



## **Information Packet Kissimmee Utility Authority Customer-Owned Renewable Generation Interconnection And Net Metering Program**

As part of our commitment to support renewable energy, Kissimmee Utility Authority is now offering a Net Metering Program for Customer-Owned Renewable Generation Systems (RGS).

The primary goal of the Net Metering Program is to promote the use of renewable generation installed at the Customer's site to offset part or all of the Customer's electric needs. Any excess energy generated by the RGS and not used by the Customer can be delivered to the KUA electric system and sold to KUA.

### **How does the program work?**

The Customer selects and installs a Renewable Generation System (RGS) at the Customer's site. The RGS is sized to supply all or part of the Customer's power needs. When the output of the RGS exceeds the power needed by the Customer, the excess energy is delivered to the KUA electric distribution system and KUA will purchase the excess energy from the Customer.

This information packet is provided to help the Customer understand and navigate through the process of signing up for KUA's Customer-Owned Renewable Generation and Net Metering Program. The packet includes the following:

- Program Guidelines
- Customer Interconnection and Net Metering Checklist
- Applications for Interconnection of Customer-Owned Renewable Generation Systems
- KUA Net Metering Tariff Sheet
- Tri-Party Net Metering Power Purchase Agreement
- Tier 1 Standard Interconnection Agreement for Customer-Owned Renewable Generation System
- Tier 2 Standard Interconnection Agreement for Customer-Owned Renewable Generation System
- Tier 3 Standard Interconnection Agreement for Customer-Owned Renewable Generation System
- Frequently Asked Questions



## **Program Guidelines Kissimmee Utility Authority Customer-Owned Renewable Generation Interconnection And Net Metering Program**

### **Availability**

The Program is available to any customer on the KUA system.

### **Customer-Owned Renewable Generation Systems**

Customer-Owned Renewable Generation Systems (RGS) are defined as an electric generating system located on a Customer's site that is intended to offset part or all of a Customer's electricity requirements with renewable energy. Renewable energy as defined in Section 377.803, Florida Statutes, means 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. The term Customer-Owned Renewable Generation does not preclude the Customer from contracting for the purchase, lease, operation, or maintenance of an on-site renewable generation system with a third party. Lease terms shall not result in the retail purchase or retail sale of electricity from the RGS.

### **RGS Size Limitations**

1. The Gross Power Rating (GPR) of the system means the total manufacturer's AC nameplate generating capacity of the RGS that will be interconnected to and operated in parallel with KUA's distribution system. For inverter-based systems, the AC nameplate generating capacity shall be calculated by multiplying the total installed DC nameplate generating capacity by 0.85 to account for losses during the conversion from DC to AC.
2. The GPR shall not exceed 90 percent (%) of the Customer's electric distribution service rating. If the GPR does exceed the 90percent (%) limit, the Customer shall be responsible for all costs associated with upgrading the distribution service to ensure the 90% limit is not exceeded.
3. This program is on a first-offered, first-accepted basis and is subject to diminution and/or rejection by KUA in the event that the total amount of electricity delivered to KUA from all participating KUA Customers exceeds 2.5 percent (%) of the aggregate Customer peak demand on KUA's electric system.
4. This Program is applicable to Customer-Owned RGS with a GPR up to and including 2000 kW (2 megawatts). In no case shall and RGS system with a GPR greater than 2 megawatts be allowed to interconnect with the KUA system under this program.

### **RGS Tiers**

The Program is divided into three (3) tiers according to system size.



- Tier 1 – A system with a GPR rating of 10 kW or less.
- Tier 2 – A system with a GPR rating greater than 10 kW and less than or equal to 100 kW.
- Tier 3 – A system with a GPR rating greater than 100 kW and less than or equal to 2 MW.

There are different requirements for each of the three tiers. The Customer will be required to enter into a Standard Interconnection Agreement for the applicable tier.

### **Fees Charged By KUA**

1. Tier 1 RGS - KUA does not charge an application fee.
2. Tier 2 RGS - There is a non-refundable application fee of \$320.
3. Tier 3 RGS - There is a non-refundable application fee of \$470. A deposit of \$2,500 is also required to be paid in addition to the \$470 application fee. This deposit will be applied toward the cost of an interconnection study (Study) if required. The Study is required to determine the impact of a large RGS being interconnected to the KUA electric distribution system. The Customer shall be responsible for the actual cost to perform the Study. However, the Customer's cost for the Study shall not exceed \$2,500. Should the actual cost of the Study be less than \$2,500, the Customer will be refunded the difference.
4. There is no charge to the Customer for the installation of metering required to measure the energy delivered to the Customer and the excess energy delivered by the RGS to the KUA system.

### **Islanding**

For safety reasons the Customer's RGS shall not energize KUA's system when the KUA system is de-energized at the Customer's service point. There shall be no intentional islanding, as described in the Institute of Electric and Electronic Engineers (IEEE) Standard 1547, between the Customer's RGS and the KUA system.

### **External Disconnect Switch**

1. For a Tier 1 RGS KUA typically does not require a manual disconnect switch. However, KUA does reserve the right to require (at KUA's expense) the installation of a manual disconnect switch of the visible load break type. Without a disconnect switch, should there be a need to visibly isolate the RGS, KUA will remove the Customer's meter, resulting in a loss of KUA electric service.
2. For Tier 2 and Tier 3 RGS, KUA requires an isolation device per IEEE 1547.2003. The isolation device shall be a manual disconnect switch of the visible load break type. The switch must be visible and accessible to KUA personnel. The device shall be located



adjacent to, but separate from, the meter. The switch must be capable of being locked in the open position with a KUA lock.

## Standards, Codes and Inspections

### 1. Inverters

For inverter based systems, the inverter must be listed and in compliance with Underwriters Laboratory (UL) 1741, Standard for Static Inverters and Charge Controllers for Use in Photovoltaic Systems. Utility-interactive inverters that pass the tests of UL 1741 will be considered as non-islanding inverters and will comply with the IEEE 1547.2003 interconnection standard.

### 2. System Installations.

The Customer certifies and must submit documentation that the RGS 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. The applicable National Electric Code, state and/or local building codes, mechanical codes and electrical codes.
- e. The manufacturer's installation, operation and maintenance instructions.

### 3. Inspections

- a. The Customer must have the RGS installation inspected and approved by the local building code authority having jurisdiction. Proof of the inspection and approval must be provided prior to KUA installing the net metering equipment.
- b. KUA reserves the right to inspect the RGS installation prior to parallel operation with the KUA system. The inspection is to ensure compliance with the standards, terms and conditions of the Net Metering and Renewable Generation Interconnection agreements.
- c. In no case shall RGS be operated in parallel with the KUA system without approval of KUA.
- d. The Customer is responsible for ensuring that the RGS is inspected, maintained and tested regularly in accordance with the manufacturer's recommendations to ensure proper and safe operation.



- e. KUA will not inspect, maintain or advise the Customer on the maintenance or operation of the RGS other than ensuring proper interconnection operation with KUA's system.

## **Insurance**

1. Tier 1 RGS – KUA does not require specific insurance coverage. However, it is strongly encouraged that the Customer maintain general liability insurance for personal injury and property damage for not less than one hundred thousand dollars (\$100,000).
2. Tier 2 RGS – KUA requires the Customer to maintain general liability insurance for personal injury and property damage for not less than one million dollars (\$1,000,000). The Customer shall provide sufficient proof of the required coverage.
3. Tier 3 RGS – KUA requires the Customer to maintain general liability insurance for personal injury and property damage for not less than two million dollars (\$2,000,000). The Customer shall provide sufficient proof of the required coverage.

## **Billing and Purchase of Excess Renewable Generation**

1. After the Customer's RGS has been fully inspected and approved for operation, KUA will install the appropriate electric metering equipment. The metering will measure the energy delivered to the Customer by KUA and any excess energy delivered to the KUA system by the Customer's RGS.
2. Each billing cycle, the Customer will be billed for the total amount of electricity delivered to the Customer by KUA in accordance with the applicable rate schedule.
3. Each billing cycle the total amount of excess energy (kWh) delivered by the Customer's RGS to the KUA system will be credited to the Customer's bill. The credit will be calculated by multiplying the total excess energy (kWh) delivered times the applicable Florida Municipal Power Agency (FMPA) quarterly energy rate as defined in the Tri-Party Net Metering Power Purchase Agreement and KUA's Net Metering Tariff NM-1 as filed with the Florida Public Service Commission (FPSC).

In addition, a demand credit will be given to recognize the customer's contribution to a reduction in KUA's billed coincident peak. It is determined using an average load factor for residential customers applied towards the kWh returned to the grid to estimate the associated demand. This demand returned is credited at the KUA's invoiced demand rate and is also credited on the customer's subsequent bill.

4. In any given billing cycle, should the credit for excess energy be greater than the total billed amount for electricity delivered by KUA, the excess credit will be applied to the Customer's next month's bill.



5. Any excess credits on the Customer's bill will accumulate and be used to offset the Customer's bill for a period of not more than twelve (12) months. At the end of each calendar year, the Customer will be paid for any unused excess energy credits.
6. Regardless of whether any excess energy is delivered to KUA's system, the Customer will be required to pay the greater of:
  - a. The minimum charge as stated in the Customer's applicable rate schedule, or
  - b. The applicable customer charge plus the applicable demand charge for the maximum measure demand during the billing period in accordance with the applicable rate schedule.

### **Application Process for New Systems**

1. The first step is for the Customer to submit a *KUA Application for Interconnection of Customer-Owned Renewable Generation Systems*. The Application should include the appropriate technical information and application fees.
2. Once the Application has been approved, the Customer will then be required to sign a *Standard Interconnection Agreement for Customer-Owned Renewable Generation System* with KUA for the applicable Tier level. Subject to receipt of a completed application, all required technical information and all applicable fees, KUA will execute and return the Interconnection Agreement within thirty (30) days of receipt of the aforementioned requirements. The Interconnection agreement must be returned to KUA at least thirty (30) days prior to desired date of beginning parallel operations with the KUA system.
3. The Customer will also be required to sign a *Tri-Party Net Metering Power Purchase Agreement* between the Customer, KUA and FMPA.
4. Once all required documentation, fees, applicable agreements, inspection approvals and the Interconnection Study for Tier 3 systems have been received, KUA will notify the Customer within fifteen (15) business days that the RGS has been approved and parallel operation can begin. KUA will then schedule to install the required net metering equipment.

### **Application Process for Customers Purchasing Property with Previously Approved Systems**

1. The first step is for the Customer is to submit a *KUA New Owner Application for Customer-Owned Renewable Generation Systems and schedule an inspection with KUA*.
2. The Customer will also be required to sign a *Tri-Party Net Metering Power Purchase Agreement* between the Customer, KUA and FMPA.
3. Once all required documentation, applicable agreements, and inspection approvals are completed, KUA will begin assessing the appropriate credits to the customer bill.



## Additional Information

For additional information on KUA's Net Metering Program for Customer-Owned Renewable Generation Systems please visit KUA's web site at the following link <http://kua.com/Rates/> and scroll down for the forms, contact KUA's Conservation Division at 407-933-7777, or email us at [netmetering@kua.com](mailto:netmetering@kua.com).

## Frequently Asked Questions Kissimmee Utility Authority Customer-Owned Renewable Generation Interconnection And Net Metering Program

1. [What is Renewable Generation?](#)
2. [How does Net Metering Work?](#)
3. [How much does it cost to participate in the Net Metering Program?](#)
4. [How is the Excess Renewable Generation purchased by KUA?](#)
5. [How much energy should a system produce?](#)
6. [Why does KUA charge more for electricity it provides than what they pay for excess customer-owned generation sold to KUA?](#)
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9. [Can KUA tell me how much total electricity my system produces?](#)
10. [Will a renewable generation system provide me electricity when KUA's system experiences a power outage?](#)
11. [How do I get started in the Program?](#)
12. [What documents are necessary to participate in the Program?](#)
13. [Where can I find additional information about Net Metering?](#)

1. What is Renewable Generation?

A renewable generation system is an electric generating system that uses one of more of the following fuels or energy sources:

- Hydrogen
- Biomass (landfill gas or methane)
- Solar energy (photovoltaic)
- Geothermal energy
- Wind energy
- Ocean energy (tidal power or ocean currents)
- Waste heat
- Hydroelectric

2. How does Net Metering Work?

Once a customer-owned renewable generation system is fully approved for operation, KUA will install a special meter at the customer's location. This meter will separately measure the flow of electricity both (1) from KUA to the Customer; and (2) excess energy generated by the renewable generation system and delivered to KUA's distribution system

3. How much does it cost to participate in the Net Metering Program?



The customer is responsible for all costs associated with installing the customer-owned generation system on the customer's side. Depending on the size of the installation, the customer may also be responsible for certain fees payable to KUA. For a Tier 1 system (less than 10 kW) there are no additional KUA fees. For a Tier 2 system (greater than 10 kW and less than or equal to 100 kW) KUA charges an application fee of \$320. For Tier 3 systems (greater than 100 kW and less than or equal to 2 MW) KUA charges an application fee of \$470 and a deposit of \$2,500 to cover the cost of an interconnection study. Also, depending on the size of the system, the customer may be required to carry minimum insurance coverage. All of the fees and insurance requirements are explained in the program documents.

4. How is the Excess Renewable Generation purchased by KUA?

Each month KUA will bill the Customer for the total amount of electricity delivered to the Customer by KUA in accordance with the Customer's applicable rate schedule. Any energy (kWh) from the renewable generation system not used to serve the Customer's load and delivered to the KUA system will be considered Excess Renewable Generation. The amount of Excess Renewable Generation will be multiplied by the Net Metering rate and credited to the Customer's bill. In addition, a demand credit will be given to recognize the customer's contribution to a reduction in KUA's billed coincident peak. It is determined using an average load factor for residential customers applied towards the kWh returned to the grid to estimate the associated demand. This demand returned is credited at the KUA's invoiced demand rate.

For any given month, if the total credit amount for Excess Renewable Generation exceeds the total billed amount for electricity delivered by KUA, the excess credit will be applied to the Customer's next month's bill.

5. How much energy should a system produce?

The amount of energy a system will produce is dependent on a number of factors. However, a handy tool called the PVWATTS solar calculator (see link below) can calculate the approximate output of a system in Florida. Using the PVWATTS calculator, a well-designed and maintained photovoltaic system in Florida could generate approximately 1,500 kilowatt-hours (kWh) per year for each kW installed. For example, a 5 kW system could generate approximately 7,500 kWh per year.

6. Why does KUA charge more for electricity they provide than what they pay for excess customer-owned generation sold to KUA?

KUA's rate for energy is made up of various different components. Two of the primary components are the cost to produce the energy and the cost of the system to deliver the energy (the delivery system). The cost to produce the energy is the cost KUA pays to FMPA as reflected in the ARP energy rate. The cost of the delivery system includes the cost to install and maintain the transmission and distribution facilities (i.e. the poles, wires, transformers, meters, etc.). When the customer generates excess energy and delivers it to the KUA system, KUA does not have to pay for the cost to produce this energy. This is sometimes called avoided cost. However, there is still a cost associated with delivering the energy to the customer.

7. What is FMPA and why do I have to sign a Tri-Party Agreement with them?

The Florida Municipal Power Agency (FMPA) is an Orlando-based wholesale power agency owned by the municipal electric utilities it serves. FMPA is the exclusive wholesale electricity supplier to KUA and fourteen other Florida municipal electric utilities. Any excess renewable





generation purchased from the customer is actually purchased by FMPA and used to provide wholesale power to the member cities.

8. How will I know how much electricity I sold back to KUA?

KUA's metering will measure the amount of excess energy that the renewable generation system delivers to the KUA distribution system. This will be clearly displayed on your monthly bill.

9. Can KUA tell me how much total electricity my system produces?

KUA's metering will only measure the amount of excess energy the renewable generation system delivers to the KUA distribution system. Typically the customer-owned inverter will record the total amount of energy the system produces.

10. Will a renewable generation system provide me electricity when KUA's system experiences a power outage?

Renewable generation systems without battery systems cannot be used as a power source during a KUA power outage. The customer-owned renewable generation system must be designed to disconnect from the KUA system any time KUA experiences a loss of power at the customer's location. This is required to prevent the dangerous situation of the customer's system "feeding back" onto the KUA system. This would pose a danger to KUA employees working on the KUA system.

11. How do I get started in the Program?

KUA strongly suggests that anyone interested in the Net Metering program carefully review all of the Program documents prior to making a decision to purchase a renewable generation system with the intent to interconnect to the KUA system. The next step would be to select a system that best suits your household and choose a qualified contractor to perform the installation. KUA also strongly suggests that the Customer submit the required applications documents to KUA prior to purchasing a system.

12. What documents are necessary to participate in the Net Metering Program?

KUA requires anyone participating in the Net Metering to submit the following documents:

- Application for Interconnection (or New Owner Application if property is sold with previously approved system)
- Standard Interconnection Agreement for Customer-Owned Renewable Generation
- Tri-Party Net Metering Power Purchase Agreement

In addition to the above documents, technical information on the proposed Renewable Generation System must be submitted for review by KUA. These requirements are detailed in the Program documents. For Tier 1 and Tier 2 systems, proof of minimum insurance coverage may also be required.

13. Where can I find additional information about Renewable Energy and Net Metering?

Additional information can be found at the following Web sites:

- [Florida Solar Energy Center \(FSEC\)](#)
- [Florida Public Service Commission: The Florida Public Service Commission provides information on net metering as well as regulations associated with the electric utility](#)



[industry. Municipal electric utilities are not subject to PSC rules on net metering. Instead, each municipal utility adopts its own net metering and interconnection policies.](#)

- [Database of State Incentives for Renewables & Efficiency \(DSIRE\)](#); DSIRE provides a summary of Florida’s net metering incentives, rules and regulations.
- [Florida Solar Energy Industries Association](#)
- [PV Watts Solar Calculator](#)

**Customer Checklist  
Kissimmee Utility Authority  
Customer-Owned Renewable Generation Interconnection  
And Net Metering Program**

Step	Action	Completed
<b>Prepare</b>		
1.	<b>Review Information:</b> Net metering information is available on the utility’s Web site or upon request from the utility. In particular, carefully review the agreements necessary to participate in net metering.	<input type="checkbox"/>
2.	<b>Research Generation:</b> Conduct research on renewable generation, if it has not already been installed, that best suits your household and choose a contractor to install it. Solar photovoltaic generation should be installed by a licensed Certified Solar Contractor.	<input type="checkbox"/>
<b>Apply</b>		
3.	<b>Complete Application:</b> Complete the “Application for Interconnection” and submit it to KUA.	<input type="checkbox"/>
4.	<b>Submit Application Fee:</b> Customers applying for a Tier 2 RGS must submit application fee of \$320. For Tier 3 RGS Customer must submit an application fee of \$470 and a deposit for an Interconnection Study of \$2,500.	<input type="checkbox"/>
5.	<b>Approval to Proceed:</b> Please wait for the KUA to approve your application before proceeding.	<input type="checkbox"/>
<b>Install</b>		
6.	<b>Install System:</b> Once KUA has approved the application, the Customer may proceed with the installation. It is the Customer’s responsibility to obtain all necessary permits for the installation from the local code department.	<input type="checkbox"/>



**Customer Checklist  
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And Net Metering Program**

<b>Activate</b>		
7.	<p><b>Execute Agreements:</b> You must review and sign two agreements for interconnection and net-metering and return them to KUA for execution. These documents are:</p> <ul style="list-style-type: none"> <li>• Standard Interconnection Agreement for Customer-Owned Renewable Generation</li> <li>• Tri-Party Net Metering Power Purchase Agreement</li> </ul>	<input type="checkbox"/>
8.	<p><b>Approval to Activate:</b> Once all agreements have been approved and the system has been inspected, KUA will provide written notice that operation of the system may begin.</p>	<input type="checkbox"/>
9.	<p><b>Activation Notification:</b> You must provide KUA with written notification of the date and time you plan to place the system in service. Notification must be submitted at least 10 business days prior to activation. KUA may require utility personnel to be present for activation.</p>	<input type="checkbox"/>
<b>Ongoing Requirements</b>		
10.	<p><b>Change Notification:</b> Some changes to your system will require you to notify the KUA:</p> <ul style="list-style-type: none"> <li>• If you plan any modifications to your system that change its gross power rating, you must notify KUA utility at least 30 days before the work is performed.</li> <li>• If there is a change in ownership of the system, you must notify KUA in advance of the change of ownership, and the new owner must execute a New Owner Application with KUA and a Tri-Party agreement.</li> </ul>	