NET (Continued)	18313-E
20844-E	Electric Rate Schedule E-NET (Continued)	18314-E
20845-E	Electric Rate Schedule E-NET (Continued)	New
20846-E	Electric Rate Schedule E-NET (Continued)	New
20847-E	Electric Rule 21 – Generating Facility Interconnections	19408-E
20848-E	Electric Rule 21 (Continued)	19408,19409-E
20849-E	Electric Rule 21 (Continued)	19409-E
20850-E	Electric Rule 21 (Continued)	19426-E
20851-E	Sample Form – Interconnection Agreement for Net Energy Metering for Residential and Small Commercial Solar or Wind Electric Generating Facilities of 10 Kilowatts of Less (Form 79-854)	18324-E
20852-E	Sample Form – Interconnection Agreement for Net Generating Facilities of 1,000 KW or Less, Other Than Residential or Small Commercial Facilities of 10 Kilowatts of Less (Form 79-978)	18318-E
20853-E	Sample Form – Application for Interconnecting Residential or Small Commercial Net Energy Metering (E-NET) Customers with Solar or Wind Electric Generating Facilities of 10 Kilowatts of Less (Form 79-994)	18970-E
20854-E	Sample Form – Expanded Net Energy Metering (E-NET) Supplemental Application (Form 79-998)	New
20855-E	Sample Form – Generating Facility Interconnection Application (Form 79-974)	18580-E
20856-E	Table of Contents – Sample Forms (Continued)	20196,18971-E
20857-E	Table of Contents – Sample Forms (Continued)	18971, 19236, 19010, 18980-E
20858-E	Table of Contents – Rules (Continued)	19454-E
20859-E	Table of Contents – Rate Schedules (Continued)	20805-E
20860-E	Table of Contents – Rate Schedules (Continued)	20806-E
20861-E	Table of Contents	20807-E



SCHEDULE E-NET—NET ENERGY METERING SERVICE

APPLICABILITY: This net energy-metering schedule is applicable to a residential, small commercial (as defined in subdivision (h) of Section 331 of the California Public Utilities Code (CPU Code)), commercial, industrial, or agricultural customer who uses a solar or wind turbine electrical generating facility, or a hybrid system of both, with a capacity of not more than 1,000 kilowatts that is located on the customer's owned, leased, or rented premises, is interconnected and operates in parallel with PG&E's transmission and distribution facilities, including wind energy co-metering customers as defined in CPU Code Section 2827.8, and is intended primarily to offset part or all of the customer's own electrical requirements (hereinafter "eligible customer-generator" or "customer"). Certain incremental billing and metering costs set forth in this schedule that are related to net energy metering are applicable to Energy Service Providers (ESPs) serving eligible customer-generators. (T)

This service is not applicable to a Direct Access (DA) customer where the customer's ESP does not offer a net energy metering tariff. In addition, if an eligible customer-generator participates in direct transactions with an electric provider that does not provide distribution service for the direct transactions, the electric provider, and not PG&E, is obligated to provide net energy metering to the customer. (D)
(T)
|
(T)

This rate schedule is available on a first-come, first-served basis until such time as the total rated generating capacity used by eligible customer-generators exceeds one-half of 1 percent of PG&E's aggregate customer peak demand. (T)

TERRITORY: The entire territory served.

RATES: All rates charged under this schedule will be in accordance with the eligible customer-generator's otherwise-applicable metered rate schedule. An eligible customer-generator served under this schedule is responsible for all charges from its otherwise-applicable rate schedule including monthly minimum charges, customer charges, meter charges, facilities charges, demand charges and surcharges. The "Peak Rate Limiter" and "Average Rate Limiter" for general service otherwise-applicable-rate schedules, the "Demand Charge Limiter" for agricultural otherwise-applicable-rate schedules and all other demand charges will be based on the demand in kilowatts as measured only on the energy being consumed by the customer from PG&E. The power factor, when it applies on the otherwise-applicable-rate schedule, will be based on the average power factor over the past 12 billing months of operation prior to starting on E-NET. Customer-generators without 12 billing months of power factor history, will have their power factor estimated based on the nature of the connected facilities and their hours of operation. Power factor will be subsequently applied to the customer-generator's bill until the customer-generator demonstrates to PG&E's satisfaction that adequate correction had been provided. PG&E will continue to monitor and review the power factor and if warranted, change the power factor correction on the customer-generator's bills. Charges for electricity supplied by PG&E will be based on the net metered usage in accordance with Net Energy Metering and Billing (Special Condition 2, below). (L)

(Continued)



SCHEDULE E-NET—NET ENERGY METERING SERVICE

(Continued)

- RATES: (Cont'd.)
- Customer-generators eligible for service under this schedule are exempt from the requirements of Schedule S—Standby Service. (L)
 - Except for those eligible customer-generators qualifying for Special Condition 4 below, customer-generators are responsible for Public Purpose Program (PPP) charges. Such charges shall be based on Departing Load (as defined in PG&E's Preliminary Statement BB), and retail usage in accordance with the eligible customer's otherwise-applicable rate schedule. (L)
 - To determine nonbypassable PPP charges and any other charges the CPUC determines to be nonbypassable, a customer-generator's Departing Load shall be estimated by PG&E at such time, and in such a manner, as may be approved by the Commission (CPUC). (T)

(Continued)



SCHEDULE E-NET—NET ENERGY METERING SERVICE

(Continued)

SPECIAL
CONDITIONS:

1. **METERING EQUIPMENT:** Eligible Wind Energy Co-Metering customer-generators, see Special Condition 5. Net energy metering shall be accomplished using a single meter capable of registering the flow of electricity in two directions. If the eligible customer-generator's existing electrical meter is not capable of measuring the flow of electricity in two directions, the eligible customer-generator shall be responsible for all expenses involved in purchasing and installing a meter that is able to measure electricity flow in two directions. An additional meter or meters, installed in a dual meter socket ("dual metering"), to monitor the flow of electricity in each direction may be installed with the consent of the eligible customer-generator, at the expense of PG&E, and the dual metering shall be used only to provide the information necessary to accurately bill or credit the customer according to the utility's otherwise applicable tariff or to collect solar or wind, or a hybrid system of both, electric generating system performance information for research purposes. PG&E shall determine whether dual metering is required under this provision. If dual metering is installed, the net energy metering calculation (see below) shall yield a result identical to that of a single meter capable of measuring the flow of electricity in two directions.

(T)
(T)

PG&E shall not require dual metering except where necessary for billing accuracy. If none of the normal metering options available at PG&E's disposal which are necessary to render accurate billing are acceptable to the customer-generator, PG&E shall have the right to refuse interconnection.

Customer-generators eligible for Special Condition 4 shall not be responsible for replacing, nor be obligated to replace, their existing meter unless the customer-generator's existing electrical meter is not capable of measuring the flow of electricity in two directions.

(N)
|
(N)

2. **NET ENERGY METERING AND BILLING:** Eligible Wind Energy Co-Metering customer-generators, see Special Condition 5. Net energy is defined as measuring the difference between the electricity supplied by PG&E through the electric grid to the eligible customer-generator and electricity generated by an eligible customer generator and fed back into the electric grid over a 12-month period. At the end of each 12-month period following the date the customer-generator was first eligible for Schedule E-NET, or the date of final interconnection, whichever is later, and at each anniversary date thereafter, the eligible customer-generator shall be billed for electricity used during that period. If an eligible customer-generator terminates service under this rate schedule, or experiences a change in electric service provider prior to the end of any 12-month period, PG&E shall reconcile the customer's consumption and production of electricity and bill the customer as described below, as if it were the end of the normal 12-month period.

(T)
(T)

In the event the energy generated exceeds the energy consumed during the 12-month period, based on the eligible customer-generator's otherwise-applicable rate schedule as set forth below, no payment shall be made for the excess energy delivered to PG&E's grid. If PG&E is the electric service provider, this condition may be modified where the customer has signed a contract to sell electricity to PG&E.

(Continued)



SCHEDULE E-NET—NET ENERGY METERING SERVICE
(Continued)

SPECIAL
CONDITIONS:
(Cont'd.)

2. NET ENERGY METERING AND BILLING: (Cont'd.)

In the event that the electricity supplied by PG&E during the 12-month period exceeds the electricity generated by the eligible customer-generator during the same period, the eligible customer-generator is a net electricity consumer and PG&E shall bill the eligible customer-generator for the net consumption during the 12-month period based on the eligible customer-generator's otherwise-applicable rate schedule, as set forth below.

Except as provided in Special Condition 5, for customer-generators taking service on otherwise-applicable rate schedules, any net monthly consumption or production shall be valued as follows:

(T)
(T)
(T)

a) Baseline Rates

For eligible customer-generators taking service on otherwise-applicable baseline rate schedules, any net consumption or production shall be valued monthly as follows:

If the eligible customer-generator is a net consumer, the eligible customer-generator will be billed in accordance with the eligible customer-generator's otherwise-applicable rate schedule.

(T)

If the eligible customer-generator is a net generator, the net kWh generated shall be valued at the rate for the kWh up to the baseline quantity, with any excess kWh generated, valued at the rate for the appropriate tier level in which the equivalent kWh of usage would fall.

b) Time of Use

For eligible customer-generators taking service on otherwise-applicable time-of-use rate schedules, any net consumption or production shall be valued monthly as follows:

If the eligible customer-generator is a net consumer during any discrete time-of-use period, the net kWh consumed shall be billed in accordance with that same time-of-use period in the eligible customer-generator's otherwise-applicable rate schedule.

If the eligible customer-generator is a net generator during any discrete time-of-use period, the net kWh produced shall be valued at the same price per kWh as the same time-of-use period in the eligible customer generator's otherwise-applicable rate schedule.

c) Annual and Monthly Billing

If PG&E supplies the eligible customer-generator with electricity, PG&E shall provide the eligible customer-generator with net electricity consumption information with each regular bill. That information shall include the current monetary balance owed PG&E for the net electricity consumed since the last 12-month period ended. Eligible residential and small commercial



SCHEDULE E-NET—NET ENERGY METERING SERVICE
(Continued)

SPECIAL
CONDITIONS:
(Cont'd.)

2. NET ENERGY METERING AND BILLING: (Cont'd.)

c) Annual and Monthly Billing (Cont'd.)

customer-generators may pay monthly or annually for the net energy consumed. For all other commercial, industrial, and agricultural customers, the net balance of all moneys owed must be paid on each monthly billing cycle; when they are a net electricity producer over a monthly billing cycle, any excess kilowatt-hours generated during the billing cycle shall be carried over to the following billing period and appear as a credit on the customer generator's account, until the end of the 12-month period. (T)

d) Energy Service Providers (ESP) Charges (T)

If PG&E provides direct access metering, UDC consolidated billing, or ESP dual or consolidated billing support services for DA customer-generators served under this rate or their ESPs, PG&E may recover the incremental costs related to net energy metering from the customer's ESP as follows:

Metering services: \$104 Metering Service Base charge, plus \$73/hour for on-site work, plus materials.

Billing: \$85/hour plus materials.

3. INTERCONNECTION: Prior to receiving approval for Parallel Operation, the customer-generator must submit a completed PG&E application form *Interconnection Application for Net Energy Metering (E-Net) for Residential or Small Commercial Customers with Solar or Wind Electric Generating Facilities of 10 Kilowatts or Less*, (Form 79-994) or *Generating Facility Interconnection Application*, (Form 79-974), and *Expanded Net Energy Metering (E-NET) Supplemental Application Form* (Form 79-998). Also, prior to receiving approval for Parallel Operation, the customer generator must execute and comply with the requirements of PG&E's *Interconnection Agreement for Net Energy Metering for Residential or Small Commercial Solar or Wind Electric Generating Facilities of 10 Kilowatts or Less*, (Form 79-854), or PG&E's *Interconnection Agreement for Net Energy Metering of Solar or Wind Electric Generating Facilities of 1,000 Kilowatts or Less, other than Residential or Small Commercial Facilities of 10 Kilowatts or Less* (Form 79-978). The eligible customer-generator must meet all applicable safety and performance standards established by the National Electrical Code, the Institute of Electrical and Electronics Engineers, and accredited testing laboratories such as Underwriters Laboratories and, where applicable, rules of the California Public Utilities Commission regarding safety and reliability. (T)



SCHEDULE E-NET—NET ENERGY METERING SERVICE

(Continued)

SPECIAL
CONDITIONS:
(Cont'd.)

4. EXEMPTIONS FROM CERTAIN CHARGES: Per Section 2728.7 of the California Public Utilities Code, eligible customer-generators who have all local and state permits required to commence construction of their generating facilities on or before December 31, 2002, and have completed construction on or before September 30, 2003, shall not be required to pay non-bypassable charges on Departing Load including Public Purpose Program charges and shall be entitled to the net energy metering terms in effect on the date the local and state permits were acquired, for the life of the generating facility, regardless of any change in customer or ownership of the generating facility.

5. WIND ENERGY CO-METERING: In accordance with Section 2827.8 of the California Public Utilities Code, any customer-generator with wind energy generating facilities greater than 50 kW but not exceeding 1,000 kW taking service under this tariff is required to do so pursuant to this section. This definition includes eligible customer-generators with a hybrid system including a solar generating facility where the size of the wind energy generating facility component exceeds 50 kW and total generating facility size is less than 1,000 kW.

Wind Energy Co-Metering customer-generators are required to take service on a time-of-use (TOU) otherwise-applicable rate schedule. In addition, the customer-generator must utilize a TOU meter, or multiple TOU meters, capable of separately measuring the electricity in both directions, that is, the electricity supplied by PG&E to the customer and the electricity generated by the customer and fed back to the electric grid. If the customer's existing meter is not a TOU meter or is not capable of separately measuring the flow of electricity in both directions, the eligible customer-generator is responsible for all expenses involved in purchasing and installing a meter that is both TOU and able to separately measure electricity flow in both directions.

Subject to Special Condition 2, the generation of electricity provided to PG&E by a Wind Energy Co-Metering customer-generator shall result in a credit to the eligible customer-generator priced in accordance with the generation component of the energy charge of the eligible customer-generator's otherwise-applicable rate schedule, excluding generation surcharges from Schedule E-EPS. All electricity supplied to the Wind Energy Co-Metering customer-generator by PG&E shall be priced in accordance with the customer-generator's otherwise-applicable rate schedule.

(N)

(N)



SCHEDULE E-NET—NET ENERGY METERING SERVICE
(Continued)

SPECIAL
CONDITIONS:
(Cont'd.)

5. WIND ENERGY CO-METERING (Cont'd):

At the end of each 12-month period (as described in Special Condition 2), if the electricity fed back to the electric grid by the eligible customer-generator exceeds the electricity supplied to the eligible customer-generator by PG&E, the eligible customer-generator is a Wind Energy Co-Metering producer; (otherwise the eligible customer-generator is a Wind Energy Co-Metering consumer). To calculate the maximum generation credit for a Wind Energy Co-Metering producer, PG&E will, at the end of each 12-month period, determine the average credit for energy based on the following equation:

Average Credit (\$/kWh) =

Total Credit (\$) calculated for the 12-month period

Total energy fed back to PG&E (kWh) during the 12-month period

Then the

Maximum Credit (\$) =

Average Credit (\$/kWh) × Total energy (kWh) PG&E supplied during the 12-month period

Any credit for excess energy (kWh) over this maximum will be retained by PG&E and the Wind Energy Co-Metering producer will not be owed any compensation for this excess energy.

(N)

(N)

(Continued)



RULE 21—GENERATING FACILITY INTERCONNECTIONS
(Continued)

C. APPLICATION AND INTERCONNECTION PROCESS (Cont'd.)

1. APPLICATION PROCESS (Cont'd.)

d. When Required, Applicant and PG&E Commit to Additional Interconnection Study Steps. When a Supplemental Review reveals that the proposed Generating Facility cannot be Interconnected to PG&E's Distribution System by means of a Simplified Interconnection, or that significant PG&E Interconnection Facilities or Distribution System improvements will be needed to accommodate an Applicant's Generating Facility, PG&E and Applicant shall enter into an agreement that provides for PG&E to perform additional studies, facility design, and engineering and to provide detailed cost estimates for fixed price or actual cost billing to the Applicant at the Applicant's expense. The Interconnection Study agreement shall set forth PG&E's estimated schedule and charges for completing such work. Initial and Supplemental Review and Interconnection Study fees for solar generating facilities up to 1 megawatt (MW) that do not sell power to the grid will be waived up to the amount of \$5,000. Generating Facilities eligible for Net Energy Metering under Public Utilities Code Section 2827 are exempt from any costs associated with Interconnection Studies.

e. Applicant and PG&E Enter Into an Interconnection Agreement and, Where Required, a Financing and Ownership Agreement for Interconnection Facilities or Distribution System Improvements. PG&E shall provide the Applicant with an executable version of the Interconnection Agreement or Net Energy Metering agreement appropriate for the Applicant's Generating Facility and desired mode of operation. Where the Supplemental Review or Interconnection Study performed by PG&E has determined that modifications or additions to its Distribution System are required, or that additional Interconnection Facilities will be necessary to accommodate an Applicant's Generating Facility, PG&E may also provide the Applicant with other Interconnection Facilities financing and ownership agreements. These agreements shall set forth PG&E and the Applicant's responsibilities, completion schedules, and estimated or fixed price costs for the required work. For Generating Facilities qualifying for service under Public Utilities Code Section 2827, with the exception of Section 2827.9, PG&E approval for Parallel Operation shall normally be provided no later than thirty (30) business days following PG&E's receipt of: (1) a completed Net Energy Metering Application including all supporting documents and required payments; (2) a completed, signed Net Energy Metering Interconnection Agreement; and (3) evidence of the Producer's final inspection clearance from the governmental authority having jurisdiction over the Generating Facility.

(N)

(N)
(L)

(Continued)



RULE 21—GENERATING FACILITY INTERCONNECTIONS
(Continued)

C. APPLICATION AND INTERCONNECTION PROCESS (Cont'd.)

1. APPLICATION PROCESS (Cont'd.)

h. PG&E Authorizes Parallel Operation or Momentary Parallel Operation. The Producer's Generating Facility shall be authorized for Parallel Operation or Momentary Parallel Operation, as applicable, with PG&E's Distribution System upon satisfactory compliance with the terms of all applicable agreements and PG&E's express written permission. Compliance may include, but not be limited to, provision of any required documentation and satisfactorily completing any required inspections or tests as described herein or in the agreements formed between the Producer and PG&E. A Producer shall not commence Parallel Operation of its Generating Facility with PG&E's system unless it has received PG&E's express written permission to do so.

(L)

(L)

i. PG&E Reconciles Costs and Payments. If the Producer selected a fixed price billing for the Interconnection Facilities or Distribution System improvements, no reconciliation will be necessary. If the Producer selected actual cost billing, a true-up will be required. Within a reasonable time after the Interconnection of a Producer's Generating Facility, PG&E will reconcile its actual costs related to the Generating Facility against any advance payments made by the Producer. The Producer will receive either a bill for any balance due or a reimbursement for overpayment as determined by PG&E's reconciliation. The Producer shall be entitled to a reasonably detailed and understandable accounting for the payments.

(Continued)



RULE 21—GENERATING FACILITY INTERCONNECTIONS
(Continued)

H. DEFINITIONS (Cont'd.)

Line Section: That portion of PG&E's Distribution System connected to a Customer bounded by automatic sectionalizing devices or the end of the distribution line.

Metering: The measurement of electrical power flow in kW and/or energy flow in kWh, and, if necessary, kVAR at a point, and its display to PG&E, as required by this Rule.

Metering Equipment: All equipment, hardware, software including meter cabinets, conduit, etc., that are necessary for Metering.

Momentary Parallel Operation: The interconnection of a Generating Facility to the Distribution System for one second (60 cycles) or less.

Nationally Recognized Testing Laboratory (NRTL): A laboratory accredited to perform the Certification Testing requirements under this Rule.

Net Energy Metering: Metering for the receipt and delivery of electricity between the Producer and PG&E pursuant to Section 2827 of the Public Utilities Code and Schedule E-NET, Net Energy Metering.

(T)

Net Generation Metering: Metering of the net electrical power of energy output in kW or energy in kWh, respectively, from a given Generating Facility. This may also be the measurement of the difference between the total electrical energy produced by a Generator and the electrical energy consumed by the auxiliary equipment necessary to operate the Generator. For a Generator with no Host Load and/or Public Utilities Code Section 218 Load (Section 218 Load), Metering that is located at the Point of Common Coupling. For a Generator with Host Load and/or Section 218 Load, Metering that is located at the Generator but after the point of auxiliary load(s) and prior to serving Host Load and/or Section 218 Load.

Net Nameplate Rating: The Gross Nameplate Rating minus the consumption of electrical power of a Generator or Generating Facility as designated by the manufacturer(s) of the Generator(s).

Network Service: More than one electrical feeder providing Distribution Service at a Point of Common Coupling.

Non-Export; Non-Exporting: Designed to prevent the transfer of electrical energy from the Generating Facility to PG&E.

(Continued)



Pacific Gas and Electric Company
San Francisco, California

Cancelling

Revised
Revised

Cal. P.U.C. Sheet No.
Cal. P.U.C. Sheet No.

20851-E*
18342-E

PACIFIC GAS AND ELECTRIC COMPANY

INTERCONNECTION AGREEMENT FOR NET ENERGY METERING FOR
RESIDENTIAL AND SMALL COMMERCIAL SOLAR OR WIND ELECTRIC
GENERATING FACILITIES OF 10 KILOWATTS OR LESS
FORM NO. 79-854 (REV 10/03)
(ATTACHED)

(T)

Advice Letter No. 2373-E-B
Decision No.

Issued by
Karen A. Tomcala
Vice President
Regulatory Relations

Date Filed November 6, 2003
Effective January 1, 2003
Resolution No. _____

49858



Pacific Gas and Electric Company

**INTERCONNECTION AGREEMENT FOR
NET ENERGY METERING FOR
RESIDENTIAL AND SMALL
COMMERCIAL SOLAR OR WIND
ELECTRIC GENERATING FACILITIES OF
10 KILOWATTS OR LESS**

DISTRIBUTION

- Billing
- Customer-Generator
- Business Customer Center

REFERENCE

Current Acct No. _____

DECLARATIONS

_____ ("Customer-Generator") and Pacific Gas and Electric Company, also referred to as "Utility", referred to collectively as "Parties" and individually as "Party," consistent with, and in order to effectuate, the provisions of Sections 2827 and 2827.7 of the California Public Utilities Code and Pacific Gas and Electric Company's electric rate Schedule E-NET ("E-NET"), enter into this "Interconnection Agreement for Net Energy Metering For Residential and Small Commercial Solar or Wind Electric Generating Facilities of 10 Kilowatts or Less" ("Agreement")¹. This Agreement applies to the Customer-Generator's generating facilities identified below with the specified characteristics and generating capacity, and does not allow interconnection or operation of facilities different than those described. Accordingly, the Parties agree as follows:

1. DESCRIPTION OF CUSTOMER-GENERATOR'S SOLAR OR WIND ELECTRIC GENERATING FACILITY ("Facility")

Project Identification Number: _____
(Utility Log Number)

Interconnected Equipment:

Table 1. - List of generating equipment interconnecting with Pacific Gas and Electric Company's Distribution System with, or without, an inverter. (For those generators interconnecting without an inverter, write in "N/A" in the right three columns. If an inverter is shared by more than one generator, write "shared" on the same line as that generator under the manufacturer column and do not enter the inverter rating. Attach list of additional equipment if applicable.)

	Type of Generator (Solar / Wind / Hybrid)	Generator Rating (watts)	Manufacturer for Inverter used with Generator	Inverter Model Number	Inverter Rating (watts) ²
1					
2					

¹ Additional forms are available upon request by telephoning 415-972-5676 or on PG&E's website at <http://www.pge.com/gen>).

² The inverter rating equals: (the CEC efficiency for each installed inverter) TIMES (the nameplate rating, in kW, of each inverter). The CEC efficiency is obtained on the CEC website at http://www.consumerenergycenter.org/erprebate/eligible_inverters.html as listed on the date the application is reviewed. Enter the total of all inverter ratings for multiple inverter installations in the Table above.

DECLARATIONS (Continued)

Site Address:

(Street)

(City)

Facility will be ready for operation on or about: _____
(date)

If the date of the permits allowing the Customer-Generator to commence construction of the Generating Facility is prior to January 1, 2003, please provide the date the permits were issued:

Customer-Generator shall not commence Parallel Operation of the Generating Facility until written approval for Parallel Operation is provided by Pacific Gas and Electric Company. See Section 3.3 of Attachment A, PROVISIONS.

2. CUSTOMER BILLING AND PAYMENT OPTIONS

Customer-Generator selects Pacific Gas and Electric Company's electric rate Schedule _____ as its otherwise-applicable rate schedule, in addition to Schedule E-NET. Customer-Generator understands:

Customer-Generator will be billed and will be expected to pay monthly for the non-energy charges (i.e., non-per-kilowatt-hour charges) due under Customer-Generator's otherwise-applicable rate schedule. In addition, Customer-Generator may (at its option) pay any amount for energy charges monthly, with the understanding that any and all payments will be reconciled annually as set forth herein. At the end of every twelve (12) month period, or other reconciliation period as provided in Schedule E-NET, the Customer-Generator's charges will be totaled including: (1) the monthly non-energy charges, (2) the charge for any net-energy consumption as defined in rate Schedule E-NET. The Customer-Generator's total payments for the twelve (12) months or other reconciliation period as provided in Schedule E-NET, will then be subtracted from the total charges. The Customer-Generator will then be billed for any balance due. If the Customer-Generator has overpaid for the energy they consumed, a credit will be applied to the next month's bill.

DECLARATIONS (Continued)

5. SIGNATURES

IN WITNESS WHEREOF, the Parties hereto have caused two originals of this Agreement to be executed by their duly authorized representatives. This Agreement is effective as of the last date set forth below.

"Customer-Generator" Name _____

By (Signature): _____ Date: _____

Type/Print Name: _____

Title: _____

Pacific Gas and Electric Company

By (Signature) _____ Date _____

Type/Print Name: _____

Title: Manager, Generation Interconnection Services _____



Pacific Gas and Electric Company

INTERCONNECTION AGREEMENT FOR
NET ENERGY METERING FOR
RESIDENTIAL AND SMALL
COMMERCIAL SOLAR OR WIND
ELECTRIC GENERATING FACILITIES OF
10 KILOWATTS OR LESS

Attachment A, PROVISIONS

1. PURPOSE OF INTERCONNECTION AND REPRESENTATIONS

The purpose of this Agreement is to allow Customer-Generator to interconnect with Pacific Gas and Electric Company's distribution system, subject to the provisions of this Agreement and Pacific Gas and Electric Company's rate schedule E-NET. Customer-Generator has elected to interconnect and operate its solar or wind electric generating facility in parallel with Pacific Gas and Electric Company's electric grid. The solar or wind electric generating facility is intended primarily to offset part or all of the Customer-Generator's own electrical requirements. Customer-Generator shall at all times comply with this Agreement as well as with all applicable laws and tariffs, and applicable requirements of the Public Utilities Commission of the State of California.

2. INTERRUPTION OR REDUCTION OF DELIVERIES

2.1 Pacific Gas and Electric Company shall not be obligated to accept or pay for, and may require Customer-Generator to interrupt or reduce deliveries of, available energy:

- a. when necessary in order to construct, install, maintain, repair, replace, remove, investigate, or inspect any of its equipment or part of Pacific Gas and Electric Company's system; or
- b. if Pacific Gas and Electric Company determines that curtailment, interruption, or reduction is necessary because of emergencies, forced outages, force majeure, or compliance with prudent electrical practices.

2.2 Whenever possible, the Utility shall give Customer-Generator reasonable notice of the possibility that interruption or reduction of deliveries may be required.

2.3 Notwithstanding any other provision of this Agreement, if at any time Pacific Gas and Electric Company determines that either (a) the Customer Generator's Facility, or its operation, may endanger Pacific Gas and Electric Company personnel, or (b) the continued operation of the Customer-Generator's Facility may endanger the integrity of Pacific Gas and Electric Company's electric system, Pacific Gas and Electric Company shall have the right to disconnect the Facility from Pacific Gas and Electric Company's system. Customer-Generator's Facility shall remain disconnected until such time as Pacific Gas and Electric Company is satisfied that the condition(s) referenced in (a) or (b) of this Section 2.3 have been corrected.

ATTACHMENT A, PROVISIONS (continued)

3. INTERCONNECTION

3.1 Customer-Generator shall deliver the available energy to Pacific Gas and Electric Company at the utility's meter.

3.2 The metering requirements are detailed in electric rate Schedule E-NET and, if applicable, Pacific Gas and Electric Company's electric Rule 21. If the Customer-Generator refuses consent to dual metering pursuant to Rate Schedule E-NET, Pacific Gas and Electric Company shall have the right to refuse interconnection.

3.3 Customer-Generator shall not commence parallel operation of the Generating Facility until Pacific Gas and Electric Company has provided express written approval. Such approval shall normally be provided no later than (30) business days following PG&E's receipt of: (1) a completed Application (Form 79-994) including all supporting documents and payments as described in the Application; (2) a completed and signed Interconnection Agreement; and (3) a copy of the Customer-Generator's final inspection clearance from the governmental authority having jurisdiction over the Generating Facility. Such approval shall not be unreasonably withheld. Pacific Gas and Electric Company shall have the right to have representatives present at the initial testing of Customer-Generator's protective apparatus. Customer-Generator shall notify the utility five (5) working days prior to the initial testing.

3.4 Customer-Generator authorizes to release to the California Energy Commission (CEC) information regarding Customer-Generator's facility, including customer name and Generating Facility location, size, and operational characteristics, as requested from time to time pursuant to the CEC's rules and regulations.

4. DESIGN REQUIREMENTS

Customer-Generator shall meet all applicable safety and performance standards established by the National Electrical Code, the Institute of Electrical and Electronics Engineers, and accredited testing laboratories such as Underwriters Laboratories and, where applicable, rules of the California Public Utilities Commission regarding safety and reliability. A Customer-Generator whose solar or wind turbine electrical generating system, or a hybrid system of both, meets those standards and rules shall not be required to install additional controls, perform or pay for additional tests, or purchase additional liability insurance.

5. MAINTENANCE AND PERMITS

Customer-Generator shall: (a) maintain the Facility and interconnection facilities in a safe and prudent manner and in conformance with all applicable laws and regulations including, but not limited to, Section 4, and (b) obtain any governmental authorizations and permits required for the construction and operation of the Facility and interconnection facilities. Customer-Generator shall reimburse Pacific Gas and Electric Company for any and all losses, damages, claims, penalties, or liability it incurs as a result of Customer-Generator's failure to obtain or maintain any governmental authorizations and permits required for construction and operation of Customer-Generator's Facility.

ATTACHMENT A, PROVISIONS (continued)

6. ACCESS TO PREMISES

Pacific Gas and Electric Company may enter Customer-Generator's premises: (a) to inspect, at reasonable hours, Customer-Generator's protective devices and read or test meters; and (b) to disconnect, without notice, the interconnection facilities if, in the utility's opinion, a hazardous condition exists and such immediate action is necessary to protect persons, or the utility's facilities, or property of others from damage or interference caused by Customer-Generator's solar or wind electric generating facilities, or lack of properly operating protective devices.

7. INDEMNITY AND LIABILITY

7.1 Each Party as indemnifier shall defend, save harmless and indemnify the other Party and the directors, officers, employees, and agents of such other Party against and from any and all loss, liability, damage, claim, cost, charge, demand, or expense (including any direct, or consequential loss, liability, damage, claim, cost, charge, demand, or expense, including attorneys' fees) for injury or death to persons including employees of either Party and damage to property including property of either Party arising out of or in connection with: (a) the engineering, design, construction, maintenance, repair, operation, supervision, inspection, testing, protection or ownership of, or (b) the making of replacements, additions, betterments to, or reconstruction of, the indemnifier's facilities; provided, however, Customer-Generator's duty to indemnify Pacific Gas and Electric Company hereunder shall not extend to loss, liability, damage, claim, cost, charge, demand, or expense resulting from interruptions in electrical service to the utility's customers other than Customer-Generator. This indemnity shall apply, notwithstanding the active or passive negligence of the indemnified. However, neither Party shall be indemnified hereunder for its loss, liability, damage, claim, cost, charge, demand, or expense resulting from its sole negligence or willful misconduct.

7.2 Notwithstanding the indemnity of Section 7.1, and except for a Party's willful misconduct or sole negligence, each Party shall be responsible for damage to its facilities resulting from electrical disturbances or faults.

7.3 The provisions of this Section 7 shall not be construed to relieve any insurer of its obligations to pay any insurance claims in accordance with the provisions of any valid insurance policy.

7.4 Except as otherwise provided in Section 7.1 neither Party shall be liable to the other Party for consequential damages incurred by that Party.

ATTACHMENT A, PROVISIONS (continued)

7.5 If Customer-Generator fails to comply with the insurance provisions of this Agreement, Customer-Generator shall, at its own cost, defend, save harmless and indemnify Pacific Gas and Electric Company, its directors, officers, employees, agents, assignees, and successors in interest from and against any and all loss, liability, damage, claim, cost, charge, demand, or expense of any kind or nature (including attorney's fees and other costs of litigation) resulting from the death or injury to any person or damage to any property, including the personnel and property of the utility, to the extent that the utility would have been protected had Customer-Generator complied with all such insurance provisions. The inclusion of this Section 7.5 is not intended to create any expressed or implied right in Customer-Generator to elect not to provide any such required insurance.

8. INSURANCE

8.1 To the extent that Customer-Generator has currently in force Property insurance and Commercial General Liability or Personal Liability insurance, Customer-Generator agrees that it will maintain such insurance in force for the duration of this Agreement in no less amounts than those currently in effect. Pacific Gas and Electric Company shall have the right to inspect or obtain a copy of the original policy or policies of insurance prior to commencing operation.

8.2 Customer-Generator shall meet the standards and rules set forth in Section 4, have the appropriate liability insurance required in Section 8.1 and shall not be required to purchase any additional liability insurance.

8.3 Such insurance required in Section 8.1 shall, by endorsement to the policy or policies, provide for thirty (30) calendar days written notice to the utility prior to cancellation, termination, alteration, or material change of such insurance.

9. GOVERNING LAW

This Agreement shall be interpreted, governed, and construed under the laws of the State of California as if executed and to be performed wholly within the State of California.

10. AMENDMENTS, MODIFICATIONS OR WAIVER

Any amendments or modifications to this Agreement shall be in writing and agreed to by both Parties. The failure of any Party at any time or times to require performance of any provision hereof shall in no manner affect the right at a later time to enforce the same. No waiver by any Party of the breach of any term or covenant contained in this Agreement, whether by conduct or otherwise, shall be deemed to be construed as a further or continuing waiver of any such breach or a waiver of the breach of any other term or covenant unless such waiver is in writing.

ATTACHMENT A, PROVISIONS (continued)

11. NOTICES

11.1 All written notices shall be directed as follows:

Pacific Gas and Electric Company
Attn: Manager, Generation Interconnection Services
Mail Code B13M
P.O. Box 770000
San Francisco, California 94177

11.2 Customer-Generator's notices to Pacific Gas and Electric Company pursuant to this Section 11 shall refer to the utility's project identification number set forth in the Declarations Section of this Agreement.

12. TERM OF AGREEMENT

This Agreement shall become effective as of the last date set forth in Section 5 of the Declarations and shall continue in full force and effect until terminated by either Party providing 30-days prior written notice to the other Party in accordance with Section 11. This Agreement may be terminated prior to 30 days notice by agreement of both Parties.

13. GOVERNING AUTHORITY

This contract shall at all times be subject to such changes or modification by the Public Utilities Commission of the State of California as said Commission may, from time to time, direct in the exercise of its jurisdiction.



PACIFIC GAS AND ELECTRIC COMPANY

INTERCONNECTION AGREEMENT FOR NET ENERGY METERING OF SOLAR OR
WIND ELECTRIC GENERATING FACILITIES OF 1,000 KILOWATTS OR LESS,
OTHER THAN RESIDENTIAL OR SMALL COMMERCIAL FACILITIES
OF 10 KILOWATTS OR LESS
FORM NO. 79-978 (10/03)
(ATTACHED)

(T)

(T)

(T)



This "Interconnection Agreement for Net Energy Metering of Solar or Wind Electric Generating Facilities of 1,000 Kilowatts or Less, Other Than Residential or Small Commercial Facilities of 10 Kilowatts or Less" ("Agreement")¹ is entered into by and between _____ ("Customer-Generator"), and Pacific Gas and Electric Company ("PG&E"), a California Corporation. Customer-Generator and PG&E are sometimes also referred to in this Agreement jointly as "Parties" or individually as "Party." In consideration of the mutual promises and obligations stated in this Agreement and its attachments, the Parties agree as follows:

1. SCOPE AND PURPOSE

This Agreement provides for Customer-Generator to interconnect and operate a Generating Facility in parallel with PG&E's Distribution System to serve the electrical loads connected to the electric service account that PG&E uses to interconnect Customer-Generator's Generating Facility. Customer-Generator's Generating Facility is intended primarily to offset part or all of the Customer-Generator's own electrical requirements. Consistent with, and in order to effectuate, the provisions of Sections 2827, 2827.7 and 2827.8 of the California Public Utilities Code and PG&E's electric rate Schedule E-NET ("E-NET"), Parties enter into this Agreement. This Agreement applies to the Customer-Generator's Generating Facilities identified below with the specified characteristics and generating capacity, and does not allow interconnection or operation of facilities different than those described.

2. SUMMARY AND DESCRIPTION OF CUSTOMER-GENERATOR'S GENERATING FACILITY AND DESIGNATION OF OTHERWISE-APPLICABLE RATE SCHEDULE

2.1 A description of the Generating Facility, including a summary of its significant components and a single-line diagram showing the general arrangement of how Customer-Generator's Generating Facility and loads are interconnected with PG&E's Distribution System, is attached to and made a part of this Agreement. (This description is supplied by Customer-Generator as Appendix A).

2.2 Generating Facility identification number: _____ (Assigned by PG&E)

2.3 Customer-Generator's electric service account number: _____ (Assigned by PG&E)

2.4 Name and address used by PG&E to locate the electric service account used to interconnect the Generating Facility with PG&E's Distribution System:

Name: _____

Address: _____

City/Zip Code: _____

¹ Additional forms are available upon request by telephoning 415-972-5676 or on PG&E's website at <http://www.pge.com/gen>.

INTERCONNECTION AGREEMENT FOR NET ENERGY METERING OF SOLAR OR WIND ELECTRIC
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2.5 Interconnected Equipment:

List of generating equipment interconnected with, or without, an inverter to PG&E. (For those generators interconnecting without an inverter, write in "N/A" in the right three columns. If an inverter is shared by more than one generator, write "shared" on the same line as that generator under the manufacturer column and do not enter the inverter rating. Attach list of additional equipment, if applicable.)

	Type of Generator (Solar / Wind / Hybrid)	Generator Rating (watts)	Manufacturer of Inverter used with Generator (if Applicable)	Inverter Model Number (if Applicable)	Inverter Rating (watts) ² (If Applicable)
1					
2					

2.6 Customer-Generator's otherwise-applicable rate schedule under the provisions of Schedule E-NET will be _____. (Eligible Wind Energy Co-Metering Customer-Generators *must* be on a time-of-use rate schedule. See Special Condition 5 of the E-NET tariff.)

2.7 The Generating Facility's expected date of Initial Operation is _____.
The expected date of Initial Operation shall be within two years of the date of this Agreement.

2.8 If the date of the permits allowing the Customer-Generator to commence construction of the Generating Facility is prior to January 1, 2003, please provide the date the permits were issued: _____.

² If installing an inverter, the inverter rating equals: (the CEC efficiency for each installed inverter) TIMES (the nameplate rating, in kW, of each inverter). The CEC efficiency is obtained on the CEC website at http://www.consumerenergycenter.org/erprebate/eligible_inverters.html as listed on the date the application is reviewed. Enter the total of all inverter ratings for multiple inverter installations in the Table above.

INTERCONNECTION AGREEMENT FOR NET ENERGY METERING OF SOLAR OR WIND ELECTRIC
GENERATING FACILITIES OF 1,000 KILOWATTS OR LESS, OTHER THAN RESIDENTIAL OR SMALL
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3. DOCUMENTS INCLUDED AND DEFINED TERMS

3.1 This Agreement includes the following exhibits that are specifically incorporated herein and made a part of this Agreement.

Appendix A Description of Generating Facility and Single-Line Diagram (Supplied by Customer-Generator).

Appendix B A Copy of PG&E's Agreement for Installation or Allocation of Special Facilities (Forms 79-255, 79-280, 79-702) or Agreements to Perform Any Tariff Related Work (62-4527), if applicable (Formed by the Parties).

In addition, PG&E Electric Tariff Rules and Rates, including but not limited to Electric Rules 2, 14, 15, 16, and 21, Schedule E-NET, and Customer-Generator's otherwise-applicable rate schedule, available at PG&E's website at www.pge.com or by request, are specifically incorporated herein and made part of this Agreement.

3.2 When initially capitalized, whether in the singular or in the plural, the terms used herein shall have the meanings assigned to them either in this Agreement or in PG&E's Electric Rule 21, Section H.

4. CUSTOMER BILLING AND PAYMENT

Customer-Generators Other Than Wind Energy Co-Metering Customer-Generators

Except as otherwise provided for eligible Wind Energy Co-Metering Customer-Generators covered in Special Condition 5 of the E-NET tariff, Customer-Generator initially selects PG&E's electric rate schedule referenced in Section 2.6 of this Agreement as its otherwise-applicable rate schedule. Customer-Generator understands:

Customer-Generator will be billed and is required to pay monthly for all applicable charges due under Customer-Generator's otherwise-applicable rate schedule, unless Customer-Generator is a residential or small commercial customer. If Customer-Generator is a residential or small commercial customer, the Customer-Generator may pay annually for energy charges and will only be required to pay monthly for all non-energy charges (i.e., non-per-kilowatt-hour charges)..

At the end of every twelve (12) month period, or other reconciliation period as provided in Schedule E-NET, the Customer-Generator's charges will be totaled, including the monthly non-energy charges and the charge for any net-energy consumption as defined in Schedule E-NET. The Customer-Generator's total payments for the twelve (12) months or other reconciliation period as provided in Schedule E-NET will then be subtracted from the total charges. The Customer-Generator will then be billed for any balance due. If the Customer-Generator has overpaid for the energy it consumed, a credit will be applied to the next month's bill.

Form 79-978
Tariffs and Compliance
Revised November 6, 2003
Effective January 1, 2003
Advice 2373-E-B

**INTERCONNECTION AGREEMENT FOR NET ENERGY METERING OF SOLAR OR WIND ELECTRIC
GENERATING FACILITIES OF 1,000 KILOWATTS OR LESS, OTHER THAN RESIDENTIAL OR SMALL
COMMERCIAL FACILITIES OF 10 KILOWATTS OR LESS**

Wind Energy Co-Metering Customer-Generators

The eligible Wind Energy Co-Metering Customer-Generator with wind energy Generating Facilities greater than 50 kilowatts (kW) but not exceeding 1,000 kW initially selects a **time-of-use** electric rate schedule referenced in Section 2.6 of this Agreement as its otherwise-applicable rate schedule. The Customer-Generator understands:

Subject to Special Condition 2 of the E-NET tariff, the generation of electricity provided to PG&E by a Wind Energy Co-Metering Customer-Generator shall result in a credit to the eligible Customer-Generator priced in accordance with the generation component of the energy charge of the eligible Customer-Generator's otherwise-applicable rate schedule for the account, excluding generation surcharges from Schedule E-EPS and any other surcharges to cover the purchase of power by the Department of Water Resources. All electricity supplied to the Wind Energy Co-Metering Customer-Generator by PG&E shall be priced in accordance with the Customer-Generator's otherwise-applicable rate schedule.

At the end of each twelve (12) month period (as described in Special Condition 2 of the E-NET tariff), if the electricity fed back to the electric grid by the eligible Customer-Generator exceeds the electricity supplied to the eligible Customer-Generator by PG&E, the eligible Customer-Generator is a Wind Energy Co-Metering producer. The maximum generation credit for a Wind Energy Co-Metering producer will be calculated as provided in Special Condition 5 of the E-NET tariff.

Any credit for excess energy (kWh) over this maximum will be retained by PG&E and the Wind Energy Co-Metering producer will not be owed any compensation for excess energy.

5. TERM AND TERMINATION

5.1 This Agreement shall become effective as of the last date entered in Section 18 below. The Agreement shall continue in full force and effect until the earliest date that one of the following events occurs:

- (a) The Parties agree in writing to terminate the Agreement.
- (b) Unless otherwise agreed in writing by the Parties, at 12:01 A.M. on the day following the date the electric service account through which Customer-Generator's Generating Facility is interconnected to PG&E is closed or terminated.
- (c) At 12:01 A.M. on the 61st day after Customer-Generator or PG&E provides written Notice pursuant to Section 11 below to the other Party of Customer-Generator's or PG&E's intent to terminate this Agreement.

5.2 Customer-Generator may elect to terminate this Agreement pursuant to the terms of Section 5.1(c) for any reason. PG&E may elect to terminate this Agreement pursuant to the terms of Section 5.1(c) for one or more of the following reasons:

- (a) A change in applicable rules, tariffs, or regulations, as approved or directed by the Commission, or a change in any local, state or federal law, statute or regulation, either of which materially alters or otherwise affects PG&E's ability or obligation to perform PG&E's duties under this Agreement; or,

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- (b) Customer-Generator fails to take all corrective actions specified in PG&E's Notice that Customer-Generator's Generating Facility is out of compliance with the terms of this Agreement within the time frame set forth in such Notice; or,
 - (c) Customer-Generator abandons the Generating Facility. PG&E shall deem the Generating Facility to be abandoned if PG&E determines, in its sole opinion, the Generating Facility is nonoperational and Customer-Generator does not provide a substantive response to PG&E Notice of its intent to terminate this Agreement as a result of Customer-Generator's apparent abandonment of the Generating Facility affirming Customer-Generator's intent and ability to continue to operate the Generating Facility; or,
 - (d) Customer-Generator's Generating Facility ceases to meet all applicable safety and performance standards set out in Section 6.
- 5.3 Notwithstanding any other provisions of this Agreement, PG&E shall have the right to unilaterally file with the Commission, pursuant to the Commission's rules and regulations, an application to terminate this Agreement.
- 5.4 Any agreements attached to and incorporated into this Agreement shall terminate concurrently with this Agreement unless the Parties have agreed otherwise in writing.

6. GENERATING FACILITY REQUIREMENTS

- 6.1 Customer-Generator's Generating Facility must meet all applicable safety and performance standards established by the National Electrical Code, the Institute of Electrical and Electronics Engineers, and accredited testing laboratories such as Underwriters Laboratories and, where applicable, rules of the Commission regarding safety and reliability including Rule 21.
- 6.2 Customer-Generator shall: (a) maintain the Generating Facility and Interconnection Facilities in a safe and prudent manner and in conformance with all applicable laws and regulations including, but not limited to, Section 6.1, and (b) obtain any governmental authorizations and permits required for the construction and operation of the Generating Facility and Interconnection Facilities. Customer-Generator shall reimburse PG&E for any and all losses, damages, claims, penalties, or liability it incurs as a result of Customer-Generator's failure to obtain or maintain any governmental authorizations and permits required for construction and operation of Customer-Generator's Generating Facility.
- 6.3 Customer-Generator shall not commence parallel operation of the Generating Facility until PG&E has provided express written approval. Such approval shall normally be provided no later than thirty (30) business days following PG&E's receipt of: (1) a completed *Generating Facility Interconnection Application* (Form 79-974), including all supporting documents and payments as described in the Application; (2) a completed *Expanded Net Energy Metering (E-NET) Supplemental Application* (Form 79-998); (3) a signed and completed *Interconnection Agreement* (Form 79-978); and (4) a copy of the Customer-Generator's final inspection clearance from the governmental authority having jurisdiction over the Generating Facility. Such approval shall not be

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unreasonably withheld. PG&E shall have the right to have representatives present at the Commissioning Test as defined in Rule 21. Customer-Generator shall notify PG&E at least five (5) business days prior to the initial testing.

7. INTERCONNECTION FACILITIES

- 7.1 Customer-Generator and/or PG&E, as appropriate, shall provide Interconnection Facilities that adequately protect PG&E's Distribution System, personnel, and other persons from damage or injury, which may be caused by the operation of Customer-Generator's Generating Facility.
- 7.2 Customer-Generator shall be solely responsible for the costs, design, purchase, construction, permitting, operation, and maintenance of the Interconnection Facilities that Customer-Generator owns.
- 7.3 If the provisions of PG&E's Electric Rule 21, or any other tariff or rule approved by the Commission, require PG&E to own and operate a portion of the Interconnection Facilities, Customer-Generator and PG&E shall promptly execute an Special Facilities Agreement that establishes and allocates responsibility for the design, installation, operation, maintenance, and ownership of the Interconnection Facilities. This Special Facilities Agreement shall be attached to and made a part of this Agreement as Appendix B.

8. LIMITATION OF LIABILITY

Each Party's liability to the other Party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission in its performance of this agreement, shall be limited to the amount of direct damage actually incurred. In no event shall either Party be liable to the other Party for any indirect, special, consequential, or punitive damages of any kind whatsoever.

9. INSURANCE

Customer-Generator Facility is required to comply with standards and rules set forth in section 6 and provide the following for insurance policies in place.

Customer-Generator shall furnish the required certificates and all endorsements to PG&E prior to Parallel Operation.

The certificate shall provide thirty (30) calendar days' written notice to PG&E prior to cancellation, termination, alteration, or material change of such insurance.

PG&E shall have the right to inspect or obtain a copy of the original policy or policies of insurance.

**INTERCONNECTION AGREEMENT FOR NET ENERGY METERING OF SOLAR OR WIND ELECTRIC
GENERATING FACILITIES OF 1,000 KILOWATTS OR LESS, OTHER THAN RESIDENTIAL OR SMALL
COMMERCIAL FACILITIES OF 10 KILOWATTS OR LESS**

- 9.1 If at any time during this agreement the Customer-Generator fails to meet the requirements in section 6, the following insurance shall apply:

Customer-Generator shall procure and maintain a commercial general liability insurance policy at least as broad as the Insurance Services Office (ISO) commercial general liability coverage "occurrence" form; or, if Customer-Generator is an individual, then liability coverage with respect to premises and use at least as broad as the ISO homeowners' or personal liability Insurance occurrence policy form, or substitute, providing equivalent coverage no less than the following limits, based on generator size:

- (a) Two million dollars (\$2,000,000) for each occurrence if the Gross Nameplate Rating of the Generating Facility is greater than one hundred (100) kW; or
- (b) One million dollars (\$1,000,000) for each occurrence if the Gross Nameplate Rating of the Generating Facility is greater than twenty (20) kW and less than or equal to one hundred (100) kW; or
- (c) Five hundred thousand dollars (\$500,000) for each occurrence if the Gross Nameplate Rating of the Generating Facility is twenty (20) kW or less;
- (d) Two hundred thousand dollars (\$200,000) for each occurrence if the Gross Nameplate Rating of the Generating Facility is ten (10) kW or less and the Generating Facility is connected to an account receiving residential service from PG&E.

The insurance shall, by endorsement, shall:

- (a) Add PG&E as an additional insured;
- (b) State that coverage provided is primary and is not in excess to or contributing with any insurance or self-insurance maintained by PG&E.
- (c) Contain a severability of interest clause or cross-liability clause.

- 9.2 If Customer-Generator's Generating Facility is connected to an account receiving residential service from PG&E and the requirement of Section 9.1 prevents Customer-Generator from obtaining the insurance required in this Section, then upon Customer-Generator's written Notice to PG&E in accordance with Section 11.1, the requirements of Section 9.1 may be waived.

- 9.3 Customer-Generator may self-insure with approval from PG&E. Evidence of an acceptable plan to self-insure, at least thirty (30) calendar days' prior to operations shall be submitted.

If Customer-Generator ceases to self-insure to the level required hereunder, or if Customer-Generator is unable to provide continuing evidence of Customer-Generator's ability to self-insure, Customer-Generator agrees to immediately obtain the coverage required under agreement.

**INTERCONNECTION AGREEMENT FOR NET ENERGY METERING OF SOLAR OR WIND ELECTRIC
GENERATING FACILITIES OF 1,000 KILOWATTS OR LESS, OTHER THAN RESIDENTIAL OR SMALL
COMMERCIAL FACILITIES OF 10 KILOWATTS OR LESS**

9.4 All required certificates, endorsements or letters of self-insurance shall be issued and submitted to the following:

Pacific Gas and Electric Company
Attn: Manager, Generation Interconnection Services
P.O. Box 770000
Mail Code B13M
San Francisco, California 94177

10. INDEMNITY FOR FAILURE TO COMPLY WITH INSURANCE PROVISIONS

10.1 If Customer-Generator fails to comply with the insurance provisions of this Agreement, Customer-Generator shall, at its own cost, defend, save harmless and indemnify PG&E, its directors, officers, employees, agents, assignees, and successors in interest from and against any and all loss, liability, damage, claim, cost, charge, demand, or expense of any kind or nature (including attorney's fees and other costs of litigation) resulting from the death or injury to any person or damage to any property, including the personnel and property of the utility, to the extent that the utility would have been protected had Customer-Generator complied with all such insurance provisions. The inclusion of this Section 10.1 is not intended to create any expressed or implied right in Customer-Generator to elect not to provide any such required insurance.

10.2 The provisions of this Section 10 shall not be construed to relieve any insurer of its obligations to pay any insurance claims in accordance with the provisions of any valid insurance policy.

11. NOTICES

11.1 Any written notice, demand, or request required or authorized in connection with this Agreement ("Notice") shall be deemed properly given if delivered in person or sent by first class mail, postage prepaid, to the person specified below:

If to PG&E: Pacific Gas and Electric Company
Attention: Business Customer Center
P.O. Box 770000
Mail Code B8C
San Francisco, California 94177
Phone: (800) 468-4743
FAX: (415) 972-5309

If to Customer-Generator :

Customer-Generator Name: _____

Address: _____

City: _____

Phone: () _____

FAX: () _____

Form 79-978
Tariffs and Compliance
Revised November 6, 2003
Effective January 1, 2003
Advice 2373-E-B

**INTERCONNECTION AGREEMENT FOR NET ENERGY METERING OF SOLAR OR WIND ELECTRIC
GENERATING FACILITIES OF 1,000 KILOWATTS OR LESS, OTHER THAN RESIDENTIAL OR SMALL
COMMERCIAL FACILITIES OF 10 KILOWATTS OR LESS**

- 11.2 A Party may change its address for Notices at any time by providing the other Party notice of the change in accordance with Section 11.1.
- 11.3 The Parties may also designate operating representatives to conduct the daily communications, which may be necessary or convenient for the administration of this Agreement. Such designations, including names, addresses, and phone numbers may be communicated or revised by one Party's Notice to the other.

12. REVIEW OF RECORDS AND DATA

- 12.1 PG&E shall have the right to review and obtain copies of Customer-Generator's operations and maintenance records, logs, or other information such as Generating Facility availability, maintenance outages, circuit breaker operation requiring manual reset, relay targets and unusual events pertaining to Customer-Generator's Generating Facility or its interconnection to PG&E.
- 12.2 Customer-Generator authorizes to release to the California Energy Commission (CEC) information regarding Customer-Generator's facility, including customer name and Generating Facility location, size, and operational characteristics, as requested from time to time pursuant to the CEC's rules and regulations.

13. ASSIGNMENT

Customer-Generator shall not voluntarily assign its rights nor delegate its duties under this Agreement without PG&E's written consent. Any assignment or delegation Customer-Generator makes without PG&E's written consent shall not be valid. PG&E shall not unreasonably withhold its consent to Customer-Generator's assignment of this Agreement.

14. NON-WAIVER

None of the provisions of this Agreement shall be considered waived by a Party unless such waiver is given in writing. The failure of a Party to insist in any one or more instances upon strict performance of any of the provisions of this Agreement or to take advantage of any of its rights hereunder shall not be construed as a waiver of any such provisions or the relinquishment of any such rights for the future, but the same shall continue and remain in full force and effect.

15. GOVERNING LAW, JURISDICTION OF COMMISSION, INCLUSION OF PG&E's TARIFF SCHEDULES AND RULES

- 15.1 This Agreement shall be interpreted, governed, and construed under the laws of the State of California as if executed and to be performed wholly within the State of California without giving effect to choice of law provisions that might apply to the law of a different jurisdiction.

Form 79-978
Tariffs and Compliance
Revised November 6, 2003
Effective January 1, 2003
Advice 2373-E-B

**INTERCONNECTION AGREEMENT FOR NET ENERGY METERING OF SOLAR OR WIND ELECTRIC
GENERATING FACILITIES OF 1,000 KILOWATTS OR LESS, OTHER THAN RESIDENTIAL OR SMALL
COMMERCIAL FACILITIES OF 10 KILOWATTS OR LESS**

- 15.2 This Agreement shall, at all times, be subject to such changes or modifications by the Commission as it may from time to time direct in the exercise of its jurisdiction.
- 15.3 The interconnection and services provided under this Agreement shall at all times be subject to the terms and conditions set forth in the Tariff Schedules and Rules applicable to the electric service provided by PG&E, which Tariff Schedules and Rules are hereby incorporated into this Agreement by this reference.
- 15.4 Notwithstanding any other provisions of this Agreement, PG&E shall have the right to unilaterally file with the Commission, pursuant to the Commission's rules and regulations, an application for change in rates, charges, classification, service, tariff or rule or any agreement relating thereto.

16. AMENDMENT AND MODIFICATION

This Agreement can only be amended or modified by a writing signed by both Parties.

17. ENTIRE AGREEMENT

This Agreement, including any incorporated Tariff Schedules and Rules, contains the entire Agreement and understanding between the Parties, their agents, and employees as to the subject matter of this Agreement. Each party also represents that in entering into this Agreement, it has not relied on any promise, inducement, representation, warranty, agreement or other statement not set forth in this Agreement or in the incorporated Tariff Schedules and Rules.

18. SIGNATURES

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their duly authorized representatives. This Agreement is effective as of the last date set forth below.

CUSTOMER-GENERATOR'S NAME

PACIFIC GAS AND ELECTRIC COMPANY

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: Manager,
Generation Interconnection Services

Date: _____

Date: _____

**INTERCONNECTION AGREEMENT FOR NET ENERGY METERING OF SOLAR OR WIND ELECTRIC
GENERATING FACILITIES OF 1,000 KILOWATTS OR LESS, OTHER THAN RESIDENTIAL OR SMALL
COMMERCIAL FACILITIES OF 10 KILOWATTS OR LESS**

**APPENDIX A
DESCRIPTION OF GENERATING FACILITY
AND SINGLE-LINE DIAGRAM
(Provided by Customer-Generator)**

**INTERCONNECTION AGREEMENT FOR NET ENERGY METERING OF SOLAR OR WIND ELECTRIC
GENERATING FACILITIES OF 1,000 KILOWATTS OR LESS, OTHER THAN RESIDENTIAL OR SMALL
COMMERCIAL FACILITIES OF 10 KILOWATTS OR LESS**

**APPENDIX B
(If Applicable)**

**Any Rule 2 or Rule 21 Agreements for the Installation or Allocation of Special Facilities (Forms 79-255, 79-280, 79-702) or Agreements to Perform Any Tariff Related Work (62-4527)
(Formed between the Parties)**



Pacific Gas and Electric Company
San Francisco, California

Cancelling

Original

Cal. P.U.C. Sheet No.

20853-E*

Cal. P.U.C. Sheet No.

18970-E

PACIFIC GAS AND ELECTRIC COMPANY

**APPLICATION FOR INTERCONNECTING RESIDENTIAL OR SMALL COMMERCIAL
NET ENERGY METERING (E-NET) CUSTOMERS WITH SOLAR OR WIND ELECTRIC
GENERATING FACILITIES OF 10 KILOWATTS OR LESS**

**FORM NO. 79-994 (10/03)
(ATTACHED)**

(T)

Advice Letter No. 2373-E-B
Decision No.

Issued by
Karen A. Tomcala
Vice President
Regulatory Relations

Date Filed November 6, 2003
Effective January 1, 2003
Resolution No. _____

49860



**INTERCONNECTION APPLICATION FOR
NET ENERGY METERING (E-NET) FOR
RESIDENTIAL OR SMALL COMMERCIAL
CUSTOMERS WITH SOLAR OR WIND
ELECTRIC GENERATING FACILITIES OF 10
KILOWATTS OR LESS**

Part I – Introduction and Overview

A. Applicability:

This *INTERCONNECTION APPLICATION FOR NET ENERGY METERING (E-NET) FOR RESIDENTIAL OR SMALL COMMERCIAL CUSTOMERS WITH SOLAR OR WIND ELECTRIC GENERATING FACILITIES OF 10 KW OR LESS* ("Application") applies to net energy metering electric rate Schedule E-NET for residential or small commercial¹ Customers ("Customer") who interconnect a solar or wind turbine electrical Generating Facility, or a hybrid system of both, with an aggregate capacity of not more than 10 kilowatts (kW) that is located on the Customer's premises, and which operates in parallel with Pacific Gas and Electric Company's ("PG&E") transmission and distribution facilities, and is used primarily to offset part or all of a Customer's own electrical requirements ("Generating Facility").

This Application also needs to be filed for changes to an existing, approved interconnection when: 1) the changes involve ownership of the Generating Facility (for example, when the property is sold); 2) physical changes are made to the Generating Facility (for example, when more photovoltaic panels are added or an inverter is replaced), and/or 3) as otherwise required by PG&E.

Customers must not operate their Generating Facility in parallel with PG&E's Distribution System until they receive written authorization for Parallel Operation from PG&E. Unauthorized Parallel Operation could result in injury to persons and/or damage to equipment and/or property for which the Customer may be liable!

B. Application Package:

In addition to this Application form, applicants must submit the documents described below to complete the application package. These additional documents are needed to ensure safe and reliable operation of PG&E's distribution facilities and to confirm that Customer's interconnection has been performed in accordance with PG&E's tariffs. (Additional forms are available upon request by telephoning 415-972-5676 or on PG&E's website at <http://www.pge.com/gen>).

1. Required Documents for New Applicants:

- a. A completed copy of this **Application**. **Please note:** the name on the Application and all other documents described below must be the same name as on the PG&E bill. PG&E may only make changes to an account or service if authorized by the Customer of record.
- b. A completed and signed copy of the *INTERCONNECTION AGREEMENT FOR NET ENERGY METERING FOR RESIDENTIAL AND SMALL COMMERCIAL SOLAR OR WIND ELECTRIC GENERATING FACILITIES OF 10 KILOWATTS OR LESS* (Form 79-854). In the **Interconnection Agreement** the Customer will confirm their otherwise-applicable rate schedule, as well as the date initial permits to commence construction were provided by the governmental authority having jurisdiction over the Generating

¹ "Small commercial" is defined as a commercial account with a maximum demand of less than 20 kW.

Facility. The Customer's otherwise-applicable rate schedule will establish how the Customer's monthly usage or net generation will be valued. Customers cannot change this rate schedule for a period of twelve (12) months, in accordance with PG&E's Electric Rule 12.

- c. A **single-line diagram** showing the Customer's actual installation of its Generating Facility. The diagram must include the electrical rating and operating voltages of the significant electrical components such as the service panel, the disconnect switch, inverters, all wind and/or photovoltaic generators, circuit breakers, and protective functions of the Generating Facility, the general location of the Customer's loads relative to the Generating Facility, and the interconnection with PG&E's Distribution System. The diagram must include the following information:
- 1) A description of the visible, lockable **disconnect switch** to be used between the interconnected Generating Facility and PG&E's Distribution System. The description must include the switch manufacturer, model number and switch capacity ratings (current and voltage). Note that the disconnect switch must normally be installed within 10 feet of the Customer's service panel and in a readily accessible location where PG&E personnel can operate the switch at any time. Disconnect switch must be the type approved by PG&E (see the PG&E web site at <http://www.pge.com/gen>).
 - 2) A description of the specific **DC to AC inverter(s)** used to control the interconnection between PG&E and the Generating Facility, including rating, brand name, and model number. Only California Energy Commission Certified inverters will pass the requirements for the Simplified Interconnection per Rule 21. (See website at: http://www.consumerenergycenter.org/erprebate/eligible_inverters.html
Non-certified units will require further study and may involve additional costs.
 - 3) A complete description of the generating **equipment Customer plans to install**. If the Generating Facility includes solar photovoltaic panels, the description must include the manufacturer name, model number, number of panels, and the rating. If the Generating Facility includes a wind-turbine, the description must include the manufacturer name, model number, number of turbines, and the rating. For all descriptions of equipment rating, use the nameplate rating found on the equipment or in the equipment specifications. Only California Energy Commission certified inverters and certified wind turbine generators without separate inverters will pass the requirements for Simplified Interconnection. (See the PG&E website <http://www.pge.com/gen> or the CEC website at: <http://www.consumerenergycenter.org/erprebate/equipment.html>)
 - 4) A description of how the power output from the inverter is connected to the **main service panel via a branch breaker**. The amperes rating of this branch breaker and also main service panel breaker must have the capabilities to carry the output rating of the Generating Facility. Output rating is computed based on total nameplate rating of the inverter.
- d. Proof of any existing (liability and/or property) **insurance coverage** for the location of the Schedule E-NET Generating Facility. Customers must provide PG&E with a copy of the Declaration page of their insurance policy or other equivalent document acceptable to PG&E. This coverage level must be maintained as long as Customer's Generating Facility is interconnected to PG&E's distribution system.
- e. If Customer selects a **time-of-use rate** as their otherwise-applicable rate schedule under E-NET, an installation fee is required for a special bi-directional time-of-use meter. The time-of-use meter for E-NET must be bi-directional to provide net energy metering, and consequently differs from the time-of-use meter for accounts without generating facilities. For residential Customers selecting Schedule E-7, which is the basic residential time-of-use rate schedule, the installation fee is \$277. For small

commercial Customers selecting Schedule A-6, which is the basic commercial time-of-use rate schedule, the installation fee is \$443. For information about meter costs associated with other rates, please contact PG&E.

Please note: Installation of the time-of-use meter will not be scheduled by PG&E until the time-of-use meter installation fee and all completed Application materials are received by PG&E.

- f. A copy of the **final, signed, jurisdictional approval for Customer's Generating Facility** from the local government entity with jurisdiction over the Customer's project (Generally, a local city or county building and/or planning commission/ department). **While Customer's application package will not be complete until PG&E receives this document, Customers should not delay sending all other Application materials to PG&E.**

Once PG&E receives documentation described in Section B.1. (a) through (e) above, PG&E will begin to process the application. As soon as PG&E receives the jurisdictional approval form, PG&E will contact the Customer to schedule an on-site inspection and, if required, bi-directional meter installation.

2. **Other Documents and/or Fees that may be required:**

- a. A completed form **Authorization to Receive Customer Information or Act on a Customer's Behalf**. This form is required if a contractor or other person will be acting as an agent for the Customer and working with PG&E on this application. PG&E may only discuss Customer-related information with the Customer of record (the person whose name is shown on their bill) unless that Customer has completed this form. This Authorization form may be found at <http://www.pge.com/gen>.
- b. If Customer selects **Schedule E-9, the Experimental Rate for Low Emission Vehicles** as the otherwise-applicable rate, a **Schedule E-9 Application** form will need to be completed and signed.
- c. An **Application for Service** must be completed if this is a **new service** (for example, if this is for a new house to be constructed.) **Please note:** additional fees may be required if there is new service at the location and a service or line extension is required (in accordance with Electric Rules 15 and 16).
- d. **Applications with non-standard DC to AC inverters** which do not meet the UL and IEEE requirements specified in Electric Rule 21, or Customers whose aggregate Generating Facility capacity exceeds 15% of the peak load on the distribution line section as described in Electric Rule 21 (Section I.6.) require a **Supplemental Review** which may entail a study, additional equipment, and/or other requirements.
- e. Customers applying for E-NET who are served under **Direct Access** by an Energy Service Provider (ESP) must contact their ESP directly for information regarding the ESP's net energy metering program.

Depending on the specifics of the planned Generating Facility, there may be requirements for interconnection in addition to the above list. Other approvals and/or other agreements may be needed for special PG&E programs or regulatory agency requirements.

Please note that this application does not constitute an application to any **rebate and incentive programs**. For more information on these programs and the required applications, please contact PG&E about the Self-Generation program (on the web at www.pge.com/selfgen, telephone (415) 973-6436, or e-mail: selfgen@pge.com) or contact the agencies administering those programs directly.

C. Steps for Parallel Operation:

- Step 1:** Complete this Application and the other items described in Section B.1.b) through B.1.e), above. Mail these documents, along with any required fees, to PG&E at the address below. PG&E will review the application package to verify it meets all applicable tariffs and will advise the Customer of its status.
- Step 2:** Mail a copy of the final, signed, approval for the Generating Facility from the local government entity with jurisdiction over project, described in Section B.1.f) above, to PG&E. Once received, PG&E will contact the Customer to schedule an on-site inspection and bi-directional meter installation. If this inspection proves satisfactory, PG&E will provide the Customer with written authorization for Parallel Operation.
- Step 3:** Generating Facility's Parallel Operation may commence only after receipt of written authorization from PG&E.

Customers must not operate their Generating Facility in parallel with PG&E's Distribution System until they receive written authorization for Parallel Operation from PG&E. Unauthorized Parallel Operation could result in injury to persons and/or damage to equipment and/or property for which the Customer may be liable!

D. Internet Application Forms

If this Application has been completed on PG&E's website, it may be automatically submitted via that system. Copies of the required signed forms, attachments and any applicable fees described in Section B.1. b) through B.1.f) above must be mailed to the address below.

E. Mailing Instructions and Assistance:

When this application has been completed it should be mailed, along with the required attachments and any applicable fees to:

Pacific Gas and Electric Company
Attention: Generation Interconnection Services
Mail Code B13M
P.O. Box 770000
San Francisco, California 94177

For answers to questions or for assistance completing this application, please call (415) 972-5676 or e-mail gen@pge.com.

Part II – Identifying the Generating Facility's Location and Responsible Parties

A. Customer's Generating Facility Information (Where will the Generating Facility be installed?)

Name shown on PG&E service account		Electric Account Number	
Street Address			
City	State	Zip	
Mailing Address			
City	State	Zip	
Business Phone	Home Phone	Fax	Email

Part II – Identifying the Generating Facility's Location and Responsible Parties, continued

B. Contractor Information² (Please provide even if Contractor is not used as a PG&E contact).

Contractor		Company Name	
Mailing Address			
City	State	Zip	
Business Phone	Fax	Email	

Contractor to be used as PG&E contact and authorized by Customer to receive confidential Customer information. *Authorization to Received Customer Information or Act on Customer's Behalf* form completed by Customer and attached.

² If you want PG&E to be able to talk to your contractor or another person about your Generating Facility and/or other confidential customer information you will need to complete the *Authorization to Receive Customer Information or Act on the Customer's Behalf* form described above in Section B. 2.(a).

C. Other Contact Information² (Do not complete if the Contractor above is to be used as PG&E contact.)

Contact Person	Company Name (if applicable)	
Mailing Address		
City	State	Zip
Business Phone	Fax	Email

Other Contact Person to be used as PG&E contact and authorized by Customer to receive confidential Customer information. *Authorization to Received Customer Information or Act on Customer's Behalf* form completed by Customer and attached.

Part III – Description of the Generating Facilities *Use additional sheets, if necessary.*

A. Disconnect Switch

List the disconnect switch that will be used at this Generating Facility.

Disconnect Switch Manufacturer	Disconnect Switch Model Number	Disconnect Switch Rating (amperes)

B. Inverters interconnected with PG&E

List all the inverters that will be interconnected to PG&E.

Inverter Number	Inverter Manufacturer	Inverter Model Number	Inverter Rating (kW) ³	Inverter Output Voltage	Single or Three phase?
1					
2					

³ The inverter rating equals: (the CEC efficiency for each installed inverter) TIMES (the nameplate rating, in kW, of each inverter). The CEC efficiency is obtained the CEC website at http://www.consumerenergycenter.org/erprebate/eligible_inverters.html as listed on the date the application is reviewed. Enter the total of all inverter ratings for multiple inverter installations in the Table above.

C. Photovoltaic Generator Equipment

List the photovoltaic (PV) panel information requested below. If the panels are not all identical modules, list the total capacity connected to each inverter you listed above.

No.	PV Panel Manufacturer	PV Panel Model	PV Panel Rating ³ (kW)	Quantity of PV Panels	Total Capacity ⁴ (kW)	Inverter number from (B) above (1 or 2)
1						
2						

D. Wind Turbine Equipment

List the wind turbine information requested below. If there is more than one wind turbine of the same type, list the total capacity connected to each inverter you listed in B) above. Write NONE if the inverter is incorporated in the wind turbine and no inverter is required.

No.	Wind Turbine Manufacturer	Wind Turbine Model	Wind Turbine Rating ⁴ (kW)	Quantity of Wind Turbines	Total Capacity ⁴ (kW)	Inverter number from (B) above (1 or 2)	Turbine Output Voltage	Single or Three Phase
1								

Part IV – General Information

1. What applicable **Rate Schedule** have you selected for your E-NET account (known as your "otherwise applicable rate schedule")?

RESIDENTIAL:

- E-1 – Residential Service
- E-7 – Residential Time-of-Use Service
- E-9 – Experimental Residential Time-of-Use for Low Emission Vehicle Customers
- Other (Which? _____)

SMALL COMMERCIAL

- A-1 – Small General Service
- A-6 – Small General Time-of-Use Service
- Other (Which? _____)

⁴ For all generation equipment ratings, please use the nameplate rating found on the equipment or in the equipment specifications.

2. This application is for:

- A new (or proposed) E-NET Generation Facility that has not previously been approved for Parallel Operation with PG&E.
- An existing Generating Facility to which generator modifications are being made.
- An existing E-NET Generating Facility which has previously been approved for Parallel Operation by PG&E and for which the account has been **closed** or had a **change in the name** on the bill.

3. The Generating Facility in this Application is for:

- An existing PG&E account
- A **new** PG&E account

4. Will the account associated with this Generating Facility receive energy from an **Energy Service Provider other than PG&E?**

- Yes **If yes, who is the Energy Service Provider?** _____
- No

5. Will this account be established in a new **subdivision?**

- Yes **If yes, who is the developer?** _____
- No

6. Will a **low emission vehicle** recharging facility be included as part of the load at this location?

- Yes
 If yes, will the vehicle recharging facility be separately metered from the residence?
 - Yes
 - No
- No

7. Expected **date** of Final, Signed-Off Building Permit for Generating Facility?

Date: _____

8. If the Applicant has received permits to commence construction of the Generating Facility before January 1, 2003, on what date did applicant have all local and state permits to commence construction and will construction of the Generating Facility be completed on or before September 30, 2003?

Date: applicant had permits to commence construction _____

Was construction completed on or before September 30, 2003? **Yes** **No** _____

9. If the applicant has a wind Generating Facility, is it greater than 50kW but not exceeding 1MW so that it will take service under Special Condition 5 of the E-NET tariff for Wind Energy Co-metering?

Wind Generator is greater than 50 kW and less the 1MW in size? **Yes** **No** _____



Pacific Gas and Electric Company
San Francisco, California

Original
Cancelling

Original

Cal. P.U.C. Sheet No.
Cal. P.U.C. Sheet No.

20854-E

PACIFIC GAS AND ELECTRIC COMPANY

EXPANDED NET ENERGY METERING (E-NET) SUPPLEMENTAL APPLICATION
FORM NO. 79-998 (10/03)
(ATTACHED)

(N)
|
(N)

Advice Letter No. 2373-E-B
Decision No.

49469

Issued by
Karen A. Tomcala
Vice President
Regulatory Relations

Date Filed November 6, 2003
Effective January 1, 2003
Resolution No. _____



All E-NET Applicants completing a **GENERATING FACILITY INTERCONNECTION APPLICATION** (Form 79-974) must also complete this form. Please answer the questions below. Use additional sheets, if necessary.

A	<p>What are the specifications for the single disconnect switch that will be used at this Generating Facility?</p> <p>Note: The disconnect switch must be installed in a readily accessible location normally within ten (10) feet of the service panel and in a location where PG&E can operate the switch.</p>	<p>Disconnect Switch Manufacturer _____</p> <p>Disconnect Switch Model Number _____</p> <p>Disconnect Switch Rating _____ Amps</p>
	<p>Can PG&E readily access the <u>disconnect switch</u> for this Generating Facility year-round?</p>	<p>Yes _____</p> <p>No _____</p> <p>_____</p> <p>(Please explain why)</p>
B	<p>What is the otherwise-applicable rate schedule that you are requesting under PG&E's Net Energy Metering tariff?</p>	<p>PG&E Otherwise-Applicable Rate Schedule _____</p>
C	<p>What is the power source of the Generating Facility (i.e., solar or wind)?</p>	<p>Check all that apply:</p> <p>Solar _____</p> <p>Wind _____</p>



D	Does the Generating Facility include a wind energy generator that is greater than 50 kW but not exceeding 1 MW, so that it will take service under Special Condition 5 of the E-NET Tariff for Wind Energy Co-Metering?	<p>Has a wind energy generator with a nameplate rating greater than 50 kW but not exceeding 1 MW?</p> <p>Yes _____</p> <p>No _____</p>
E	When did/will you have all permits required to commence construction of the Generating Facility, and when will construction be completed?	<p>Date permitted to commence construction _____</p> <p>Date construction completed _____</p>
F	Can PG&E readily access the Customer's <u>service panel</u> to read the PG&E meter year-round?	<p>Yes _____</p> <p>No _____</p> <p>_____</p> <p>(Please explain why)</p>
G	How many Customer-owned locked gates will PG&E need to pass through to access the PG&E meter and disconnect switch?	<p>Number of locked gates _____</p>
H	Will PG&E need access to any planks or platforms, or need to cross over/under any hot-wire fences to access the disconnect switch or access the meter?	<p>Yes _____</p> <p>_____</p> <p>(Please explain why)</p> <p>No _____</p>
I	Does Customer receives 3 phase service from PG&E:	<p>Yes _____ (Please answer a and b below)</p> <p>No _____ (Please do not answer a and b below)</p>



a) What Voltage is this service? b) Is the service 3 wires (ungrounded) or 4 wires?	240 V _____ 480 V _____ Other Voltage _____ 3 wires _____ 4 wires _____
J If the Generating Facility will be associated with an Agricultural rate schedule per Question B, what is the total horsepower of the agricultural pump(s)?	If applicable, Horsepower (hp) _____



Pacific Gas and Electric Company
San Francisco, California

Canceling

Revised
Revised

Cal. P.U.C. Sheet No.
Cal. P.U.C. Sheet No.

20855-E*
18580-E

PACIFIC GAS AND ELECTRIC COMPANY

GENERATING FACILITY INTERCONNECTION APPLICATION
FORM NO. 79-974 (10/03)
(ATTACHED)

(T)

Advice Letter No. 2373-E-B
Decision No.

Issued by
Karen A. Tomcala
Vice President
Regulatory Relations

Date Filed November 6, 2003
Effective January 1, 2003
Resolution No. _____

49861



Part 1 – Introduction and Overview

- A. Applicability:** This Generating Facility Interconnection Application (Application) may be used to request the interconnection of a Generating Facility to Pacific Gas and Electric Company's (PG&E's) Distribution System (over which the California Public Utilities Commission (CPUC) has jurisdiction). Refer to PG&E's Electric Rule 21 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 Electric 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 Producer to supplement or serve the Customer's electric service requirements that would otherwise be served by PG&E, including "distributed" generation, "cogeneration," emergency, backup, and standby generation, and Net Energy Metered Generating Facilities. A simpler, shorter form is also available from PG&E for most Net Energy Metered Generating Facilities (Form Number 79-994. This form is available upon request by telephoning 415-972-5676 or on PG&E's website at <http://www.pge.com/gen>). For Customers applying for PG&E's Self Generation Incentive Program, a separate application is required and can be obtained at PG&E's website at <http://www.PGE.com/selfgen>. While Customers or Producers operating isolated Generating Facilities are not obligated to enter into an Interconnection Agreement with PG&E, some parts of this Application will need to be completed even for Generating Facilities that will always be isolated from PG&E's Distribution System. Completing this application will satisfy PG&E's notice requirements for operating an isolated Generating Facility.

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 are subject to the jurisdiction of the Federal Energy Regulatory Commission (FERC) and require a different application available from PG&E.

- B. Guidelines and Steps for Interconnection:** This Application must be completed and sent to PG&E along with the additional information indicated below to initiate PG&E's review and authorization to operate the proposed Generating Facility in parallel with PG&E's Distribution System. An application fee of \$800 (payable by check or money order to PG&E) must accompany most Applications. Exceptions to this fee requirement include Applications used for isolated Generating Facilities, Solar Generating Facilities up to 1 MW that do not export power, and Net Energy Metered Generating Facilities. Additional fees and charges may also apply for large and/or more complex Generating Facility Interconnections; see PG&E's Electric Rule 21 Section C.1 (b) and (c).

This document is only an application. Upon acceptance, PG&E will prepare an Interconnection Agreement for execution by PG&E and the "Producer," the party that will be responsible for the Generating Facility. PG&E may also require an inspection and testing of the Generating Facility and any related Interconnection Facilities prior to giving the Producer written authorization for Parallel Operation. **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 the Producer 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 for Parallel Operation does not satisfy the need for an Applicant to acquire such other approvals.

- C. Required Documents:** Four copies of this Application and each of the following documents are required to be submitted. Drawings must conform to accepted engineering standards and must be legible. 11"x17" drawings 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 Distribution System.
 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 Distribution System.
 3. If **transformers** are used to interconnect the Generating Facility with PG&E Distribution System, please provide transformer nameplate information (voltages, capacity, winding arrangements, connections, impedance, et cetera).
 4. If a **transfer switch** or scheme is used to interconnect the Generating Facility with PG&E's Distribution System, please provide component descriptions, capacity ratings, and a technical description of how the transfer scheme is intended to operate.
 5. If **protective relays** are used to control the interconnection, please provide 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.
- D. Mailing Instructions, Assistance:** When this application has been completed it may be printed and mailed, along with the required attachments to:

Pacific Gas and Electric Company
Attention: Generation Interconnection Services
Mail Code B13M
P.O. Box 770000
San Francisco, California 94177



GENERATING FACILITY INTERCONNECTION APPLICATION

Alternatively, you may contact PG&E at [(415) 972-5676] or [gen@pge.com] and make arrangements to e-mail or fax copies of the required information with payment of the required fees to follow. If you have questions or need assistance in completing this application, please call [(415) 972-5676].

Project Name:	Date Received:	Generating Facility ID:

(For PG&E Use Only)

Part 2 – Identifying the Generating Facility's Location and Responsible Parties

A. Host Customer Facility Information (Where will the Generating Facility be installed?)

--	--	--

Name shown on PG&E service account Electric Account Number Meter Number

NOTE: If available, please also submit a copy of the host Customer facility's utility bill.

--	--	--	--

Street Address City State Zip

B. Contact Information (Who should be contacted for additional information, if necessary?)

--	--

Contact Person Company Name

--	--	--

Phone Fax Email

--	--	--	--

Mailing Address City State Zip

--	--

Backup Contact Person (Optional) Company Name

--	--	--

Phone Fax Email

--	--	--	--

Mailing Address City State Zip

C. Operating Date (What date is this Generating Facility expected to begin operation?)

--

PG&E GENERATING FACILITY INTERCONNECTION APPLICATION

Part 3 – Describing the Generating Facility and Host Customer's Electrical Facilities

A
(MP&I)

Indicate how this Generating Facility will interface with PG&E's Distribution System.

1 2 3
(Choose one)

Instructions and Notes

Choose from the following three interface options:

- Parallel Operation:** The Generating Facility will interconnect and operate "in parallel" with PG&E's Distribution System for more than one (1) second, referred to as Type 1
- Momentary Parallel Operation:** 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 switches or circuit breakers specifically designed and engineered for such operation, referred to as Type 2.
- Isolated Operation:** 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, referred to as Type 3.

If the answer is option 1, "parallel operation," 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.

If the answer is option 2, "momentary parallel operation," only questions A, E and F of this Part 3 and questions A, B, E, F, I, L, M, N, and S of Part 4 need be answered. Be sure, however, 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.

If the answer is option 3, "Isolated Operation," only questions A, E, and F of this Part 3 and questions A, B, F, and S of Part 4 need be answered. Be sure, however, 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.

B

If the Answer to Question A was option 1, please indicate the type of agreement that is being requested with this Application. If options 2 or 3 were selected, please skip to questions E and F.

If options 2, 3, or 4 to this question B are chosen, please provide an estimate of the monthly kWh the Generating Facility is expected to deliver to PG&E's Distribution System. If PG&E determines that the amount of power to be exported is significant in relation to the capacity available on its Distribution System, it may request additional information, including time of delivery or seasonal kWh estimates.

1 2 3 4
(Choose one)

_____ kWh

Instructions and Notes

Sample agreements are available from PG&E for review. Choose from the following four agreement options:

- A Generating Facility Interconnection Agreement** that provides for parallel or momentary parallel operation of the Generating Facility, but does not provide for exporting power to PG&E's Distribution System.
- A Generating Facility Interconnection Agreement** that provides for parallel operation of the Generating Facility, and the occasional, inadvertent, non-compensated, export of power to PG&E's Distribution System. (This type of Agreement has not yet been developed by PG&E or approved by the CPUC. Check with PG&E for availability.)
- A "Qualifying Facility" Power Purchase Agreement** that provides for parallel operation of the Generating Facility, and exporting power to PG&E's Distribution System for sale to PG&E. This option is available only to "Qualifying Facilities" with a total Nameplate Capacity of 100 kW or less. See Question F for the definition of a Qualifying Facility. (This type of Agreement has not yet been developed by PG&E or approved by the CPUC. Check with PG&E for availability.)
- A Net Energy Metering Agreement** that provides for parallel operation of the Generating Facility, and exporting power to PG&E's Distribution System for credit under the terms of PG&E's Net Energy Metering Tariff. This option is available only to solar and wind powered Generating Facilities per the terms of Sections 2827 and 2827.7 of the California Public Utilities Code.

Form 79-974
Tariffs and Compliance
Revised November 6, 2003
Effective January 1, 2003
Advice 2373-E-B

PG&E GENERATING FACILITY INTERCONNECTION APPLICATION

<p>C If the answer to question B was option 1, please indicate the option that will be used to prevent energy from being exported to PG&E's Distribution System.</p> <p>If option 3 to this question C is selected, please provide the continuous current rating of the host Customer facility's service entrance equipment (service panel size):</p> <p>If option 4 to this question C is selected, please provide the minimum load of the host Customer facility:</p>	<p>1 2 3 4 (Choose one)</p> <p>_____</p> <p>Amps</p> <p>_____</p> <p>KW</p>
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Instructions and Notes

Refer to PG&E's Electric Rule 21, Section I. 4. for additional information as to how to answer this question. If the Generating Facility will never export power to PG&E's Distribution System, a simpler, lower cost, protection scheme may be used to control the interface between the Generating Facility and PG&E's Distribution System. Choose from the following four options:

1. A reverse-power protection device will be installed to measure any outflow of power and trip the Generating Facility or open an intertie breaker to isolate the Generating Facility if limits are exceeded.
2. An under-power protection device will be installed at the PCC to measure the inflow of power and trip or reduce the output of the Generating Facility if limits are not maintained.
3. The Generating Facility's interface 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 continuous ampere rating of the service entrance equipment (Main Panel size) that is used by the host Customer facility must be stated in the space provided above.
4. The nameplate rating of the Generating Facility will not exceed 50% of the host Customer facility's minimum electrical load. If this option is to be used, the minimum load of the host Customer facility must be stated in the space provided above.

Note: 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.

<p>D 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.)</p> <p>Please indicate the short circuit interrupting rating of the host Customer facility's service entrance ("main") panel:</p>	<p>_____</p> <p>Amps</p> <p>_____</p> <p>Amps</p>
--	---

Instructions and Notes

Refer to PG&E's Electric Rule 21, Section D. 3. a. (2) and Section I. 9. 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 cable runs 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. However, if the design of the proposed installation will limit 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.

PG&E GENERATING FACILITY INTERCONNECTION APPLICATION

E
(MP&I)

Please indicate the mode of operation of this Generating Facility.	1 2 3 4 5 (Please choose all options that may apply.)
--	--

Instructions and Notes

Choose from the following five operation options:

1. **Combined Heat and Power or Cogeneration** – Where the operation of the Generating Facility will produce thermal energy for a process other than generating electricity.
2. **Peak Shaving/Demand Management** – Where the Generating Facility will be operated primarily to reduce electrical demands of the host Customer facility during PG&E's "peak pricing periods."
3. **Primary Power Source** – Where the Generating Facility will be used as the primary source of electric power and that supplied by PG&E to the host Customer's loads will be required for supplemental, standby or backup power purposes only.
4. **Standby / Emergency / Backup** – Where the Generating Facility will normally be operated only when PG&E's electric service is not available.
5. **Net Energy Metering** – Where the Generating Facility qualifies and receives service under PG&E's Net Energy Metering tariff. For Net Energy Metering applicants other than residential or small commercial customers installing generators 10kW or less, a supplemental application (Form Number 79-998) is also required.

F
(MP&I)

Please indicate if Qualifying Facility Status will be obtained from the FERC for this Generating Facility.	Yes No
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Instructions and Notes

Parties operating Generating Facilities complying with all of the requirements for qualification as either a small power production facility or cogeneration facility pursuant to the regulations of the Federal Energy Regulatory Commission (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, Qualifying Facilities 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. QF facilities 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.

PG&E GENERATING FACILITY INTERCONNECTION APPLICATION

Part 4 – Describe each of the Generators (see Instructions). Use additional sheets, if necessary.

	Generator Information	Generator(s) Type 1 interconnected for parallel operation	Generator(s) Type 2 interconnected for momentary parallel operation	Generator(s) Type 3 interconnected for isolated operation	Totals For All Generators
#	Please indicate the quantity of each "type" of Generator being installed				
A (MP&I)	Generator/Inverter Manufacturer (Name)				
B (MP&I)	Generator/Inverter Model (Name/Number)				
C	Generator/Inverter Software Version (Number)				
D	Is the Generator Certified by a Nationally Recognized Testing Laboratory (NRTL) according to Rule 21?	Yes No	Yes No	Yes No	
E (MP)	Generator Design (Choose One)	Synchronous Induction Inverter	Synchronous Induction Inverter	Synchronous Induction Inverter	
F (MP&I)	Gross Nameplate Rating (kVA)				
G	Gross Nameplate Rating (kW)				
H	Net Nameplate Rating (kW)				
I (MP)	Operating Voltage (Volts or kV)				
J	Power Factor Rating (%)				
K	PF Adjustment Range (%)	Min. _____ Max. _____	Min. _____ Max. _____	Min. _____ Max. _____	
L (MP)	Wiring Configuration (Choose One)	Single-Phase Three-Phase	Single-Phase Three-Phase	Single-Phase Three-Phase	

PG&E GENERATING FACILITY INTERCONNECTION APPLICATION

Part 4 Cont. – Describe each of the Generators (see Instructions). Use additional sheets, if necessary.

Generator Information		Type 1	Type 2	Type 3	
M (MP)	3-Phase Winding Configuration (Choose One)	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	
	N (MP)	Neutral Grounding System Used (Choose One)	Ungrounded Solidly Grounded Ground Resistor _____ Ohms	Ungrounded Solidly Grounded Ground Resistor _____ Ohms	Ungrounded Solidly Grounded Ground Resistor _____ Ohms
		O	<i>For Synchronous Generators Only:</i> Synchronous Reactance: _____ (Xd %) Transient Reactance: _____ (X'd %) Subtransient Reactance: _____ (X''d %)	_____ (Xd %) _____ (X'd %) _____ (X''d %)	_____ (Xd %) _____ (X'd %) _____ (X''d %)
P	<i>For Induction Generators Only:</i> Locked Rotor Current: _____ (Amps) OR Stator Resistance: _____ (%) Stator Leakage Reactance: _____ (%) Rotor Resistance: _____ (%) Rotor Leakage Reactance: _____ (%)	_____ (Amps) _____ _____ _____ _____	_____ (Amps) _____ _____ _____ _____	_____ (Amps) _____ _____ _____ _____	
	Q	Short Circuit Current Produced by Generator: _____ (Amps)	_____ (Amps)	_____ (Amps)	
	R	<i>For Generators that are Started as a "Motor" Only</i> 1. In-Rush Current: _____ (Amps)	_____ (Amps)	_____ (Amps)	
		2. Host Customer's Service Entrance Panel (Main Panel) Continuous Current Rating: _____ (Amps)	_____ (Amps)	_____ (Amps)	

PG&E GENERATING FACILITY INTERCONNECTION APPLICATION

Part 4 Cont. – Describe each of the Generators (see Instructions). Use additional sheets, if necessary.

Generator Information		Type 1	Type 2	Type 3
S (MP&I)	Prime Mover:	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
	(Choose One)	7 8 9 10 11	7 8 9 10 11	7 8 9 10 11
		12 13 14 15	12 13 14 15	12 13 14 15

Instructions for Part 4 – Describing the Generators

#	Generator Information	Instructions and Comments
#	Please indicate the quantity of each "type" of Generator being installed:	Please provide the following information for each Generator "type". Be sure all Generators classified as one "type" are identical in all respects. If only one type of Generator is to be used, only one column needs to be completed. Please be sure the information in the "Totals" column is correct and reflects the total number of Generator units to be installed.
A	Generator/Inverter Manufacturer	Enter the brand name of the Generator.
B	Generator/Inverter Model	Enter the model name or number assigned by the manufacturer of the Generator.
C	Generator/Inverter Software Version	If this Generator's control and or protective functions are dependent on a "software" program supplied by the manufacturer of the equipment, please provide the version or release number for the software that will be used.
D	Is the Generator Certified by a Nationally Recognized Testing Laboratory (NRTL) according to Rule 21?	Answer "Yes" only if the Generator manufacturer can or has provided certification data. See PG&E's Electric Rule 21, Section J for additional information regarding Generator certification.
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.
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	Gross Nameplate Rating (kW)	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 "kVA" rating. However, where both kVA and kW values are available, please indicate both. When the generator is connected in parallel via an inverter, the Gross Nameplate Rating is the smaller of either a) the total nameplate rating for the generator(s) interconnected through the inverter or b) the inverter nameplate rating times the inverter efficiency.

PG&E GENERATING FACILITY INTERCONNECTION APPLICATION

Instructions for Part 4 – Describing the Generators – Continued

	Generator Information	Instructions and Comments
H	Net Nameplate Rating (kW)	This capacity value is determined by subtracting the "Auxiliary" or "Station Service" loads used to operate the Generator or Generating Facility. Applicants are not required to supply this value but, if it is not supplied, applicable Standby Charges may be based on the higher "gross" values.
I	Operating Voltage	This value should be the voltage rating designated by the manufacturer and used in this installation. Please indicate phase-to-phase voltages for 3-phase installations. See PG&E's Electric Rule 21, Section D. 2. a. for additional information.
J	Power Factor Rating	This value should be the nominal power factor rating designated by the manufacturer for the Generator. See PG&E's Electric Rule 21, Section D. 2. f. for additional information.
K	Power Factor Adjustment Range	Where the power factor of the Generator is adjustable, please indicate the maximum and minimum operating values. See PG&E's Electric Rule 21, Section D. 2. f. for additional information.
L	Wiring Configuration	Please indicate whether the Generator is a single-phase or three-phase device. See PG&E's Electric Rule 21, Section D. 3. a. (1) for additional information.
M	3-Phase Winding Configuration	For three-phase generating units, please indicate the configuration of the Generator's windings or inverter systems.
N	Neutral Grounding	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.
O	<i>For 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 to be input 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	<i>For Induction Generators Only:</i>	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.

PG&E GENERATING FACILITY INTERCONNECTION APPLICATION

Instructions for Part 4 – Describing the Generators - Continued

	Generator Information	Instructions and Comments
Q	Short Circuit Current Produced by Generator	Please indicate the current each Generator can supply to a three-phase fault across its output terminals. For single-phase Generators, please supply the phase-to-phase fault current.
R	<p><i>For Generators that are Started as a "Motor" Only:</i></p> <p>1. In-Rush Current</p> <p>2. Host Customer's Service Entrance Panel (Main Panel) Continuous Current Rating</p>	<p>This information is needed only for Generators that are started by "motoring" the generator.</p> <p>Refer to PG&E's Electric Rule 21, Section I. 7. for significance and additional information.</p> <p>If this question was answered in Part 3, question C of this Application, it need not be answered here.</p>
S	Prime Mover Type	<p>Please indicate the type and fuel used as the "prime mover" or source of energy for the Generator.</p> <p>1 = Internal Combustion Engine – Natural Gas/Propane Fueled</p> <p>2 = Internal Combustion Engine – Diesel Fueled</p> <p>3 = Internal Combustion Engine – Other Fuel</p> <p>4 = Microturbine (< 250 kW) – Natural Gas/Propane Fueled</p> <p>5 = Microturbine – Other Fuel</p> <p>6 = Combustion Turbine (> 250 kW) Natural Gas/Propane Fueled</p> <p>7 = Combustion Turbine – Other Fuel</p> <p>8 = Steam Turbine</p> <p>9 = Photovoltaic Panels</p> <p>10 = Solar-thermal engine</p> <p>11 = Fuel Cell – Natural Gas/Propane Fueled</p> <p>12 = Fuel Cell – Other Fuel</p> <p>13 = Hydroelectric Turbine</p> <p>14 = Wind Turbine</p> <p>15 = Other (please describe)</p>



TABLE OF CONTENTS—SAMPLE FORMS
(Continued)

FORM NO.	DATE SHOWN ON FORM	AGREEMENT/CONTRACT TITLE	CPUC SHEET NO.	
RESIDENTIAL				
79-744	10/88	Declaration of Eligibility for Baseline Quantities for Residential RV Parks.....	10629-E	(L)
79-763		Experimental Residential Dispatchable Peak Time-of-Use Service Letter of Understanding.....	11647-E	
NET ENERGY METERING				
79-854	REV 10/03	Interconnection Agreement for Net Energy Metering for Residential and Small Commercial Solar or Wind Electric Generating Facilities of 10 Kilowatts or Less..	20851-E	(T)
79-978	REV 10/03	Interconnection Agreement for Net Energy Metering of Solar or Wind Electric Generating Facilities 1,000 Kilowatts or less, other than Residential or Small Commercial Facilities of 10 Kilowatts or Less....	20852-E	(T) (T)
79-994	REV 10/03	Interconnection Application for Net Energy Metering (E-NET) for Residential or Small Commercial Customers With Solar or Wind Generating Facilities of 10 Kilowatts or Less.....	20853-E	(T)
79-998	10/03	Expanded Net Energy Metering (E-NET) Supplemental Application	20854-E	(N)

(Continued)



TABLE OF CONTENTS—SAMPLE FORMS
(Continued)

FORM NO.	DATE SHOWN ON FORM	AGREEMENT/CONTRACT TITLE	CPUC SHEET NO.
RULE 19 MEDICAL BASELINE QUANTITIES			
62-3481	REV 7/02	Declaration of Eligibility for a Standard Medical Baseline Quantity	18977-E
61-0502	7/02	Medical Baseline Allowance Self Certification	18978-E
RULES 19.1, 19.2 AND 19.3 CALIFORNIA ALTERNATE RATES FOR ENERGY			
01-9077	REV 7/01	Application for Residential Single-Family Customers	18336-E
01-9285	REV 7/01	Application for Tenants of Sub-metered Facilities	18337-E
62-0156	REV 7/01	Application for Qualified Nonprofit Group-Living Facilities	18338-E
62-1198	REV 7/01	Application for Qualified Agricultural Employee Housing Facilities	18339-E
62-1477	REV 7/01	Income Guidelines	18340-E
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ABAG Power Pool
ACN Energy, Inc.
Aglet Consumer Alliance
Agnews Developmental Center
Ahmed, Ali
Alcantar & Elsesser
Anderson Donovan & Poole P.C.
Applied Power Technologies
APS Energy Services Co Inc
Arter & Hadden LLP
Avista Corp
Barkovich & Yap, Inc.
BART
Bartle Wells Associates
Blue Ridge Gas
Bohannon Development Co
BP Energy Company
Braun & Associates
C & H Sugar Co.
CA Bldg Industry Association
CA Cotton Ginners & Growers Assoc.
CA League of Food Processors
CA Water Service Group
California Energy Commission
California Farm Bureau Federation
California ISO
Calpine
Calpine Corp
Calpine Gilroy Cogen
Cambridge Energy Research Assoc
Cameron McKenna
Cardinal Cogen
Cellnet Data Systems
Childress, David A.
City of Glendale
City of Healdsburg
City of Palo Alto
City of Redding
CLECA Law Office
Constellation New Energy
CPUC
Creative Technology
Crossborder Inc
CSC Energy Services
Davis, Wright Tremaine LLP
Davis, Wright, Tremaine, LLP
Defense Fuel Support Center
Department of the Army
Department of Water & Power City
Dept of the Air Force
DGS Natural Gas Services
DMM Customer Services
Downey, Brand, Seymour & Rohwer
Duke Energy

Duke Energy North America
Duncan, Virgil E.
Dutcher, John
Dynergy Inc.
Ellison Schneider
Energy Law Group LLP
Enron Energy Services
Exeter Associates
Foster, Wheeler, Martinez
Franciscan Mobilehome
Future Resources Associates, Inc
GLJ Energy Publications
Goodin, MacBride, Squeri, Schlotz &
Grueneich Resource Advocates
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Heeg, Peggy A.
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Integrated Utility Consulting Group
International Power Technology
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Marcus, David
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McKenzie & Associates
Meek, Daniel W.
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Pinnacle CNG Company
PPL EnergyPlus, LLC
Price, Roy
Product Development Dept
Provost Pritchard
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Recon Research
Regional Cogeneration Service
RMC Lonestar
Sacramento Municipal Utility District
SCD Energy Solutions

Seattle City Light
Sempra
Sempra Energy
Sequoia Union HS Dist
SESCO
Sierra Pacific Power Company
Silicon Valley Power
Simpson Paper Company
Smurfit Stone Container Corp
Southern California Edison
SPURR
St. Paul Assoc
Stanford University
Sutherland, Asbill & Brennan
Tabors Caramanis & Associates
Tansev and Associates
Tecogen, Inc
TFS Energy
TJ Cross Engineers
Transwestern Pipeline Co
Turlock Irrigation District
United Cogen Inc.
URM Groups
Utility Cost Management LLC
Utility Resource Network
Wellhead Electric Company
Western Hub Properties, LLC
White & Case
WMA