

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

ENERGY DIVISION

RESOLUTION E-3996

5/25/06

**R E S O L U T I O N**

Resolution E-3996. Pacific Gas & Electric (PG&E), Southern California Edison (SCE), San Diego Gas & Electric (SDG&E) request revisions to Rule 21 with regards to a new fee for repeated Commissioning Test visits, Net Generation Output Metering requirements and the Dispute Resolution process .

By Advice Letters PG&E 2792-E, SCE 1971-E & SDG&E 1776-E filed on February 24, 27 & 27, 2006, respectively.

REGULATORY REL. / NO DEPARTMENT

JUN - 2 2006

**SUMMARY**

This Resolution approves revisions to Rule 21 proposed by the ALs filed subject to clarifying who is the beneficiary of "cost effectiveness", and applying the Net Generator Output Metering (NGOM) requirements to all generators, subsidized and non-subsidized, pursuant to Decision (D.) 05-08-013 (Decision).

**BACKGROUND**

The Decision ordered PG&E, SCE and SDG&E to file Advice Letters (AL) to revise the following Sections of Electric Rule 21, in order to incorporate issues discussed in the Rule 21 Working Group and recommended in a California Energy Commission Report, CEC-100-2005-003-CTF (CEC Report):

Section C.1: A cost based charge for additional commissioning test verifications by the utility to defray the cost for customer-caused repeats, not included in the initial interconnection review fee, is added to the "Summary of Fees and Exemptions" Table.

Section E.2: The "Cost Responsibility for Interconnecting a Generating Facility "(GF) is amended per Section C.1 above.

Section F: The requirements for "Metering, Monitoring and Telemetering" are clarified to spell out under what circumstances Net Generation Output Metering (NGOM) is required, and the sunset provision for filing permanent metering requirements is removed.

Section G: The "Dispute Resolution Process" is modified to include a procedure for 1) parties to request a mediator from the Commission or a third party mediator by mutual agreement; 2) the utility to provide the aggrieved party all relevant regulatory and/or technical details regarding the interconnection requirements in dispute; 3) the CEC to maintain a website to publicly disclose resolutions of the dispute.

Sections F.3 and H: In the "Definitions" section the term "Net Generation Metering" is changed to "Net Generation Output Metering".

## **NOTICE**

Notice of AL 2792 -E, AL 1971 and AL 1776-E was made by publication in the Commission's Daily Calendar. PG&E, SCE and SDG&E state that a copy of the Advice Letter was mailed and distributed in accordance with Section III-G of General Order 96-A.

## **PROTESTS**

Advice Letters AL 2792-E, AL 1971-E and 1776-E were not protested, however the Energy Division disputes that they are in complete compliance with the Decision.

## **DISCUSSION**

These ALs incorporate Rule 21 revisions recommended by the CEC Report, as adopted by the Decision. The CEC Report is based on discussions and partial consensus reached in the Rule 21 Working group, comprising representatives from the utilities, manufacturers, mostly industrial customers, and regulators.

This group was formed under Rulemaking R.99-010-025 to work out details on technical and procedural aspects of Interconnections of Generating Facilities to the utility distribution system.

No protests were filed and the ALs incorporate most issues within the latitude of the Decision. However there are inconsistencies in the proposed Rule 21 revisions with the Decision, in terminology and with General Order (G.O.) 96, as follows.

Section C.1, Table C.1: The Decision, Ordering Paragraph (OP) 2, sixth bullet states that Rule 21 shall be modified to specify *"A cost-based charge for DG (Distributed Generation) project interconnection inspections for those inspections that are extraordinary and/or follow the first inspection"*. This order is in response to the utilities' complaints that unprepared customers require repeated Commissioning Test verification visits for their GFs. The cost for the first visit is included in the initial interconnection review fee.

While the range of \$100 to \$150/Person-hour seems reasonable, the table should not term this *"(illustrative range of 2005 Rates)"*. This is a cost-based charge range for different personnel grades and therefore firm, subject to a General Rate Case (GRC), as stated in the Decision and required per G.O. 96. The table footnote *"A range of rates is provided here because the actual rate may vary by utility and will adjust periodically"* is inappropriate, because each Rule 21 is utility specific. Furthermore, the table should also say *"plus additional costs"*, to reflect wording in proposed Section E. 2.

SDG&E's table incorrectly says *"Meeting"* instead of *"Metering"* or *"Metered"* and *"\$100 to \$150/hour"* instead of *"\$ 100 to \$150/Person-hour"*.

Section F.3: The ALs propose to distinguish between *"customers receiving regulated subsidies (e.g. publicly funded incentive payments or specific tariff exemptions)"* and *"customers that do not receive regulated subsidies"* with regards to the requirements for NGOM *"to determine applicable standby and non-bypassable charges as defined in the utility's tariffs, to satisfy applicable California Independent System Operator (CAISO) reliability requirements, and for Distribution System planning and operations"* and *"where less intrusive and/or more cost effective options are available for generator data"*, respectively. The utilities refer to Decision OP 2, first bullet, which states that *"DG facilities that do not receive regulated subsidies do not need to install NGOM*

*where less intrusive and/or more cost effective options for providing output data are available, consistent with existing Rule 21."*

The utilities interpret the negative requirement of NGOM for "non-subsidized" generators as a positive requirement of NGOM for "subsidized" generators. However they disregard that most "subsidized" generators do not pay standby, cost-responsibility surcharge (CRS) and non-bypassable charges anyway and therefore would not need NGOM.

The Summary of the Decision states: *"We retain existing rules and tariffs which address the circumstances under which DGs receiving publicly-funded incentives or tariff exemptions must install NGOM equipment"*.

These rules are in the existing Rule 21, Section F.3, which does not distinguish between "subsidized" and "non-subsidized" generators for allowing alternate means of determining applicable tariff charges to installation of NGOM.

The Decision only mentioned "non-subsidized" generators because their requirements for NGOM were ordered therein, while the "subsidized" generators' NGOM requirements remain as in existing Rule 21, Section F.3.

Rule 21 only specifies NGOM for tariff administration, CAISO and operational requirements. The incentive-specific NGOM requirements for "subsidized" generators are spelled out in program handbooks for verification of eligibility and monitoring and need not be included in Rule 21.

Decision OP 2 repeats the existing Rule 21, Section F.3 term *"cost-effective"* without reference to the beneficiary. However Section F. 8, Cost of Metering, clearly assigns the cost of all Metering required in Rule 21 to the Producer (Customer).

It is therefore reasonable to clarify Section F.3 by replacing "more cost-effective" with "less costly for the Producer".

## **COMMENTS**

Public Utilities Code section 311(g) (1) provides that this resolution must be served on all parties and subject to at least 30 days public review and comment prior to a vote of the Commission. Section 311(g) (2) provides that this 30-day period may be reduced or waived upon the stipulation of all parties in the proceeding.

The 30-day comment period for the draft of this resolution was neither waived nor reduced. Accordingly, this draft resolution was mailed to parties for comments.

Comments to the draft resolution were received from SCE, SDG&E and PG&E on May 8.

There were no replies to the comments received.

Following are the summaries of the comments and their discussions.

### General

Some utilities comment that the issues at hand were discussed in the Rule 21 working group and agreed upon by the stakeholders. They question the continued role and effectiveness of the Rule 21 Working Group (R21 Group) in light of differing opinions presented in this resolution.

This resolution is not about the R21 Group's consensus, rather the implementation of D.05-08-013. The value of the R21 Group is not diminished by this, because it examines unclear rule language, among other tasks. Other utilities question the authority of the Energy Division (ED) to introduce issues in a resolution; in this case clarification of language about the cost responsibility for metering. Metering and dispute resolutions are the main subjects of the ALs. The Commission may of course differ with the majority of the R21 Group opinion or offer clarifying language related to an issue in an AL.

### Section C.1 (Table and footnote)

PG&E comments that the range of person-hour charges shown in Table C.1 for repeat inspections encompasses the three named utilities results in uniform Rules 21 and would avoid having to file for Rule 21 changes every time the costs change.

While uniform Rules 21 among the utilities is a desired goal, charges still have to reflect individual utilities' costs. There already exist minor differences in Rule 21 between utilities because of very specific reasons. Person-hour charge ranges reflecting different grades of personnel within a specific utility is within the cost-based definition, a range reflecting other utilities is not. D.05-08-013 states in the

Summary of Decision section “We do not adopt any cost allocations or revenue requirement changes here, although we direct the utilities to address certain cost and allocation issues in appropriate ratemaking proceedings”, “The utilities shall track interconnection costs ... to inform future decisions allocating costs associated with interconnection processing”, and “We do, however, state our intent to change the fees so that they recover some portion of cost following review in each utility’s next general rate case.” Conclusion of Law #7 states: “The utilities should be ordered to propose changes to fees for initial and supplemental application review and other interconnection processing activities in their respective electric ratemaking proceedings”.

This indicates that the charges for repeat inspections are not to be open-ended (“illustrative” and “adjusted periodically”) without CPUC approval.

We corrected the reference to Section E.1 to E.2 in the Discussion Section C.1, per SDG&E’s comment.

### Section F.3 (NGOM)

SDG&E repeats its argument that the Decision’s OP 2, first bullet order: “DG facilities that *do not* receive regulated subsidies (non-subsidized) *do not* need to install net generation output metering (NGOM) where less intrusive and/or more cost effective options for providing output data are available, consistent with existing Rule 21” means that DG facilities that *do* receive regulated subsidies *do* need to install NGOM.

Such a categorical requirement flies in the face of the *Summary of Decision* and is irrational, because most subsidized DGs are exempt from standby, CRS and other non-bypassable charges anyway and therefore do not need NGOM. The decision had to qualify “non-subsidized” because metering for those DGs was at issue. The Decision lists the current purposes of NGOM for DGs under various tariffs. For subsidized DGs it lists “for project evaluation”. This purpose is not for tariff administration, CAISO requirements or operation of the distribution system.

We agree that subsidy programs *may* require NGOM for project evaluation. Rule 21 does not specify requirements for subsidies and any DG is still subject to the applicable tariff schedules which specify the rates and charges and their determination, by metering if necessary. The CEC report recommends NGOM because it administers subsidy programs. The CEC has no jurisdiction over tariff requirements.

The Decision ordered changes to Rule 21 to clarify the NGOM requirements, among them allowing Rule 22 compatible metering as option in lieu of utility meters.

SCE adds to SDG&E's arguments, that the resolution deletes the distinction between metering requirements for DG that receive regulated subsidies and DG that do not receive such.

There never was such a distinction in Rule 21, which deals with interconnections, not subsidies for DG.

SCE then mentions the California Solar Initiative, which may require metering for progress assessment.

While NGOM may be critical for that purpose in the future, Rule 21 is neither currently the place nor is it rational to require such metering for subsidized DG only.

PG&E comments that the resolution adds uncertainty about the metering required by the utility in situations where the DG customer receives a regulated subsidy.

Subsidized DG may require metering for program evaluation and verification per applicable program requirements. All DG require metering per applicable tariffs. Rule 21 does not overrule those OATs.

### Section F.3 (Cost effectiveness)

SDG&E claims that spelling out the beneficiary of cost-effectiveness for NGOM is not simply a point of clarification, but a major change to current policy that has not been heard by the Commission or parties to the proceeding.

We are not aware of any policy other than Section F.8 of Rule 21: "The Producer will bear all costs of the Metering required by this Rule, including the incremental costs of operating and maintaining the Metering Equipment." Therefore the beneficiary of any cost-effectiveness for NGOM is logically the Producer. The utilities did not propose any other meaning in their comments or in discussions in the R21 Group.

The Decision ordered changes to the metering requirements, interconnection costs and resolution of disputes between DG developers and utilities. The clarification of the meaning of "cost effective" in the context of NGOM is therefore very appropriate and necessary, as many disputes arise about metering.

SCE comments that it will always be cheaper for the producer to forego metering under a "least cost" test and cost-effectiveness should be examined from the perspective of all ratepayers, not just the Producer.

We agree with the first part of SCE's comment, but point out that the utilities charge for NGOM per "Special Facilities" agreements, which do not affect ratepayers. Tariff schedules do include charges for metering and limit the metering options. Note that metering includes hardware and services.

PG&E has the same comment as SCE regarding costs to ratepayers and fears options may be "uneconomical overall". The change could lead to a protracted negotiation process between PG&E and the Producer as to which NGOM substitute is most cost effective to the Producer.

It is ironic, that the clarification consistent with Section F.8 would lead to negotiations and the current wording "cost-effective" without a beneficiary, would not.

## **FINDINGS**

1. The Decision ordered the utilities to propose cost based charges for repeat Commissioning Test Verification visits, not covered in the Initial Review Fee.
2. The utilities propose a person-hour charge range for Commissioning Test verification visits, as illustration only, and subject to adjustment.
3. Fees and charges are subject to an Application (GRC) per Decision and G.O. 96.
4. Current Rule 21, Section F applies to all Generating Facilities, subsidized and non-subsidized.
5. The Decision reaffirmed that Section F provisions are retained with regards to circumstances when subsidized GFs require NGOM.
6. NGOM for monitoring and verification of program eligibility is specified in the handbooks of the specific subsidy program.

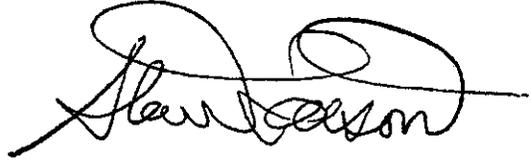
7. Rule 21 only specifies NGOM requirements for tariff administration, CAISO and distribution system operation.
8. "Cost effective" without beneficiary is meaningless.
9. Rule 21, Section F.8 requires the Producer of energy to pay for any NGOM.

**THEREFORE IT IS ORDERED THAT:**

1. The person-hour charge range for extraordinary visits shall be shown in Table C.1 as applicable to the specific utility, not as "illustrative range of 2005 rates." The footnote shall be revised to delete "because the actual rate may vary by utility and will adjust periodically ", and extra expenses mentioned.  
Adjustments are to be proposed in ratemaking proceedings per Decision.
2. The distinction between subsidized and non-subsidized GFs with regards to NGOM and its allowed alternates to obtaining generator data for tariff administration, CAISO reliability requirements and distribution system operation shall be deleted in Section F.3.
3. The criteria of "cost effectiveness" when NGOM may be substituted by other means of obtaining generator output data shall be clarified by specifying the beneficiary, "Producer", in Section F.3.
4. SDG&E shall correct "Meeting" to "Metering" or "Metered" in Table C.3.
5. SDG&E, SCE and PG&E shall incorporate above orders in Rule 21 and resubmit within 30 days.

This Resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed and adopted at a conference of the Public Utilities Commission of the State of California held on May 25, 2006; the following Commissioners voting favorably thereon:



STEVE LARSON  
Executive Director

MICHAEL R. PEEVEY  
PRESIDENT  
GEOFFREY F. BROWN  
DIAN M. GRUENEICH  
JOHN A. BOHN  
RACHELLE B. CHONG  
Commissioners



**Brian K. Cherry**  
Director  
Regulatory Relations

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February 24, 2006

**Advice 2792-E**

(Pacific Gas and Electric Company ID U 39 E)

Public Utilities Commission of the State of California

**Subject:** Revisions to PG&E's Electric Rule 21 in Compliance with Decision  
(D.) 05-08-013

Pacific Gas and Electric Company (PG&E) hereby submits for filing revisions to its **Electric Rule 21**. The affected tariff sheets are listed on the enclosed Attachment I.

**Purpose**

The purpose of this Advice Letter is to revise PG&E's Electric Rule 21 -- Generating Facility Interconnections consistent with the direction provided in Ordering Paragraph (OP) 2 of Commission Decision (D.) 05-08-013.

**Background**

Decision 05-08-013 required San Diego Gas and Electric (SDG&E), Southern California Edison (SCE), and PG&E to file revised tariff language meeting the Commission's specifications within six months of the effective date of the decision, August 25, 2005. Since the issuance of the decision, PG&E has participated in the California Energy Commission's Rule 21 Working Group process to develop the new tariff language. The proposed tariff changes included here are submitted in compliance with the requirements of D.05-08-013.

**Tariff Revisions**

The following is a listing of the sections of Rule 21 that are changing along with a general overview of the revisions made by this filing.

**Section C** – Application and Interconnection Process

Changes were made to Table C.1, Summary of Fees and Exemptions, to reflect compliance with D.05-08-013's OP 2, bullet 6 regarding the development of a cost-based charge for Distributed Generation (DG) project interconnection Commissioning Test verifications (pre-parallel inspections) for those inspections that are extraordinary and/or follow the first inspection. While the Rule 21 Working Group reached consensus on the fee structure, the fees listed in Table C.1 are listed as a range both to reduce the need for fee update filings and to reflect differences due to each respective utility's labor rates.

#### Section E - Interconnection Facilities and Distribution System Modifications, Ownership and Financing

Changes were made to Section E.2.a, Responsibility of Costs of Interconnecting a Generating Facility. As is Section C, described above, this modification is to comply with D.05-08-013's OP 2, bullet 6 regarding the development of a cost-based charge for DG project interconnection Commissioning Test verifications (pre-parallel inspections) for those inspections that are extraordinary and/or follow the first inspection. The proposed changes reflect when fees would be appropriate, outline the level of utility cost reporting owed Producer, and include the Producer's payment schedule in the event a fee is required.

#### Section F – Metering, Monitoring and Telemetry

Substantive changes were made Sections F.2, F.3 and F.4 to reflect compliance with D.05-08-013's OP 2, bullets 1 and 2. These proposed changes identify when net-generation output metering (NGOM) is required, may be required, or may be elected by the Producer. Where NGOM is required, the Producer will now have the option to install, own, maintain, and operate the NGOM in conformance with PG&E's Electric Tariff Rule 22. Additionally, the sunset provision date in Section F.6 that requires the utilities to file permanent metering requirements with the Commission is deleted.

#### Section G - Dispute Resolution Process

Substantive changes were made to Sections G.2 and G.3, and a new Section G.4 was added in response to D.05-08-013's OP 2, bullets 3 and 4. The changes add requirements to the dispute resolution process. The changes include identification early in the dispute process of decision-making representatives for both parties, provision of all relevant regulatory and/or technical details, and a timeline for the resolution process. New Section G.4 enumerates the process for the posting of a mutually agreed upon summary of the dispute resolution and supporting non-confidential documentation on the California Energy Commission website.

**Summary**

These changes are consistent with D.05-08-013's requirements and with the filings planned by SDG&E and SCE.

No cost information is required for this Advice Letter. This filing will not increase any rate or charge, cause withdrawal of service, or conflict with any other schedule or rule.

**Protests**

Anyone wishing to protest this filing may do so by letter sent via U.S. mail, by facsimile or electronically, any of which must be received no later than **March 16, 2006**, 20 days after the date of this filing. Protests should be mailed to:

CPUC Energy Division  
Attention: Tariff Unit, 4<sup>th</sup> Floor  
505 Van Ness Avenue  
San Francisco, California 94102

Facsimile: (415) 703-2200  
E-mail: [jjr@cpuc.ca.gov](mailto:jjr@cpuc.ca.gov) and [jnj@cpuc.ca.gov](mailto:jnj@cpuc.ca.gov)

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

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

Pacific Gas and Electric Company  
Attention: Brian Cherry  
Director, Regulatory Relations  
77 Beale Street, Mail Code B10C  
P.O. Box 770000  
San Francisco, California 94177

Facsimile: (415) 973-7226  
E-mail: [PGETariffs@pge.com](mailto:PGETariffs@pge.com)

**Effective Date**

PG&E requests that this advice filing become effective on regular notice, **March 27, 2006**, which is 31 calendar days after the date of filing.

**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 for R.04-03-017. Address changes should be directed to Rose de la Torre at (415) 973-4716. Advice letter filings can also be accessed electronically at: **<http://www.pge.com/tariffs>**

Handwritten signature of Brian K. Cheng in black ink.

Director, Regulatory Relations

Attachments

CC: Service List R.04-03-017

# CALIFORNIA PUBLIC UTILITIES COMMISSION

## ADVICE LETTER FILING SUMMARY ENERGY UTILITY

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

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

Utility type:

ELC

GAS

PLC

HEAT

WATER

Contact Person: Bernard Lam

Phone #: (415) 973-4878

E-mail: bxlc@pge.com

EXPLANATION OF UTILITY TYPE

ELC = Electric

GAS = Gas

PLC = Pipeline

HEAT = Heat

WATER = Water

(Date Filed/ Received Stamp by CPUC)

Advice Letter (AL) #: **2792-E**

Subject of AL: Revisions to PG&E's Electric Rule 21 in Compliance with Decision (D.) 05-08-013

Keywords (choose from CPUC listing): Rules, Connection

AL filing type:  Monthly  Quarterly  Annual  One-Time  Other \_\_\_\_\_

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

D.05-08-013

Does AL replace a withdrawn or rejected AL? If so, identify the prior AL: N/A

Summarize differences between the AL and the prior withdrawn or rejected AL<sup>1</sup>: \_\_\_\_\_

Resolution Required?  Yes  No

Requested effective date: **March 27, 2006**

No. of tariff sheets: 13

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

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

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

Tariff schedules affected: Rule 21

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

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

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

**CPUC, Energy Division**

**Attention: Tariff Unit**

**505 Van Ness Ave.,**

**San Francisco, CA 94102**

**jjr@cpuc.ca.gov and jnj@cpuc.ca.gov**

**Pacific Gas and Electric Company**

**Attn: Brian K. Cherry**

**Director, Regulatory Relations**

**77 Beale Street, Mail Code B10C**

**P.O. Box 770000**

**San Francisco, CA 94177**

**E-mail: PGETariffs@pge.com**

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

**ATTACHMENT 1  
Advice 2792-E**

<b>Cal P.U.C. Sheet No.</b>	<b>Title of Sheet</b>	<b>Cancelling Cal P.U.C. Sheet No.</b>
24591-E	Rule 21--Generating Facility Interconnections	23683-E
24592-E	Rule 21 (Cont.)	23697-E
24593-E	Rule 21 (Cont.)	23697-E
24594-E	Rule 21 (Cont.)	23700-E
24595-E	Rule 21 (Cont.)	23700-E
24596-E	Rule 21 (Cont.)	24027-E
24597-E	Rule 21 (Cont.)	23702-E
24598-E	Rule 21 (Cont.)	23703-E
24599-E	Rule 21 (Cont.)	23703-E
24600-E	Rule 21 (Cont.)	23706-E
24601-E	Rule 21 (Cont.)	23707-E
24602-E	Table of Contents -- Rules	24465-E
24603-E	Table of Contents -- Rate Schedules	24466-E



**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 interconnection Facilities installed on PG&E's system or Distribution System modifications 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 a fixed price or an estimate for 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. 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, 2827.8, 2827.9, or 2827.10 are exempt from any costs associated with Interconnection Studies.

TABLE C.1 Summary of Fees and Exemptions

Generating Facility Type	Initial Review Fee	Supplemental Review Fee	Interconnection Study Fees	Additional Commissioning Test Verification (Illustrative Range of 2005 Rates)**
Non-Net Energy Metering	\$800*	\$600	As Specified by PG&E	\$100 to \$150/ Person Hour
Net Energy Metering (per Public Utilities Code Sections 2827, 2827.8, 2827.9, or 2827.10)	\$0	\$0	\$0	N/A
Solar 1 MW or less that does not sell power to the grid (per D.01-07-027)	First \$5,000 of total review and study fees waived			\$100 to \$150/ Person Hour
* Subject to 50% refund pursuant to Section C.1.b.3.				
** A range of rates is provided here because the actual rate may vary by utility and will adjust periodically.				

(N)  
-----  
(N)

(Continued)



RULE 21—GENERATING FACILITY INTERCONNECTIONS  
(Continued)

E. INTERCONNECTION FACILITIES AND DISTRIBUTION SYSTEM MODIFICATIONS  
OWNERSHIP AND FINANCING (Cont'd.)

2. RESPONSIBILITY OF COSTS OF INTERCONNECTING A GENERATING  
FACILITY

- a. Review, Study, and Additional Commissioning Test Verifications (pre-parallel inspections) Costs. A Producer shall be responsible for the reasonably incurred costs of the reviews, studies, and additional Commissioning Test verifications (pre-parallel inspections) conducted pursuant to Section C of this Rule. If the initial Commissioning Test verification (pre-parallel inspection) is not successful through no fault of PG&E, PG&E may impose upon the Producer a cost-based charge for subsequent Commissioning Test verifications (pre-parallel inspections). All costs for additional Commissioning Test verifications (pre-parallel inspections) shall be paid by Producer within thirty days of receipt of PG&E's invoice. The invoice provided by PG&E shall consist of the hourly rate multiplied by the hours incurred by PG&E and will separately specify the amount of time spent on-site from that spent in roundtrip travel to the project site. Additional costs, if any, will be specified on the invoice. If the initial Commissioning Test verification (pre-parallel inspection) is not successful through the fault of PG&E, that visit will not be considered the initial Commissioning Test verification (pre-parallel inspection). (T)  
(T)  
(N)  
-----  
(N)
- b. Facility Costs. A Producer shall be responsible for all costs associated with Interconnection Facilities owned by the Producer. The Producer shall also be responsible for any costs reasonably incurred by PG&E in providing, operating, or maintaining the Interconnection Facilities and Distribution System modifications required solely for the Interconnection of the Producer's Generating Facility with PG&E's Distribution System. Generating Facilities eligible for Net Energy Metering under California Public Utilities Code 2827, 2827.8, 2827.9, or 2827.10 are exempt from any costs associated with Distribution System modifications. (L)

(Continued)



RULE 21—GENERATING FACILITY INTERCONNECTIONS  
(Continued)

E. INTERCONNECTION FACILITIES AND DISTRIBUTION SYSTEM MODIFICATIONS  
OWNERSHIP AND FINANCING (Cont'd.)

2. RESPONSIBILITY OF COSTS OF INTERCONNECTING A GENERATING  
FACILITY (Cont'd.)

c. Separation of Costs. Should PG&E combine the installation of Interconnection Facilities or Distribution System modifications required for the Interconnection of a Generating Facility with modifications to PG&E's Distribution System to serve other Customers or Producers, PG&E shall not include the costs of such separate or incremental facilities in the amounts billed to the Producer.

(L)

d. Reconciliation of Costs and Payments. If the Producer selected a fixed price billing for the Interconnection Facilities or Distribution System modifications, 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.

(L)

(Continued)



RULE 21—GENERATING FACILITY INTERCONNECTIONS  
(Continued)

F. METERING, MONITORING AND TELEMTRY (Cont'd.)

3. NET GENERATION OUTPUT METERING (NGOM) (T)

Generating Facility customers receiving regulated subsidies (e.g. publicly funded incentive payments or specific tariff exemptions) may be required to install NGOM for evaluation, monitoring and verification purposes and to determine applicable standby and non-bypassable charges as defined in PG&E's tariffs, to satisfy applicable California Independent System Operator (CAISO) reliability requirements, and for Distribution System planning and operations. (N)

Where NGOM is required, utility-owned meters are not needed provided the metering conforms to the requirements set forth in PG&E's Rule 22. However, if the PG&E does not receive meter data in accordance with Rule 22, PG&E shall have the right to install utility-owned NGOM at the customer's expense.

Generating Facility customers that do not receive regulated subsidies do not need to install NGOM where less intrusive and/or more cost effective options are available for providing generator data to PG&E. These Generating Facilities may opt to have PG&E estimate load data in accordance with PG&E's applicable tariffs to determine or meet applicable standby and non-bypassable and other applicable charges and tariff requirements.

However, if a Generating Facility customer objects to PG&E's estimate of the customer's generation output, the customer may elect to install the NGOM, or have PG&E install NGOM at the customer's expense. (N)

(L)

(Continued)



RULE 21—GENERATING FACILITY INTERCONNECTIONS  
(Continued)

F. METERING, MONITORING AND TELEMTRY (Cont'd.)

3. NET GENERATION OUTPUT METERING (NGOM) (Cont'd.) (T)

The relevant factors in determining the need for NGOM are as listed below: (N)

(D)

a. Data requirements in proportion to need for information; (L)

b. Producer's election to install equipment that adequately addresses PG&E's operational requirements;

c. Accuracy and type of required Metering consistent with purposes of collecting data;

d. Cost of Metering relative to the need for and accuracy of the data;

e. The Generating Facility's size relative to the cost of the Metering/monitoring;

f. Other means of obtaining the data (e.g., Generating Facility logs, proxy data etc.); and

g. Requirements under any Interconnection Agreement with the Producer.

The requirements in this section may not apply to Metering of Generating Facilities operating under PG&E's Net Energy Metering tariff pursuant to California Public Utilities Code Section 2827, et seq. Nothing in this Section F.3 supercedes Section B.4. (T)  
(T)

PG&E will report to the Commission or designated authority, on a quarterly basis, the rationale for requiring Net Generation Output Metering equipment in each instance along with the size and location of the facility. (T)  
(L)

(Continued)



RULE 21—GENERATING FACILITY INTERCONNECTIONS  
(Continued)

F. METERING, MONITORING AND TELEMETRY (Cont'd.)

4. POINT OF COMMON COUPLING METERING

For purposes of assessing PG&E charges for retail service, the Producer's PCC Metering shall be reviewed by PG&E, and if required, replaced to ensure that it will appropriately measure electric power according to the provisions of the Customer's electric service tariff. Where required, the Customer's existing meter may be replaced with a bi-directional meter so that power deliveries to and from the Producer's site can be separately recorded. Alternately, the Producer may, at its sole option and cost, require PG&E to install multi-metering equipment to separately record power deliveries to PG&E's Distribution System and retail purchases from PG&E. Where necessary, such PCC Metering shall be designed to prevent reverse registration.

Generating Facilities eligible for Net Energy Metering under Public Utilities Code Section 2827, et seq. shall have metering provided pursuant to the terms of the applicable Net Energy Metering tariff schedule. (T)

5. TELEMETERING

If the nameplate rating of the Generating Facility is 1 MW or greater, Telemetering equipment at the Net Generator Output Metering location may be required at the Producer's expense. If the Generating Facility is interconnected to a portion of PG&E's Distribution System operating at a voltage below 10 kV, then Telemetering equipment may be required on Generating Facilities 250 kW or greater. PG&E shall only require Telemetering to the extent that less intrusive and/or more cost effective options for providing the necessary data in real time are not available. PG&E will report to the Commission or designated authority, on a quarterly basis, the rationale for requiring Telemetering equipment in each instance along with the size and location of the facility. (T)

(D)

(Continued)



RULE 21—GENERATING FACILITY INTERCONNECTIONS  
(Continued)

F. METERING, MONITORING AND TELEMETRY (Cont'd.)

6. LOCATION (T)

Where PG&E-owned Metering is located on the Producer's premises, Producer shall provide, at no expense to PG&E, a suitable location for all such Metering Equipment.

7. COSTS OF METERING (T)

The Producer will bear all costs of the Metering required by this Rule, including the incremental costs of operating and maintaining the Metering Equipment.

G. DISPUTE RESOLUTION PROCESS

The following procedures will apply for disputes arising from this Rule:

1. The Commission shall have initial jurisdiction to interpret, add, delete or modify any provision of this Rule or of any agreements entered into between PG&E and the Producer to implement this tariff ("The Implementing Agreements") and to resolve disputes regarding PG&E's performance of its obligations under its tariffs, the applicable agreements, and requirements related to the Interconnection of the Producer's Generating or Interconnection Facilities pursuant to this Rule.

(L)

(Continued)



RULE 21—GENERATING FACILITY INTERCONNECTIONS  
(Continued)

G. DISPUTE RESOLUTION PROCESS (Cont'd.)

- 2. Any dispute arising between PG&E and the Producer (individually "Party" and collectively "the Parties") regarding PG&E's or Producer's performance of its obligations under its tariffs. The Implementing Agreements, and requirements related to the Interconnection of Producer's Facilities pursuant to this Rule shall be resolved according to the following procedures:
  - a. The dispute shall be reduced to writing by the aggrieved Party in a letter ("the dispute letter") to the other Party containing the relevant known facts pertaining to the dispute, the specific dispute and the relief sought, and express notice by the aggrieved Party that it is invoking the procedures under Section G.2. Upon the aggrieved Party notifying the other Party of the dispute, each Party must designate a representative with the authority to make decisions for its respective Party and a representative with the technical expertise for its respective Party to review the dispute within 7 calendar days. In addition, upon receipt of the dispute letter, PG&E shall provide the aggrieved Party all the relevant regulatory and/or technical detail regarding any PG&E interconnection requirements under dispute within 21 calendar days. Within 45 calendar days of the date of the dispute letter, the Parties' authorized representatives will be required to meet and confer to try to resolve the dispute.
    - (L)
    - (N)
    - (N)
    - (L)
  - b. If a resolution is not reached within 45 calendar days from the date of the dispute letter, either Party may request to: (1) continue negotiations for an additional 45 days or (2) make a written request to the Chief Administrative Law Judge of the Commission for mediation. Alternatively, both Parties by mutual agreement may request mediation from an outside third-party mediator with costs to be shared equally between the Parties.
    - (N)
    - (N)
  - c. If the Parties do not resolve their dispute within 90 calendar days after the date of the dispute letter, the Commission pursuant to the Commission's Rules of Practice and Procedure Applicable to Customer Complaints.
    - (L) (T)
    - (L) (T)
- 3. Pending resolution of any dispute under this Section, the Parties shall proceed diligently with the performance of their respective obligations under this Rule and The Implementing Agreements, unless The Implementing Agreements have been terminated. Disputes as to the application and implementation of this Section shall be subject to resolution pursuant to the procedures set forth in this Section.

(Continued)



RULE 21—GENERATING FACILITY INTERCONNECTIONS  
(Continued)

G. DISPUTE RESOLUTION PROCESS (Cont'd.)

4. The California Energy Commission (CEC) will maintain a website for the purpose of public disclosure of the resolution of the disputes submitted pursuant to Section G.2. Within 30 calendar days of resolution of the dispute, PG&E will present to the Producer a summary of the dispute including project-specific parameters such as generator technology, generator size, requested operational protocol, voltage service level, circuit type, the disputed issue and the agreed-upon resolution including the executed resolution documents that are non-confidential, if any. If the Producer and PG&E reach agreement on the dispute summary, PG&E will forward it to the CEC for posting. If the Producer and PG&E cannot agree on the dispute summary within 30 calendar days, PG&E will notify the CEC that there was a dispute that was resolved but agreement was not reached between PG&E and the Producer on the dispute summary. (N)

H. DEFINITIONS (L)

The definitions in this Section H are applicable only to this Rule, the Application and Interconnection Agreements.

**Anti-Islanding:** A control scheme installed as part of the Generating Facility or Interconnection Facilities that senses and prevents the formation of an Unintended Island.

**Applicant:** The entity submitting an Application for Interconnection pursuant to this Rule.

**Application:** A Commission-approved standard form submitted to PG&E for Interconnection of a Generating Facility.

**Certification Test:** A test pursuant to this Rule that verifies conformance of certain equipment with Commission-approved performance standards in order to be classified as Certified Equipment. Certification Tests are performed by NRTLs.

**Certification; Certified; Certificate:** The documented results of a successful Certification Testing.

**Certified Equipment:** Equipment that has passed all required Certification Tests.

**Commission:** The Public Utilities Commission of the State of California.

**Commissioning Test:** A test performed during the commissioning of all or part of a Generating Facility to achieve one or more of the following:

- Verify specific aspects of its performance;
- Calibrate its instrumentation; and
- Establish instrument or Protective Function set-points.

(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.

**Load Carrying Capability:** The maximum electrical load that may be carried by a section of PG&E's Distribution System consistent with reliability and safety under the circumstances being evaluated.

**Metering:** The measurement of electrical power flow in kW and/or energy in kWh, and, if necessary, reactive power in 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, 2827.8, 2827.9, or 2827.10 of the Public Utilities Code and Schedule NEM, Net Energy Metering.

**Net Generation Output Metering:** Metering of the net electrical power of energy output in kW or energy in kWh, 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. (T)

**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.

(Continued)



RULE 21—GENERATING FACILITY INTERCONNECTIONS  
(Continued)

H. DEFINITIONS (Cont'd.)

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

**Non-Islanding:** Designed to detect and disconnect from an Unintended Island with matched load and generation. Reliance solely on under/over voltage and frequency trip is not considered sufficient to qualify as Non-Islanding.

**Paralleling Device:** An electrical device, typically a circuit breaker, operating under the control of a synchronization function or by a qualified operator to connect an energized generator to an energized electric power system or two energized power systems to each other.

**Parallel Operation:** The simultaneous operation of a Generator with power delivered or received by PG&E while Interconnected. For the purpose of this Rule, Parallel Operation includes only those Generating Facilities that are Interconnected with PG&E's Distribution System for more than 60 cycles (one second).

**Periodic Test:** A test performed on part or all of a Generating Facility/ Interconnection Facilities at pre-determined time or operational intervals to achieve one or more of the following: (1) Verify specific aspects of its performance; (2) Calibrate instrumentation; and (3) Verify and re-establish instrument or Protective Function set-points.

**Point of Common Coupling (PCC):** The transfer point for electricity between the electrical conductors of PG&E and the electrical conductors of the Producer.

**Point of Common Coupling Metering:** Metering located at the Point of Common Coupling. This is the same Metering as Net Generation Output Metering for Generating Facilities with no Host Load and/or Section 218 Load.

(T)

**Point of Interconnection:** The electrical transfer point between a Generating Facility and the Distribution System. This may or may not be coincident with the Point of Common Coupling.

**Producer:** The entity that executes an Interconnection Agreement with PG&E. The Producer may or may not own or operate the Generating Facility, but is responsible for the rights and obligations related to the Interconnection Agreement.

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Accent Energy	Downey, Brand, Seymour & Rohwer	PG&E National Energy Group
Aglet Consumer Alliance	Duke Energy	Pinnacle CNG Company
Agnews Developmental Center	Duke Energy North America	PITCO
Ahmed, Ali	Duncan, Virgil E.	Plurimi, Inc.
Alcantar & Elsesser	Dutcher, John	PPL EnergyPlus, LLC
Anderson Donovan & Poole P.C.	Dynergy Inc.	Praxair, Inc.
Applied Power Technologies	Ellison Schneider	Price, Roy
APS Energy Services Co Inc	Energy Law Group LLP	Product Development Dept
Arter & Hadden LLP	Energy Management Services, LLC	R. M. Hairston & Company
Avista Corp	Enron Energy Services	R. W. Beck & Associates
Barkovich & Yap, Inc.	Exelon Energy Ohio, Inc	Recon Research
BART	Exeter Associates	Regional Cogeneration Service
Bartle Wells Associates	Foster Farms	RMC Lonestar
Blue Ridge Gas	Foster, Wheeler, Martinez	Sacramento Municipal Utility District
Bohannon Development Co	Franciscan Mobilehome	SCD Energy Solutions
BP Energy Company	Future Resources Associates, Inc	Seattle City Light
Braun & Associates	G. A. Krause & Assoc	Sempra
C & H Sugar Co.	Gas Transmission Northwest Corporation	Sempra Energy
CA Bldg Industry Association	GLJ Energy Publications	Sequoia Union HS Dist
CA Cotton Ginners & Growers Assoc.	Goodin, MacBride, Squeri, Schlotz &	SESCO
CA League of Food Processors	Hanna & Morton	Sierra Pacific Power Company
CA Water Service Group	Heeg, Peggy A.	Silicon Valley Power
California Energy Commission	Hitachi Global Storage Technologies	Smurfit Stone Container Corp
California Farm Bureau Federation	Hogan Manufacturing, Inc	Southern California Edison
California Gas Acquisition Svcs	House, Lon	SPURR
California ISO	Imperial Irrigation District	St. Paul Assoc
Calpine	Integrated Utility Consulting Group	Stanford University
Calpine Corp	International Power Technology	Sutherland, Asbill & Brennan
Calpine Gilroy Cogen	Interstate Gas Services, Inc.	Tabors Caramanis & Associates
Cambridge Energy Research Assoc	IUCG/Sunshine Design LLC	Tansev and Associates
Cameron McKenna	J. R. Wood, Inc	Tecogen, Inc
Cardinal Cogen	JTM, Inc	TFS Energy
Cellnet Data Systems	Kaiser Cement Corp	Transcanada
Chevron Texaco	Luce, Forward, Hamilton & Scripps	Turlock Irrigation District
Chevron USA Production Co.	Manatt, Phelps & Phillips	U S Borax, Inc
Childress, David A.	Marcus, David	United Cogen Inc.
City of Glendale	Masonite Corporation	URM Groups
City of Healdsburg	Matthew V. Brady & Associates	Utility Cost Management LLC
City of Palo Alto	Maynor, Donald H.	Utility Resource Network
City of Redding	McKenzie & Assoc	Wellhead Electric Company
CLECA Law Office	McKenzie & Associates	Western Hub Properties, LLC
Commerce Energy	Meek, Daniel W.	White & Case
Constellation New Energy	Mirant California, LLC	WMA
CPUC	Modesto Irrigation Dist	
Cross Border Inc	Morrison & Foerster	
Crossborder Inc	Morse Richard Weisenmiller & Assoc.	
CSC Energy Services	Navigant Consulting	
Davis, Wright, Tremaine LLP	New United Motor Mfg, Inc	
Defense Fuel Support Center	Norris & Wong Associates	
Department of the Army	North Coast Solar Resources	
Department of Water & Power City	Northern California Power Agency	
DGS Natural Gas Services	Office of Energy Assessments	