CITY OF BANDON

INTERCONNECTION & NET METERING AGREEMENT
For Customer-Owned, Grid Connected Electric Generating Systems of 25kW or Less

This INTERCONNECTION & NET METERING AGREEMENT ("Agreement) is between _____ ("Customer") and City of Bandon ("City"). Customer and City may be referred to collectively herein as "Parties" and individually as "Party".

1. CUSTOMER ELECTRIC GENERATING SYSTEM

1.1 Customer's Application for Net Metered Electrical Generation, including the location of the electrical generating installation and details on the electrical generating unit(s), for Net Metered Electrical Generation is hereby incorporated into this agreement as Attachment A.

System Location/Address:
System Manufacturer:
Model (Name and Number):
Name Plate Electrical Capacity:
Name Plate Data: kW Volts (Single or Three Phase)
Energy Source: Solar / Wind / Fuel Cell / Bio Fuel/ Hydro (Circle one)

1.2 Customer has elected, in accordance with OAR 860-039, OAR 860-082 to operate, at their own expense, a net metering system using either bio-fuel, fuel cell, solar, wind or hydropower electric generating system, with a generating capacity of not more than 25kW aggregated at the service interconnection point, in parallel with the City's electrical system. This generating system is intended to offset either part or all of the Customer's electrical requirements.

1.3 A separate agreement shall be entered into for each electrical service location of Customer.

1.4 The electrical Generating System used by the Customer shall be located on the Customer's premises. It shall include all equipment necessary to meet applicable safety, power quality, and interconnection requirements.

1.5 The City shall have the sole authority to determine which interconnection requirements set forth herein (including attachments) are applicable to Customer's proposed installation.

1.6 Any expenses incurred due to modifications to the existing electric power system necessitated by the introduction of Customer's generating system into the system shall be paid by the Customer.

2. TERMS OF NET METERING BILLING AND ENERGY CREDITING

2.1 Excess energy produced by the Owner's facility during a billing cycle, will be applied towards the next billing cycle as electricity credits. Energy credits are measured in kilowatt hours (kWh) and will be credited at a ratio of one-to-one. Billing cycle shall mean one month within a twelve-month calendar year, ending in December of each year.

2.2 Electricity credits that remain from the prior billing cycle will be "rolled-over" and applied towards the next billing cycle at wholesale rate through the end of December of each calendar year. Wholesale rate shall mean the rate paid to Bonniville Power Administration by the City for power generation.

2.3 If electricity credits remain at year's end (December of each year), said credits shall be granted by the Owner to the City's Electric Utility for dedication as determined by the City Council pursuant to ORS 757.300(3)(d).

3. INTERRUPTION OR REDUCTION OF DELIVERIES

3.1 The City may require Customer to interrupt or reduce deliveries as follows: (a) when necessary in order to construct, install, maintain, repair, replace, remove, investigate, or inspect any of its equipment or part of its system; or (b) if the City determines that curtailment, interruption, or reduction is necessary because of emergencies, or compliance with good electrical practices as determined by the City.

3.2 To the extent reasonably practicable, the City shall give Customer notice of possible interruption or reduction of deliveries.

3.3 Notwithstanding any other provision of this Agreement, if at any time the City determines that either (a) the facility may endanger City personnel, or (b) the continued operation of Customer's facility may endanger the integrity of the City's electric system, the City shall have the right to disconnect Customer's facility from the City's electric system. Customer's facility shall remain disconnected until such time as City is satisfied that the condition(s) that caused the problems referenced in (a) or (b) of this section 3.3 have been corrected.

4. INTERCONNECTION

4.1 Customer shall comply with the Net Metering Application & Compliance Form set forth in Attachment A and the City's Interconnection Standards set forth in Attachment B. The Customer shall pay for designing, installing, inspecting, operating, and maintaining the electric generating system in accordance with all applicable laws and regulations.

4.2 Customer shall deliver the excess energy to the City at the customer's premises. The City will install and maintain a service meter capable of registering the bi-directional flow of electricity at the customer's premises at a level of accuracy that meets all applicable standards, regulations and statutes. Customer shall pay for any non-standard meter electrical hook-up requested by the Customer.

4.3 Customer shall not commence parallel operation of the generating system until inspection and written approval of the interconnection has been given by the City. Such approval shall not be unreasonably withheld. The City shall have the right to have representatives present at the initial testing of Customers' protective apparatus. The Customer shall notify the City of its intent to test the generating system. This test will be conducted as soon as City representatives can be scheduled.

4.4 Once in operation, Customer shall make no changes or modifications in the equipment, wiring, or the mode of operation without the prior approval of the City.

5. MAINTENANCE AND PERMITS

Customer shall:

5.1 obtain an electrical permit and pass electrical inspection before they can be connected or operated in parallel with the City's electric system.

5.2 provide to City written certification (Certificate of Completion) that the generating system has been installed and inspected in compliance with the local zoning regulations, building codes and/or electrical codes.

5.3 maintain the electric generating system and interconnection facilities in a safe and prudent manner and in conformance with all applicable laws and regulations including, but not limited to, City's Interconnection Standards, Attachment B.

5.4 obtain any governmental authorizations and permits required for the construction and operation of the electric generating system and interconnection facilities, including electrical permit.

5.5 reimburse City for any and all losses, damages, claims, penalties, or liability it incurs as a result of Customer's failure to obtain or maintain any governmental authorizations and permits required for construction and operation of Customer's generating system or failure to maintain Customer's facility as required in this Section.

6. ACCESS TO PREMISES

The City may enter Customer's premises or property:

6.1 to inspect, with prior notice at all reasonable hours, Customer's protective devices and to read meter(s).

6.2 to disconnect the interconnection facilities at the City's meter or transformer, without notice, if, in the City's opinion, a hazardous condition exists and such immediate action is necessary to protect persons, or the City's facilities, or property of others from damage or interference caused by Customer's electric generating facilities, or lack of properly operating protective devices or inability to inspect the same. The City shall notify the Customer, within 5 working days, with the reason for the disconnection.

7. INDEMNITY AND LIABILITY

The Customer hereby indemnifies and agrees to hold harmless and release City of Bandon and its elected officials, officers, employees of any of the foregoing (collectively, the "Indemnitees") from and against any and all losses, claims, damages, costs, demands, fines, judgments, penalties, obligations, payments and liabilities, together with any costs and expenses (including without limitation attorneys' fees and out-of-pocket expenses and investigation expenses) incurred in connection with any of the foregoing, resulting from, relating to or arising out of or in connection with:

7.1 any failure or abnormality in the operation of the Customer's Generating System or any related equipment.

7.2 any failure of the Customer to comply with the standards, specifications, or requirements referenced in this Agreement (including appendices hereto) which results in abnormal voltages or voltage fluctuations, abnormal changes in the harmonic content of the generating facility output, single phasing, or any other abnormality related to the quantity

or quality of the power produced by the generating facility. The Customer shall promptly rectify abnormalities. The city reserves the right to disconnect the interconnection facility for a lack of response.

7.3 any failure of the Customer to duly perform or observe any term, provision, covenant, agreement or condition hereunder to be performed or by or on behalf of the Customer.

7.4 any negligence or intentional misconduct of Customer related to operation of the Generating System or any associated equipment or wiring.

8. FORCE MAJEURE

8.1 **Suspension of Obligations.** Neither Party shall be liable to the other for, or be considered to be in breach of or default under this Agreement because of any failure or delay in performance by such Party under this Agreement to the extent such failure or delay is caused by or results from any such cause or condition which is beyond such Party's reasonable control, or which such Party is unable to prevent or overcome by exercise of reasonable diligence (any such cause or condition, a "Force Majeure"), including breach of contract or failure of performance by any person providing services to the City.

8.2 **Notice Required Efforts to Resume Performance.** Any Party claiming Force Majeure shall give the other Party maximum practicable advance notice of any failure or delay resulting from a Force Majeure, and shall use its reasonable best efforts to overcome the Force Majeure and to resume performance as soon as possible; provided however, that nothing in this Agreement shall be construed to require either Party to settle any labor dispute in which it may be involved.

8.3 **No Excuse of Payment Obligations.** Notwithstanding any other provision of this Agreement, in no event shall a Force Majeure excuse a Party's failure or delay to pay any amounts due and owing to the other Party under or pursuant to this Agreement.

9. INDEPENDENT CONTRACTORS

The Parties hereto are independent contractors and shall not be deemed to be partners, employees, franchisees or franchisers, servants or agents of each other for any purpose whatsoever under or in connection with this Agreement.

10. ASSIGNMENT BINDING AGREEMENT

The Customer shall not assign its rights under this Agreement to any other Party without the express written consent of the City. The City may impose reasonable conditions on any such assignment to ensure that all of Customer's obligations under this Agreement are met and that none of Customer's obligations are transferred to the City as a result of default, bankruptcy, or any other cause.

11. NO THIRD PARTY BENEFICIARIES

Except as expressly set forth in this Agreement, none of the provisions of this Agreement shall inure to the benefit of or be enforceable by any third Party.

12. ENTIRE AGREEMENT

This Agreement and the Attachments hereto set forth the entire agreement of the Parties and supersede any and all prior agreements with respect to the subject matter of this Agreement. The rights and obligations of the Parties hereunder shall be subject to and governed by this

Agreement.

13. GOVERNING LAW VENUE

This Agreement shall be governed by and construed in accordance with the laws of the State of Oregon (regardless of the laws that might otherwise govern under applicable principals of conflicts of law of such state). Venue for any action arising under or in connection with this Agreement shall be in the Superior Court for Coos County District or Superior Court, Oregon.

14. RULES OF CONSTRUCTION STATUTORY REFERENCES

No provision of this Agreement shall be construed in favor of or against either of the Parties hereto by reason of the extent to which any such Party or its counsel participated in the drafting thereof or by reason of the extent to which such provision or any other provision or provisions of this Agreement is or are inconsistent with any prior draft thereof. Any reference to statutes or laws will include all amendments, modifications, or replacements of the specific sections and provisions concerned.

15. AMENDMENT MODIFICATIONS OR WAIVER

Any amendments or modifications to this Agreement shall be in writing and agreed to by both Parties. The failure of any Party at any time or times to require performance of any provision hereof shall in no manner affect the right at a later time to enforce the same. No waiver by any Party of the breach of any term or covenant contained in this Agreement, whether by conduct or otherwise, shall be deemed to be construed as a further or continuing waiver of any such breach or waiver of the breach of any other term or covenant unless such waiver is in writing.

16. NOTICES AND OTHER COMMUNICATIONS

Notice Methods and Addresses. All notices, requests, demands and other communications required or permitted to be given under this Agreement shall be given in writing:

16.1 by personal delivery

16.2 by recognized overnight air courier service

16.3 by United States postal service, postage prepaid, registered or certified mail, return receipt requested, or

All notices to either Party shall be made to the addresses set forth below. Any notice shall be deemed to have been given on the date delivered, if delivered personally, by overnight air courier service or by facsimile transmission; or, if mailed, shall be deemed to have been given on the date shown on the return receipt as the date of delivery or the date on which the United States postal service certified that it was unable to deliver, whichever is applicable.

City of Bandon:

ATTN: Torrey Contrares, City Mgr.

PO Box 67

555 HWY 101
Bandon, OR 97411
Telephone: (541) 347-2437

CUSTOMER:

Name: _____

Address: _____

_____

Telephone: _____

17. APPENDICES

The Agreement includes the following appendices attached and incorporated by reference:

Attachment A: Net Metering Application & Compliance Form

Attachment B: City of Bandon's Interconnection Standards for Customer-Owned, Grid Connected Electric Generating Systems of 25 kW or Less

18. TERM OF AGREEMENT

This Agreement shall be and remain in effect until terminated by either Party on thirty (30) days' prior written notice. The Generating System or the Customer may be disconnected from the City's electrical system at any time if it is considered unsafe or having adverse impact on the existing customers.

IN WITNESS WHEREOF, the Parties hereto have caused two originals of this Agreement to be executed by their duly authorized representatives.

CUSTOMER	City of Bandon
_____	_____
Signature	Signature
_____	Torrey Contrares, City Manager
Print Name	Print Name and Title
_____	_____
Date	Date

CITY OF BANDON
ATTACHMENT A

INTERCONNECTION & NET METERING APPLICATION

Customer-Owned, Grid Connected, Electric Generating System

(25 kW or Smaller)

Please review this application with your contractor / agent to be sure your plan will meet all of the general criteria contained in Attachment A "Interconnection & Net Metering Application" and Attachment B "Interconnection Standards".

To initiate an engineering review and impact assessment, the Applicant shall complete sections A, B and C of this Interconnection & Net Metering Application, submit the information required herein and Attachment B (contains minimum design requirements and information that is required), obtain approval that the installation meets local zoning requirements, and pay a deposit of $2,500 for City's engineering representative to do an electrical schematic review and electrical inspector to do a final inspection. Any unaccounted-for charges from the deposit will be refunded. Any additional costs associated with the customer's electric generating system will be billed to the customer. A net meter will be installed after final inspection and payment in full for any associated costs. The Utility may request additional information that is necessary to complete the review of the application.

Planning Department Contacts:

Inside City Limits City of Bandon	 541-347-2437 Ext. 231
Outside city limits Coos County	 541-396-7770
Curry County	541-247-3379

After the applicable zoning compliance has been approved and the City has approved the Interconnection Agreement; the applicant is required to apply for applicable permits from the City, County, or State Building Codes Division (contact: 541-266-1098).

The application review process is shown in Figure 1. If the application meets the criteria for the Fast Track Screening Process, the Utility will proceed with the Fast Track review as shown in Figure 2.

If the application does not meet the criteria of the Fast Track Screening Process or any of the answers to the Fast Track screening questions are "NO", then the Applicant will be notified that an in-depth study is required. If an in-depth study is required, the Utility will advise the Applicant of what issues require an in-depth review. If the Applicant does not want to proceed with the in-depth review, then the application is deemed withdrawn and any unaccounted-for charges from the original application deposit will be refunded.

A. Applicant Information

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Street Address (if different from above)_____

Daytime Phone: _____ Fax: _____ Email: _____

Electric Utility Name: _____ Electric Account No: _____

B. Electric System Information

Type of System: ❑ Solar PV Array ❑ Fuel Cell ❑ Wind ❑ Hydroelectric

Location: Attach Site Plan with location of proposed system

Solar □ Rooftop □ Pole Mount or □ Ground Mount - Show Location on Site Plan

Other □ Indoor □ Outdoor- Show Location on Site Plan

System Description:

Manufacturer: _____ Type/Style/Model: _____

Nameplate Data:

Voltage/Frequency _____ Maximum kW Output Rating: _____kW

Synchronous Inverter / Synchronous Generator / Induction Generator (Circle one) Manufacturer & Model #: _____

Nameplate Data:

Voltage/Frequency: _____ Maximum Power Rating _____kW (AC/DC)

Operating Power Factor: _____

Inverter / Generator Operation:

□ Isolated from Utility (with a break-before-make transfer switch)

□ Paralleled with Utility (Requires import/export meter, provided by Utility and Interconnection Agreement for periodic operational testing)

□ Inverter UL 1741 Certified & IEEE 1547 Compliant

Panel:

Manufacturer and Model _____

Panel Size: _____ Panel Peak Wattage Output: _____

Number of Panels: _____ Total Peak Wattage Output: _____

AC Disconnect: Provide A Separate Manual Disconnect - Show Location on Site Plan

C. System Designer & Installation Contractor Information (if applicable)

Design Consultant: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____ Fax: _____ Email: _____

Installation Contractor:

Contractor's License No: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____ Fax: _____ Email: _____

Proposed Installation Date: _____

Submit / Attach additional information as specified herein and in Attachment B.

D. Hardware Installation Compliance

- The electrical system referenced above shall meet the Bandon Electric Department "Interconnection Standards for Customer-Owned, Grid Connected Electric Generating Systems".
- Customer shall be solely responsible for obtaining and complying with any and all necessary easements, licenses and permits, or exemptions, as may be required by any federal, state, local statutes, regulations, ordinances or other legal mandates.
- The Customer shall submit documentation to Bandon Electric Department that the system has been inspected and approved by the local permitting agency regarding electrical code requirements.
- Customer shall not commence parallel operation of the generating system until inspection and written approval of the interconnection has been given by Bandon Electric Department.
- This Application Form shall be Appendix A and B to the Bandon Electric Department "Interconnection & Net Metering Agreement".
- For PV Systems, the system hardware is in compliance with Underwriters Laboratories (UL) 1741, Standard for Static Inverters and Charge Controllers for Use in Photovoltaic Systems; UL 1703, Standard for Safety: Flat-Plate Photovoltaic Modules and Panels.
- For PV Systems, the system has been installed in compliance with IEEE Standard 1547 and with applicable requirements of local electrical codes and applicable National Electrical Code® (NEC) Articles (See Attachment B).

Signed (Contractor): _____ Date: _____

Name (Print): _____

Company: _____

E. Owner Acknowledgment

The system has been installed to my satisfaction and I have been given system warranty information, and an operation manual. Also, I have been informed as to whether my PV system is eligible for net metering, and I have been instructed in the operation of the system.

Signed (Owner): _____ Date: _____

F. Electrical Code Inspection and Utility Approval

The system referenced above satisfies applicable electrical code requirements.

Inspector Name (Print): _____

Signed (Inspector): _____ Date: _____

The system referenced above satisfies applicable utility interconnection requirements.

Utility Representative Name (Print) _____

Signed (Utility Representative): _____ Date: _____

REVIEW PROCESS AND OTHER APPLICATION REQUIREMENTS

For Customer-Owned, Grid Connected Electric Generating Systems
(25 kW or less)

Attachment A includes flow charts for the application review process and general criteria for interconnection of Customer-Owned, Grid-Connected Solar, Wind, Fuel Cell or Hydroelectric Electric Generating Facilities of up to 25kW Generating Capacity.

Attachment B specifies the requirements and conditions for the design and installation of Customer-Owned, Grid-Connected Solar, Wind, Fuel Cell or Hydroelectric Electric Generating Facilities of up to 25kW generating output capacity.

General Criteria

The generating facility shall be installed in compliance with all applicable requirements of local building and electrical codes, and the *National Electrical Code* and the *National Electric Safety Code*.

The Owner of the generating facility and/or the Owner's agents or representatives shall not make any modifications to the generating facility, including but not limited to alterations to the protective functions, without prior written notification to the City of Bandon of any such modifications.

The customer shall furnish and install on customer's side of the meter, a UL-approved disconnect (safety switch, or approved equal) which shall be capable of fully disconnecting *all* customer energy production and storage sources from its distribution system for the safety of City line workers. The switch must be manually operable with a visible "ON" and "OFF" indication and capable of being locked in the off position. Draw-out or other types of disconnects are not acceptable**.** The disconnect switch shall be located adjacent to the City's meter and shall be of the visible break type in a metal enclosure which can be secured by a padlock. The disconnect switch shall be accessible to City personnel at all times. If the switch cannot be located within 10 feet of the service meter or is not visible from the meter, a permanent placard at the service meter location must be provided that gives clear directions to the disconnect location.

The output of Customer-Owned Electric Generating Facilities shall be interconnected with the existing Customer service voltage, 60 Hz.

Generation systems shall be approved by the City's electric utility on a case by case basis to ensure that the City's electric grid and City employees' safety are not jeopardized.

Supplemental Information to be included with application

Submit 1-line schematic diagram depicting service entrance disconnect, meter, transfer equipment, if applicable, generation equipment and customer distribution panel(s). Submit Manufacturer's literature of major generation equipment and control system. Submit diagram depicting controls and protective equipment.

Submit site plan for proposed Customer-Owned Generator system. Include metering points in relation to the Electric Department electrical system and the Customer's generating system.

Application Review Process

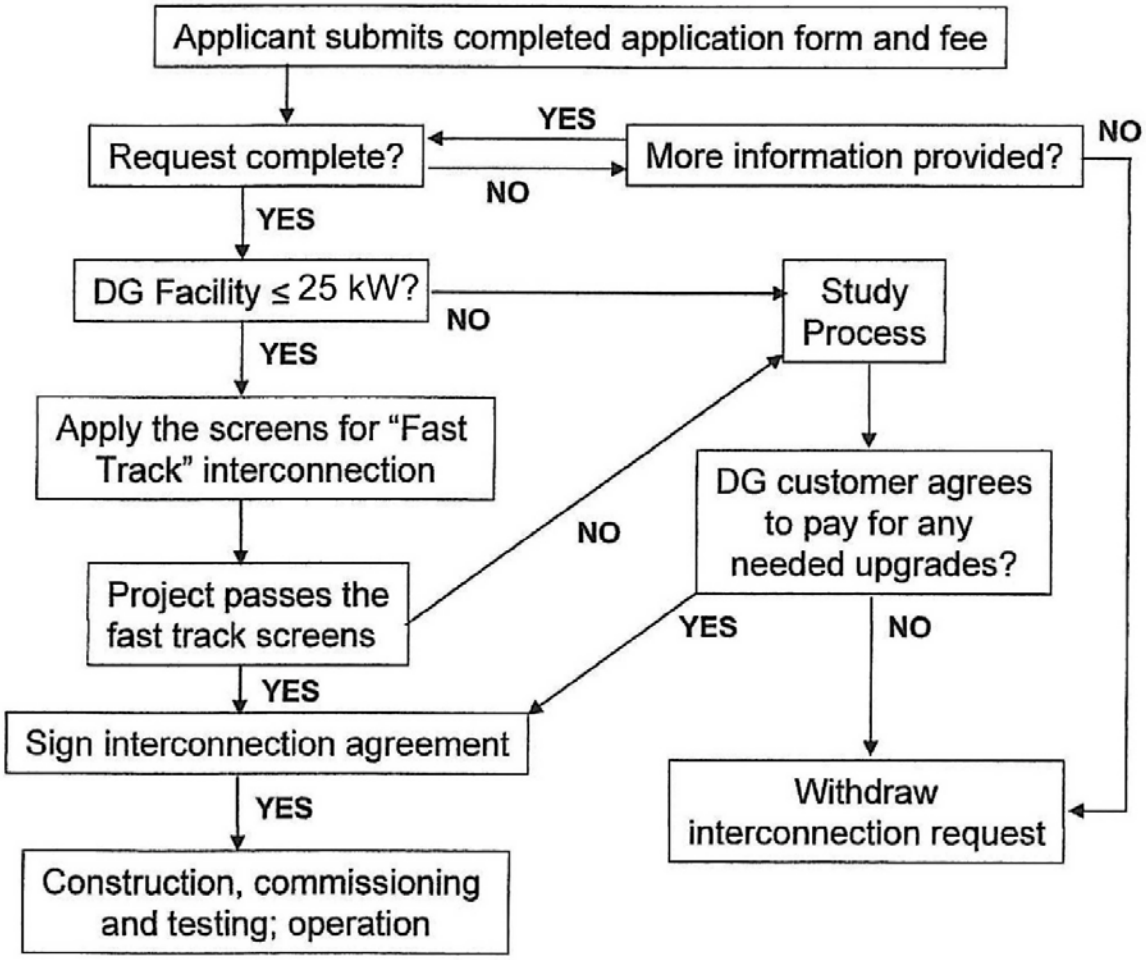


Figure 1: Application Process

Fast Track Screening Process

The fast track screening process is available for customers with DG projects up to 25 kW (see Figure 2), and if the equipment meets the codes and standards listed in Attachment A and meets the equipment certification requirements of IEEE 1547 (v2018) and IEEE 1547.1 (v2020). Specific screens to be met include:

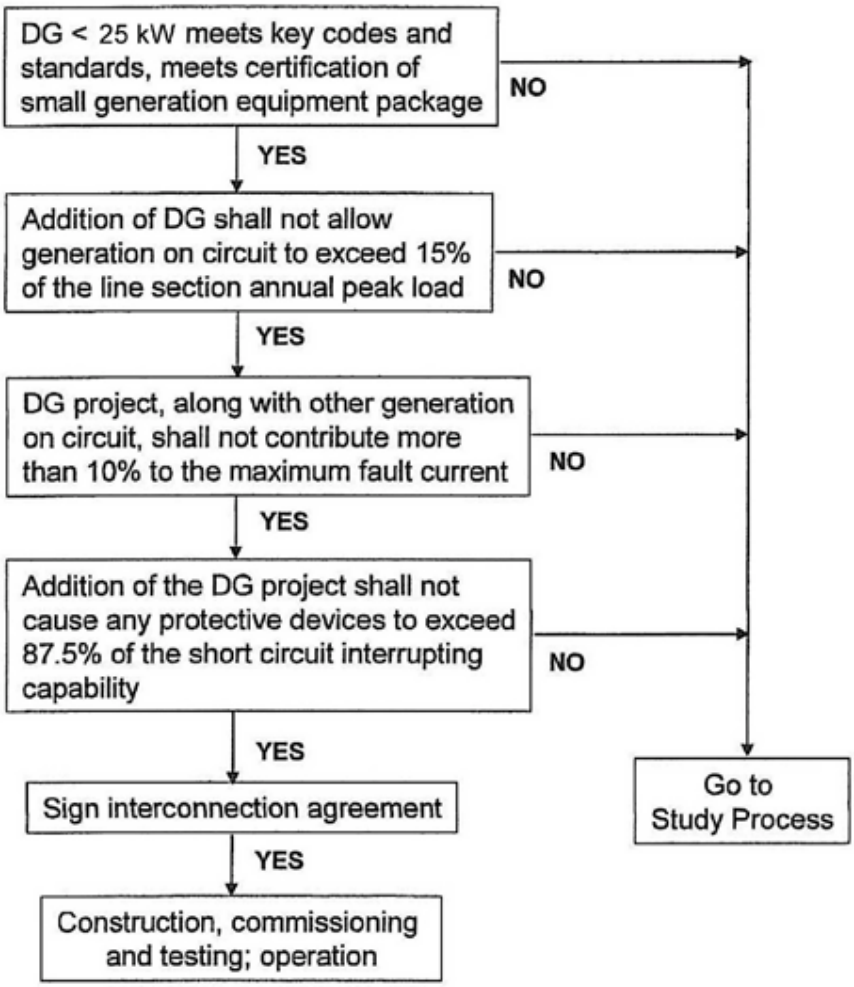


Figure 2: Fast Track Screening Process

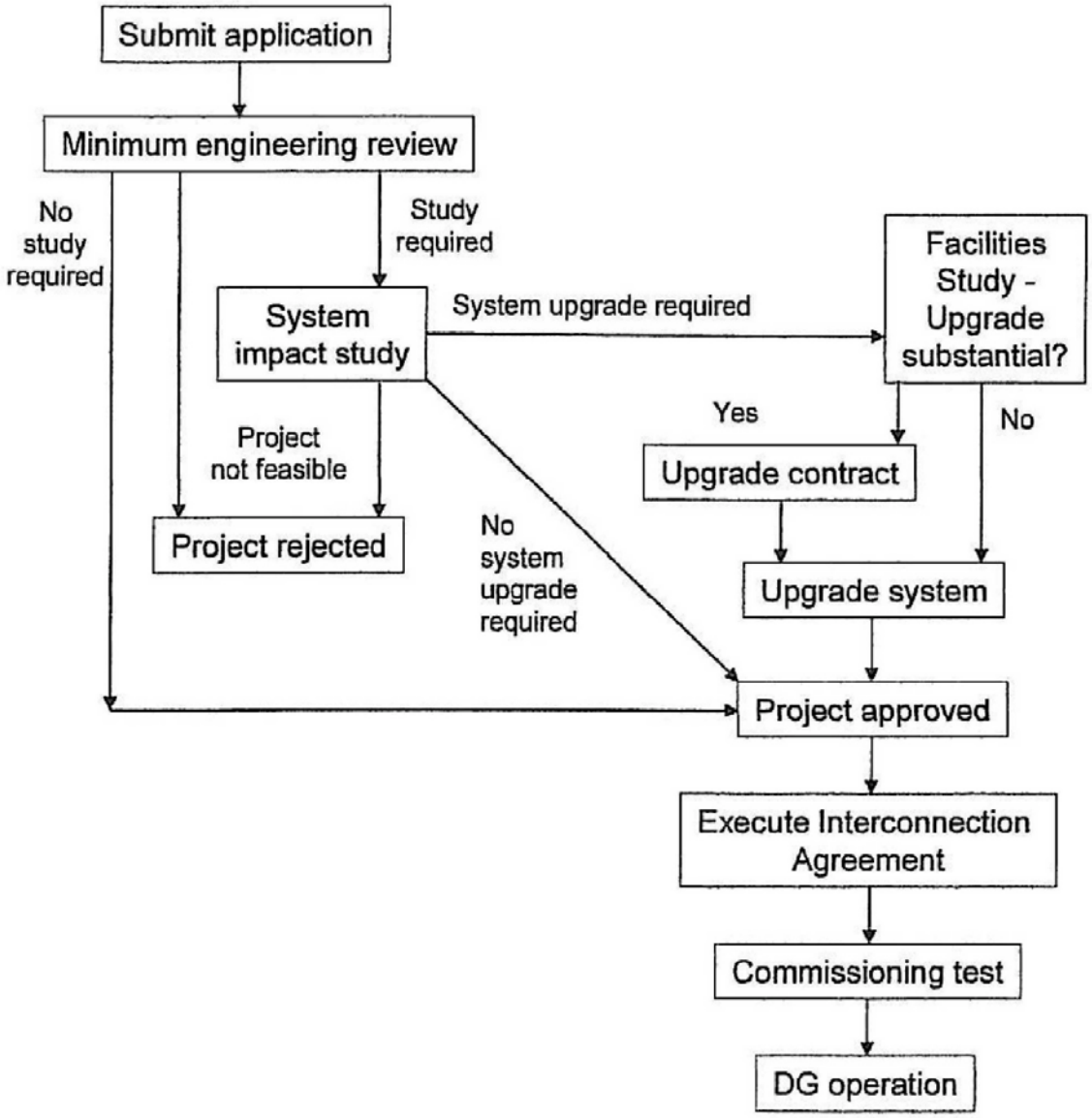


Figure 3: The Study Process (if the generation source is greater than 25 kW. Information Only)

City of Bandon
Electric Power Purchase Agreement
For Renewable Energy Systems 25 kW or Smaller

Owner(s) Name: _____

Mailing Address: _____

Street Address of Owner's Electric Generating Facility (if different than the mailing address):

_____

Daytime Phone: _____ Fax: _____ Email: _____

Electric Account Number: _____

Recitals:

- The City of Bandon encourages citizens and businesses to invest in renewable electric energy generation systems.
- Owner produces electricity from an electric generating facility that qualifies for purchase by the City of Bandon under the City's Renewable Resource Purchase Policy.
- Owner has met the City's design requirements for interconnection and has entered into an interconnection agreement with the City.

City and Owner agree as follows:

- Excess energy produced by the Owner's facility during a billing cycle, will be applied towards the next billing cycle as electricity credits. Energy credits are measured in kilowatt hours (kWh) and will be credited at a ratio of one-to-one. Billing cycle shall mean one month within a twelve-month calendar year, ending in December of each year.
- Electricity credits that remain from the prior billing cycle will be "rolled-over" and applied towards the next billing cycle at wholesale rate through the end of December of each calendar year. Wholesale rate shall mean the rate paid to Bonniville Power Administration by the City for power generation.
- If electricity credits remain at year's end (December of each year), said credits shall be granted by the Owner to the City's Electric Utility for dedication as determined by the City Council pursuant to ORS 757.300(3)(d).

Owner	**City of Bandon**
_____	_____
Signature	Signature
_____	Torrey Contrares
Print Name	Print Name
_____	City Manager
Date	Title
	_____
	Date

ATTACHMENT B

INTERCONNECTION STANDARDS

For Customer-Owned, Grid Connected Electric Generating Systems
(25 kW or less)

General

The "Interconnection Standards for Customer-Owned, Grid Connected Electric Generating Systems" sets forth the requirements and conditions for interconnected non-utility-owned electric generation where such generation may be connected for parallel operation with the electrical system of the City of Bandon Electric Department (City). Generating systems will be permitted to interconnect to the City's electric distribution system (480V and below) only after a determination by the City that such interconnection will not interfere with the operation of the distribution system.

Interconnection Requirements

The customer equipment shall comply with all the latest applicable National Electric Code (NEC) requirements NEC Articles shown below, NESC requirements, State of Oregon requirements, building codes, local codes and regulations, and shall obtain electrical permit(s) for the equipment installation.

The National Electric Code (NEC) Articles:

- 250 – Grounding and Bonding
- 685 – Integrated Electrical Systems
- 690 – Solar Photovoltaic (PV) Systems
- 692 – Fuel Cell Systems
- 694 – Small Wind Electric Systems
- 700 – Emergency Systems
- 702 – Optional Standby Systems
- 705 – Interconnected Electric Power Production Sources
- 706 – Energy Storage Systems

The customer's power production control system and equipment shall comply with current Institute of Electrical and Electronics Engineers (IEEE) Standards.

- IEEE 1547 Recommended Practice for Interconnecting Distributed Resources with Electric Power Systems Distribution Secondary Networks
- IEEE 1547.1 Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems

The customer’s solar photovoltaic equipment shall be in compliance with Underwriters Laboratories Standards.

- (UL) 1741, Standard for Static Inverters and Charge Controllers for Use in Photovoltaic Systems
- UL 1703, Standard for Safety: Flat-Plate Photovoltaic Modules and Panels

The City will provide and install labels when customer-generator's electric system is approved for interconnection. The meter and transformer, or the transformer pole serving the customer-generator shall be labeled to indicate potential electric current back feed. The customer shall furnish and install on customer's side of the meter, a UL-approved disconnect (safety switch, or approved equal) which shall be capable of fully disconnecting all customer energy production and storage sources from its distribution system for the safety of City line workers. The switch must be manually operable with a visible “ON” and “OFF” indication and capable of being locked in the off position. Draw-out or other

types of disconnects are not acceptable**.** The disconnect switch shall be located adjacent to the City's meter and shall be of the visible break type in a metal enclosure which can be secured by a padlock. The disconnect switch shall be accessible to City personnel at all times. If the switch cannot be located within 10 feet of the service meter or is not visible from the meter, a permanent placard at the service meter location must be provided that gives clear directions to the disconnect location.

The customer shall placard the overcurrent device for the generator circuit, at the service panel, to indicate an on-site power source is interconnected with the City's distribution system.

The customer shall assume full responsibility for all acceptance and maintenance testing of the generator and protective equipment and keeping of records for such testing. These records shall always be available to the City for inspection.

Acceptance and Maintenance Testing

An acceptance test must be performed to verify that the equipment meets the requirements specified prior to initial parallel operation by a Generator, or any time interface hardware or software is changed.

Both acceptance and maintenance testing must include the testing of the generation disconnect features and verification that the disconnect is functional and reconnection time complies with IEEE Standard 1547. Following a generation facility disconnect due to a voltage or frequency excursion, the generation facility shall remain disconnected until City's service voltage and frequency are within the operating voltage range of 90% to 110% of nominal voltage and frequency range of 59.3-60.5Hz for a minimum of five (5) minutes.

Safety

All Safety and operating procedures for joint use equipment shall be in compliance with the Occupational Safety and Health Administration (OSHA) standard 29 CFR 1910.269, the National Electrical Code (NEC), State of Oregon rules, City standards and equipment manufacturer's safety and operating manuals.

Guidelines for System Diagrams

The required System Diagram(s) is/are an important part of the application for interconnection. The system diagrams are used by the City for an engineering impact assessment during the review and approval process, during field testing and meter installation and during subsequent review of periodic maintenance test reports. The diagram is a permanent record copy of the system and is filed at City for reference.

A good diagram will facilitate the City engineering impact assessment and can significantly shorten the review period and helps ensure City's field testing and meter installation are straightforward. Incomplete diagrams are one of the largest sources of delays during the application process. Discrepancies between the diagram and the actual installation as-built are cause for rejection at the final testing and net meter installation, which in turn means rescheduling and a significant delay in activating the system.

Depending on the complexity of the proposed electric generation system, the required System Diagram(s) may be simply a One-Line diagram, Site Plan and Manufacturer's Technical Bulletins/Information to complete Control Schematics, Wiring and Interconnection Diagrams that show every wire and every connection throughout. The City determines what submittal information is required to be submitted.

At a minimum, the System Diagram must show how the major components of the customer generator system are connected electrically. Additional information, such as equipment part numbers and physical locations, should also be included in the diagram. Basic information is required in the application. Documenting the additional information on the System Diagram(s) provides a single complete reference for the project and speeds the engineering reviews and field work.

Note: PV systems that do not use a UL-1741 approved synchronous inverter have more complex requirements for interconnection and will require more detailed design drawings for review and approval.

The System Diagram(s) shall provide the information as described below. Refer to the illustrative sketch on the next page for an example of information required.

❑ Generator (PV Panels, Wind Turbine, Hydro Turbine, etc.)

Include manufacturer, part number, nameplate maximum capacity (kW) and physical location. For modular systems (e g. PV panels), also include number of modules, configuration, nameplate maximum capacity of each module and total nameplate maximum capacity.

❑ Inverter

Include manufacturer, type or series, part number, serial number, nameplate maximum capacity, output voltage and physical location.

❑ Disconnect Switch

Include the physical location relative to the City Service Meter.

❑ Electrical Service Panel

Include the panel or main breaker size and the position at which the generation is connected. Show all panels (if there are multiple panels or subpanels) even if not directly connected into the generation system.

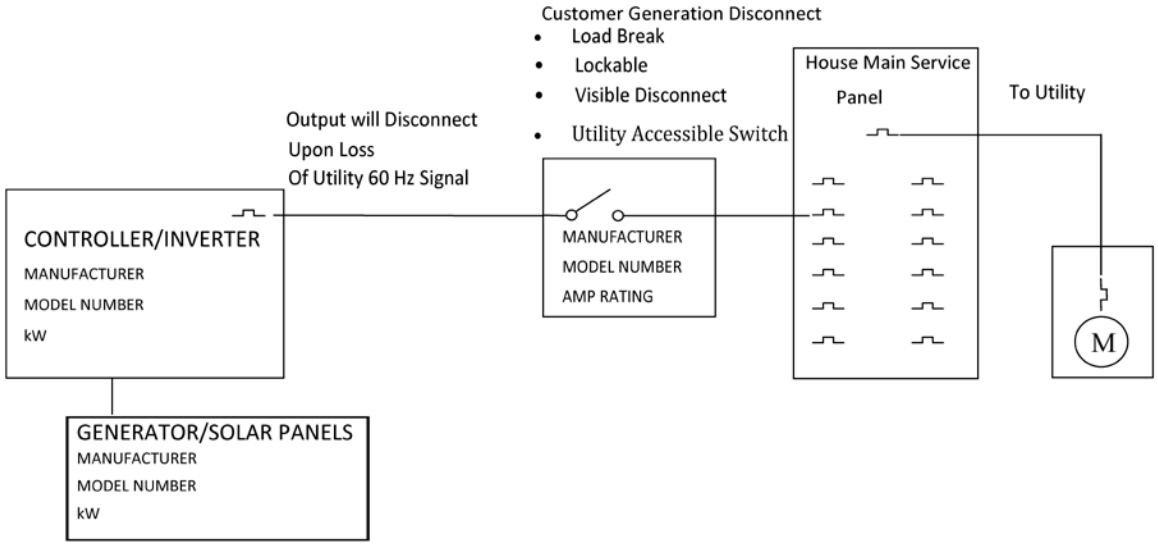
❑ City Service Meter

Include existing meter serial number, meter form and class

❑ Other Related Equipment (battery banks, transfer or bypass switches, backup generators, etc.)

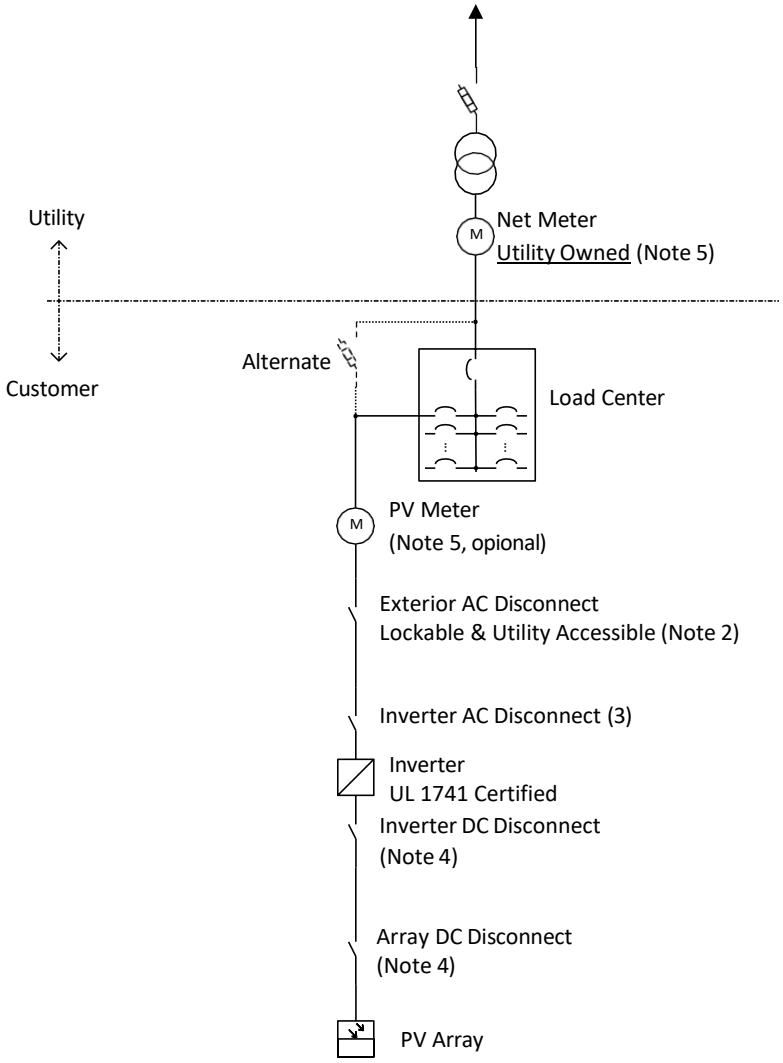
Components and Connections Shown are for Illustrative Purposes Only

1. This illustrative sketch is not intended to specify utility interconnection or safety requirements.
2. This illustrative sketch is not intended to provide electrical design or code compliance directives.
3. Some components and connections shown may be internal to the generator controller or inverter. The manufacturer and model number of the generator controller or inverter must be shown on the drawing.
4. All switches, breakers, fuses and mechanical interlock mechanisms which are part of the operating scheme to isolate the customers generating equipment (including solar panels, standby generators and batteries) from the utility during emergency or maintenance conditions must be shown on the single-line diagram.
5. The narrative description accompanying the single-line interconnection diagram must contain sufficient detail to determine if the components in, and the operation of, the interconnection and protection systems meet the utilities interconnection and safety requirements.



Illustrative Sketch

PV System ≤ 25 kW Residential/Commercial
Net Metering Type



1. For grid-connected systems, safety disconnects ensure that generating equipment is isolated from the grid. Typically, one disconnect is needed for each source of power or energy storage device in the system.

2. Utilities commonly require an exterior AC disconnect that is lockable, has visible blades and is mounted next to the utility meter so that it is accessible to utility personnel.

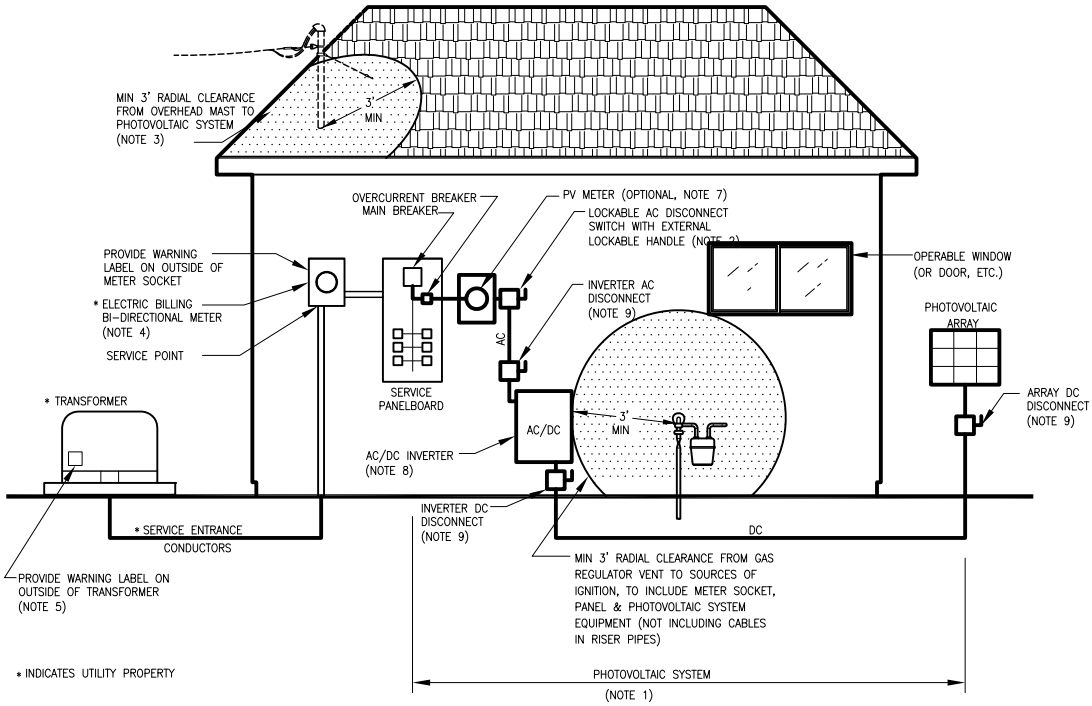
3. Inverter AC disconnect is typically installed near the building's main electrical panel. If not, an additional AC disconnect should be installed near the inverter.

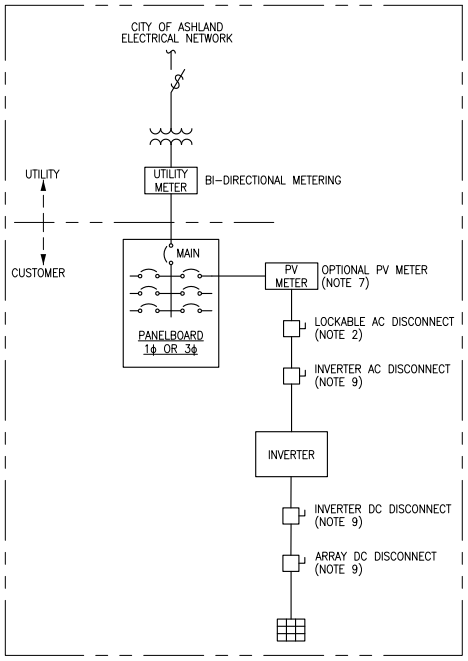
4. If an inverter is located indoor, both inverter DC disconnect and array disconnect are needed. If an inverter is located outdoor, a single DC disconnect can serve the function of both inverter and array DC disconnects.

5. According to Oregon Solar Electric Guide, the 1999 Oregon Legislature passed a law requiring utilities to provide net metering for PV systems. The PV meter keeps track of how much energy is produced by the PV panels, but it is not tied to its associated utility account. The net meter keeps track of energy flowing to and from the utility. The two meters do not communicate with each other. Net meter is owned by the utility, but not necessary for the PV meter.

REV: 05/18/2018

TYPICAL PHOTOVOLTAIC INSTALLATION
--- BI-DIRECTIONAL METERING ---
(MAXIMUM 10KW RESIDENTIAL / 25KW COMMERCIAL SYSTEMS)





NOTES:

1. The photovoltaic system shall be configured as shown above and meet all requirements of the Interconnection Agreement.
2. An AC disconnect switch is required and shall be mounted in a visible location on the building exterior, adjacent to the billing meter and within 10 feet of the meter base. The AC disconnect switch shall have an external disconnect handle and it shall be lockable. this switch should be locked in the "open" position to prevent backfeed when working on conductors or equipment. It shall be clearly labeled "Generator Disconnect Switch".
3. For overhead electric services do not place any part of a roof-mounted photovoltaic array within 3' minimum horizontal distance from the mast for utility maintenance clearance.
4. Utility billing meter and disconnect switch shall be installed 5'-6' above grade. .
5. Install large "Distributed Generation Backfeed Possible" warning label on outside of transformer tank, overhead pole and/or termination riser. Install small version of this warning label on outside of meter socket. Install cable wrap version of this warning label adjacent to the address label at secondary connectors to clearly identify each service entrance conductor involved with the photovoltaic system.
6. Customer or authorized representative must be present at time of inspection to operate the photovoltaic system.
7. A separate PV meter may be provided by the PV developer if approved by the customer. It is not tied to the utility company. Remove the neutral grounding jumper on the PV meter socket if equipped (NEC 250.30).
8. The inverter shall be certified in accordance with the latest edition of UL 1741.
9. Separate inverter isolation disconnects are needed depending on the location of the inverter. The inverter isolation AC and DC disconnects, if equipped, shall be installed within sight and within 10 feet of the inverter. If the inverter is located indoor and adjacent to the service panel, the designated overcurrent breaker may serve as the AC isolation disconnect, but both inverter DC disconnect and array disconnect are needed. If the inverter is located outdoor, an AC disconnect is needed and a single DC disconnect can serve the function of both inverter and array DC disconnects.