



Solar Information Packet For OUC Commercial Customers

Dear Valued OUC Customer,

Thank you for your interest in Orlando Utilities Commission's Pilot Solar Programs. OUC has launched two solar programs: A Solar Photovoltaic (PV) program which generates electricity and a Solar Thermal program which generates heat for domestic water heating systems.

HOW DO THE PROGRAMS WORK?

The customer installs Solar PV, Thermal, or both systems on his or her business, signs an agreement allowing OUC to retain the rights to the environmental benefits or attributes, and in exchange, OUC will provide a monthly production credit on the utility bill for the energy the systems produce. Additionally, for PV systems, any excess electricity that is generated back to OUC's electric grid will be credited at the full applicable standard retail rate. The Solar PV systems will be metered in kilowatt-hours (kwh). The Solar Thermal systems will be metered in British Thermal Units (BTU's) and converted to kwh's. Customers will receive a \$250 credit on their bill to cover the cost of having the BTU meter installed. For reference, an average 2 kilowatt solar PV system and a typical residential solar thermal system will each produce about 2,700 kilowatt-hours a year. The customer will receive a monthly credit based on the system's production as outlined in the applicable credit rider in this packet. There are Florida state rebates and federal tax credits available to help minimize the cost.

To assist OUC customers with signing up for the solar programs, this information packet contains the following:

- Customer Checklists for OUC Commercial Solar Thermal (Water Heating) and/or Photovoltaic (Electric) Service
- Florida State Rebates and Federal Tax Credits
- OUC's Preferred Contractor Network List of Solar Contractors
- Commercial Solar Service Agreement
- Net Metering for Customer Owned Renewable Generation
- Pilot Solar Thermal Credit Rider
- Pilot Solar Photovoltaic (PV) Credit Rider
- For PV systems: Interconnection Agreements and the associated requirements to connect to OUC's electrical distribution system

If you have any questions regarding the solar programs or information in this packet, please contact Conservation Support at 407-236-9603 or send an email to: conservationsupport@ouc.com.

Customer Checklist For OUC Commercial Solar Thermal (Water Heating) Service

- I have solicited quotes from OUC’s Preferred Contractor Network list of solar contractors or a licensed contractor of my choice, and selected the contractor who will do the installation.

- I have faxed, emailed (scanned), or mailed the quote, and the signed Commercial Solar Service Agreement to Conservation Support (see below). I have also sent two original signed and notarized Solar Service Agreements by mail.

- OUC’s Conservation Support has contacted me and given authorization to proceed with the installation (Allow 5 business days for OUC to review the documents).

- I have contacted the selected contractor to coordinate an installation date.

- The contractor has completed installation and has complied with permitting and code requirements.

- I have provided the permit number to Conservation Support by email or by phone.

- The Solar Service has been initiated and is on the utility bill.

If you have any questions regarding OUC’s solar programs, please email or call Conservation Support below.

Department:	Attn: Conservation Support
Mailing Address:	Orlando Utilities Commission Reliable Plaza 100 West Anderson St Orlando, FL 32802
Email:	conservationsupport@ouc.com
Fax:	407-244-8762
Phone:	407-236-9603

Customer Checklist For OUC Commercial Solar Photovoltaic (Electric) Service

- I have solicited quotes from OUC’s Preferred Contractor Network list of solar contractors or a licensed contractor of my choice, and selected the contractor who will do the installation.

- I have faxed, emailed (scanned), or mailed the quote, and the signed Commercial Solar Service Agreement to Conservation Support (see below). I have also sent **two original signed and notarized** Solar Service Agreements by mail.

- OUC’s Conservation Support has contacted me and given authorization to proceed with the installation (Allow 5 business days for OUC to review the documents).

- I have contacted the selected contractor to coordinate an installation date.

- The contractor has completed installation and has complied with permitting and code requirements.

- I have provided the Interconnection Agreement to the Contractor to fill out sections B and C, and sign section D.

- I have filled out section A, and signed section E of the Interconnection Agreement, the Owner Acknowledgement.

- I have faxed, emailed (scanned), or mailed the completed Interconnection Agreement to Conservation Support (see below).

- The Solar Service has been initiated and is on the utility bill.

If you have any questions regarding OUC’s solar programs, please email or call Conservation Support below.

Department:	Attn: Conservation Support
Mailing Address:	Orlando Utilities Commission Reliable Plaza 100 West Anderson St Orlando, FL 32802
Email:	conservationsupport@ouc.com
Fax:	407-244-8762
Phone:	407-236-9603

Florida State Rebates and Federal Tax Credits For OUC's Commercial Solar Pilot Programs

State Incentives

There are state rebates that are available to commercial customers who install solar systems. Funding for the rebates is limited and is distributed on a first-come first-served basis. Below is a summary of the state rebates:

Florida State Solar Rebates for Commercial Customers	
Thermal Domestic Water Heating System	\$15 per BTU up to \$5000 per system
Photovoltaic System	\$4 per watt up to \$100,000

Please be sure to verify that the rebate amounts and the availability of funding prior to the purchase and installation of a solar system. Rebate applications must be made within 90 days after installation of the solar system. To check the amount of rebate funds remaining for this year, please visit www.dep.state.fl.us/energy and click on "Incentives". Applications for the solar system rebates can be accessed from the same web page by clicking on "Solar Energy Systems Rebate Program". The Florida Department of Environmental Protection can also be contacted directly at (850) 245-8002 for more information.

Federal Tax Credits

The Energy Policy Act of 2005 (H.R. 6, Sec. 1335) established a 30% tax credit for the purchase and installation of commercial solar electric and solar water heating property. The tax credits were extended through December 31, 2016, by Section 1103 of The American Recovery and Reinvestment Act of 2009 (H.R. 1). The solar energy property is also allowed to be depreciated over a five year period. Please check with your tax advisor to verify your tax savings prior to the purchase and installation of a solar system. For more information, go to www.irs.gov or contact the Internal Revenue Service directly at (800) 829-1040.

OUC Preferred Contractor Network

Solar Photovoltaic and Thermal Systems

<u>Company</u>	<u>Contact, Email, and Website</u>	<u>Phone and Fax</u>
AllSolar Service Company, Inc. 1507 Damon Avenue Kissimmee, FL 34744	Residential & Commercial David Bessette david@allsolarflorida.com www.allsolarflorida.com	Ph: (407) 846-7830 Fax: (407) 847-5013
Mirasol Fafco Solar, Inc. 4855 Distribution Court, Ste. 4 Orlando, FL 32822	Residential & Commercial Jeff Probus jeff@mirasolsolar.com www.mirasolfafco.com	Ph: (407) 859-8437 Fax: (407) 859-8437
Solar Direct, Inc. 5919 21 st Street East Bradenton, FL 34203	Residential & Commercial Cindy Lemery cindy@solardirect.com www.solardirect.com	Ph: (941) 359-8228 Fax: (941) 359-3848
Sunworks Solar Systems, Inc. 1005 Lakemont Circle Winter Park, FL 32792	Residential & Commercial Jennifer Woods jenn.woods@sunworkssolar.com www.sunworkssolar.com	Ph: (321) 251-7784 Fax: (904) 731-1847
Superior Solar Systems, Inc. 275 Hunt Park Cove Longwood, FL 32750	Residential & Commercial Christopher Maingot chris@superiorsolar.com www.superiorsolar.com	Ph: (407) 331-9077 Fax: (407) 331-0305

Contractors were selected through a Statement of Qualifications bid process. The contractors are required to adhere to Standards of Conduct and a Code of Ethics. For more information, go to www.ouc.com/contractors.

NET METERING FOR CUSTOMER-OWNED RENEWABLE GENERATION

For customers with renewable generation equipment that have executed an interconnection agreement with Orlando Utilities Commission (“OUC”) whose customer-owned renewable generation is eligible for net metering as defined by FPSC rule 25-6.065, monthly billing will be prepared in the following manner:

- (1) At no additional cost to the customer, metering equipment will be installed by OUC capable of measuring the difference between the electricity supplied to the customer from OUC and the electricity generated by the customer and delivered to OUC’s electric grid.**
- (2) Meter readings will be taken monthly on the same cycle as required under the otherwise applicable rate schedule in accordance with normal billing practices.**
- (3) OUC will charge the customer for energy used by the customer in excess of the generation supplied by customer owned renewable generation for the entire billing cycle in accordance with the otherwise applicable rate schedule.**
- (4) During any billing cycle excess customer-owned renewable generation delivered to OUC’s electric grid will be credited to the customer’s energy consumption for the next month’s billing cycle.**
- (5) Regardless of whether excess energy is delivered to OUC’s electric grid, the customer will be required to pay the greater of:**
 - (a) the minimum charge as stated in their otherwise applicable rate schedule, or**
 - (b) the applicable monthly customer charge plus the applicable demand charge for the monthly maximum 15-minute demand measured on OUC’s usage meter during the billing period in accordance with the otherwise applicable rate schedule.**
- (6) For customers whose otherwise applicable rate schedule is a time of use (TOU) or time of day (TOD) rate, the generation supplied by customer owned renewable generation to OUC will be measured by the distinct TOU/TOD periods of that rate schedule and offset customer usage in the current month or subsequent periods using the distinct TOU/TOD periods of that rate schedule.**

PILOT SOLAR PHOTOVOLTAIC CREDIT PROGRAM RIDER RATE SCHEDULE PV-CR

Availability

This rate, offered as a pilot program, is available anywhere within Orlando Utilities Commission's service area.

Applicability

Applicable, upon request, to eligible customers in conjunction with standard applicable rates. A photovoltaic ("PV") system is a solar electric generating system which contains solar PV panels, batteries (optional), a Static Power Converter (Inverter), wiring, fuses, conduit, circuit breakers, etc., as described in IEEE 1547 in order to produce electricity. This pilot program is available to the first 600 kW of Residential PV generation and the first 2,000 kW of General Service PV generation.

PV Energy Production Credit

The customer will receive a monthly credit of 5.0 cents per kWh for the production of solar energy as recorded by the meter installed on the customer's PV system.

Billed Energy

The billed energy (kWh) applied to the applicable standard tariff energy rate shall be calculated as the difference between the OUC supplied energy and the energy exported to the OUC grid from the customer's PV system.

Special Provisions

1. A customer taking the Photovoltaic Energy Production Credit Rider must apply and enter into a RSSA or CSSA agreement, as applicable, and complete an Interconnection Agreement for PV systems with OUC. Commencement of this rider will occur once the customer has executed the agreement and the system installation has been inspected and approved by OUC.
2. OUC shall furnish and install at its expense such metering facilities, as OUC shall deem appropriate to measure the total amount of renewable energy produced by the customer's PV system.

PILOT SOLAR THERMAL CREDIT RIDER RATE SCHEDULE TH-CR

Availability

This rate, offered as a pilot program, is available anywhere within Orlando Utilities Commission's electric and water service area.

Applicability

Applicable, upon request, to eligible customers in conjunction with standard applicable rates. A Solar Thermal system is a device which contains solar panels that allows heat exchange to occur between a liquid moving through the solar panel and into a thermal storage tank via piping as described by the Solar Ratings and Certification Corporation (SRCC) in order to produce hot water. This pilot program is available to the first 1,200 kW equivalent of Residential solar thermal generation capacity and the first 2,000 kW of General Service solar thermal generation capacity.

Solar Thermal Energy Production Credit

The customer will receive a monthly credit of 3.0 cents per kWh equivalent for the production of solar energy as recorded by the meter installed on the customer's thermal system.

Special Provisions

1. A customer taking the Solar Thermal Energy Production Credit Rider must apply and enter into a RSSA or CSSA agreement, as applicable, with OUC. Commencement of this rider will occur once the customer has executed the agreement and the system installation has been inspected and approved by OUC.
2. At its own expense OUC shall furnish to a licensed contractor such metering facilities, as OUC shall deem appropriate to measure the total amount of renewable energy produced by the customer's solar thermal system.

CSSA

Commercial Solar Service Agreement (CSSA) Customer-Sited Solar Systems

This Agreement is made and entered into this _____ day of __, 20__, (“Effective Date”) by and between the Orlando Utilities Commission (“OUC” or “Company”), a statutory commission existing under the laws of the State of Florida, whose address is 100 West Anderson St., Orlando, Florida 32802, and _____ (“Customer”), whose electric service address is _____, (the “Service Address”).

1. **REPRESENTATIONS.** The signatories hereto individually and collectively make the following representations:
 - a) They are individually authorized and competent to sign this Agreement, and that they have read the Agreement and agree to be bound by its terms.
 - b) Customer owns the solar system(s) in the state of Florida at the Service Address set forth above, and whose primary business is not the generation of electricity for retail or wholesale sale from the same Service Address, and for the purpose of this Agreement is the person in whose name electric service is listed at the Service Address.
 - c) The solar system(s) for consideration under this agreement is/are:
 - Solar Photovoltaic System
Size: _____ KW (DC capacity)
 - Solar Thermal Water Heating System
Size: _____ Sq. Ft. (Collector)
 - d) **OUC shall provide customer with a one-time solar thermal meter credit of two-hundred-fifty dollars (\$250) to offset the cost of installing each BTU meter.**
2. **PURCHASE AND SALE.** On the terms and subject to the conditions set forth in this Agreement, the Customer agrees to sell and OUC agrees to purchase from Customer all of the environmental attributes associated with the generation of solar energy, including but not limited to, all renewable energy certificates, “green tags”, carbon offsets, or other tradable environmental interests (collectively “Environmental Attributes”) generated by the solar system(s) at the Service Address. An Environmental Attribute is separate **and apart** from the energy produced and may be **independently** transferred or conveyed. OUC will accumulate the Environmental Attributes to more cost effectively meet its renewable energy portfolio goals which benefits all OUC customers.
3. **TERM.** The term of this Agreement shall commence on the Effective Date and shall continue for a period of five (5) years from the date of the first utility bill (“Bill Date”) where the Purchase and Sale of Environmental Attributes have been initiated. This agreement shall automatically renew for successive Terms of five (5) years hence, unless terminated by written notice of such intention from either party to the other at least sixty (60) days prior to expiration date of the initial Term or subsequent Terms.

Customer initial: _____

CSSA

4. **PURCHASE PRICE.** The price for the Environmental Attributes shall be a payment based on OUC's receipt of all Environmental Attributes generated by the solar system(s). The price for the Environmental Attributes will be set forth in the Company's Electric Tariff (Pilot Solar Photovoltaic **Credit Program** Rider and/or Pilot Solar Thermal **Credit** Rider) on file with the Florida Public Service Commission (FPSC) which may be changed from time to time.
5. **TERMS AND CONDITIONS**
 - a) Customer shall be solely responsible for ensuring that the solar system(s) equipment installed for this program meets all applicable codes, standards, and regulatory requirements.
 - b) The solar system(s) shall be located at the Service Address at all times during the term of this Agreement.
 - c) For Solar Photovoltaic (PV) Systems:
 - c1. The Customer must receive electric power from OUC.
 - c2. The PV system shall be no larger than one (1) megawatt, nameplate direct current (DC) output capacity.
 - c3. The Customer shall complete a PV Interconnection Application and Compliance Form attached and incorporated herein as Exhibit A, and be granted permission by OUC to interconnect to its electric distribution system prior to the operation of the proposed PV system. The Customer agrees to maintain compliance with all of OUC's interconnection requirements.
 - c4. If any excess energy is generated by the PV system at the Service Address, OUC shall receive all of this excess energy. The Customer will receive compensation for any excess energy in the form of a consumption offset to the customer's energy consumption as shown on the next billing cycle as set forth in the Company's Net Metering for Customer Owned Renewable Generation tariff or other tariffs on file with the FPSC which may be changed from time to time. The Customer's "Billed Energy" shall be applied to the applicable standard tariff energy rate and shall be calculated as the difference between the OUC supplied energy and the energy exported to the OUC grid from the Customer's PV system.
 - c5. If this agreement is terminated as provided for in Section 3, the Customer will remain eligible to interconnect to OUC's distribution system; however, the Customer shall not be billed based on the Pilot Solar Photovoltaic Rider, but on an otherwise applicable tariff rate.
 - d) For Solar Thermal Water Heating Systems:
 - d1. Solar thermal water heating systems must be used for potable water heating.
 - d2. Solar pool water heating systems are excluded under this agreement.
 - e) OUC shall purchase and own all Environmental Attributes produced by the solar system(s), and the Customer shall not be allowed to sell the Environmental Attributes to any party other than OUC during the initial and all subsequent terms of this Agreement. Upon the customer request to terminate this agreement under section 3, OUC shall have the right of first refusal with respect to any and all bona fide offers to purchase Environmental Attributes and agrees to exercise such right of first refusal, if at all, within thirty (30) days of receiving written notification by Customer of a bona fide offer.

Customer initial: _____

CSSA

- f) This Agreement is assignable by Customer to any subsequent purchaser of the Service Address, pursuant to section 5(q) below.
- g) Under the terms of this Agreement, OUC does not imply any representation or warranty by OUC of the design, installation or operation of the solar equipment, and OUC expressly disclaims any and all warranties of the equipment as to workmanship, quality, or performance, including the fitness of the equipment for the purpose intended.
- h) OUC shall not be responsible or liable for any personal injury or property damage caused by the solar system(s) or any individual component equipment of the system(s).
- i) Customer shall indemnify, defend, and hold OUC, its employees, agents, successors, assigns, subsidiaries and affiliates harmless against any and all claims, demands, liens, lawsuits, judgments or actions of whatsoever nature that may be brought on account of the installation, maintenance, operation, repair, or replacement of the Solar system or any component equipment of the system.
- j) This Agreement and the terms contained in the Agreement shall be binding and enforceable against the parties for as long as the Agreement remains in effect.
- k) If any disputes arise concerning this Agreement, including but not limited to enforcement of any term or condition of the Agreement, parties specifically agree to be responsible for their own attorney's fees and costs, whether incurred at trial or on appeal unless awarded as part of any settlement or judgment. Failure of either party to enforce any term or condition of this Agreement shall not constitute a waiver of that term or condition or of any other term or condition of this Agreement.
- l) The parties agree that a cause of action for breach of any provision of this Agreement shall not accrue with regard to statutory time limitations until the non-breaching party actually discovers the breach.
- m) If any of the representations of the Customer are false or incorrect, such false or incorrect representation shall constitute a material breach of this Agreement.
- n) This Agreement shall be exclusively governed by and interpreted in accordance with the laws of the State of Florida.
- o) This Agreement shall be binding upon and inure to the benefit of the successors and assigns of the respective parties hereto, and shall not be assigned by either party without the written consent of the other party, which consent shall not be unreasonably withheld. Customer is released from any and all future liability under this Agreement upon its assignment.
- p) By executing this Agreement, Customer grants to OUC permission to share information concerning the location of the Environmental Attributes sold to OUC by Customer under this Agreement to other Utilities, Municipalities, Cooperatives and other entities that may be involved with the transaction of Environmental Attributes for the limited purpose of ensuring that the Environmental Attributes associated with the Customer's solar system have not been sold to another entity and to meet the reporting requirements of FPSC Rule 25-6.065.

Customer initial: _____

CSSA

- q) OUC will own, read, and maintain the solar system(s) meter(s).
- r) **Customer hereby grants to OUC, it's employees, agents, and contractors a non-exclusive license of free access to all areas where solar system meter(s) are installed for any purpose necessary or appropriate to allow OUC to exercise any rights secured to or performance of any obligations imposed by this Agreement.**

IN WITNESS WHEREOF, Customer and OUC, executed this Agreement _____ this day of _____ 20_____.

CUSTOMER CORPORATION

By: _____

Print Name: _____

Title: _____

Date: _____

ATTEST:

By: _____

Name: _____

Title: _____

By: _____

Name: _____

Title: _____

Customer initial: _____

CSSA

STATE OF FLORIDA COUNTY OF ORANGE

The foregoing instrument was acknowledged before me this ____ day of _____, 20____. by _____
_____. He is personally known to me or has produced _____
_____ as identification.

(Notarial Seal)

Notary Public, State of Florida

Print Name: _____

By: Elizabeth M. Mason
Title: Assistant Secretary

By: Kenneth P. Ksionek
Title: General Manager and CEO

STATE OF FLORIDA COUNTY OF ORANGE

The foregoing instrument was acknowledged before me this ____ day of _____, 20____,
by KENNETH P. KSIONEK, as General Manager & CEO of Orlando Utilities Commission, a municipal utility chartered
under the laws of the State of Florida, on behalf of the Commission. He is personally known to me or has produced
_____ as identification.

(Notarial Seal)

Notary Public, State of Florida

Print Name: _____

Form of Execution of the foregoing
Agreement is hereby approved:

By: _____
Attorney for OUC

Customer initial: _____

Exhibit A Interconnection Application and Compliance Form For Photovoltaic Systems Up to 2 MW

A. APPLICANT INFORMATION

Name: _____ OUC Account No.: _____
 Mailing Address: _____
 City, State & Zip: _____
 Street Address (if different from above): _____
 City, State & Zip: _____
 Daytime Phone: _____ Fax: _____ Email: _____

B. PHOTOVOLTAIC INFORMATION

System Name/Model: _____
 Array DC Power at STC _____ Watts _____ FSEC Approval No.: _____
 List Manufacturer/Model No. for:
 Modules: _____ Inverter: _____ Batteries (if applicable): _____
 System Location: _____ Inverter Location: _____
 AC Disconnect Location: _____

C. INSTALLATION CONTRACTOR INFORMATION

Installation Contractor Name: _____ FL License No.: _____
 Address: _____
 City, State & Zip: _____
 Daytime Phone: _____ Fax: _____ Email: _____
 Proposed Installation Date: _____

D. HARDWARE AND INSTALLATION COMPLIANCE

1. The system hardware is in compliance with Underwriters Laboratories (UL) Standard 1741, Standard for Static Inverters and Charge Controllers for Use in Photovoltaic Systems and UL 1703, Standard for Safety: Flat-Plate Photovoltaic Modules and Panels, and IEEE 1262-1995, IEEE Recommended Practice for Qualification of Photovoltaic (PV) Modules.
2. The system has been installed in compliance with IEEE 1547, Standard for Interconnecting Distributed Resources with Electric Power Systems and the 2005 National Electrical Code (NEC).
3. The system installation has been permitted and passed inspection.

Signed (Contractor): _____ Date: _____
 Name (Print): _____ Company: _____ Permit No. _____

E. OWNER ACKNOWLEDGEMENT

I have been given system warranty information, and an operation manual. I have read and agree to comply with OUC's Interconnection Requirements attached herein as Appendix A. Also, I have been instructed in the operation of the system.

Signed (Owner): _____ Date: _____

F. UTILITY APPROVAL

1. Satisfies OUC Interconnection Requirements
 OUC Representative Name (Print): _____
 OUC Representative Signature: _____ Date: _____

2. Satisfies Code Requirements
 Inspector Name (Print): _____

Inspector Signature: _____ Date: _____

Exhibit A Interconnection Application and Compliance Form For Renewable Generation Systems Up to 2 MW

A. APPLICANT INFORMATION

Name: _____ OUC Account No.: _____
 Mailing Address: _____
 City, State & Zip: _____
 Street Address (if different from above): _____
 City, State & Zip: _____
 Daytime Phone: _____ Fax: _____ Email: _____

B. RENEWABLE GENERATION SYSTEM

System Name/Model: _____
 Gross Power Rating _____ Watts
 List Manufacturer/Model No. for:
Interconnecting Equipment: _____ **Batteries (if applicable):** _____
System Location: _____ **Interconnecting Equipment Location:** _____
 AC Disconnect Location: _____

C. INSTALLATION CONTRACTOR INFORMATION

Installation Contractor Name: _____ FL License No.: _____
 Address: _____
 City, State & Zip: _____
 Daytime Phone: _____ Fax: _____ Email: _____
Proposed Installation Date: _____

D. HARDWARE AND INSTALLATION COMPLIANCE

1. The system hardware **has been submitted by a manufacturer to a nationally recognized testing laboratory (NRTL) to comply with UL 1741, and has been tested and listed by the laboratory for continuous interactive operation with an electric distribution system in compliance with the applicable codes and standards listed in Part B, Subsection 1 of Appendix A.**
2. The system has been installed in compliance with IEEE 1547, Standard for Interconnecting Distributed Resources with Electric Power Systems and the 2005 National Electrical Code (NEC).
3. The system installation has been permitted and passed inspection.

Signed (Contractor): _____ Date: _____
 Name (Print): _____ **Company:** _____ **Permit No.** _____

E. OWNER ACKNOWLEDGEMENT

I have been given system warranty information, and an operation manual. I have read and agree to comply with OUC's Interconnection Requirements attached herein as Appendix A. Also, I have been instructed in the operation of the system.

Signed (Owner): _____ Date: _____

F. UTILITY APPROVAL

1. Satisfies OUC Interconnection Requirements

OUC Representative Name (Print): _____
 OUC Representative Signature: _____ Date: _____

2. Satisfies Code Requirements

Inspector Name (Print): _____
Inspector Signature: _____ **Date:** _____

Appendix A Interconnection Requirements For All Renewable Generation Systems Up to 2 MW

A. Definitions

1. **“Customer-owned renewable generation system” (RGS)** means an electric generating system located on a customer’s premise that is primarily intended to offset part or all of the customer’s electricity requirements with renewable energy. The term “customer-owned renewable generation” does not preclude the customer of record from contracting for the purchase, lease, operation, or maintenance of an on-site renewable generation system with a third-party under terms and conditions that do not include the retail purchase of electricity from the third-party.
 - a. Tier 1 is a system with a rating of 10 kW or less.
 - b. Tier 2 is a system with a rating of greater than 10 kW and less than or equal to 100 kW.
 - c. Tier 3 is a system with a rating of greater than 100 kW and less than or equal to 2 MW.
2. **“Renewable energy”**, as defined in Section 377.803, Florida Statutes, means electrical, mechanical, or thermal energy produced from a method that uses one or more of the following fuels or energy sources: hydrogen, biomass, solar energy, geothermal energy, wind energy, ocean energy, waste heat, or hydroelectric power.
3. Photovoltaic (PV) system is a solar electric generator. The array rating is under standard operating conditions (SOC) of 1000 watts/m² solar irradiance, nominal operating cell temperature, air mass 1.5, and ASTM standard solar spectrum.
4. Inverter, also referred to as a power conditioner, is a dc to ac device that converts PV energy to ac energy for utility interconnection. The inverter contains many control functions, such as voltage and frequency monitoring and protection against islanding.
5. **“Gross Power Rating” (GPR)** means the total manufacturer’s AC nameplate generating capacity of an on-site customer-owned renewable generating system that will be interconnected to and operate in parallel with the utility’s distribution facilities. For inverter-based systems, the AC nameplate generating capacity shall be calculated by multiplying the total installed DC nameplate generating capacity by .85 in order to account for losses during the conversion from DC to AC.

B. Standards and Codes

1. Inverters, PV Modules and Panels

- a. Inverter(s) must be listed and in compliance with Underwriters Laboratories (UL) Subject 1741, Standard for Static Inverters and Charge Controllers for Use in Photovoltaic Systems. Utility-interactive inverters that pass the tests of the UL 1741 standard will be, by definition, “non-islanding” inverters and will comply with the IEEE 1547-2003 interconnection standard.
- b. **Multiple inverter units. For multiple inverter units, verification that the photovoltaic system ceases to energize within 0.16 seconds (per IEEE 1547-2003), upon loss of sensed voltage, is required. This is verified with on-site testing.**

- c. PV modules and panels must be listed and be in compliance with Underwriters Laboratories (UL) Standard 1703, Standard for Safety: Flat-Plate Photovoltaic Modules and Panels.
 - d. PV modules must be in compliance with IEEE Standard 1262-1995, IEEE Recommended Practice for Qualification of Photovoltaic (PV) Modules (or, equivalently, IEC 61215).
2. System Installation. **Customer certifies that the RGS installed shall be in compliance with the following standards:**
 - a. **IEEE-1547 (2003) Standard for Interconnecting Distributed Resources with Electric Power Systems**
 - b. **IEEE-1547.1 (2005) Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems**
 - c. **UL-1741 (2005) Inverters, Converters, Controllers and Interconnection System Equipment for use with Distributed Energy Resources**
 - d. **2005 National Electric Code, all relevant articles (or subsequent revisions) and local building codes**
3. GPR
 - a. **The GPR shall not exceed 90% of the Customer's utility distribution service rating at the Customer's location. If the GPR does exceed that 90% limit, the Customer shall be responsible to pay the cost of upgrades for that distribution service to accommodate the GPR capacity and ensure the 90% threshold is not breached.**
 - b. **It is the Customer's responsibility to notify OUC of any change to the GPR by submitting a new Interconnection Application and Compliance Form specifying the modifications at least 30 days prior to making the modifications.**
4. OUC Inspection and Approval.
 - a. **Customer shall have the installed RGS inspected and approved by the appropriate local code authorities having jurisdiction. OUC reserves the right to require the Customer to provide proof of this inspection and approval.**
 - b. **Prior to operation, OUC reserves the right to inspect the RGS installation to ensure compliance with the standards and codes noted in the previous sections. If OUC chooses to exercise this option, it agrees to inspect and, if the system is in compliance, provide written approval of the interconnection (using the Interconnection **Application and Compliance Form**) within ten working days following the request for inspection and approval. Parallel operation of the RGS with the grid shall not begin without the approval of OUC. The customer must notify OUC of any modifications at least 30 days prior to making the modifications.**
5. **Islanding. The Customer shall not energize OUC's system when it is de-energized. The Customer shall cease to energize OUC's system during a faulted condition on OUC's system. The Customer shall cease to energize OUC's system prior to the automatic or non-automatic reclosing of OUC's protective device(s). There shall be no intentional islanding, as described in IEEE 1547, between the Customer's and OUC's systems.**

6. Extreme Conditions. OUC reserves the right to refuse to accept electric power from the PV system under extreme conditions as described below. If OUC chooses to exercise this option, which may involve physically disconnecting from the PV system, it agrees to notify the Customer when such conditions exist or are anticipated, and to reconnect when the adverse conditions no longer exist. Examples of conditions that may lead to disconnection include:
 - a. OUC system emergencies and/or maintenance requirements,
 - b. Hazardous conditions existing on the **RGS** or its protective equipment,
 - c. Adverse effects of the **RGS** operation on other OUC customers, or
 - d. Failure of the **RGS** complying with regulations, rules, orders or decisions of any government or regulatory authority having jurisdiction over the generating equipment or operation.
7. External Disconnect Switch.
 - a. **For Tier 1 RGS OUC recommends, but does not require, an isolation device (manual disconnect switch). However, without an isolation device, (should there be a need to isolate the RGS) OUC will remove the meter, resulting in loss of utility distribution service.**
 - b. **For Tier 2 and Tier 3 RGS, OUC reserves the right to require an isolation device per IEEE 1547-2003. The isolation device shall be a manual disconnect switch of the visible load break type that is both visible and accessible by OUC personnel. The isolation device shall be located separate from, but adjacent to, the meter base.**
8. Testing of Protective Relays. OUC reserves the right to review periodic test reports as required per IEEE 1547-2003.
9. Insurance.
 - a. **Tier 1 RGS, OUC recommends that the Customer maintain an appropriate level of general liability insurance for personal injury and property damage.**
 - b. **Tier 2 RGS. The Customer shall maintain general liability insurance for personal injury and property damage for not less than one million dollars (\$1,000,000). The Customer shall provide initial proof of insurance or sufficient guarantee and proof of self-insurance, evidencing the Customer's insurance as a covered addition to the Customer's insured property. For residential customers with systems between 10 kW and 20 kW, OUC recommends that the customer maintains an appropriate level of general liability insurance for personal injury and property damage.**
 - c. **Tier 3 RGS. The Customer shall maintain general liability insurance for personal injury and property damage for not less than two million dollars (\$2,000,000). The Customer shall provide initial proof of insurance or sufficient guarantee and proof of self-insurance, evidencing the Customer's insurance as a covered addition to the Customer's insured property.**

- 10. RGS Equipment Protection.** It is the responsibility of the Customer to protect its generating equipment, inverters, protection devices, and other system components from damage by the normal conditions and operations that occur on the part of OUC in delivering and restoring system power. **The customer is also responsible for ensuring that its RGS equipment is inspected, maintained and tested regularly in accordance with the manufacturer's instructions to ensure that it is operating correctly and safely.**
- 11. Isolation Transformer.** **RGS** greater than 20 kW must be interconnected to OUC's system through an isolation transformer (other than **RGS** owner, no other OUC customer is to be served from this transformer).
- 12. Transfer Trip and Reclose Blocking.** **For Tier 2 and Tier 3 RGS** where the aggregate generation capacity exceeds 15% of the peak load on any automatic reclosing device, OUC requires transfer trip and reclose-blocking on automatic reclosing devices.
- 13. System Study.** **RGS** greater than **100 kW** may require a system study. Additional protective devices may be required, as specified in the OUC "Guide for Producer-Owned Generating Interconnections".