

## Green Meter Adapter (GMA) for Customer Generation

### SUMMARY

This bulletin introduces a new PG&E program that allows the installation of an electric meter socket adapter that will accept a wired connection directly from a residential customer's Photo Voltaic (PV) solar generation system. The adapter is installed between the PG&E meter and the meter socket in the electric panel. Through this adapter, the solar system is connected to the load side of the PG&E meter and the supply side of the customer's main breaker.

The Green Meter Adapter (GMA) program will become effective on January 15, 2018. Customers may start applying for a GMA on January 15, 2018.

Level of Use: Informational Use

### AFFECTED DOCUMENT

None

### TARGET AUDIENCE

PG&E electric departments: Electric Generation Interconnection, Service Planning, Estimating, Restoration, Maintenance and Construction, Inspection, Field Meter Operations

Non-PG&E Personnel: Installers and designers of customer generation (Solar/Photovoltaic) systems, Electrical Contractors, Customers

### WHAT YOU NEED TO KNOW

PG&E has made available a new program called the Green Meter Adapter (GMA) to simplify the interconnection process for qualified residential customers installing generating facilities. The GMA is an alternative to upgrading an electric panel and service which may save time and additional cost.

#### NOTE

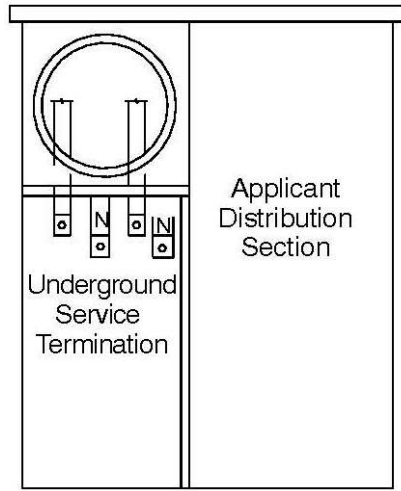
The GMA is **not** allowed on electric meter panels that; have deteriorated parts, are rated above 125 amps, do not meet the equipment clearances, located on poles, located inside cabinets, have a overhead to underground service adapter, are a stand alone meter socket, or where the GMA and/or wires cannot be routed and terminated appropriately. The review and approval are at the discretion of the PG&E Meter Engineering and Field Metering personnel. When a GMA cannot be installed an upgrade to the electrical panel and service may be required to support the customers generating system.

#### 1 Eligibility:

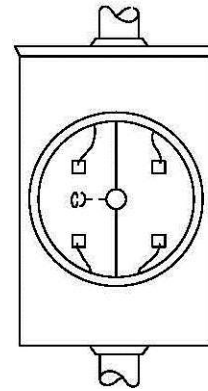
If you are a PG&E residential customer you may be eligible to request the installation of a GMA if all of the requirements listed below are met.

## Green Meter Adapter (GMA) for Customer Generation

- 1.1 A self-contained electric meter panel not exceeding a 125 amp rating, as determined by PG&E, and a single phase 120/240 volt electric service are installed.
- 1.2 The main breaker and meter socket is contained in the same electrical panel as shown in Figure 1. A GMA is not allowed on Individual Meter Sockets or meter panels without service disconnects. See Figure 2.



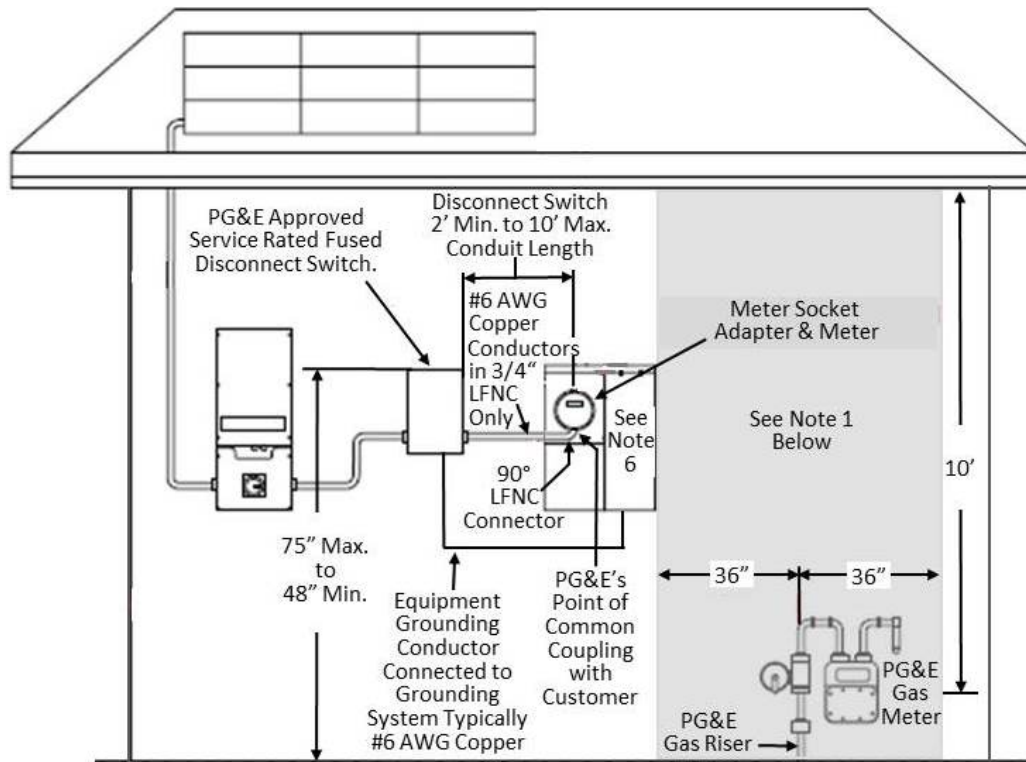
**Figure 1. Electric Meter Panel with Breaker Section**



**Figure 2. Not Allowed - Individual Meter Socket without Breaker Section**

- 1.3 A electric meter panel that meets all PG&E requirements and passes an initial review before the installation. The panel must also pass an on-site inspection by PG&E personnel. If the panel does not pass the initial review or inspection the GMA cannot be installed.
- 1.4 A customer generating facility rated not greater than 14.0 kilowatts (kW) at 240 volts (V) and does not produce more than 60 amps.
- 1.5 There are not any existing customer generation sources on the property that are interconnected with the PG&E service. This could be in the customer distribution section (i.e., breaker or line/supply side connection) of the main panel or in a sub-panel. Multiple interconnections including battery storage systems will not be approved.
- 1.6 The local Authority Having Jurisdiction (AHJ) has issued a permit for the installation of your generation system and the line side connection to the GMA. Some AHJ's may not approve this type of interconnection.
- 1.7 All customer equipment must meet the PG&E gas and electric meter clearances shown in Figure 3 and in the PG&E Electric & Gas Service Requirements ([Greenbook](#)).

## Green Meter Adapter (GMA) for Customer Generation



**Figure 3. PG&E Gas & Electric Clearances and GMA Requirements**

**Notes in reference to Figure 3:**

1. Applicants must not install any electrical devices or generation equipment, including wires, cables, enclosures, bond wires, clamps, or ground rods within the shaded area around the gas meter.
2. 36" deep x 30" wide x 75" high, clear and level working space is required in front of the meter panel.
3. A GMA is only allowed to be installed in meter panels with a maximum rating of 125 amps or less and must not be installed in a meter panel with a greater rating, as determined by PG&E and Greenbook section 1.14., [Determining the Service Rating](#).
4. The maximum current allowed to be connected to the GMA from an alternate energy source is 60 amps.
5. The wire between the fused disconnect switch and the GMA must be insulated copper wire, sized at AWG 6 gauge, and rated for 90° C. Other wire sizes, types, or rating will not be accepted.
6. Bond an Equipment Grounding Conductor from the Disconnect Switch and connect to the Service Grounding System. Typically #6 AWG Copper, bare.

## Green Meter Adapter (GMA) for Customer Generation

### 2 Technical Requirements:

2.1 PG&E will own, supply, and install the GMA.

1. Only qualified PG&E personnel may install the GMA.
2. Customer owned and PG&E non-approved adapters will not be allowed.

2.2 The customer will own, install, and maintain the conduit, connector fittings, wires, and fused disconnect switch. The following specified equipment is required. Substitutions are not acceptable.

1. A PG&E approved fused ac disconnect switch is installed between 2 to 10 feet from the meter panel. The disconnect switch must meet all of the PG&E requirements as described in Numbered Document 060559, [Disconnect Switch Requirements For Distributed Generation Customers](#).
2. Install; 3/4-inch diameter, Liquidtight Flexible Nonmetallic Conduit (LFNC), UL listed, between the GMA and the fused disconnect switch.
  - a. The conduit length shall be a minimum of 2 feet to a maximum of 10 feet. The conduit must be continuous without any coupling(s) or splice boxes.
  - b. Rigid metal, PVC, or other flexible conduit types are not allowed.
  - c. A junction box, termination or splicing enclosure is not allowed between the fused disconnect switch and the MSA.
3. One 90 degree, 3/4-inch diameter, LFNC connector fitting (nonmetallic); UL listed, installed on the end of the conduit that will be attached to the GMA.

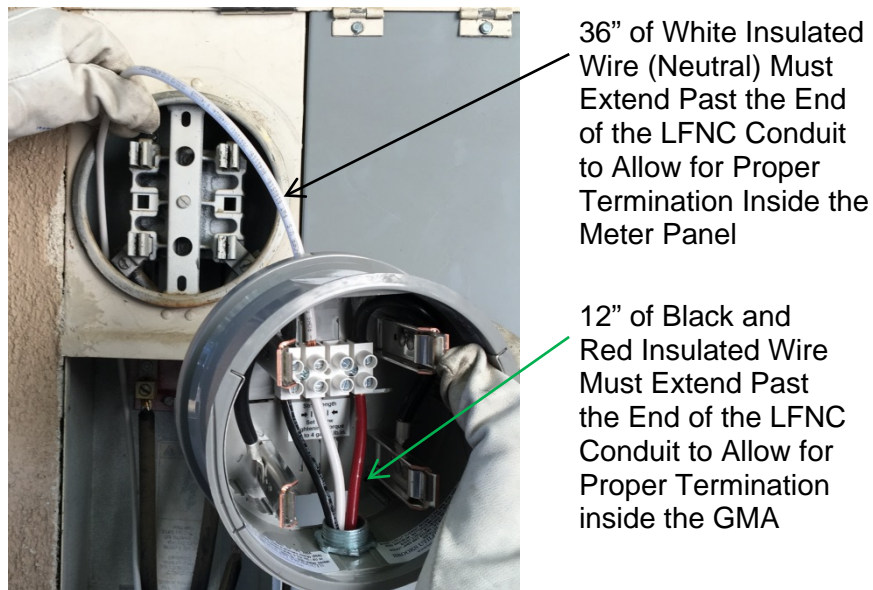


**Figure 4. 90 degree LFNC connector (nonmetallic) 3/4-inch diameter**

- a. This will prevent meter panel compartment doors from being blocked.
  - b. Do not use straight or 45 degree connectors on the GMA end of the LFNC.
4. One straight, 45 degree, or 90 degree LFNC connector fitting (nonmetallic); UL listed, must be installed on the end of the conduit and attached to the fused disconnect switch.

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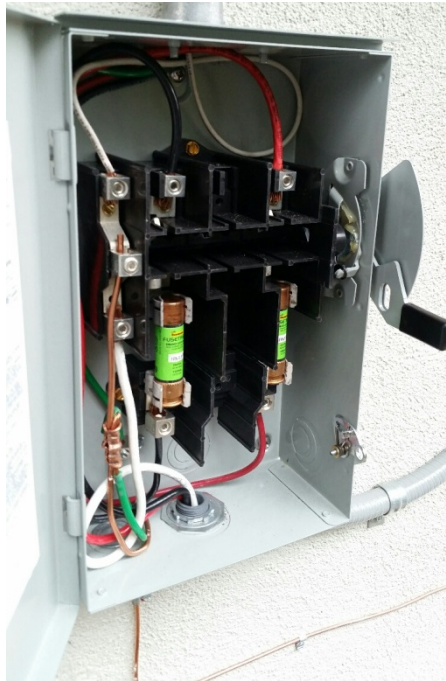
5. Three #6 AWG insulated copper wires (rated 90° C) must be installed in the LFNC. Aluminum wire or other wire sizes are not allowed.
  - a. Install one hot wire with black insulation, one hot wire with red insulation, and one neutral wire with white insulation.
  - b. On the GMA side the white neutral wire should extend out 36 inches past the end of the LFNC connector.
  - c. On the GMA side the black and red wires should extend out 6 inches past the end of the LFNC connector.



**Figure 5. Extend Insulated Wires Past the LFNC Conduit**

- d. PG&E will connect these wires to the GMA.
  - e. Connect the LFNC and wires to the fused disconnect switch according to the applicable electrical codes. Refer to Figure 6.
6. Install removable clamp(s) to secure the LFNC to the wall if the LFNC is more than 36" long. Do not install clamps closer than 18" from the GMA to allow for proper removal.
7. Bond a bare copper Equipment Grounding Conductor (EGC) to the disconnect switch enclosure and connect to the electric grounding system at the meter panel.
  - a. The EGC shall be sized and installed according to applicable electrical codes.

## Green Meter Adapter (GMA) for Customer Generation



**Figure 6. LFNC Conduit and Wires Connected in PG&E Approved Fused Disconnect Switch**

- 2.3 The Point of Interconnection (POI) with PG&E is where the customer LFNC and wires enter the GMA.



**Figure 7. Point of Interconnection**

## Green Meter Adapter (GMA) for Customer Generation

- 2.4 Only PG&E approved GMA's are allowed for this program and installed by PG&E personnel. See Table 1 below for the GMA information.

**Table 1 PG&E Approved GMA's**

Manufacturer	Catalog/Model Number	PG&E Material Code	Generation System Size (Maximum)	Generation System Backfeed or Alternative Energy Input (Maximum)
Brooks Utility	EK-4J SP5111	241583	14.4 kW @ 240 Volts	60 amps
Marwell	1000-0-R4-SP	241596	14.4 kW @ 240 Volts	60 amps

- 2.5 Pictures and a drawing showing the layout and clearances of the specified equipment must be submitted for review. The layout should include the electric meter panel, PG&E gas meter (if located on same side of the house), fused disconnect switch, inverter(s), conduit route from GMA to disconnect switch.
- 2.6 Submit the requested information in section 3.2 on page 8 for technical review.
- 2.7 To allow the AHJ to perform a complete and final inspection of the generation system, PG&E will install the GMA prior to the issuance of the final building permit.
1. Customers are required to obtain pre-approval from the local building inspection agency that the AHJ will allow the GMA to be installed and interconnected to the solar generation system. Some AHJ's may not approve this type of interconnection.



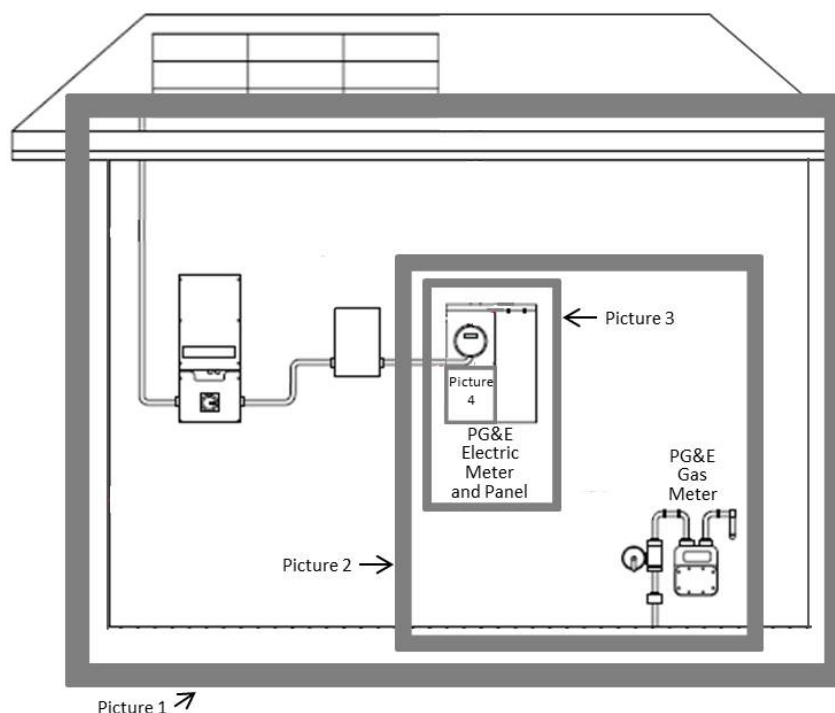
*The generation system must not be operated in parallel with PG&E's distribution system until the customer has received a written approval from PG&E. Before PG&E will issue a Permission To Operate (PTO) letter, proof is required that the generation system has passed the final building and electrical inspection by the AHJ.*

### 3 How to Apply:

- 3.1 To request an GMA, you must first submit a Standard NEM online application at, [www.pge.com/standardnem](http://www.pge.com/standardnem), to PG&E's Electric Generation Interconnection (EGI) department.
1. A variance request must be selected during Step 2, on the application and noted in the Variance Request document attachment that a Green Meter Adapter (GMA) is being requested.
  2. For help with the application process you can call the Solar Customer Service Center at 877-743-4112.

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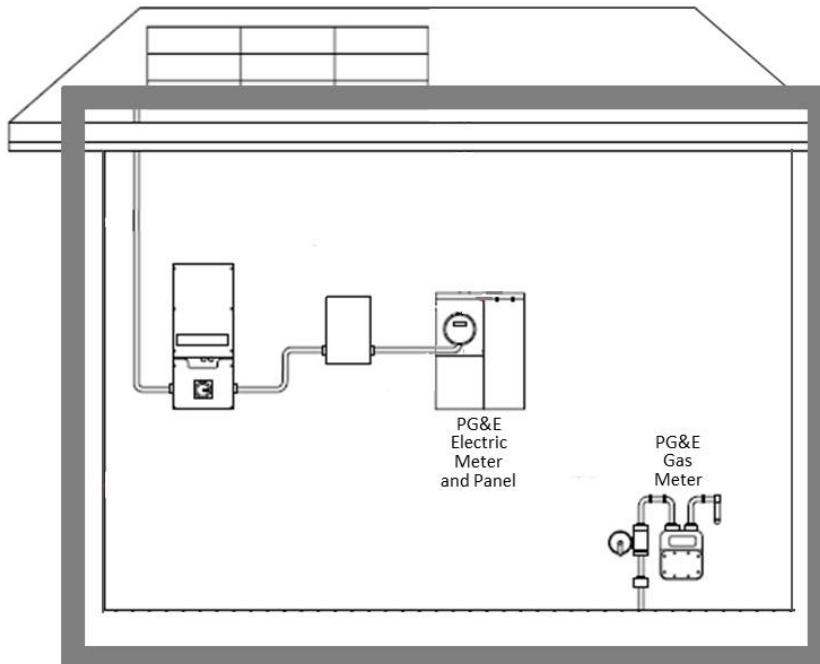
- 3.2 Applicants will upload the information below for the Variance Request during Step 2 of the online application process.
1. Pictures, clear and unobstructed, of the four areas described in items a., b., and c. as well as shown in Figures 8 - 12.
    - a. Picture Set 1: Front view of the entire wall where the gas (if applicable) and electric meters and solar equipment will be installed. This is from the top of the wall to the bottom and the whole side of the house. See Figure 9.
    - b. Picture Set 2: Front view, closer up, showing just the electric and gas (if applicable) meters. See Figure 10.
    - c. Picture Set 3:
      - (1) Front view, close up, of the entire electric meter panel. See Figure 11.
      - (2) Readable close up, of all of the label for the meter panel. See Figure 12.
    - d. Picture Set 4: **Only if requested by PG&E at a later time.** Front view of the inside of the PG&E cable termination compartment of the electric meter panel. See Figure 13. **Caution: Only a licensed and qualified electrician may open the termination compartment door with prior PG&E approval.**



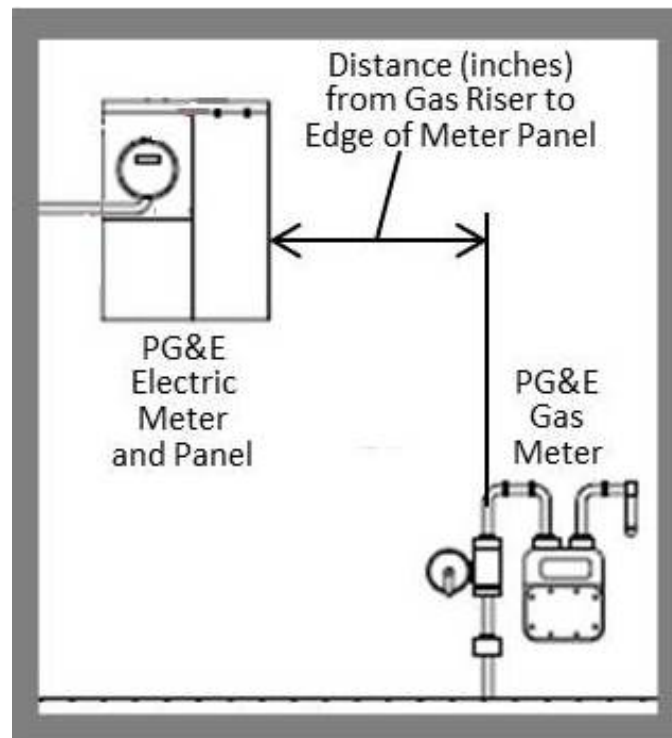
**Figure 8 – All Picture Sets 1-4**



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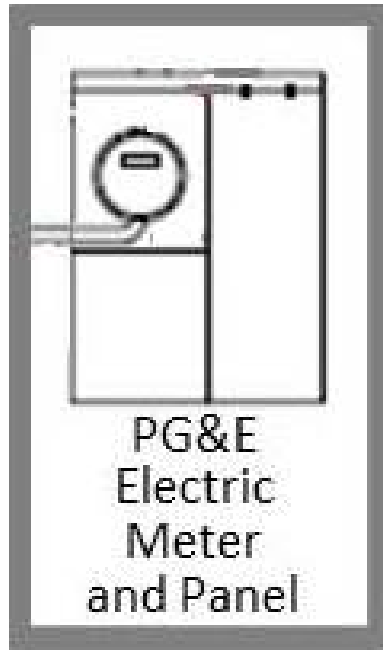


**Figure 9 – Side of House - Picture Set 1**

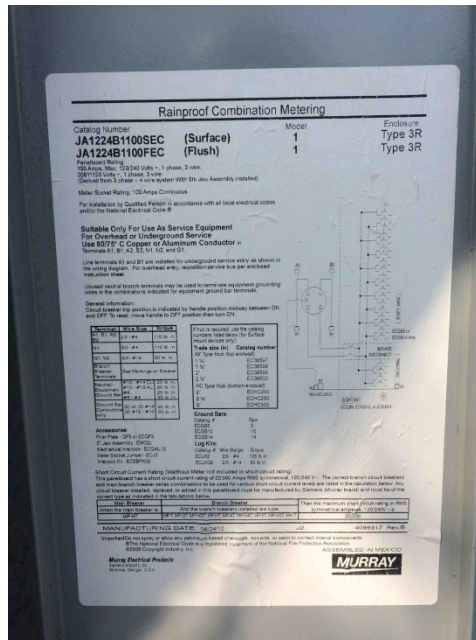


**Figure 10 – Gas and Electric Meter Panel - Picture Set 2**

**Green Meter Adapter (GMA) for Customer Generation**



**Figure 11 – Electric Meter Panel - Picture Set 3 (1)**



**Figure 12 – Electric Meter Panel Label - Picture Set 3 (2)**

## Green Meter Adapter (GMA) for Customer Generation

**Only if  
requested by  
PG&E's Meter  
Engineering  
Department.**



**Caution:  
Only a licensed and  
qualified electrician  
may open the  
termination  
compartment door  
with prior PG&E  
approval.**

**Figure 13 – Inside of PG&E Cable Termination Compartment - Picture Set 4**

2. Drawing(s) showing the layout of the equipment described below. The vertical heights above grade and horizontal clearances between all items must be shown on the drawing.
  - a. Electric meter panel.
  - b. Gas meter (if located on same side of the house). Measure clearances from the gas riser.
  - c. Fused disconnect switch.
  - d. Conduit route from the GMA to the disconnect switch.
  - e. Inverter(s).
  - f. Grounding Electrode Conductor (GEC) and/or Equipment Grounding Conductor (EGC).
3. Material specifications for the following items must be submitted for review.
  - a. Liquidtight Flexible Nonmetallic Conduit (LFNC), UL listed.
  - b. Connector fittings (nonmetallic) for LFNC, UL listed.
4. Pre-approval documentation and permit from the AHJ allowing the interconnection of the customer's generation system to the GMA.
  - a. The address on the permit should match the address on the EGI application.
  - b. The scope of work should include the solar installation.
  - c. Some AHJ's may not allow these interconnections.

## Green Meter Adapter (GMA) for Customer Generation

- 3.3 EGI will process the application and will request for the following.
1. A special facilities agreement signed by the customer of Record.
  2. A one-time payment estimated at approximately \$1,038. This payment amount is for the GMA, the installation of the GMA, and any future maintenance or replacement that may be required. This amount may be subject to change.
- 4 Additional Information:**
- 4.1 Other types of meter socket adapters are **not** allowed except for the GMA. Please see section 5.6.2 Installing Non-Allowed and Unauthorized Customer Equipment in PG&E's Electric & Gas Service Requirements ([Greenbook](#)).
- 4.2 Customers may refer to these PG&E Manuals for additional requirements and information.
1. [Electric and Gas Service Requirements \(Greenbook\)](#)
  2. [Distribution Interconnection Handbook](#)
- 4.3 PG&E employees may access the following internal document for the installation and maintenance procedures for the GMA.
1. [TD-6259P-01 Green Meter Adapter \(GMA\) Installation](#)
- 4.4 Contact PG&E's Service Planning department if adding load or replacing the electric meter panel or service.
- 4.5 As explained previously in this document, some electric panels may not meet the requirements and the GMA cannot be installed.

### DOCUMENT APPROVER

Roozbeh Movafagh, Senior Manager, Distribution Standards Engineering

### DOCUMENT CONTACT

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### INCLUSION PLAN

There is no inclusion plan for this bulletin at this time.

## Green Meter Adapter (GMA) for Customer Generation

### Attachment 1 – GMA Checklist

#### CHECKLIST

(This is a list of the major requirements. Refer to the main document above for all of the detailed requirements and information)

<b>Eligibility</b>
PG&E residential customer with a PG&E electric service.
Electric meter panel is rated for 125 amps or less and has a customer distribution section attached with a main breaker or individual breakers inside.
Solar generating facility is rated 14.0 kilowatts (kW) or less, at 240 volts (V), with not more than 60 amps of production.
No existing sources of generation (solar, wind, battery storage, etc.) are on the property and/or interconnected with the PG&E service.
The local City, County, or State, Authority Having Jurisdiction (AHJ), has issued a permit for the installation of your generation system and pre-approved the line side connection to the GMA.
Newly installed generation equipment, including all conduits and wiring, will meet all of the PG&E gas and electric meter clearances shown in Figure 3 and in the PG&E Greenbook.
<b>Technical Requirements</b>
A PG&E approved fused ac disconnect switch is/will be installed between 2 to 10 feet from the meter panel.
3/4-inch diameter, Liquidtight Flexible Nonmetallic Conduit (LFNC), UL listed, with one 90 degree and a second (straight, 45 or 90 degree) connector fitting.
Three #6 AWG insulated copper wires (rated 90° C) inside and extending out of the LFNC 12" (black, red) and 36" (white).
Removable clamp(s) to secure the LFNC to the wall If the LFNC is more than 36" long.
Bonded bare copper Equipment Grounding Conductor (EGC) connecting the disconnect switch enclosure and the electric grounding system with the meter panel.
<b>How to Apply</b>
Submit a Standard NEM online application at, <a href="http://www.pge.com/standardnem">www.pge.com/standardnem</a> , and select "Variance Request" during Step 2 of the application process.
Upload all of the requested information (pictures, drawings, specifications, AHJ pre-approval) for review.
Sign and submit the special facilities agreement and one-time payment when requested by EGI.
For help call the Solar Customer Service Center at 877-743-4112.