

Brian K. Cherry Vice President Regulatory Relations Pacific Gas and Electric Company 77 Beale St., Mail Code B10C P.O. Box 770000 San Francisco, CA 94177

Fax: 415.973.7226

March 4, 2014

#### Advice 4369-E

(Pacific Gas and Electric Company ID U 39 E)

Public Utilities Commission of the State of California

**Subject:** Modification of Schedule NEM Interconnection Forms

#### **Purpose**

Pacific Gas and Electric Company (PG&E) hereby seeks approval to make minor modifications to its Schedule NEM Forms 79-1151A, 79-1151B and 79-1153.

#### **Background**

In order to further streamline PG&E's schedule NEM interconnection processes for net energy metering customers installing solar and wind generating facilities of 30 kW or less, PG&E makes minor changes to three of its forms:

- Sample Form 79-1151A AGREEMENT AND CUSTOMER AUTHORIZATION Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less.
- Sample Form 79-1151B APPLICATION Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less.
- Sample Form 79-1153 -- NEM Load Aggregation Appendix

These changes update the forms created last year in AL 4263-E and earlier this year in AL 4305-E-A. The changes reflect recent changes to related programs, and further clarify the completion of the forms to facilitate their automation for online use.

#### Form Changes

#### 1. Agreement and Customer Authorization – 79-1151A

- Added to the top that the CCSF owned generating facilities applying for NEMCCSF are not eligible for NEM.
- Added the individual vs. company check boxes to Part I, Section A.
- Added a check box to Part I, Section A, clarifying the instructions for NEMA Load Aggregation projects and referencing Form 79-1153.

- Added descriptor to "Account Holder Name" in Part I, Section A. It now reads "Account Holder Name\* (Individual or Company)".
- Made a minor change to Part I, Section A, to match the language on the bill the field now reads "Electric Service Agreement ID" instead of "Electric Service ID Number."
- Part II, Section B added instructional text on how to fill out section B.
- Part III, Section A added rate options E-9A and E-9B to footnote 6 and also adding two new PEV rates of EV-A and EV-B. EV-A and EV-B will also have a footnote indicating that it became effective for customers applying for PEV rates as of 8/1/2013.
- Added AG-5 rate as an option to Part III, Section A.
- Streamlined signature area so there is one less line.
- Removed from footnote 6 on Page 2 the EL-7 Care rate to be consistent with not showing the other low income rates.

#### 2. Application - 79-1151B

- Added the individual vs. company check boxes to Part I, Section A.
- Added descriptor to "Account Holder Name" in Part I, Section A. It now reads "Account Holder Name\* (Individual or Company)".
- Made a minor change to Part I, Section B, to match the language on the bill the field now reads "Electric Service Agreement ID" instead of "Electric Service ID Number."
- Added to Part II, Section B, reference to the gosolarcalifornia.com website on equipment information.
- Added to Part II, Section D measurement for "Distance from Meter" it now indicates that this is in feet.
- Added a note to Part II, Section D to provide details on Greenbook requirements for AC Disconnect Switch.
- Removed the link to the wind turbine equipment. The webpage is no longer available via the CEC website.

#### 3. NEMA - 79-1153

• Removed reference to NEM Form 79-1101 and replaced it with Form 79-1151A. Form 79-1101 was replaced by Forms 79-1151A and 79-1151B.

#### **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 24, 2014, which is 20 days after the date of this filing. Protests should be mailed to:

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

Facsimile: (415) 703-2200

E-mail: EDTariffUnit@cpuc.ca.gov

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

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

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

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

Any person (including individuals, groups, or organizations) may protest or respond to an advice letter. (General Order 96-B, Rule 7.4). The protest shall contain the following information: specification of the advice letter protested; grounds for the protest; supporting factual information or legal argument; name, telephone number, postal address, and (where appropriate) e-mail address of the protestant; and statement that the protest was sent to the utility no later than the day on which the protest was submitted to the reviewing Industry Division (General Order 96-B, Rule 3.11).

#### **Effective Date**

PG&E requests that this Tier 1 advice filing become effective upon date of filing, which is **March 4, 2014**.

#### **Notice**

In accordance with General Order 96-B, Section IV, a copy of this advice letter is being sent electronically and via U.S. mail to parties shown on the attached list and the parties on the service list for Rulemaking (R.) 12-11-005. Address changes to the General Order 96-B service list should be directed to PG&E at email address PGETariffs@pge.com. For changes to any other service list, please contact the Commission's Process Office at (415) 703-2021 or at Process\_Office@cpuc.ca.gov. Send all electronic approvals to PGETariffs@pge.com. Advice letter filings can also be accessed electronically at: http://www.pge.com/tariffs

Vice President, Regulatory Relations

Brian Cherry KHC

Attachments

cc: Service List R.12-11-005

# CALIFORNIA PUBLIC UTILITIES COMMISSION

### ADVICE LETTER FILING SUMMARY ENERGY UTILITY

1000000	MUST BE COM	PLETED BY UTILITY (A	Attach additional pages as needed)	
Company nam	ne/CPUC Utility No. Pacific	Gas and Electric Comp	any (ID U39 E)	
Utility type:		Contact Person: Kings	ley Cheng	
☑ ELC	□ GAS	Phone #: (415) 973-52	<u>65</u>	
□ PLC	□ HEAT □ WATER	E-mail: <u>k2c0@pge.com</u>	m and PGETariffs@pge.com	
	EXPLANATION OF UTILITY T	YPE	(Date Filed/ Received Stamp by CPUC)	
ELC = Electric PLC = Pipeline	GAS = Gas HEAT = Heat	WATER = Water		
	(AL) #: <u>4369-E</u> : <u>Modification of Schedule</u>	NEM Interconnection	Tier: <u>1</u> <u>Forms</u>	
Keywords (ch	oose from CPUC listing): Ag	reements, Forms, Text (	<u>Changes</u>	
AL filing type:	☐ Monthly ☐ Quarterly ☐ Ann	nual 🗹 One-Time 🗆 Otl	ner	
If AL filed in co	ompliance with a Commission of	rder, indicate relevant Dec	ision/Resolution #: <u>N/A</u>	
Does AL replac	e a withdrawn or rejected AL?	If so, identify the prior AI	: <u>No</u>	
Summarize diff	erences between the AL and the	prior withdrawn or rejector	ed AL:	
Is AL requestin	g confidential treatment? If so,	what information is the ut	lity seeking confidential treatment for: No	
Confidential int	formation will be made available	e to those who have execut	ed a nondisclosure agreement: $\underline{N/A}$	
Name(s) and co information:	entact information of the person(	s) who will provide the no	ndisclosure agreement and access to the confidential	
Resolution Req	uired? □Yes ☑No			
Requested effect	etive date: March 4, 2014		No. of tariff sheets: 5	
Estimated syste	m annual revenue effect (%): N/	<u>'A</u>		
Estimated syste	m average rate effect (%): N/A			
	affected by AL, include attachmige C/I, agricultural, lighting).	ent in AL showing averag	e rate effects on customer classes (residential, small	
Tariff schedules	s affected: Electric Sample Form	ns 79-1151A, 79-1151B ar	d 79-1153	
Service affected	l and changes proposed: <u>N/A</u>			
Pending advice	letters that revise the same tariff	f sheets: N/A		
	itions, and all other corresponderized by the Commission, and si		due no later than 20 days after the date of this filing, unless	
	lic Utilities Commission		ic Gas and Electric Company	
Energy Divisio	n		Brian K. Cherry President, Regulatory Relations	
EDTariffUnit	Avo 4 <sup>th</sup> Fly		ale Street, Mail Code B10C	
505 Van Ness A San Francisco,		P.O.	Box 770000	
	E-mail: EDTariffUnit@cpuc.ca.gov  San Francisco, CA 94177  F-mail: PGFTariffs@nge.com			

		ATTACHMENT 1 Advice 4369-E
Cal P.U.C. Sheet No.	Title of Sheet	Cancelling Cal P.U.C. Sheet No.
33650-E	ELECTRIC SAMPLE FORM 79-1151A AGREEMENT AND CUSTOMER AUTHORIZATION Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less Sheet 1	32770-E
33651-E	ELECTRIC SAMPLE FORM 79-1151B APPLICATION Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less Sheet 1	32771-E
33652-E	ELECTRIC SAMPLE FORM 79-1153 NEM LOAD AGGREGATION APPENDIX Sheet 1	33482-E
33653-E	ELECTRIC TABLE OF CONTENTS Sheet 1	33641-E
33654-E	ELECTRIC TABLE OF CONTENTS SAMPLE FORMS Sheet 28	33485-E

Cancelling

Revised Original Cal. P.U.C. Sheet No. Cal. P.U.C. Sheet No.

33650-E 32770-E

<b>ELECTRIC</b>	SAMPL	E FORM	79-1151A
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Sheet 1

AGREEMENT AND CUSTOMER AUTHORIZATION

Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating

Facilities Of 30 Kilowatts Or Less

Please Refer to Attached Sample Form

Advice Letter No: Decision No.

1D5

4369-E Issued by

Brian K. Cherry

Vice President

Regulatory Relations

Date Filed Effective Resolution No. March 4, 2014



#### AGREEMENT AND CUSTOMER AUTHORIZATION

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

Customers may not operate their Generating Facility while interconnected to the PG&E system until they receive written permission from PG&E.

City and County of San Francisco ("CCSF") owned generating facilities seeking Schedule NEMCCSF and participants in the Demand Response Programs below are not eligible to participate in NEM

Peak Day Pricing (PDP)
 Scheduled Load Reduction Program (SLRP)
 SmartRate

Part I – Generating Facility Information and F	Responsible Parties
A. Customer and Generating Facility Information	(*as it appears on the PG&E bill):
	nd to participa <b>glab</b> id <mark>nn aNEMicangnoginen</mark> ue to fill out Parts I, on Appendix (Form 79-1153)
Please check the applicable box:   Individual	☐ Company
Account Holder Name* (Individual or Company)	Electric Service Agreement ID * Meter Number*
Generating Facility Street Address*	City* State Zip*
Customer Phone Number Email (if blank, Permiss	ssion to Operate (PTO) letter will be mailed to mailing address on record)
Meter in building or behind locked gate  Unrestrained anima AC Disconnect Sw	vitch
regarding the ESP's NEM program. (If applicable Interconnection under Direct Access (DA)	Interconnection under Community Choice Aggregation (CCA)
Company Name	ustomer is authorizing a third party to act on Customer's behalf):  Contact Person
Contact Phone Number	Email
Electric Account information to the Comcharacteristics, and other information reauthorized to submit Application Form 79 and receive copies of this executed Intewhen issued.  By checking this box, I (Customer) volunt	Agreement, I (Customer) authorize PG&E to release my PG&E npany above limited to kilowatt hour (kWh) usage, operational elated to my Generating Facility application. Company is also 9-1151B and act on my behalf with regard to the interconnection erconnection Agreement and the Permission to Operate Letter tarily agree to provide PG&E the System Cost Paid by Customer information may also be provided to the CPUC and other third
Part II – NEM Generator System Size	

#### A. Interconnection Study and Requirements

This Agreement covers the installed Generating Facility nameplate listed in the accompanying Application Form 79-

This Agreement covers the installed Generating Facility nameplate listed in the accompanying Application Form 79-1151B.

The interconnection study will use the nameplate to determine if Interconnection Facilities or Distribution or Network Upgrades are required and the responsible party for the associated costs. If upgrades are required, this will increase the time it will take for PG&E to approve your interconnection. PG&E will confirm the nameplate covered by this Agreement in the Permission to Operate Letter.

In order for PG&E to approve your system, you will need to provide (1) this signed Agreement, (2) Application Form 79-1151B, and (3) a copy of the final signed jurisdiction approval (building permit) for your project.



## AGREEMENT AND CUS TOMER AUTHORIZATION **Net Energy Metering Interconnection** For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

#### Part II - NEM Generator System Size - Continued

NEM systems should be sized with an estimated annual production no larger than 110% of the Customer's total previous 12 months of usage (annual usage) and projected future increase. Customers can obtain their usage data

fro	m <u>www.pge.com/greenbutton.</u> System sizing	eligibility will be reviewed usin	ng the criteria below.				
B.	<ul> <li>Solar Generator System Sizing: The CEC-AC kW on the Application cannot exceed the CEC-AC kW listed below</li> <li>Solar Systems &lt;= 5 kW (CEC-AC<sup>1</sup> kW) do not require review. Please only list your CEC-AC rating below in (1) and skip the rest of Section B.</li> </ul>						
	Solar Systems > 5 kW (CEC-AC kW), si		_				
	Estimated Annual Production:	(1) CEC-AC rating	(kW) X 1,664 <sup>2</sup>	= -			
	Estimated Annual Energy Usage:	(2) Recent annual usage	(kWh) X 1.1	= -			
	OR (If 12 months usage not available)		(sq ft) X 3.32 <sup>3</sup>	= -			
	AND	(4) I plan to increase my ann	• , , ,	-			
		(5) Total Energy Usage	(2  or  3) + (4)	= .	***************************************		
	Net Generation (Production – Usage) *Positive number indicates that the		(1) - (5) ate more than the estimate	= d usa	age		
C.	<ul><li>Wind Generator System Sizing: The name</li><li>All Wind Turbines, size is determined as</li></ul>		not exceed the nameplate I	isted	below.		
	<b>Estimated Annual Production:</b>	(1) Nameplate rating	(kW) X 2,190 <sup>4</sup>	= _			
	Estimated Annual Energy Usage:	(2) Recent annual usage	(kWh) X 1.1				
	OR (If 12 months usage not available)		(sq ft) X 3.32 <sup>5</sup>	_	***************************************		
	AND	(4) I plan to increase my ann		_			
		(5) Total Energy Usage	(2  or  3) + (4)				
	Net Generation (Production – Usage) *Positive number indicates that the syst	(1) - (5) The than the estimated usage	2000 2000				
Р	art III – Rate Selection		a man mo commanda doago				
Α.	Otherwise Applicable Rate Schedule (O you. Visit <a href="https://www.pge.com/rateoptions">www.pge.com/rateoptions</a> or call (			gory	applicable to		
	Residential Service Rate (Select one):  □ E-1 – Non-Time-of-Use □ E-6 – Time-of-Use □ E-7 <sup>6</sup> – Time-of-Use □ E-8 <sup>6</sup> – Non-Time-of-Use □ E-9A <sup>6</sup> – Time-of-Use for Customers with □ E-9B <sup>6</sup> – Time-of-Use for Customers with □ EV-A <sup>7</sup> – Time-of-Use for Customers with □ EV-B <sup>7</sup> – Time-of-Use for Customers with □ Other ()	n a separately metered EV red n a single meter for Electric V n a separately metered EV re	charging station ehicle (EV) recharging stat charging station				
<sup>1</sup> CE	C-AC (kW) = California Energy Commission Alternating	Current, refers to inverter efficiency	rating				

<sup>(</sup>Quantity of PV Modules x PTC Rating of PV Modules x CEC Inverter Efficiency Rating)/1000

<sup>&</sup>lt;sup>2</sup> 8,760 hrs/yr X 0.19 solar capacity factor = 1,664

<sup>&</sup>lt;sup>3</sup> 2 watts/sq ft X 1/1,000 watts X 8,760 hrs/yr X 0.19 solar capacity factor = 3.32

<sup>8,760</sup> hrs/yr X 0.25 wind capacity factor = 2,190

 $<sup>^{5}</sup>$  1.52 watts/sq ft X 1/1,000 watts X 8,760 hrs/yr X 0.25 wind capacity factor = 3.32

<sup>&</sup>lt;sup>6</sup> E-7, E-8, E-9A, E-9B, AG-R, and AG-V are closed to all new customers and are only available to Customers that are currently on the rate.

G-Vare closed to all new customers and are only available to odctonists and all the configurations. The configuration of the configura <sup>7</sup> Rates effective August 1,



# AGREEMENT AND CUS TOMER AUTHORIZATION **Net Energy Metering Interconnection** For Solar And/Or Wind Electric Generating Facilities

F 305 * ***	Of 30 Kilowatts Or Less
Part III - Rate Selection - Continued	

Small and Medium Commercial Service Rate (Select of	one rate and p	orimary or <b>Secon</b> o		lary service vo	oltage):
<ul> <li>□ A-1 – Small General Service</li> <li>□ A-6 – Small General Time-of-Use Service</li> <li>□ A-10 – Medium General Demand-Metered Service</li> <li>□ A-10 – Medium General Time-of-use Service</li> <li>□ Other ()</li> </ul>			<u>,</u>		
Agricultural Power Service Rate: (Select one rate and		D		_	
AG-1  AG-R <sup>6</sup> – Split-Week Time-of-Use  AG-V <sup>6</sup> – Short-Peak Time-of-Use  AG - 4 – Trin e - o f - U s e  AG-5 – Time of Use  Other ()					

#### Purpose

The purpose of this Net Energy Metering (NEM) Application and Interconnection Agreement for Solar and/or Wind Electric Generating Facilities of 30 Kilowatts or Less (Agreement) is to allow Customer to interconnect with Pacific Gas and Electric Company's (PG&E) Distribution System, subject to the provisions of this Agreement and PG&E's Electric Schedule Net Energy Metering (NEM). Customer has elected to interconnect and operate its solar and/or wind electric Generating Facility in parallel with PG&E's Distribution System to offset part or all of the Customer's own electrical requirements at this service point. Customer shall comply at all times with this Agreement as well as with all applicable laws, tariffs and requirements of the California Public Utilities Commission (CPUC).

#### B. Applicability

This Agreement applies to Electric Schedule NEM Customer-Generators (Customer) who interconnect a solar and/or wind turbine electrical Generating Facility, or a hybrid system of both, with an aggregate capacity of 30 kilowatts or less that is located on Customer's premises and that operates in parallel with PG&E's Distribution System.

#### C. Permission to Operate

Customer may not operate their generator while interconnected to the PG&E system until receiving written permission 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. Safety

Customer shall meet all applicable safety and performance standards established by the National Electrical Code, the Institute of Electrical and Electronics Engineers, accredited testing laboratories such as Underwriters Laboratories and, where applicable, PG&E's Electric Rule 21, and other rules approved by the CPUC regarding safety and reliability. A Customer with a solar or wind-turbine electrical generating system, or a hybrid system of both, that meets those standards and rules shall not be required to install additional controls, perform or pay for additional tests, or purchase additional liability insurance.

#### E. Safe Operation of your Generating Facility

Notwithstanding any other provision of this Agreement, if at any time PG&E determines that the Customer's Facility, or its operation, may endanger (a) the public, (b) PG&E personnel, or (c) the safe and reliable operation of PG&E's electrical system, PG&E shall have the right to disconnect the Facility from PG&E's system. Customer's Facility shall remain disconnected until such time as PG&E is satisfied that the unsafe condition(s) have been corrected.



# AGREEMENT AND CUS TOMER AUTHORIZATION Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

#### Part IV - Interconnection Agreement Provisions - Continued

#### F. AC Disconnect Switch

PG&E recommends that a customer installing an inverter-based generator consider also installing an AC Disconnect Switch to facilitate maintenance of the Customer's equipment (i.e. inverter, PV arrays, etc.). If an AC Disconnect Switch is not installed, the revenue meter may be temporarily removed by PG&E due to an emergency or maintenance on PG&E's system to isolate the Customer's generator from the electric distribution system. Removal of the revenue meter will result in loss of electrical service to the Customer's facility or residence. AC Disconnect Switch requirements are available in PG&E's Greenbook <a href="https://www.pge.com/greenbook">www.pge.com/greenbook</a>.

#### G. Rate

Customer has confirmed their otherwise applicable rate schedule (OAS), establishing how Customer's monthly usage or net generation will be charged/credited when submitting this Agreement. Further Customer-initiated rate changes are governed in accordance with PG&E's Electric Rule 12.

#### H. **NEM Billing**

PG&E installs a "net meter" on a customer's property that measures the net energy, defined as the difference between the amount of electricity supplied by PG&E and the amount of electricity exported to the grid over the course of a month. The Customer's account is enrolled in the NEM program and put on an annual (12- billing months) true-up cycle.

The meter is read monthly and an amount is calculated based on the net energy recorded in kilowatt hours (kWh). If a customer exported more electricity than they drew from PG&E in a given billing cycle, the amount is deemed a surplus. If a customer received more electricity from PG&E than they exported, the amount is deemed a charge. The rate at which the charge or surplus is calculated is based on the customer's OAS which is requested by the Customer in this Agreement.

After 12 billing cycles, the corresponding charges and surpluses are reconciled in the annual true-up bill. Any remaining charges must be paid and any excess surpluses are typically zeroed out. More information about NEM billing is available at www.pge.com/nembilling.

#### I. Net Surplus Compensation (NSC)

NSC payments are made to NEM customers who produce more electricity than they use during the Relevant Period. The payment rate is based on a rolling 12-month average of spot market prices and may fluctuate on a monthly basis. The historical range of the NSC rate at the time of this Advice Filing is approximately \$0.03 to \$0.04. A history of NSC rates is available at <a href="https://www.pge.com/nembilling">www.pge.com/nembilling</a>. If a customer would like to opt out from receiving this payment, please visit <a href="https://www.pge.com/nscoptout">www.pge.com/nscoptout</a> to complete Form 79-1130.

#### J. Limitation of Liability

PG&E's and Customer's (Individually Party or together Parties) 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.

#### K. 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.

#### L. Governing Authority

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

#### M. Term of Agreement

This Agreement shall become effective as of the date of PG&E's issuance of the permission to operate letter after receipt of all applicable fees, required documents, and this completed Agreement. This Agreement shall continue in full force and effect until terminated by either Party providing 30-days prior written notice to the other Party, or when a new Customer takes service with PG&E operating this approved generating facility. This new Customer will be interconnected subject to the terms and conditions as set forth in Schedule NEM.



# AGREEMENT AND CUS TOMER AUTHORIZATION Net Energy Metering Interconnection For Solar And/Or Wind Electric Generating Facilities Of 30 Kilowatts Or Less

#### Part IV - Interconnection Agreement Provisions - Continued

#### N. Meter Access

The electric meter must be installed in a safe location easily accessible upon PG&E request.

#### O. Stale Agreements

If this agreement is still pending one year from the date it is received by PG&E and Customer has not met all of the requirements, PG&E will close this application and Customer will be required to submit a new Agreement and Application should Customer wish to take service on Schedule NEM.

By signing below, I declare under penalty of perjury under the laws of the State of California that:

- 1) The information provided in this Agreement is true and correct.
- 2) By completing the fields and checking the box in Part I Section D, I authorize the identified third party (Company) to receive my information and act on my behalf, which includes submitting or revising my Interconnection Application.
- 3) I have completed and reviewed Part II to determine if my system is sized to meet no more than my projected energy usage.
- 4) I have read in its entirety and agree to all the terms and conditions in this Interconnection Agreement and agree to comply with PG&E's Electric Rule 21.

(Print Customer Name as it appears on the PG&E Bill)
(Signature)
(Drint name and title of signer applicable if systemer is a Company)
(Print name and title of signee, applicable if customer is a Company)  (e.g. John Doe, Manager)
(Date)

Note: PG&E will accept electronic signatures that are verified by qualified Third Parties such as, Adobe EchoSign, e-SignLive, and DocuSign for this Agreement.

To confirm project approval, the Customer should retain a copy of this signed agreement and a copy of the Permission to Operate (PTO) letter from PG&E authorizing the Customer to operate the Generating Facility after PG&E deems satisfactory compliance with all NEM requirements.

Cancelling

Revised Original

Cal. P.U.C. Sheet No. Cal. P.U.C. Sheet No. 33651-E 32771-E

#### **ELECTRIC SAMPLE FORM 79-1151B APPLICATION**

Sheet 1

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

> Please Refer to Attached Sample Form

Advice Letter No: 4369-E Decision No.

1D5

Issued by Brian K. Cherry Vice President Regulatory Relations Date Filed Effective Resolution No. March 4, 2014

#### **APPLICATION**



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

Customers may not operate their Generating Facility while interconnected to the PG&E system until they receive written permission from PG&E.

For a non-exporting Generating Facility, RES-BCT facility, or NEM Generating technologies other than 30 kW or less solar or wind, Customers must submit the online Form 79-974 available at <a href="https://www.pge.com/gen.">www.pge.com/gen.</a>

P	art I – Generating Facility Information and Responsible Parties
	Date of signature on accompanying Interconnection Agreement and Customer Authorization Form 79-1151A  Date:
В.	Customer and Generating Facility Information (*as it appears on the PG&E bill):
	Please check the applicable box:  Individual  Company
	Account Holder Name* (Individual or Company) Electric Service Agreement ID* Meter Number*
	CA
	Generating Facility Street Address* City* State Zip*
	☐ The project is completed and the final, signed, jurisdiction approval (building permit) is attached.
c.	Interconnection Application Type (check one):  New NEM Generating Facility interconnection at an existing PG&E service.  Modify existing PG&E approved Generating Facility interconnection (adding/removing/replacing equipment).  Must provide a Custom Single-Line Drawing (SLD) showing the original system and the modified system.  New interconnection in combination with a new service.  An Application for Service must be completed. Additional fees may be required if a service or line extension is required in accordance with PG&E Electric Rules 15 and 16. Please contact PG&E at 1-800-PGE-5000.  If this account will be established in a new subdivision, attach a list of lots/addresses and provide the following:  Developer Name
_	System Owner (check one):
n (6m)	PG&E Customer owned  Third Party ownership
	List the third party's name if they own the renewable energy credits (RECs):
	List tile tillid party's harrie it tiley own tile reliewable energy credits (NEOs).
Ε.	Contractor Information (List who is installing the system. Write "Self-Installed" if installed by Customer):
	Company Name California Contractors State License Number
F.	<b>Preparer of this Application</b> (if not the PG&E Customer, the Preparer must be authorized to act on behalf of the Customer on the Interconnection Agreement and Customer Authorization Form 79-1151A):
	Company Name Preparer Name Date Prepared



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

#### Part II - Description of the Generating Facilities

Α.	Variances from Distribution Interconner Generating Facilities must meet the and www.pge.com/greenbook. A Variance tap, AC Disconnect > 10 ft from PG&E m	e DIH and Greenbook receeds and and control of the	equirements, a I with the applic	available cation for	at <u>www</u> deviation:	w.pge.c s, i.e. lir	om/dih ne-side
	The project meets the DIH and Gree	•	•		•		
	The project deviates from the DIH a	•			•		
No	ote: Customers with Non-certified invelopeak load on the distribution line sec 21) require a Supplemental Revier requirements. Customers will be noti	ction (or do not meet other Initiew which may result in furth	al Review scre ner study, add	ens as de	escribed in	n Electr	ic Rule
В.	Photovoltaic (PV) Generating Facility I manufacturers or model numbers). To avoid application processing delays, t appear on the Go Solar California websit	the manufacturer and model n	umbers provide	ed should	be the sa	ame as	they
	B.1. Identify PV Mounting Method(s): B.2. Photovoltaic Generator 1:		Winner and the second s	na-c-c-c-c-c-c-c-c-c-c-c-c-c-c-c-c-c-c-c	1862±6они на	bias	
	Inverter Manufacturer	Model Number	Nameplate Rating kW/unit	CEC¹ Rating kW/unit	Output Voltage	1 or 3 Phase	Qty
	PV Panel Manufacturer	Model Number	Nameplate Rating kW/unit	PTC <sup>2</sup> Rating kW/unit	Total Nar Capa kW	city	Qty
		(Sec. 1997)	GIRAGIANINA WARANA AND AND AND AND AND AND AND AND AND		0	THE STATE OF THE S	
					0		
	B.3. Photovoltaic Generator 2:						
	Inverter Manufacturer	Model Number	Nameplate Rating kW/unit	CEC Rating kW/unit	Output Voltage	1 or 3 Phase	Qty
	PV Panel Manufacturer	Model Number	Nameplate Rating kW/unit	PTC Rating kW/unit	Total Nar Capa kW	city	Qty
					0		
			20000000000000000000000000000000000000		0		
C.	Wind Turbine Generating Facility Info required, write "Incorporated" into the "Into the Inverter row.						
	Inverter Manufacturer	Model Number	Nameplate Rating kW/unit	CEC Rating kW/unit	Output Voltage	1 or 3 Phase	Qty
	Wind Turbine Manufacturer	Model Number	Nameplate Rating kW/unit	CEC Rating kW/unit	Total Nar Capa kV	city	Qty
NAME OF THE PERSON OF THE PERS					n		

<sup>&</sup>lt;sup>1</sup>California Energy Commission (CEC) ratings are available at www.consumerenergycenter.org

<sup>&</sup>lt;sup>2</sup> PTC: PVUSA Test Conditions. PTC ratings are available at www.consumerenergycenter.org



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

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

D. AC Disconnect Switch (Write "None" if not applicable. See Part III Section C for requirements):

AC Disconnect Manufacturer	Model Number	Rating (amps)	Distance from Meter (ft.)*

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

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

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

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

Othing Service.	(II using the SE	J to the right)				
Panel Voltage	Main Breaker	PV Breaker Size	Generator		AC Disconnect (Recommended.	(Utility Meter)
	***************************************			Inverter	Required if applicable)	Main
				$\frac{\Sigma}{\Delta C}$		Breaker
				<u> </u>		PV Breaker

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

#### F. Service Panel Short Circuit Interrupting Rating (SCIR) (for systems larger than 11 kW):

CID	of tha	convice	nanal	connected	to thic	Generating	Facility	
SUIK	or me	service	panei	-connected	to this	Generating	Facility:	

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

Note: Applications to interconnect systems located in San Francisco or Oakland may require additional analysis to determine whether or not their proposed installation is on PG&E's networked secondary system. Networked secondary systems are in place to provide heightened levels of reliability in densely populated areas and may affect the ability of PG&E to interconnect NEM customers. Please contact Electric Generation Interconnection department at 415-972-5676 or email <a href="mailto:gen@pge.com">gen@pge.com</a> if the proposed installation is in San Francisco where the zip code is 94102, 94103, 94104, 94105, 94107, 94108, 94109, 94111 or 94133 or in Oakland where the zip code is 94607 or 94612.

#### A. Documents

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

#### **Required Documents**

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

#### Additional Documents (if applicable)

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

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

# Pacific Gas and Electric Company

#### **APPLIC\* TION**

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

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

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

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

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

#### C. AC Disconnect Switch Guidelines

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

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

An AC Disconnect Switch is required for a Customer with:

- Inverter-based interconnections having a three-phase self-contained meter or a transformer-rated meter (i.e. all meter panels or switchboards employing the use of potential and current transformers).
- Non-inverter based generators, including rotating or machine-based generators irrespective of whether the service meter configuration is transformer-rated or self-contained.
- Inverter and non-inverter based generators that do not have overcurrent protection at the point of interconnection.

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

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

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

Please submit the Application and Agreement via e-mail to <a href="mailto:gen@pge.com">gen@pge.com</a> for faster delivery. E-mails successfully sent to <a href="mailto:gen@pge.com">gen@pge.com</a> will receive an automatic reply confirming receipt. If the Customer does not receive an automatic reply, please resubmit the application. If necessary, the Application and Agreement package can be mailed to PG&E, Attn: Electric Generation Interconnection, 245 Market St, MC N7L, San Francisco, CA 94105.

Decision No.

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Cancelling

Revised Original Cal. P.U.C. Sheet No. Cal. P.U.C. Sheet No.

33652-E 33482-E

		ELECTRIC SAMPLE FORM 79-1153 NEM LOAD AGGREGATION APPEND	3 DIX	Sheet 1
		Please Refer to Attached Sample Form		
		оз <b>р</b> у от		
Advice Letter No:	4369-E	Issued by	Date Filed	March 4, 2014

Effective

Resolution No.

Brian K. Cherry

Vice President

Regulatory Relations



#### **NEM LOAD AGGREGATION APPENDIX**

#### **NEM LOAD AGGREGATION APPENDIX**

(If Applicable)

List of Qualifying Accounts Eligible for
Load Aggregation under Special Condition 8 of Schedule
NEM and Customer-Generator Declaration Warranting NEM Aggregation Is Located On
Same or Adjacent or Contiguous Property to Generator Parcel

Automated Document – Preliminary Statement Part A



Automated Document - Preliminary Statement Part A

#### **NEM LOAD AGGREGATION APPENDIX**

This is an appendix to Form 79-1151A, 79-978, 79-1137 or 79-1069 as applicable. As governed by Schedule NEM Special Condition 8, PG&E will aggregate the load of the Customer-Generator's accounts listed below where the Customer-Generator is the customer of record and the accounts continue to meet the requirements of Special Condition 8 of PG&E's NEM tariff as outlined in the Customer Declaration below

Customer Declaration below.
In accordance with this appendix:
(i) Pursuant to Schedule NEM Special Condition 8, the electricity generated by the renewable electrical generation facility and exported to the grid shall be allocated to each of the aggregated meters in proportion to the electrical load served by those meters, and
(ii) In accordance with Special Condition 8 of the Rate Schedule NEM, Customer-Generator shall remit service charges of to PG&E for its cost of providing billing service to those meters, and
(iii) Customer-Generator shall permanently be ineligible to receive AB 920 net surplus electricity compensation (NSC), and PG&E shall retain any kilowatt hours in excess of the eligible Customer-Generator's electrical load as determined for each aggregated meter individually. (However, if an Aggregated Account that is not a Generating Account is separated from the Arrangement, and subsequently qualifies for NEM, it may be eligible for NSC.)
This agreement at all times shall be subject to such modifications as the California Public Utilities Commission may direct from time to time in the exercise of its jurisdiction.

Page 2 of 4 Form No. 79-1153 Advice 4369-E March 2014



#### **NEM LOAD AGGREGATION APPENDIX**

I M. T. W. S. T. Secondario	and a hard and hard a		
Requesting	Second Service for Generator: ☐ Yes	s ⊔ No	
to all other it has no loa Facility. Hother Renewa	applicable rules, an additional servad other than that associated directowever, a customer may not subse	ting an additional service for Generat vice may be allowed for the Generatir tly with the Renewable Electric Gene equently add load to that additional se s removed, the additional service, ma	ng Account if ration rvice, and if
Accounts	Customer-Generator Service Agreement ID from your Billing Statement <sup>6</sup>	Account Address as listed on your Billing Statement (Street, City, Zip Code – no P.O. boxes	Annual kWh Load <sup>7</sup>
Generator Account			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		Total Annual kV	vh
(Use more		tandard NEM solar and/or wind <= 30 kW on restate the Generator Account on additional s	
	Total Ann	und Kunda I and Krama all abouts if annihable.	
	Total Allii	ual Kwh Load (from all sheets, if applicable) Estimated Annual kWh Production	
		Solar = CEC-AC <sup>8</sup> rating X 1,664 <sup>9</sup>	
	Wind : Other Technologies :	= Total Inverter Nameplate Rating X 2,190 <sup>10</sup> = Total Inverter Nameplate Rating X 7,008 <sup>11</sup>	
(Customer-Generator)		Date:Pag	e: of
<sup>7</sup> For previous to being installed; <sup>8</sup> CEC-AC (kW) PTC Rating of F <sup>9</sup> Estimated S <sup>10</sup> Estimated N	if none, enter zero.  = California Energy Commission Alternating CuPV Modules x CEC Inverter Efficiency Rating)/1 olar Production = 8,760 hrs/yr X 0.19 solar Wind Production = 8,760 hrs/yr X 0.25 wind	r capacity factor = 1,664	
Automated Doc	ument – Preliminary Statement Part A	 F	Page 3 of 4 orm No. 79-1153 Advice 4369-E

March 2014

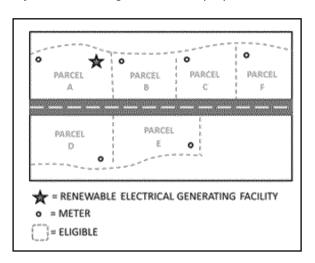


#### **NEM LOAD AGGREGATION APPENDIX**

#### **Customer-Generator Declaration**

In accordance with Schedule NEM, I, Customer-Generator represent and warrant under penalty of perjury that:

- 1) The total annual output in kWh of the generator is less than or equal to 110% (for solar and/or wind systems equal to or less than 30 kW) or 100% (for all other technologies and solar and/or wind systems greater than 30 kW) of the annual aggregated electrical load in kWh of the meters associated with the generator account, including the load on the generating account itself (before being offset by the generator); and
- 2) Each of the aggregated account meters associated with this NEM generator account are located either
- (i) on the property where the renewable electrical generation facility is located, or
- (ii) are located within an unbroken chain of contiguous parcels that are all solely owned, leased or rented by the customer-generator. For purposes of Load Aggregation, parcels that are divided by a street,



highway, or public thoroughfare are considered contiguous, provided they are within an unbroken chain of otherwise contiguous parcels that are all solely owned leased or rented by the customergenerator.

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

- 3) PG&E reserves the right to request a parcel map to confirm the property meets the requirements of 2) above; and
- 4) Customer-Generator agrees to notify PG&E if there is any change of status that makes any of the meters listed in this Appendix ineligible for meter aggregation to ensure that only eligible meters are participating; PG&E will require an updated Appendix and Declaration form; and
- 5) Upon request by PG&E, I agree to provide documentation that all aggregated meters meet the requirements of Rate Schedule NEM Special Condition 8 including but not limited to parcel maps and ownership records.

Customer Generator's Name	Signature
Date	Type/Print Name
-	Title
Automated Document – Preliminary Statement Part A	Page 4 of 4

Page 4 of 4 Form No. 79-1153 Advice 4369-E March 2014

Revised Revised

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

33653-E 33641-E

#### **ELECTRIC TABLE OF CONTENTS**

Sheet 1

#### **TABLE OF CONTENTS**

SCHEDULE TITLE OF SHEET	CAL P.U.C. SHEET NO.	
Title Page	33653-E	(T)
Rate Schedules	33653-E 33642,33643,33644,33645,33646,33647,32705,31541,33648-E	` '
	33649,32706,30376,32544,32398,30846,32783,33138-E	
Maps, Contracts and Deviations	33253-E	
Sample Forms 32777,32429,327		(T)

(Continued)

Advice Letter No: 4369-E Decision No.

Issued by **Brian K. Cherry**Vice President
Regulatory Relations

Date Filed Effective Resolution No. March 4, 2014

# ELECTRIC TABLE OF CONTENTS SAMPLE FORMS

Sheet 28

FORM TITLE OF SHEET SHEET NO.

# Sample Forms Net Energy Metering

79-854	Interconnection Agreement for Net Energy Metering for Residential and Small Commercia Solar or Wind Electric Generating Facilities of 10 kW or Less		
79-978	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		
79-994	of 10 kW or Less	32039-E*	
	or Less	. 25580-E	
79-997	Interconnection Agreement for Net Energy Metering of Biogas Digester Generating Faciliti		
79-998	Expanded Net Energy Metering (E-Net) Supplemental Application	32122-E	
79-999	Agreement for Limited Optional Remote Metering Service	. 32123-E	
79-1010 79-1069	Interconnection Agreement for Net Energy Metering of Fuel Cell Generating Facilities Generating Facility Interconnection Agreement (Eligible/Non-Eligible	. 32449-E	
	Net Generating Facility Export)	32450-E	
79-1151A	Agreement and Customer Authorization – Net Energy Metering Interconnection For Solar Wind Electric Generating Facilities Of 30 Kilowatts Or Less	And/Or	(T)
79-1151B	Application - Net Energy Metering Interconnection For Solar And/Or Wind Electric General	ting	(')
	Facilities Of 30 Kilowatts Or Less	. <b>33651-</b> E	(T)
79-1109	Net Energy Metering Application and Interconnection Agreement for the Building Owner of	a	
	Multifamily Affordable Solar Housing Facility with a Solar Generating Facility of 1 Megaw		
79-1112	Local Government Application for an Arrangement to Take Service on Rate Schedule RES	32043-E	
73-1112	With Interconnection Eligible Renewable Generation of Not More Than 5 Megawatt		
79-1114	NEM 2010 Early True-up Request Form		
79-1124	Eligible Low Income Development Virtual Net Energy Metering Application and Interconne		
70 1121	Agreement for Multi-Family Affordable Housing with Solar Generation Totaling 1 Megawa		
	, ignormania i anni y maradana nadani g maradana a ana anni anni anni anni anni ann		
79-1125	NEM / NEMVMASH Inspection Report		
79-1130	Customer Request Form not to Receive Net Surplus Compensation	30639-E	
79-1131	NEMV Application and Interconnection Agreement for an Eligible		
	Generating Facility of 1MW or Less Serving Multiple Tenants	32048-E*	
79-1137	Interconnection Agreement for Net Metering for a Renewable Electrical		
	Generation Facility of 1,000 Kilowatts or Less	32049-E*	
79-1142	NEMV Interconnection Application for a Renewable Electrical Generation		
	Facility of 1 Megawatt or Less	32050-E*	
79-1153	NEM Load Aggregation Appendix	33652-E	(T)

(Continued)

Advice Letter No: 4369-E Decision No.

Issued by **Brian K. Cherry** Vice President Regulatory Relations Date Filed March 4, 2014
Effective
Resolution No.

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

1st Light Energy

AT&T

Alcantar & Kahl LLP Anderson & Poole

**BART** 

Barkovich & Yap, Inc. Bartle Wells Associates

Braun Blaising McLaughlin, P.C.

**CENERGY POWER** 

California Cotton Ginners & Growers Assn

California Energy Commission California Public Utilities Commission California State Association of Counties

Calpine Casner, Steve

Center for Biological Diversity

City of Palo Alto City of San Jose Clean Power

Coast Economic Consulting

Commercial Energy

County of Tehama - Department of Public

Works

Crossborder Energy Davis Wright Tremaine LLP

Day Carter Murphy

Defense Energy Support Center **Dept of General Services** 

Division of Ratepayer Advocates

Douglass & Liddell Downey & Brand

Ellison Schneider & Harris LLP

G. A. Krause & Assoc. GenOn Energy Inc. GenOn Energy, Inc.

Goodin, MacBride, Squeri, Schlotz &

Ritchie

Green Power Institute Hanna & Morton In House Energy

International Power Technology Intestate Gas Services, Inc.

K&L Gates LLP Kelly Group Linde

Los Angeles County Integrated Waste

Management Task Force

Los Angeles Dept of Water & Power

MRW & Associates Manatt Phelps Phillips Marin Energy Authority McKenna Long & Aldridge LLP

McKenzie & Associates

Modesto Irrigation District

Morgan Stanley NLine Energy, Inc. NRG Solar Nexant, Inc.

North America Power Partners

Occidental Energy Marketing, Inc.

OnGrid Solar

Pacific Gas and Electric Company

Praxair

Regulatory & Cogeneration Service, Inc.

SCD Energy Solutions

SCF

SDG&E and SoCalGas

SPURR

San Francisco Public Utilities Commission

Seattle City Light Sempra Utilities SoCalGas

Southern California Edison Company

Spark Energy Sun Light & Power

Sunshine Design Tecogen, Inc.

Tiger Natural Gas, Inc.

TransCanada

**Utility Cost Management Utility Power Solutions** 

**Utility Specialists** 

Verizon

Water and Energy Consulting Wellhead Electric Company Western Manufactured Housing Communities Association (WMA)