GENERAL INFORMATION FOR CONTRACTORS REGARDING PV SYSTEM INSTALLATION

051904

This document contains information about:

- SDF Solar Generation Meters
- PECO's Interconnection Requirements
- Solar System Performance Inspection

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SDF SOLAR GENERATION METER(S)

A conventional kWh meter (utility type) must be installed between the inverter input/output and the main supply panel. This is required even though the inverter (or an AstroPower SunChoice Power Meter, if installed) can log and display cumulative solar production. A conventional kWh is much less vulnerable to failure due to electric surges, thus retains accumulated data needed for determining the production credit.

You can purchase a reconditioned conventional kWh meter from Hialeah Meter Company in Florida at 800-654-0821 (www.hialeahmeter.com); specifically order the EZ-Read meter (odometer format) with at least five digits, for 240 VAC. As of May of 2002, you can get these reconditioned meters for about $25/ea if you order four at a time.

Note: Wiring these meters is very straight forward for 220/240 VAC, but for 120 VAC inverters, these meters must be wired differently - follow the instructions that come with them for 120 VAC configuration, otherwise they will not accurately record the solar production.

Batteryless Inverters: Wire the meter between the inverter and the main service panel (the utility disconnect can be wired just before or after this meter). Be sure to wire the meter so that it moves in the **forward direction** when solar electricity is being generated.

Battery Systems: For PV systems with batteries, two kWh meters are necessary to record the solar production. Like for the batteryless inverter, the first meter should be positioned between the inverter and the main service panel, but it should be wired such that it moves in the forward direction when there is no solar generation (to verify this movement, disconnect the solar array so that only grid power is supplying the load through the inverter). This meter will go backwards if the solar generation exceeds the load from the backup subpanel. The second meter should be located between the inverter and the backup subpanel, such that it always moves in the forward direction when the load is drawing power. Subtracting the first meter reading from the second meter reading across two points in time will yield solar generation.

PECO's INTERCONNECTION REQUIREMENTS

Go to the following PECO webpage to download forms and information about interconnection:

http://www.exeloncorp.com/peco/regulatory_extaffairs_communications/epr_our_rate_price.shtml

Look for the following at the bottom of the webpage:

> **Other Information**
> "Requirements for Parallel Operations for Customers With Generation Not Exceeding 40kW" ("Yellow Book").
>
> - Text Document
> - Application for Service and Meter Form
> - Application for Parallel Operations
> - Figures of Typical Equipment Arrangements

It is important to fill out and submit *both* the Application for Parallel Operations ($100) and the Application for Service and Meter Form, and to follow the wiring diagram for installing the second PECO meter pan.

Important Note 1: It is likely that the PV system will be installed and operational before PECO Energy installs their second meter outside – during this time, the customer may experience high electric bills or might be notified by PECO Energy due to signaling an anti-theft alarm. (In this situation, when the PV system generates a surplus, thus backfeeding into the grid, the PECO Energy meter has been programmed to trigger an anti-theft alarm while still run the meter forwards – not backwards). PECO Energy may reconcile the electric bill for this period, but PECO Energy's interconnection requirements explicitly state that until they fully approve of the interconnection, the PV system should not be grid-tied and operational. Nevertheless, PECO Energy should respond with approval/rejection with in thirty days of receiving the interconnection application. If there is a delay regarding PECO Energy's approval, it is the PV owner's choice whether to operate the system – but, you should be informed them that they may have to bear the consequences.

Important Note 2: Please prepare a separate invoice for the installation of the second PECO meter pan, or clearly have this as a line item in the overall invoice (e.g., $400). This will be needed for the customer to submit to PECO in order for them to receive their $400 reimbursement for installing the second PECO meter.

SOLAR SYSTEM PERFORMANCE INSPECTION

Before a solar PV system can be inspected by the program administrator, it must first be inspected and approved by an electrical inspector – this should be verified by a sticker placed somewhere on the PV system. As required by the SDF grant program, after the PV system is up and running, the contractor must perform an acceptance test of the PV system and fill out the ***SDF Solar PV Grant Program System Inspection/Completion Form*** (www.trfund.com/sdf/PV_Inspection.pdf) and send it to the program administrator. This same form will be used to verify the test during the solar system performance inspection. If there are any equipment changes from that indicated in the original grant application, simply fill out the pertinent application sheets and append them to the inspection form.