

Tennessee Net Metering Service



Customer Information Package



An **AEP** Company

BOUNDLESS ENERGY™

April 23, 2019

Net Metering is an incentivized program designed to encourage investment in renewable energy. It is available to certain eligible Kingsport Power customers who operate on-site renewable energy generators (such as solar panels) and wish to make some or all of their own electricity. Approved customers are allowed to interconnect their generators with the grid, generally via a breaker in their electric service panel, providing renewable energy to their own electrical loads. Any excess energy is measured at the billing meter and then delivered to the grid. That excess energy is then “banked” for use on future bills to offset billable consumption as described in our Net Metering Service Rider. This is particularly beneficial for solar and wind generation as these are intermittent power sources. Eligible tariffs include Residential Service (RS), Small General Service (SGS), Medium General Service (MGS), or Public Schools (PS).

This package includes our Net Metering Service Rider for Tennessee. Please read this document carefully as it specifies the eligibility requirements as well as the conditions of your electric service while interconnected with us. Of particular importance, please note that the maximum allowed generator size for a residential account is 10 kW AC. In addition to these maximum generator sizes, the capacity of any generator is further limited to an annual energy output no greater than your historical annual consumption. Inverters **must** be UL1741 compliant. A labeled, lockable, load breaking disconnect is required outside near our electric meter so that the renewable fuel generator can be isolated, if necessary. Wind turbines should be located at least 1.5 times their height away from any overhead power lines. An inspection fee of \$50 is required with all applications. You must carry liability insurance while interconnected. Other requirements are specified in the tariff. To obtain documents for systems sized larger than 10 kW AC or non-inverter based systems, or for questions about eligibility, please contact us at apcodgcoordinator@aep.com.

The 2 page notification form (NMIN-T) is also included in the package. This form must include a licensed electrician’s signature to certify that the system has been installed in accordance with the manufacturer’s specifications as well as all applicable provisions of the National Electric Code. The vendor of the inverter must also sign to certify that the inverter is UL1741 compliant.

Form NMIN-T along with the \$50 inspection fee, evidence of liability insurance that meets requirements for net metering as referenced in the Net Metering Service Rider, a one line diagram and a sketch layout should be submitted as shown below. Submissions may be made my email or mail.

Appalachian Power
Customer Services – 5th Floor
P.O. Box 2021
Roanoke, VA 24022
apcodgcoordinator@aep.com

Customers are reminded that the terms, conditions, fees, and eligibility requirements for net metering service are subject to revision, as approved by the TRA.

Please leave your generator OFF until APCo has completed the final review and your meter has been exchanged.

**TARIFF N.M.S.
(Net Metering Service Rider)**

AVAILABILITY OF SERVICE

Available for new or existing Customers who operate an eligible renewable fuel generator designed to operate in parallel with the Company's system and who request Net Metering Service (NMS) from the Company. NMS Customers must take service under Tariff R.S., Tariff S.G.S., Tariff M.G.S.-Secondary, or Tariff P.S. NMS is limited to those customers who do not utilize time-of-day energy charge provisions.

The total capacity of all NMS Customers shall be limited to 1% of the Company's Tennessee peak load forecast ("Renewable Generator Limit"), and shall be available to customers with eligible renewable fuel generators on a first come, first serve basis. Customer's may not take service under this tariff and simultaneously take service under any alternative co-generation agreement.

DEFINITIONS

The following terms shall solely be used to define the applicability of Schedule N.M.S.

"Billing Period Credit" means the quantity of electricity generated and fed back into the electric grid by the customer's renewable fuel generator in excess of the electricity supplied to the customer over the billing period.

"Excess Generation" means the amount of electricity generated by the renewable fuel generator in excess of the electricity consumed by the customer over the course of the net metering period.

"Net Metering Customer (Customer)" means a customer owning and operating, or contracting with other persons to own or operate, or both, a renewable fuel generator under a net metering service arrangement.

"Net Metering Service" means providing retail electric service to a customer operating a renewable fuel generator and measuring the difference, over the net metering period between electricity supplied to the customer from the electric grid and the electricity generated and fed back to the electric grid.

"Person" means any individual, corporation, partnership, association, company, business, trust, joint venture, or other private legal entity and the State or any municipality.

"RF Generator" is an electrical generating facility which complies with all of the following requirements:

- (a) has an alternating current capacity less than or equal to 10 KW for customers taking service under Schedule R.S.;
- (b) uses solar, wind or hydro energy as its total fuel source;
- (c) the Net Metering Customer's facility is located on the customer's premises and is connected to the customer's wiring on the customer's side of its interconnection with the distributor;
- (d) is designed and installed to operate in parallel with the Company's system without adversely affecting the operation of equipment and service of the Company and its customers and without presenting safety hazards to the Company and Customer personnel; and
- (e) is intended primarily to offset all or part of the customer's own electricity requirements.

TARIFF N.M.S.
(Net Metering Service Rider)

CONDITIONS OF SERVICE

A. Notification

1. For a renewable fuel generator with an alternating current capacity of 25 KW or less, the customer shall submit the required Company Interconnection Notification Form to the Company at least thirty (30) days prior to the date the customer intends to interconnect the renewable fuel generator to the Company's facilities. For a renewable fuel generator with an alternating current capacity greater than 25 KW, the customer shall submit the required Interconnection Notification Form to the Company at least sixty (60) days prior to the date the customer intends to interconnect the renewable fuel generator to the Company's facilities. The submission may either be directly to the Company or by registered mail with return receipt. All sections, including appropriate signatures, of the Interconnection Notification Form must be completed for the notification to be valid. The customer shall have all equipment necessary to complete the interconnection prior to such notification. For renewable fuel generators with capacities greater than 25 KW, the customer should contact the Company prior to making financial commitments. If mailed, the date of notification shall be the third day following the mailing of the Interconnection Form. The Company shall provide a copy of the Interconnection Notification Form to the customer upon request.
2. The Company shall, within thirty (30) days of the date of notification for RF Generators with a rated capacity of 25 KW or less, and within sixty (60) days of the date of notification for RF Generators with a rated capacity greater than 25 KW, either return to the customer a copy of the valid Interconnection Notification Form or return any incomplete form. If the Company determines that the Interconnection Notification Form is incomplete or that any of the other requirements for interconnection are not satisfied, the customer shall submit another completed Interconnection Notification Form and notify the Company once the customer has completed all work necessary to satisfy the deficiencies prior to interconnection. This notification requirement shall not replace or supersede any other applicable waiting period, or required interconnection authorization when other applicable law, rule, regulation or code would permit authorization to be withheld or delayed.
3. The Net Metering Customer shall immediately notify the electric distribution company of any changes in the ownership of, operational responsibility for, or contact information for the generator. The Net Metering Customer shall not assign this tariff or any part hereof without the prior written consent of the Company, and such authorized assignment may result in the termination of availability of tariff to Customer.

B. Conditions of Interconnection

1. RF Generator equipment shall be installed in accordance with the manufacturer's specifications as well as all applicable provisions of the National Electrical Code. Renewable fuel generator equipment and installations shall comply with all applicable safety and performance standards of the National Electrical Code, the Institute of Electrical and Electronic Engineers and accredited testing laboratories in accordance with IEEE Standard 1547, Standard for Interconnecting Distributed Resources with Electric Power Systems, July 2003, and safety and performance standards established by local and national electrical codes including, the institute of Electrical and Electronics Engineers, the National Electrical Safety Code, and Underwriters Laboratories. Customer's renewable fuel generator equipment and installations shall also comply with the Company's Interconnection Guidelines. The Company shall provide a copy of its Interconnection Guidelines to the customer upon request.
2. The Customer shall obtain any governmental authorizations and permits required for the construction and operation of the RF Generator facility and interconnection facilities.

TARIFF N.M.S.
(Net Metering Service Rider)

CONDITIONS OF SERVICE (Cont'd)

3. In the case of renewable fuel generators with an alternating current capacity greater than 25 KW, the following requirements shall be met before interconnection may occur:
- a. Electric Distribution Facilities and Customer Impact Limitations. A renewable fuel generator shall not be permitted to interconnect to the Company's distribution facilities if the interconnection would reasonably lead to damage of any of the Company's facilities or would reasonably lead to voltage regulation or power quality problems at other customer revenue meters due to the incremental effect of the Company's electric distribution system, unless the customer reimburses the Company for its cost to modify any facilities needed to accommodate the interconnection.
 - b. Secondary, Service and Service Entrance Limitations. The capacity of the RF Generator shall be less than the capacity of the Company-owned secondary, service, and service entrance cable connected to the point of interconnection, unless the customer reimburses the Company for its cost to modify any facilities needed to accommodate the interconnection.
 - c. Transformer Loading Limitations. The RF Generator shall not have the ability to overload the Company's transformer, or any transformer winding, beyond manufacturer or nameplate ratings, unless the customer reimburses the Company for its costs to modify any facilities needed to accommodate the interconnection.
 - d. Integration With Company Facilities Grounding. The grounding scheme of the renewable fuel generator shall comply with IEEE 1547, Standard for Interconnecting Distributed Resources With Electric Power Systems, July 2003, and shall be consistent with the grounding scheme used by the Company. If requested by a prospective net metering customer, the Company shall assist the customer in selecting a grounding scheme the coordinates with the Company's distribution system.
 - e. Balance Limitation. The RF Generator shall not create a voltage imbalance of more than 3.0% at any other customer's revenue meter if the Company's transformer, with the secondary connected to the point of interconnection, is a three-phase transformer, unless the customer reimburses the Company for its cost to modify any facilities needed to accommodate the interconnection.
4. The customer shall provide a copy of its insurance policy to the Company. If the customer's renewable fuel generator does not exceed 10 KW, then such coverage shall be an amount of at least \$100,000 for the liability of the insured against loss arising out of the use of a generation facility. If the customer's renewable fuel generator exceeds 10 KW, then such coverage shall be an amount of at least \$300,000 for the liability of the insured against loss arising out of the use of a generation facility. The customer must submit evidence of such insurance to the Company with the Interconnection Notification Form.

The Company's receipt of evidence of liability insurance does not imply an endorsement of the terms and conditions of the coverage.

Neither party assumes any responsibility of any kind with respect to the construction, maintenance, or operation of the system or other property owned or used by the other party. The Customer agrees that the Company shall not be liable for any claims, costs, losses, suits or judgments for damages to any Person or property in any way resulting from, growing out of, or arising in or in connection with the use of, or contact with, energy delivered after it is delivered to Customer and while it is flowing through the lines of Customer, or is being distributed by Customer, or is being used by retail load.

5. Following Notification by the Customer, the Company shall have the right to inspect and test the RF Generator equipment and installation prior to interconnection. The nature and extent of these tests shall be determined solely by the Company. The Company reserves the right to conduct additional tests and inspections and to install additional equipment or meters at any time following interconnection of the RF Generator. The Customer shall not commence parallel operation of the RF Generator until the facility has been approved by the Company. Notwithstanding the foregoing, the Company's approval to operate the facility in parallel with the Company's system should not be construed as an endorsement, confirmation, warranty, guarantee, or representation concerning the safety, operating characteristics, durability of reliability of the RF Generator.

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6. The RF Generator installation must have a visibly open, lockable, manual disconnect switch which is accessible by the Company at all hours and clearly labeled. A licensed certified technician must certify via the Interconnection Notification Form that the disconnection switch has been installed properly. The Company reserves the right to install any additional equipment, including controls and meters, at the facility.
7. The Customer shall periodically maintain and test the RF Generator in accordance with the manufacturer's specifications and all applicable safety and performance standards. The Customer shall notify the Company at least fourteen (14) days prior to making any material changes to the renewable fuel generator facility or installation, including, but not necessarily limited to, any modification to the equipment or protective equipment settings or disconnection of the RF Generator from the Company's system, excluding temporary disconnects for routine maintenance. Modifications or changes made to the RF Generator shall be evaluated by the Company prior to being made. The Customer shall provide detailed information describing the modifications of changes to the Company in writing prior to making the modification the RF Generator. The Company shall review the proposed changes to the RF Generator and provide the results of its evaluation to the Customer within sixty (60) days of receipt of the Customer's proposal. Any items that would prevent parallel operation due to violation of applicable safety standards and/or power generation limits shall be explained along with a description of the modifications necessary to remedy violations. Following a notification of disconnection of the renewable fuel generator, the customer must again complete the Notification process specified above prior to any subsequent reconnection.

In addition, the customer shall notify the Company immediately regarding either any damage to the RF Generator facility or safety-related emergency disconnections.

8. The Company may enter the Customer's premises to inspect the Customer's protective devices and read or test the meter. The Company may disconnect the interconnection facilities without notice if the Company reasonably believes a hazardous condition exists and such immediate action is necessary to protect persons, or the Company's facilities, or property of others from damage or interference caused by the Customer's facilities.
9. Interconnection authorization is not transferable or assignable to other persons or service locations.

C. Other

1. The Company shall not be obligated to accept energy from the Customer and may require Customer to interrupt or reduce delivery of energy, when necessary, in order to construct, install, repair, replace, remove, investigate, or inspect any of the Company's equipment or part of its system; or if it reasonably determines that curtailment, interruption, or reduction is necessary because of emergencies, forced outage, force majeure, or compliance with prudent electrical practices. Whenever possible, the Company shall give the Customer reasonable notice of the possibility that interruption or reduction of deliveries may be required. Notwithstanding any other provision of this tariff, if at any time the Company reasonably determines that either the Renewable fuel generator facility may endanger the Company's personnel or other persons or property, or the continued operation of the RF Generator may endanger the integrity of safety of the Company's system, the Company shall reserve the right to disconnect and lock out the RF Generator from the Company's system. The RF Generator shall remain disconnected until such time as the Company is reasonably satisfied that the conditions referenced in this section have been satisfied.
2. To the fullest extent permitted by law, neither customer nor company, nor their respective officers, directors, agents, and employees members parents or affiliates, successors or assigns, or their respective officers directors, agents, nor employees successors or assigns shall be liable to the other party or their respective members, parents, subsidiaries, affiliates, officers, directors, agents employees successors or assigns, for claims ,suits, actions or causes of action for incidental, indirect, special, punitive ,multiple, or consequential damages connected with or resulting from performance or non-performance of such agreement, or any actions undertaken in connection with or related to this agreement, including without limitation, any such damages which are based upon causes of action for breach of contract, tort (including negligence and misrepresentation), breach of warranty, strict liability, statute, operation of law under any indemnity provision or any other theory of recovery. The obligor's liability shall be limited to direct damages only, and such direct damages shall be the sole and exclusive measure of damages and all other judicial remedies or damages are waived. The provisions of this section shall apply regardless of fault and shall survive termination, cancellation, suspension, completion or expiration of this agreement. Notwithstanding anything in this section to the contrary, any provisions of this section will not apply to the extent it is finally determined by a court of competent jurisdiction, including appellate review if pursued, to violate the laws of the Constitution of the State of Tennessee.

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(Net Metering Service Rider)

FACILITIES CHARGES

The customer is responsible for all equipment and installation costs of the renewable fuel generator facility.

The Company shall inspect the inverter settings of a static inverter-connected renewable fuel generator prior to interconnection. The customer shall pay \$50 to the Company for each generator that requires inspection.

The Company shall inspect the protective equipment settings of a non-static inverter-connected renewable fuel generator prior to interconnection. The customer shall pay \$50 to the Company for each generator that requires inspection.

The customer shall pay to the Company any additional charges, as determined by the Company, for equipment, labor, metering, testing or inspections requested by the customer.

METERING

Net metered energy shall be measured in accordance with standard metering practices by metering equipment capable of measuring (but not necessarily displaying) power flow in both directions.

In instances where a Net Metering Customer has requested, and where the electric distribution company would not have otherwise installed, metering equipment, the Company may charge the Net Metering Customer its actual cost of installing any additional equipment necessary to implement Net Metering Service.

MONTHLY CHARGES

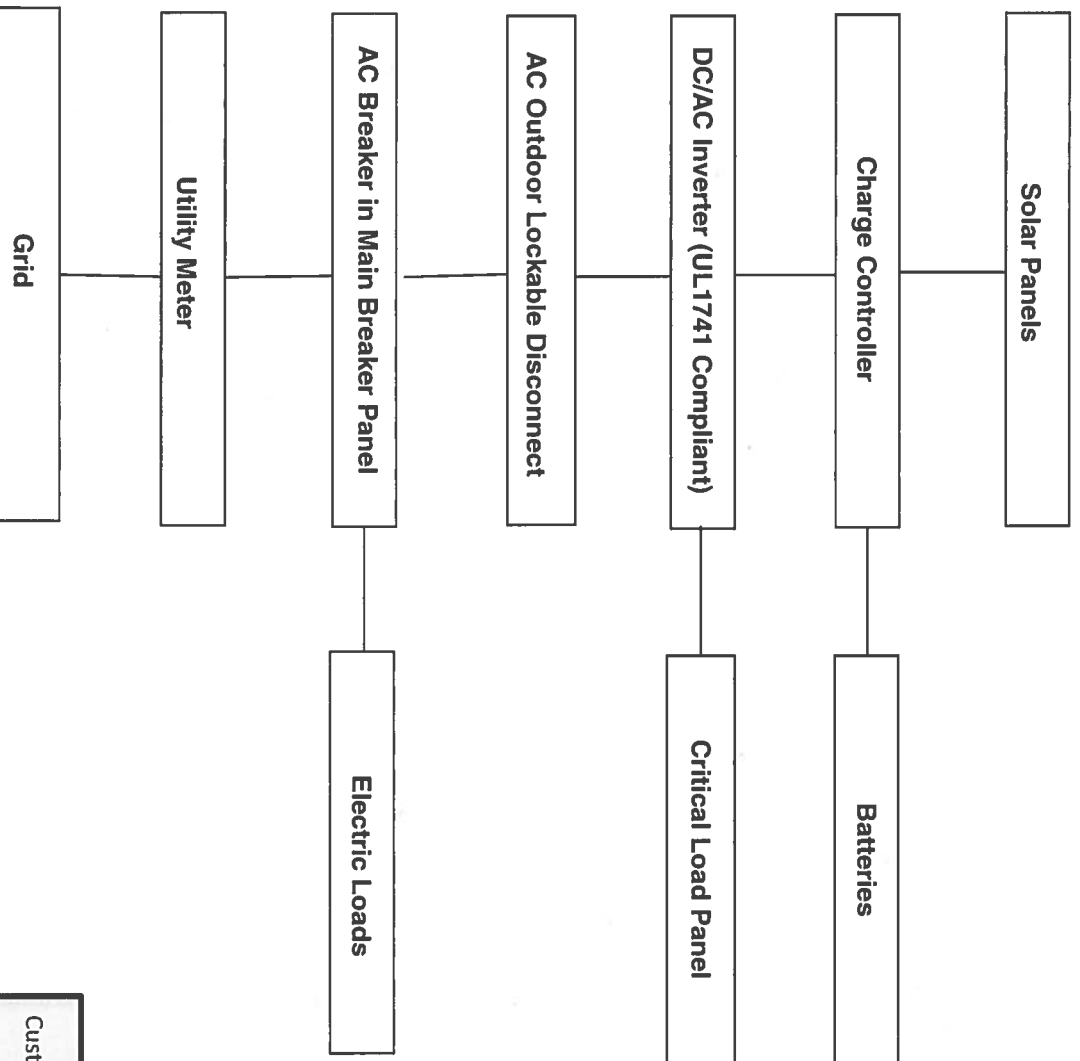
All monthly charges shall be in accordance with the Schedule under which the customer takes service. Such charges shall be based on the customer's net energy for the billing period, to the extent that the net energy exceeds zero. To the extent that a customer's net energy is zero or negative during the billing period, the customer shall pay only the non-usage sensitive charges of the Schedule. The customer shall receive no compensation from the Company for Excess Generation during the billing period. The Excess Generation during the billing period shall be carried forward and credited against positive energy usage in subsequent billing periods.

The Net Metering Period shall be defined as each successive 12-month period beginning with the first meter reading date following the date of interconnection of the RF Generator with the Company's facilities. Any Excess Generation at the end of a Net Metering Period shall be carried forward to the next Net Metering Period only to the extent that the Excess Generation does not exceed the customer's billed consumption for the current net metering period, adjusted to exclude accumulated billing credit carried forward and applied from the previous net metering Period.

Excess generation is not transferable, and the Customer, shall receive no compensation from the Company for any Excess generation upon termination of service from the Company.

Sample Interconnection One-Line

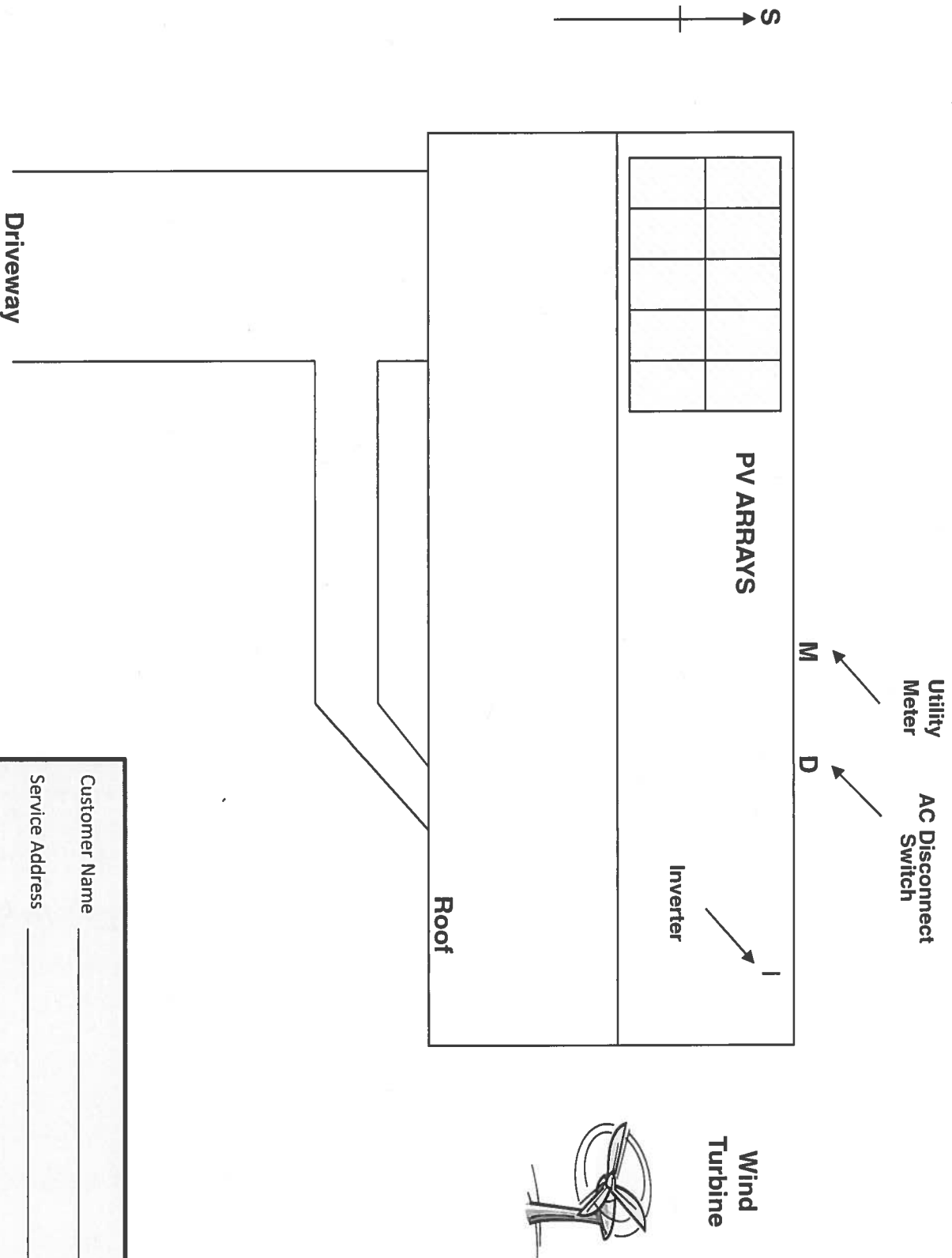
Modify as needed



Customer Name	_____
Service Address	_____

Sample Sketch Layout

Modify as needed...Please be sure to indicate location of inverter (inside or outside)



Customer Name	_____
Service Address	_____

TENNESSEE NET METERING

FREQUENTLY ASKED QUESTIONS

What is Net Metering? Net Metering was developed to encourage investment in renewable energy. It is an incentivized program available to eligible residential and small commercial customers who operate an on-site, qualifying renewable fuel generator (such as solar panels) and wish to make some or all of their own electricity. It is not available for those that desire to make energy for sale back to their utility. Approved generators are allowed to connect to the electric grid generally via the customer's main service panel providing the customer with the ability to return any excess energy to the grid "banking" it for future use. This is particularly beneficial for solar and wind as these are intermittent power sources.

How does it work? Once a generator is approved for interconnection, Appalachian Power will install a special meter capable of measuring energy flow in both directions. As your generator produces electricity, that energy is first used to supply your own energy needs. If your generator's output will not cover your entire energy needs, Appalachian Power provides the remainder. Conversely, if your generator produces more electricity than you can use, the excess is measured at the meter and sent back to the grid to be used by other customers.

How do I apply for Net Metering? A net metering informational package is available to download at www.appalachianpower.com or by calling (800) 956-4237. The package includes the net metering tariff that defines the conditions of your electric service while interconnected as well as the 2 page Net Metering Interconnection Notification (NMIN-T) form. The fully completed NMIN should be submitted after the installation is complete for utility field approval. Upon approval, your meter will be scheduled for exchange. This process may take 30 to 60 days, depending on the size of your generator so please remember to leave your generator off until it is approved and the meter has been exchanged.

How will I be billed? All monthly charges will continue to be based on your standard rate schedule. However, you will only be billed for your "net" energy usage (what we delivered to you less what you put back to the grid). Any non-usage charges or minimums as stated in your standard rate schedule still apply. If you return more energy than was supplied to you in any particular billing period, the excess energy is "banked" for application towards future bills. Most customers track their own excess generation as bills currently do not display that information.

Why was my bank not applied? In any month where you have billable consumption, you will initially get a bill for that usage. Generally within 3-7 days, your account will be reviewed and re-billed to apply any "banked" energy to offset all or part of that billable usage.

How long is the "bank" available for my use? Your net metering start date is the first meter reading following meter exchange. Your account is then reviewed annually to reconcile any excess generation. Any excess generation at that time will be compared to your billed kWhs for the year plus your excess generation rolled from the previous year. Banks in excess of this total are forfeited since you are required to size your generator so that it doesn't produce more energy than you can use annually.

Can I be paid instead for that excess generation? Sorry, but no.

How do I read my new meter? Unlike your old billing meter with a static screen, your new net meter will rotate through multiple screens. While there are several different meters being used today for net metering, all will display a screen with 08 on the left or at the bottom which shows the energy we've delivered to you and a screen with 07 on the left or on the bottom which displays the energy you've returned to the grid. You'll also see a screen that displays the 15 minute average peak demand for electricity consumed during the billing period. Some meters also show the date that peak demand occurred. You will receive a meter display guide with your paperwork after the interconnection. You may also download a copy of that guide at www.appalachianpower.com.

What if I decide to add more solar panels? You must submit a new net metering application for the added capacity and you must secure approval in advance just as you did with your initial system.

Why does my inverter show I generated more energy than your meter does? Your inverter measures the energy that you have generated while our meter only measures what you have generated, couldn't use and exported to the grid.

Guide to Reading Your Net Meter with Multiple Displays

Appalachian Power uses several different types of meters for net metering. The screens of interest to you are shown below. The codes referenced may be on the left as shown below or on the bottom.

08 – Energy you've purchased from APCo



07 - Energy you put back on our grid



621 or **21** – Your highest 15 minute demand for electricity during a given billing period



721 – The date the peak demand above occurred (some meters do not have this screen)



NET METERING INTERCONNECTION NOTIFICATION

PURSUANT TO TARIFF N.M.S. (NET METERING SERVICE RIDER) DETAILING THE COMPANY'S NOTIFICATION PROCESS FOR NET METERING, APPLICANT HEREBY GIVES NOTICE OF INTENT TO OPEATE A GENERATING FACILITY.

Section 1. Applicant Information

Name: _____
 Mailing Address: _____
 City: _____ State: _____ Zip Code: _____
 Street Address: _____
 City: _____ State: _____ Zip Code: _____
 Phone Number(s): _____
 Fax Number: _____ Email Address: _____
 Facility Location (if different from above): _____
 Distribution Utility: **Appalachian Power Company**
 Distribution Utility Account Number: _____
 Energy Service Provider (ESP) (if different than electric distribution company): _____
 ESP Account Number (if applicable): _____
 Proposed Interconnection Date: _____

Section 2. Generating Facility Information

Facility Owner and/or Operator name (if different from Applicant): _____
 Business relationship to Applicant: _____
 Mailing Address: _____
 City: _____ State: _____ Zip Code: _____
 Street Address: _____
 City: _____ State: _____ Zip Code: _____
 Phone Number(s): _____
 Fax Number: _____ Email Address: _____
 Fuel Type: _____
 Generator Manufacturer and Model: _____
 Rated Capacity in kilowatts: AC _____ DC _____
 Inverter Manufacturer and Model: _____
 Battery Backup (circle one): Yes No

Section 3. Information for Generators with an AC capacity in excess of 25 kilowatts

Generator Type (circle one): Inverter Induction Synchronous
Frequency: _____ Hz Number of phases (circle one) One Three
Rated Capacity: DC _____ kW AC apparent _____ kVA AC real _____ kW
Power factor _____ % AC voltage _____ AC amperage _____

Facility schematic and equipment layout must be attached to this form.

A prospective net metering customer considering installing a renewable fuel generator with a capacity in excess of 25 kW is strongly encouraged to contact the electric distribution company prior to making financial commitments to the project.

Section 4. Vendor Certification

The system hardware is listed by Underwriters Laboratories to be in compliance with UL1741.

Signed (Vendor): _____ Date: _____
Name (printed): _____ Phone Number: _____
Company: _____

Section 5. Electrician Certification

The system has been installed in accordance with the manufacturer’s specifications as well as all applicable provisions of the National Electrical Code.

Signed (Licensed Electrician): _____ Date: _____
Name (printed): _____
License Number: _____ Phone Number: _____
Mailing Address: _____
City: _____ State: _____ Zip Code: _____

I hereby certify that, to the best of my knowledge, all of the information provided in this Notice is true and correct.

Signature of Applicant: _____ Date: _____

Utility signature signifies only receipt of this form, in compliance with Tariff N.M.S. (Net Metering Service Rider)

Signed (Utility Representative): _____ Date: _____

Please send this completed form, \$50, a one-line diagram, sketch layout, and proof of liability insurance to:

**Appalachian Power
Customer Services – 5th Floor
PO Box 2021
Roanoke, VA 24022
apcodgcoordinator@aep.com**