

TOWN OF AYDEN ELECTRIC UTILITIES
Ayden, North Carolina

Renewable Energy Facilities Credit Rider
(Schedule REF-1)

AVAILABILITY

This Rider is available for a bi-lateral metering arrangement, in conjunction with service under the Town of Ayden Electric Utilities all applicable Rate Schedules, to customers who operate photovoltaic generating systems, without battery storage, located and utilized at the customer's primary residence or business where a part or all of the electrical requirements of the customer can be supplied from the customer's generating system. The rate capacity of the generating system shall not exceed 10 kilowatts for a residential system or 100 kilowatts for a non-residential system. The generating system that is in parallel operation with service from the Town of Ayden and located on the customer's premises must be manufactured, installed, and operated in accordance with all governmental and industry standards, in accordance with all requirements of the local code official, and fully conform with the Town of Ayden's applicable renewable energy interconnection interface criteria.

This Rider is available on a first come, first serve basis, and requires approval on a case by case basis from Progress Energy of the Carolinas.

MONTHLY CHARGE

Base Charge: \$9.00
(charge for reading bi-lateral meter)

MONTHLY CREDIT

Energy Credit:

Kilowatt hours generated	\$0.04870
<i>(shown on bill as negative charge)</i>	

CONTRACT PERIOD

Service will be provided under this schedule only after a service agreement is executed including special terms and conditions for the customer's requirements, if any, satisfactory to the Town of Ayden.

GENERAL

Service rendered under this schedule is subject to the provisions of the service regulations of the Town of Ayden contained in the town Code of Ordinances.

Meters are read in units of kWh and credits rendered accordingly.

SPECIAL CONDITIONS

The customer must complete applicable alternative energy interconnection request (Application) and submit same to the Town of Ayden prior to receiving service under this Rider. A non-refundable interconnection fee of \$35.00 will be assessed and must be paid prior to receiving service under this Rider.

The customer's service shall be metered with two meters, one of which measures all energy provided by the Town of Ayden and used by the customer, and the other measures the amount of energy generated by the customer's alternative energy generator.

In the event the Town of Ayden determines that it is necessary to install a dedicated transformer or other equipment to protect the safety and adequacy of electric service provided to other customers, the customer shall pay a Monthly Facilities Charge of 2.0% of the total installed cost of the additional facilities. The Monthly Facilities Charge shall not be less than \$25.00.

The Town of Ayden reserves the right to test the customer's alternative energy generator for compliance with the applicable interface criteria. Should it be determined that the customer's installation is in violation, the Town of Ayden will disconnect the alternative energy generator from the Town of Ayden's distribution system and it will remain disconnected until the installation is brought back into compliance.

In the event of a change in property ownership, a non-refundable processing fee of \$25.00 will be charged to the customer.

EFFECTIVE DATE

This Rider is effective immediately upon adoption by the Town of Ayden Board of Commissioners.

NC GREENPOWER

Customers with qualified systems may apply and may be eligible for NC GreenPower credits. For more information, visit <http://www.ncgreenpower.org>.

Adopted: January 26, 2009

Application ID No. _____
(For TOA Use Only)

TOWN OF AYDEN ELECTRIC UTILITIES
Ayden, North Carolina

Application for
Interconnecting a Certified Photovoltaic Generating Facility

This Application is considered complete when it provides all applicable and correct information required below. Additional information to evaluate the Application may be required.

Processing Fee

A non-refundable interconnection fee of \$35 must accompany this Application.

Interconnection Customer

Name: _____

Contact Person: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone (Day): _____ (Evening): _____

Fax: _____ E-mail Address: _____

Contact (if different from Interconnection Customer)

Name: _____

Contact Person: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone (Day): _____ (Evening): _____

Fax: _____ E-mail Address: _____

Owner of the facility: _____

Application ID No. _____
(For TOA Use Only)

Small Generating Facility Information

Location (If different from above): _____

Electric Service By: _____ Town of Ayden Utilities _____

Account Number: _____ (If Existing Customer)

Inverter Manufacturer: _____ Model: _____

Nameplate Rating: _____ kW _____ kVA _____ AC Volts

Single Phase Three Phase

System Design Capacity: _____ kW _____ kVA

Prime Mover: Photovoltaic Fuel Cell Turbine

Other (describe) _____

Energy Source: Solar

Other (describe) _____

Is the equipment UL1741 listed? Yes No

If Yes, attach manufacturer's cut sheet showing UL1741 listing.

Estimated Installation Date: _____

Estimated In-Service Date: _____

List components of the Photovoltaic Generating Facility equipment package that are currently certified:

<u>Equipment Type</u>	<u>Certifying Entity</u>
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____

Application ID No. _____
(For TOA Use Only)

Interconnection Customer Signature

I hereby certify that, to the best of my knowledge, the information provided in this Application is true. I agree to abide by the Terms and Conditions for Interconnecting an Inverter-Based Photovoltaic Generating Facility No Larger than 10 kW and return the Certificate of Completion when the Small Generating Facility has been installed.

Signed: _____ Date: _____

Title: _____

Contingent Approval to Interconnect the Small Generating Facility (For TOA Use Only)

Interconnection of the Small Generating Facility is approved contingent upon the Terms and Conditions for Interconnecting an Inverter-Based Photovoltaic Generating Facility No Larger than 10 kW and return of the Certificate of Completion.

Town of Ayden Signature: _____

Title: _____ Date: _____

Application ID Number: _____

TOA waives inspection/witness test? Yes No

- Attachment 1 – Photovoltaic Interface Criteria
- Attachment 2 – Physical Arrangement of Metering and Disconnect
- Attachment 3 – Single-Line Diagram for Interconnection of Photovoltaic Generation System Less than 10 kW Capacity
- Attachment 4 – Meter Base Labeling Diagram
- Attachment 5 – Certificate of Completion
- Attachment 6 – Town of Ayden Electric Utilities Photovoltaic Generation Service Rider

TOWN OF AYDEN ELECTRIC UTILITIES
Ayden, North Carolina

Application Procedures and Check List for Interconnecting
a Certified Photovoltaic Generating Facility

(Items listed may not be in sequential order)

- The Customer completes the Interconnection Request ("Application") and submits it to the Town of Ayden Billing and Collections office at Town Hall along with non-refundable interconnection fee.
- The Town of Ayden acknowledges to the customer, receipt of the Application.
- Customer submits Small Solar PV Application to NC GreenPower.
- Customer receives agreement from NC GreenPower.
- Customer submits Application for a Certificate of Public Convenience and Necessity to the North Carolina Utilities Commission (NCUC).
- Customer receives approval from the NCUC.
- Customer submits FERC 556 Filing to the Federal Energy Regulatory Commission (FERC).
- Customer receives approval from the FERC.
- Town of Ayden evaluates the Application for the completeness and notifies the customer that the Application is or is not complete and, if not advises what material is missing.
- Town of Ayden verifies that that Photovoltaic Generating Facility (PGF) can be interconnected safely and reliably. Unless the Town of Ayden determines and demonstrates that the PGF cannot be interconnected safely and reliably, the Town of Ayden approves the Application and returns it to the customer.
- After installation, the customer returns the Certificate of Completion to the Town of Ayden prior to parallel operation, the Town of Ayden may inspect the PGF for compliance with standards which may include a witness test, and may schedule appropriate metering replacement, if necessary.

- Town of Ayden notifies the customer in writing that interconnection of the PGF is authorized. If the witness test is not satisfactory, the Town of Ayden has the right to disconnect the PGF. The customer shall not operate the unit in parallel until a witness test has been performed or previously waived on the Application.
- Contact Information – The customer must provide the contact information for the legal applicant (i.e. the Interconnection Customer). If another entity is responsible for interfacing with the electric distribution system, that contact information must be provided on the Application.
- Ownership Information – Enter the legal names of the owner(s) of the PGF.
- Underwriters Laboratories (UL) 1741 Listed – This standard (“Inverters, Converters, and Controllers for Use in Independent Power Systems”) addresses the electrical interconnection design of various forms of generating equipment. Many manufacturers submit their equipment to a Nationally Recognized Testing Laboratory (NRTL) that verifies compliance with UL 1741. This listing is then marked on the equipment and supporting documentation. The PGF must be listed and labeled in compliance.
- Insurance Requirements – The customer shall furnish to the Town of Ayden the required Certificate of Insurance naming the Town of Ayden as additional insured prior to interconnection of the system.
- Permits and Electrical Inspections – The customer shall obtain all local permits required for wiring modifications and/or installation of the Photovoltaic Generating System. The local authority having jurisdiction shall perform required inspections and issue approval for connection.

TOWN OF AYDEN ELECTRIC UTILITIES
Ayden, North Carolina

Photovoltaic (PV) Interface Criteria

The Town of Ayden supports the development of renewable resources for generation of electric power. In order to maintain current levels of safety and power quality for the general public, electric system employees and customers certain criteria must be applied to all alternative sources of electric power. Specific criteria applying to photovoltaic solar panel (PV) installations are as follows:

- All PV installations must be connected to the Town of Ayden's electric system through a separate meter with only the PV system connected to the source side of the PV interconnection meter. See attached installation illustration and single-line diagram.
- All PV equipment must comply with the requirements of and be labeled under Underwriters Laboratories Standard 1741 "Inverters, Converters, Controllers, and Interconnection Systems Equipment for Use with Distributed Energy Resources."
- All PV installations must comply with IEEE Standard 929 "IEEE Recommended Practice for Utility Interface of Photovoltaic (PV) Systems."
- All PV systems must comply with IEEE Standard 1547 "IEEE Standard for Interconnecting Distributed Resources with Electric Power Systems."
- All PV systems must comply with IEEE Standard 1547.1 "IEEE Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems."
- All PV installations shall be made in accordance with the National Electrical Code (NFPA 70). Specific compliance with Article 690 and Article 705 is required. Installations shall be inspected and approved by the local authority having jurisdiction.
- All PV installations shall have a service disconnect installed immediately adjacent to the meter for the PV system. The disconnect shall be fully accessible to and operable by the Town of Ayden's personnel at all times. The disconnect shall include provisions for locking in the open position. The disconnect shall be labeled in accordance with NEC 705.10.
- All PV installations are subject to review and testing by the Town of Ayden prior to connection and at subsequent times of their choosing.
- All interconnected PV systems shall be non-islanding. Systems found to produce voltage when disconnected from the electric distribution system will be disconnected without

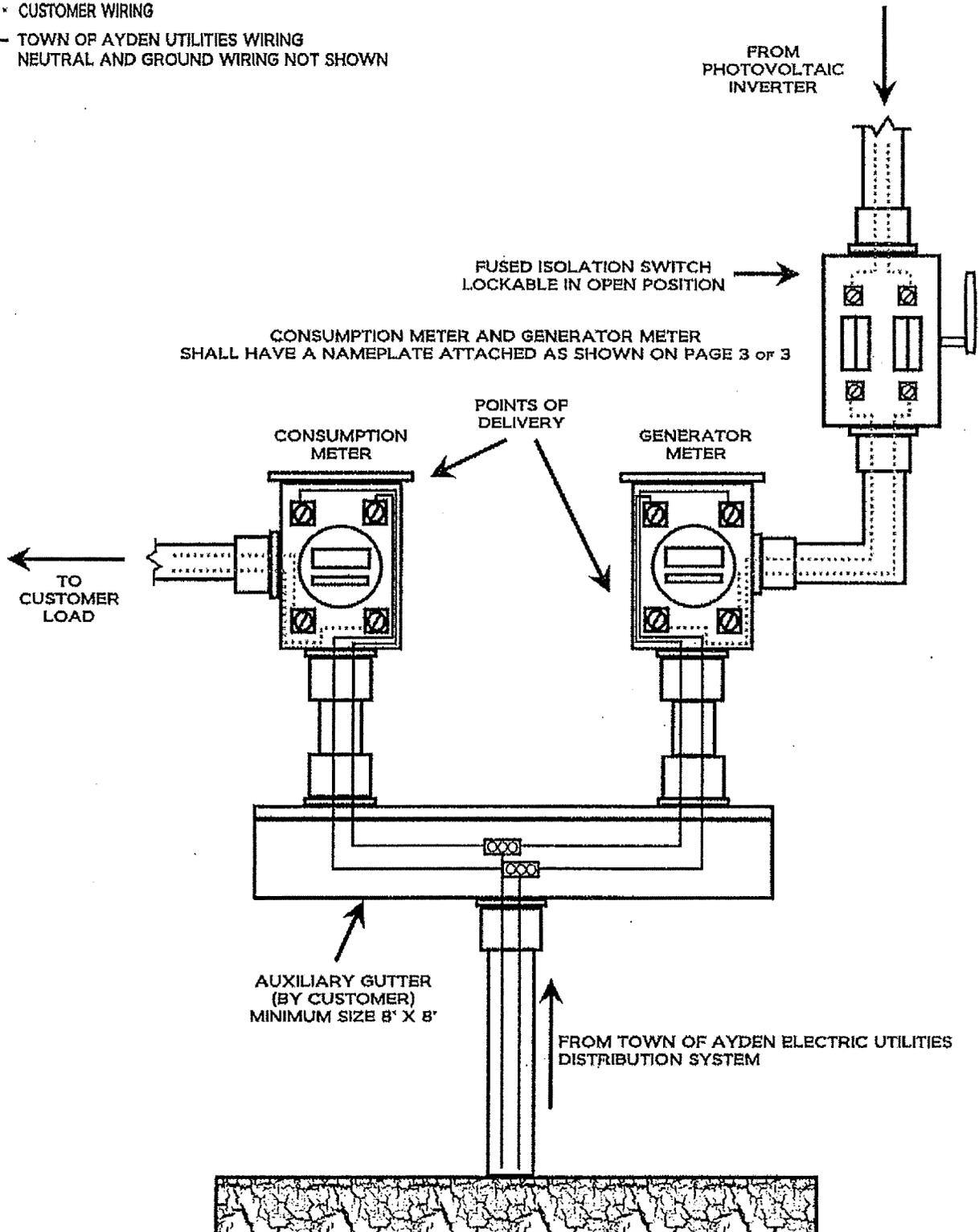
notice and will remain disconnected until installations are brought into compliance with specified standards.

- PV systems shall not interfere with the power quality of any customer of the Town of Ayden's distribution system. PV systems found to interfere with utility industry-accepted power quality standards will be disconnected from the system.
- The Town of Ayden will design and install reasonable and practical modifications to the electric distribution system to allow the interconnection of PV resources which would otherwise interfere with power quality delivered to other connections. In such cases, the PV system owner shall make an advance payment to the Town of Ayden in an amount equal to the cost of the required facility modifications.
- All PV systems shall operate within the range of 0.90 lead to 0.90 lag power factor.
- Residential PV systems shall be limited to 10 kW maximum ac output. Special provision may be negotiated for larger PV installations on an independent connection basis. PV systems larger than 10 kW maximum ac output capacity may require special review, additional testing, and special interconnection facilities.
- Owners of PV systems shall obtain and retain in effect as long as the PV system is interconnected, comprehensive general liability insurance with limits of at least \$100,000 and \$300,000, for residential and non-residential respectively, per occurrence which protects the owner from claims for bodily injury and/or property damage. This insurance shall be primarily for all purposes. The owner shall provide certificates evidencing this coverage as required by the Town of Ayden. The Town of Ayden reserves the right to refuse to establish or to continue the interconnection of the PV system if such insurance is not in effect.

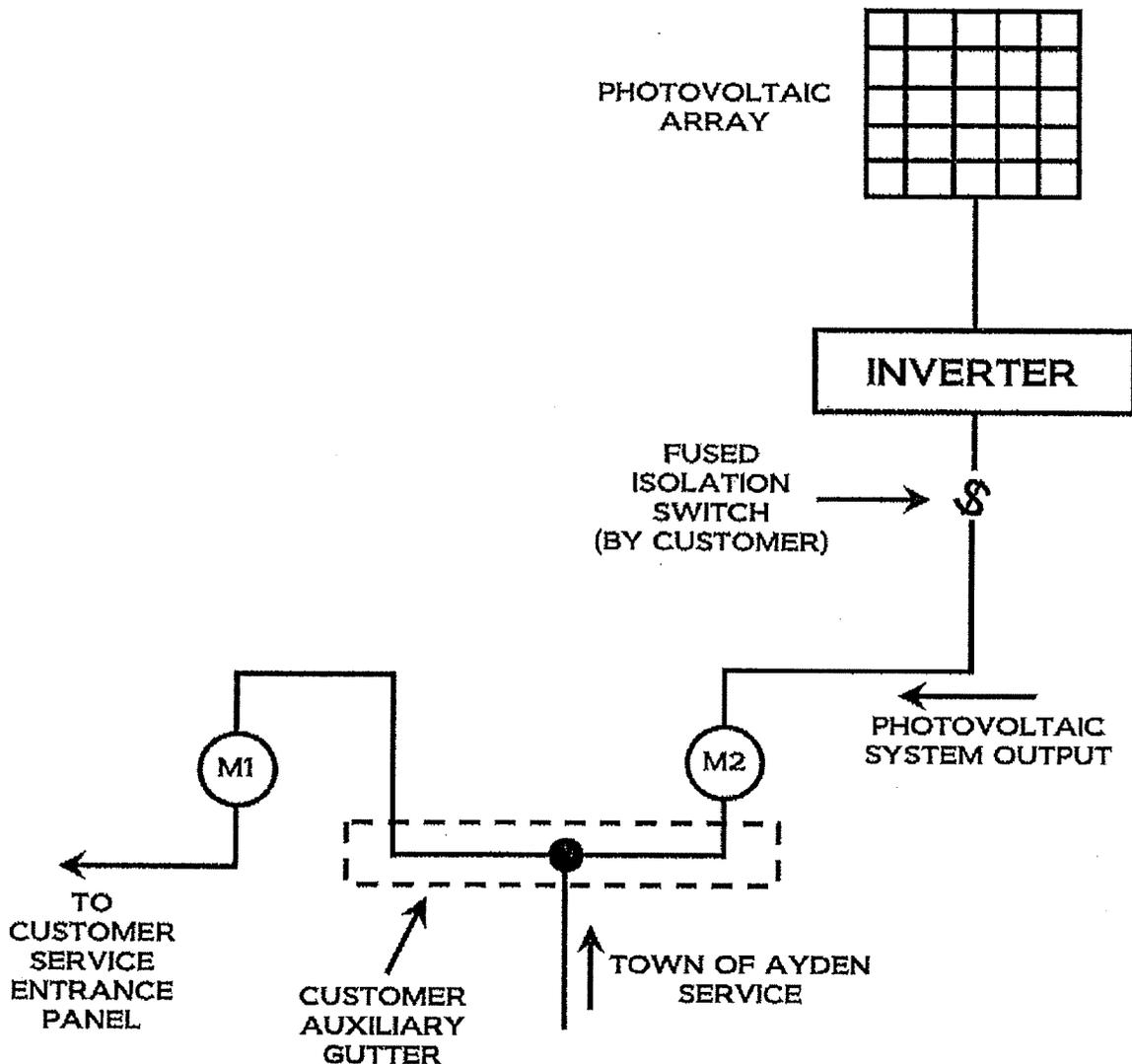
The rules and references cited above represent the state of PV technology in February 2007. Information available subsequent to this writing may result in changes by the Town of Ayden in order to protect the safety of the public and the Town of Ayden's employees; as well as to maintain appropriate levels of power quality for all electric customers.

TOWN OF AYDEN ELECTRIC UTILITIES SOLAR PANEL INTERCONNECTION INSTALLATION PHYSICAL CONNECTION ILLUSTRATION METERING AND DISCONNECT

..... CUSTOMER WIRING
 ——— TOWN OF AYDEN UTILITIES WIRING
 NEUTRAL AND GROUND WIRING NOT SHOWN



TOWN OF AYDEN ELECTRIC UTILITIES SOLAR PANEL INTERCONNECTION INSTALLATION SOLAR PANEL DIAGRAM FOR SYSTEMS LESS THAN 10kW CAPACITY



NOTES:

- 1) CONNECT TOWN SERVICE TO TOP LUGS IN CONSUMPTION BASE AND THE GENERATOR BASE.
- 2) M1 IS THE METER FOR THE RESIDENTIAL SERVICE.
- 3) M2 IS THE METER FOR THE SOLAR PANEL INPUT TO THE SYSTEM.
- 4) INVERTER/ISOLATION SYSTEM TO BE UL 1741 LISTED AND INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NFPA 70).
- 5) THE ISOLATION BY THE CUSTOMER TO BE SIZED PER NATIONAL ELECTRIC CODE MINIMUM SIZE = 100 AMPS. LABEL: "SOLAR PANEL ISOLATION SWITCH". SWITCH SHALL BE LOCKABLE IN THE OPEN POSITION.

TOWN OF AYDEN ELECTRIC UTILITIES SOLAR PANEL INTERCONNECTION INSTALLATION METER BASE LABELING DIAGRAM LESS THAN 10kW CAPACITY

1. MINIMUM TEXT HEIGHT OF 3/8"
2. SIGNAGE SHALL BE MADE OF PLASTIC AND UTILIZE EMBOSSED LETTERING
3. SIGNAGE SHALL BE PERMANENTLY AFFIXED TO METER BASE COVER

