

CALIFORNIA ENERGY COMMISSION

1516 Ninth Street, MS 45
Sacramento, California 95814

Main website: www.energy.ca.gov



Implementation of Renewable Investment Plan Legislation) Docket No. 02-REN-1038
) Renewable Energy Program
)
) NOTICE OF BUSINESS MEETING
) RE: Revision of Emerging Renewables Program
) Guidebook

Notice of Additional Revisions to the *Emerging Renewables Program Guidebook*

On March 17, 2010 the California Energy Commission posted a "Notice to Consider Adoption of Revisions to the Emerging Renewables Program Guidebook". The Energy Commission is posting additional guidebook changes that were inadvertently left out of the original notice.

The California Energy Commission will hold a Business Meeting on:

WEDNESDAY, APRIL 7, 2010
 10 a.m.
 CALIFORNIA ENERGY COMMISSION
 1516 Ninth Street
 First Floor, Hearing Room A
 Sacramento, California
 (Wheelchair Accessible)

Audio from this meeting will be broadcast over the Internet.

For details, please go to:

www.energy.ca.gov/webcast

As part of the April 7, 2010 Business Meeting, the Energy Commission will consider adopting revisions to the *Emerging Renewables Program Guidebook, Ninth Edition*. The *Guidebook* describes the requirements for receiving incentives to install eligible fuel cell systems and small wind generating systems that receive electricity from specified investor-owned utilities.

The Energy Commission's Renewables Committee, with Vice Chair James D. Boyd as Presiding Member and Commissioner Robert Weisenmiller as Associate Member, oversees the Emerging Renewables Program (ERP). The Renewables Committee is

recommending the additional revisions to the efficiency test requirements. The changes are identified in **Attachment A** to this notice.

The proposed *Guidebook* including the additional revisions is available online at [www.energy.ca.gov/renewables/emerging_renewables/index.html] and for public review (Publication No.CEC-300-2010-003-D).

Written Comments

Written comments must be submitted by 5:00 p.m. on April 2, 2010. Please include the docket number 02-REN-1038 and indicate Emerging Renewables Program in the subject line or first paragraph of comments. Please hand deliver or mail an original copy to:

California Energy Commission
Dockets Office, MS-4
Re: Docket No. 02-REN-1038
1516 Ninth Street
Sacramento, CA 95814-5512

The Energy Commission encourages comments by e-mail. Please include your name or organization's name with your comments. Those submitting comments by electronic mail should provide them in either Microsoft Word format or as a Portable Document (PDF) to [docket@energy.state.ca.us]. **One paper copy** must also be sent to the Energy Commission's Docket Unit.

Public Participation

The Energy Commission's Public Adviser provides the public assistance in participating in Energy Commission activities. For information on how to participate in this forum, please contact the Public Adviser's Office at (916) 654-4489 or toll free at (800) 822-6228, by FAX at (916) 654-4493, or by e-mail at [PublicAdviser@energy.state.ca.us]. If you have a disability and require assistance to participate, please contact Lou Quiroz at (916) 654-5146 at least five days in advance.

Please direct all news media inquiries to the Media and Public Communications Office at (916) 654-4989, or by e-mail at [mediaoffice@energy.state.ca.us]. For technical questions on the subject matter of this notice, please contact James Lee, Renewable Energy Program, at (916) 653-1195 or by e-mail at [jslee@energy.state.ca.us].

JAMES D. BOYD
Vice Chair and Presiding Member
Renewables Committee

Electronic Mail Lists: Renewable

Attachment A (New Edits Shown in Bold)

INSTRUCTIONS FOR THE RESERVATION REQUEST FORM (CEC-1038 R1)

Title Box: Indicate if the request is to modify an existing reservation application, is for affordable housing, or new construction.

Section 1. Physical Site of System Installation

Provide the complete address for the site (parcel) of installation. Note that the site is the legal parcel of land on which the system is installed.

Section 2. Purchaser

Provide the purchaser name, company name if appropriate, and complete mailing address (as it would be written on a letter to be mailed). Enter the site address information even if it is the same as the site of installation address. Also enter the phone number and fax number of the purchaser.

Section 3. Equipment Seller Information

Provide the name of the equipment seller's company and city where located. If known also enter the CEC ID number for the seller available from the list of eligible equipment sellers [www.consumerenergycenter.org/erprebate] for most companies. Also enter the phone number and fax number. The equipment seller must register with the Energy Commission each year for the application to be considered. If not already registered provide a filled out Seller Registration Form (CEC-1038 R4) with the application. The seller must also sign and date the application form if the seller is the designated payee of the rebate. Enclose a copy of the purchase agreement with the application form.

Section 4. System Installation

Identify the name of the company hired to install the system or write in "owner install" (if a contractor is not hired and paid by the purchaser to install the system, the application will qualify for a 15% lower rebate). If installed by a licensed contractor, provide the contractor's license number, phone and fax number. All contractors must have an active "A", "B" or "C-10". A standard five year warranty form (Form CEC-1038 R3) must be submitted when payment is requested for systems installed by a contractor to qualify for the full rebate amount. Enclose a copy of the signed contract with the application form.

Section 5. Utility Bill

Identify the Purchaser's electric utility provider at the site where the system will be installed. Also identify from a monthly billing statement the service ID number, billing start and end period, and the energy usage in kWh for that monthly period. Provide all pages of the monthly billing statement with the application.

Section 6. System Equipment (Turbines, inverters, performance meters and other)

Provide the quantity, name of the manufacturer and exact model number for the eligible equipment as identified at [www.consumerenergycenter.org/erprebate]. Clearly identify the generating equipment such as wind turbines in the upper section. Also identify the inverters and system performance (kWh) meters (some inverters contain eligible performance meters). Eligible generating equipment, inverters and rating information is located on the Commission's website [www.consumerenergycenter.org/erprebate]. Calculate and include the system output by multiplying the inverter efficiency rating by the quantity and rating of the generating equipment used.

Section 7. Rebate and Other Incentive Information

Calculate and include the system output by multiplying ~~the inverter efficiency rating~~, the quantity of generating equipment, and the generating equipment rating in watts.

$$\text{Quantity} \times \text{Equipment Rating} \times \text{Inverter Efficiency Rating} = \text{System Output (watts)}$$

If the sum of the inverter rated output is less than the system output (watts), the inverter rated output will be used to calculate the rebate. Where more than one type of inverter is used the average inverter efficiency will be weighted based on inverter rated capacity. The sum of the inverters' continuous rated output capacities will specify the maximum system output for determining the rebate.

Provide the system installed cost (before the ERP rebate). The ERP requires that incentives from other sources be accounted for before determining the rebate from the ERP. Five percent of any incentive received or expected from a utility incentive program, a State of California or federal government sponsored incentive program, other than tax credits, must be subtracted from the ERP rebate amount requested. The "Total Request" should therefore be based on the ERP rebate level in place at the time the application is received by the Commission and the system cost after subtracting other incentives.

Check the box indicating whether the incentive is to be paid to the purchaser or seller. If any, identify incentives expected or received from other sources. If an incentive from the ERP was received previously for this site, include the incentive amount and, if known, the reservation number, for the prior application.

Section 8. Fuel Cell Systems

Identify whether the renewable energy system is a fuel cell system. Applicants of fuel cell systems must submit a completed Fuel Cell Supplemental Information Form (CEC-1038 R1A) with their Reservation Request Form.

Section 9. Declaration and Signatures:

The purchaser must always print and sign his or her name on the form. If the seller is designated as the payee, the seller must also sign his or her name on the form.

Submit your request by fax (916) 653-2543 or by mail to:

ERP, Reservation Request
California Energy Commission
1516 9th Street, MS-45
Sacramento, CA 95814-5512

C. Inverters

All inverters must be certified as meeting the requirements of UL 1741 **for inverters that will be used exclusively with small wind turbines or fuel cells.** ~~In addition, for~~ **For each model of inverter further testing is required to be done by a qualified Nationally Recognized Test Laboratory** **Only** inverters that have completed the testing will be listed as eligible equipment. **Additional testing is required by a qualified Nationally Recognized Test Laboratory for inverters that will be used with solar photovoltaic systems participating in the California Solar Initiative or the New Solar Homes Partnership.**¹⁶ **to remain eligible for this program.** ~~Beginning April 1, 2005, only . Inverter ratings for each model will be determined according to sections of the test protocol entitled, Performance Test Protocol for Evaluating Inverters Used in Grid-Connected Photovoltaic Systems,¹⁷ prepared by Sandia National Laboratories, Endecon Engineering, BEW Engineering, and Institute for Sustainable Technology, October 14, 2004 version¹⁸ and the "Guidelines for the use of the Performance Test Protocol for Evaluating Inverters Used in Grid-Connected Photovoltaic Systems."¹⁹ This version of the test protocol and guidelines are available on the Energy Commission website at [www.consumerenergycenter.org/erprebate/equipment.html]. The tests must be performed in accordance with sections 3, 4, 5.1 and 5.2 of the test protocol, as further clarified in the guidelines. The following tests are required:~~

- ~~Maximum Continuous Output Power. Section 5.4 shall be performed in its entirety for test condition A of Table 5-2 with the following exceptions: 1) the test shall be performed at an ambient temperature of 40 °C, rather than 45 °C, and 2) the dc Vnom may be selected by the manufacturer at any point between Vmin+0.25*(Vmax-Vmin) and Vmin+0.75*(Vmax-Vmin). It is not necessary to perform Section 5.4 for test conditions B through E of Table 5-2.~~
- ~~Conversion Efficiency. Section 5.5 shall be performed for test conditions A, B and C of Table 5.3, subject to the following: 1) the tests shall be performed with dc Vnom equaling the same voltage as selected above for the Maximum Continuous Power Output test, 2) steps 1 through 8 of the test procedure (Section 5.5.1) shall be performed at 25 °C, and not at 45 °C, and 3) to reduce time for each test condition, begin at the highest power level and go to the lower power levels. If done in this order it will only be necessary to wait for temperature~~

16 Nationally Recognized Testing Laboratories shall be those laboratories that have been recognized by the U.S. Department of Labor, Occupational Safety & Health Administration (OSHA), in accordance with Title 29 of the Code of Federal Regulations, section 1910.7, and are approved to conduct test UL 1741 under the scope of their OSHA recognition. A list of all current Nationally Recognized Testing Laboratories is available on OSHA's web page at [www.osha.gov/dts/otpc/nrtl/index.html]. Please note, not all of the Nationally Recognized Testing Laboratories identified on OSHA's list are approved to conduct test UL 1741.

17 Test protocol is found here:

http://www.gosolarcalifornia.org/equipment/documents/2004-11-22_TEST_PROTOCOL.PDF

18 This version of the test protocol is identified by the file name "InvertTestProto_041014.doc" as shown in the left hand side of the footer on each page of the protocol.

19 Test guideline is found here:

http://www.gosolarcalifornia.org/equipment/documents/SANDIA_GUIDELINE_2005.PDF

stabilization at the 100 percent power level. In addition, the unit only needs to be operated at full output power for one hour, rather than 2.5 hours, and no preheating is necessary if the Conversion Efficiency test is performed within 1 hour of full operation under test 5.4, provided the unit has not been exposed to ambient temperature of less than 22 °C.

- ~~Tare Losses. Section 5.7.1 shall be performed in its entirety. It is not necessary to perform the tests under Section 5.7.2 or Section 5.7.3.~~

~~Please note that the tests for Power Foldback (Section 5.8) and Inverter Performance Factor/Inverter Yield (Section 5.9) are NOT required.~~

~~The data and reports resulting from the tests for Maximum Continuous Output Power (Section 5.4), Conversion Efficiency (Section 5.5) and Tare Losses (Section 5.7.1) must be provided to the Energy Commission and will be made public. The inverter tested must utilize the same hardware and software configuration evaluated during the UL 1741 certification test.~~

The methodology for rating inverters on the Energy Commission list is based on the weighted inverter efficiency measured at various load points. Weighting inverter efficiency will be determined with the following weighting factors:

DC Input Power Level	Weighting Factor
10%	0.04
20%	0.05
30%	0.12
50%	0.21
75%	0.53
100%	0.05

The Energy Commission also plans to consider if changes should include adjusting the ratings for inverters with battery-backup to account for losses inherent in battery back-up systems or for wind specific applications.

D. Metering Criteria

Meters must retain the kilowatt-hour production data in the event of a power outage and must be easy to read for the customer's benefit. The meter must measure the total energy produced by the system in kilowatt-hours (or watt hours) and have a manufacturer's uncertainty specification of plus or minus five percent.

E. Other Technologies