

**POWER PURCHASE AND INTERCONNECTION AGREEMENT  
(FROM A QUALIFYING FACILITY WITH A DESIGN CAPACITY OVER 100kW)**

This Agreement is made and entered into and effective this 24 day of February 2022 among East Kentucky Power Cooperative, Inc., a Kentucky corporation with its principal office at 4758 Lexington Road, Winchester, Kentucky 40391 ("EKPC"), Nolin Rural Electric Cooperative Corporation ("Nolin"), a Kentucky corporation with its principal office at 411 Ring Road, Elizabethtown, Kentucky 42701 and Swope Enterprises, LLC, a Kentucky limited liability company with its principal office at 1100 North Dixie Avenue, Elizabethtown, Kentucky 42701 ("Seller") (collectively, the "Parties").

**WITNESSETH:**

WHEREAS, Seller is developing and installing a new solar facility and will be producing electrical power at its **Toyota automobile dealership** in Elizabethtown, Kentucky; and

WHEREAS, EKPC is a rural electric cooperative that generates and transmits electricity to its sixteen (16) Owner-Member Cooperatives ("owner-members") that includes Nolin; and

WHEREAS, Nolin purchases wholesale power from EKPC under a wholesale power supply contract, as amended; and

WHEREAS, Seller desires to sell the excess output from the facilities to EKPC; and

WHEREAS, Seller's facilities will be interconnected to a Nolin distribution system that connects to EKPC's transmission system, and said facilities will primarily provide power to Seller; and

WHEREAS, during certain low loading periods, the output of the Seller's solar facilities is expected to exceed the total load of Seller, and surplus electricity will flow from Seller into the Nolin System or EKPC system; and

WHEREAS, EKPC has agreed to purchase this excess electricity from Seller at a price equivalent to the PJM Balancing Market at the EKPC Aggregate load node, on the terms and conditions set out herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements set forth herein, and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the Parties hereto agree as follows:

**ARTICLE I - DEFINITIONS**

1.01 "Agreement" shall mean this Power Purchase and Interconnection Agreement, and all Schedules hereto.

1.02 "Applicable Laws and Regulations" shall mean all duly promulgated, and local laws, regulations, rules, ordinances, codes, decrees, judgments, directives, or judicial or administrative orders, permits and other duly authorized actions of any Governmental Authority.

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PUBLIC SERVICE COMMISSION**  
**Linda C. Bridwell**  
Executive Director  
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PURSUANT TO 807 KAR 5:011 SECTION 9 (1)

1.03 “Authorization” shall mean any license, permit, approval, filing, waiver, exemption, variance, clearance, entitlement, allowance, franchise, or other authorization from or by a Governmental Authority.

1.04 “Authorization Date” shall mean the date that the last Authorization required to be given in order for the Parties to perform this Agreement is granted by the Kentucky Public Service Commission, the Administrator of the Rural Utilities Service or any other applicable Governmental Authority.

1.05 “Delivery Point” shall mean the meter at the point of connection of the facilities of Nolin and the facilities of the Seller.

1.06 “Dispute” shall have the meaning given in Section 9.06(a).

1.07 “Early Termination Date” shall have the meaning given in Section 9.03(a).

1.08 “Environmental Attributes” shall mean: 1) production tax credits applicable to electricity produced from certain renewable resources pursuant to 26 U.S.C. § 45, or any successor thereto or equivalent thereof; 2) any other federal or state tax deductions, credits or incentives for which the Qualifying Facility is eligible based upon its generation of electricity from renewable resources; 3) any grants or other payments from a Governmental Authority or non-profit entity (other than a cooperative corporation formed under KRS Chapter 279 and to the extent permitted by law) for which the Qualifying Facility is eligible based upon its generation of electricity from renewable resources; 4) environmental air quality credits, off-sets, emission reductions, allowance or other benefits related to the generation of electricity from the Qualifying Facility in a manner which reduces, displaces or off-sets emissions resulting from fuel combustion at another location pursuant to any law; and 5) credits, off-sets, environmental and other certificates, green pricing programs, renewable energy credit trading programs or any similar program.

1.09 “Event of Default” shall have the meaning given in Section 9.01 and Section 9.02.

1.10 “Force Majeure” shall have the meaning given in Section 7.01.

1.11 “Good Utility Practice” shall mean any of the practices, methods and acts employed by owners and/or lessors, operators or maintainers of electric generation, transmission or distribution facilities similar in size and operational characteristics to the Qualifying Facility, Interconnection Facilities, Nolin’s System and EKPC’s transmission system which, in the exercise of reasonable judgment in the light of the facts known or that reasonably should have been known at the time that a decision was made, could reasonably have been expected to accomplish the desired result at the lowest reasonable cost, consistent with licensing and regulatory considerations, environmental considerations, reliability, safety, protection of lives and property, expedition, the technical specifications and manufacturer’s maintenance requirements, and the applicable requirements of any Governmental Authority. Good Utility Practice is not intended to be limited to the continuous practice, method or act, to the exclusion of all others, but rather practices, methods or acts generally accepted in the region.

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1.12 “Governmental Authority” shall mean the federal government of the United States, and any state, county or local government, and any regulatory department, body, political subdivision, commission (including the Kentucky Public Service Commission and Federal Energy Regulatory Commission), agency, instrumentality, ministry, court, judicial or administrative body, taxing authority, or other authority of any of the foregoing (including any corporation or other entity owned or controlled by any of the foregoing), any regional transmission organization or independent system operator, any national or regional reliability organization or council (including NERC) or any reliability coordinator, in each case, having jurisdiction or authority over the Agreement (or any portion thereof), the Seller, EKPC, Nolin, the Qualifying Facility, the Interconnection Facilities, Nolin’s System or EKPC’s transmission system, whether acting under actual or assumed authority.

1.13 “Initial Term” shall mean the period commencing on the effective date of this Agreement, written above, and concluding on a date five years following the Authorization Date.

1.14 “Interconnection Costs” shall mean all reasonable costs of connection, switching, metering, transmission, distribution, safety provisions and administrative costs incurred by EKPC or Nolin directly related to the installation and maintenance of physical facilities necessary to permit interconnected operations with the Qualifying Facility, to the extent those costs are in excess of corresponding costs which EKPC or Nolin would have incurred if either had not engaged in interconnected operations with the Qualifying Facility but instead had generated an equivalent amount of electric energy itself or purchased an equivalent amount of electric energy or capacity or both from other sources. Interconnection costs shall not include any costs included in the calculation of EKPC’s or Nolin’s avoided costs.

1.15 “Interconnection Facilities” shall mean all facilities, lines, equipment, appurtenances and meters, as identified and designated on Schedule A, between the Qualifying Facility and Nolin’s System that are necessary to physically and electrically interconnect the Qualifying Facility to Nolin’s System, regardless of whether owned by EKPC, Nolin or Seller.

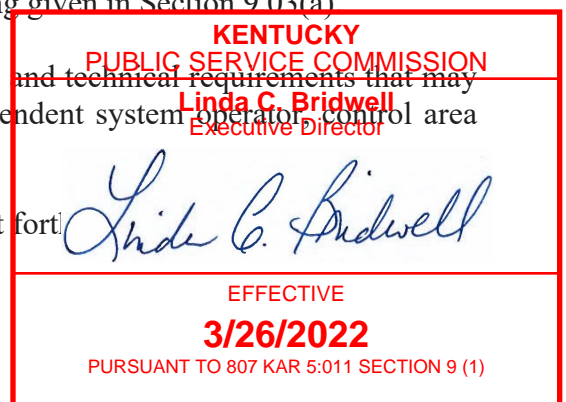
1.16 “Interconnection Manual” shall mean the document titled “Manual for Small Generator Interconnection Requirements for Direct Interconnection with EKPC Member Cooperative Distribution Systems (For Generating Facilities of 10 MW or Less),” dated June 1, 2015, which is adopted and incorporated herein as Schedule B.

1.17 “Nolin’s System” shall mean Nolin’s facilities and equipment used to distribute electricity to end users directly from nearby generators or from interconnection with EKPC’s transmission system which support bulk power.

1.18 “Notice of Early Termination” shall have the meaning given in Section 9.03(a)

1.19 “Operating Requirements” shall mean any operating and technical requirements that may be imposed by a regional transmission organization, independent system operator, control area coordinator, balancing authority, Nolin or EKPC.

1.20 “Proprietary Information” shall have the meaning set forth



1.21 “Qualifying Facility” shall mean the small power producing facility satisfying the definition of same as set forth in 807 KAR 5:054, Section 1(8) that is located at Seller’s facilities at 1104 North Dixie Avenue, Elizabethtown, Kentucky, within the service territory of Nolin; having a nameplate rating of 275 kWac; using solar power as a fuel or energy source; and, unless the context requires otherwise, including all interconnection and safety equipment owned by the Seller (as designated on Schedule A) and used in connection with its electric generation facilities.

1.22 “Seller’s System” shall mean the Qualifying Facility and any Interconnection Facilities owned by Seller.

## ARTICLE II – SALE OF CAPACITY AND ENERGY

2.01 Sale of Capacity and Energy. As soon as is reasonably practicable after all requirements set forth herein are met following the Authorization Date of this Agreement, the Seller will sell, and EKPC will purchase, electric capacity and energy from the Seller’s Qualifying Facility at the Delivery Point, on a non-dispatchable basis for periods when power and energy generated by the Seller is in excess of the Seller's own needs. The electric power delivered by the Seller and purchased by EKPC shall be metered and paid for as set forth on the attached Schedule C.

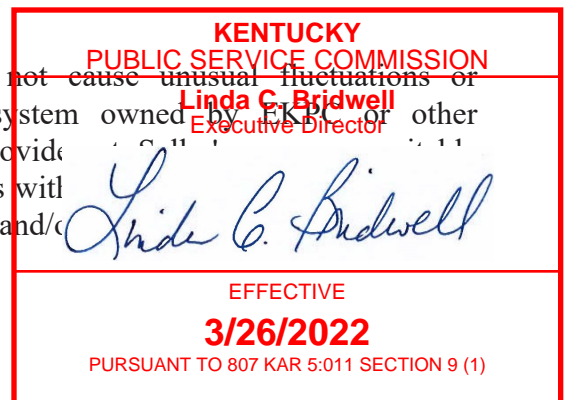
2.02 Exclusivity. The Seller agrees that its Qualifying Facility will be installed and, except for sales of power and energy to EKPC, will be used at all times for the sole purpose of the Seller's benefit, and energy generated by said Qualifying Facility shall not be otherwise transmitted, shared, or resold by the Seller to any person other than EKPC, throughout the term(s) of this Agreement.

2.03 Delivery of Electricity. Seller shall interconnect with Nolin’s System and shall deliver electricity to Nolin’s side of the Delivery Point consistent with the terms of the Interconnection Manual, which is adopted and incorporated herein in full by reference. As set forth hereinafter, Seller must provide good quality electric power within a reasonable range of voltage, frequency, flicker, harmonic currents, and power factor, including, but not limited to:

a. The electricity delivered hereunder shall be in the form of three-phase phase, at a frequency of 60-hertz, alternating current and within three percent (3%) above or below a nominal voltage of 208 volts or a nominal operating voltage to be determined by Nolin from actual operating experience.

b. Seller shall provide for proper synchronization of the Qualifying Facility with Nolin's System such that synchronism is accomplished without causing undesirable harmful currents, surges, or voltage dips on Nolin’s System or the transmission system owned by EKPC or other interconnected utilities.

c. The electricity delivered by Seller shall not cause unusual fluctuations or disturbances on Nolin’s System or the transmission system owned by EKPC or other interconnected utilities. Accordingly, the Seller shall provide apparatus which will keep such fluctuations or disturbances within limits acceptable to Nolin and EKPC in accordance with IEEE Standard 519 and/or



d. The Seller shall install a safety switch that will fully disconnect the generation circuit of its Qualifying Facility from Nolin's System. The switch shall be of the visible break type which can be secured by a padlock by Nolin. The disconnect switch shall be accessible to Nolin and EKPC personnel at all times.

2.04 Environmental Attributes. During the Initial Term of this Agreement and any subsequent term(s), Seller shall own, and may assign or sell at its sole discretion, all right, title and interest associated with or resulting from any Environmental Attributes associated with the Qualifying Facility and associated power and shall have the exclusive right to claim that Seller is responsible for: (i) generating electricity from a renewable resource; and (ii) the reductions in emissions of pollution and greenhouse gases resulting from the power produced from a renewable resource.

### ARTICLE III – RIGHTS AND OBLIGATIONS

#### 3.01 Rights and Obligations of Seller.

a. Design and Construction of the Qualifying Facility. The Seller shall design, construct and interconnect the Qualifying Facility at its own expense and in accordance with the Interconnection Manual, Good Utility Practices, Operating Requirements and all Applicable Laws and Regulations. Plans, specifications, and operating characteristics for the Qualifying Facility must be approved by EKPC and Nolin before the Qualifying Facility is connected to Nolin System, and may not be materially revised or modified without EKPC's and Nolin's approval. Prior to completion and energization of the interconnection between the Qualifying Facility and Nolin System, EKPC and Nolin shall have the right to inspect the Qualifying Facility and Interconnection Facilities to determine that the Qualifying Facility and Interconnection Facilities are in compliance with the Interconnection Manual, Operating Requirements, Good Utility Practice and all Applicable Laws and Regulations, and to comply with Article IV of the Interconnection Manual. Any deficiencies noted must be corrected prior to energization. The Seller shall not, after energization, modify or change in any way the design or operating characteristics of the Qualifying Facility without EKPC's and Nolin's express approval.

b. Design and Construction of the Interconnection Facilities. The Interconnection Facilities shall be designed, acquired, constructed and interconnected at Seller's expense and shall be respectively owned by EKPC, Nolin and Seller as designated in Schedule A. The Interconnection Facilities shall be constructed in accordance with the Interconnection Manual, Operating Requirements, Good Utility Practices, and all Applicable Laws and Regulations. The Seller shall not, after energization, modify or change in any way the design or operating characteristics of the Interconnection Facilities without EKPC's and Nolin's express approval.

i. Estimated Payment for Interconnection Costs. EKPC and Nolin shall be reimbursed for their respective Interconnection Costs associated with designing, acquiring, constructing and installing the Interconnection Facilities as follows: Seller shall pay estimated Interconnection Cost payments of \$0.00 to EKPC and \$0.00 to Nolin. Said payments shall be made no later than thirty (30) days after the Authorization Date. Unless expressly waived in writing by both EKPC and Nolin, Seller shall provide security to I of such costs and expenses of the Interconnection Facilities by letter of credit or other form of security that satisfies the criteria set forth in SECTION 9 (1) OF THE Interconnection Manual.

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ii. Final Payment for Interconnection Costs. The final Interconnection Costs payments shall be adjusted to reflect the actual amounts of said Interconnection Costs through an additional payment by the Seller, or partial refund by EKPC and/or Nolin within sixty (60) days after completion of the Interconnection Facilities. EKPC and Nolin will invoice Seller for the final and actual Interconnection Costs within thirty (30) days after the completion of the Interconnection Facilities, and Seller shall pay such costs within thirty (30) days of the date of said invoice(s). Any refunds due to Seller shall be paid within sixty (60) days after completion of the Interconnection Facilities.

c. Operation and Maintenance of the Qualifying Facility. At all times during the Initial Term of this Agreement and any subsequent term(s), the Seller has the sole duty and responsibility for operation and maintenance of the Seller's System, and neither EKPC nor Nolin shall furnish service personnel or material and equipment to the Seller for the maintenance or operation of the Seller's System, unless separately agreed to and invoiced by EKPC or Nolin. Seller shall operate and maintain the Qualifying Facility in accordance with the Interconnection Manual, Operating Requirements, Good Utility Practices, and all Applicable Laws and Regulations.

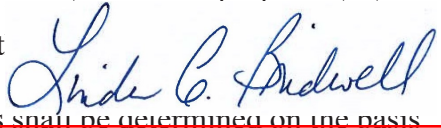
i. Protection of the Qualifying Facility. The Seller shall protect the Qualifying Facility from disturbances occurring on Nolin's System or the transmission system owned by EKPC or other interconnected utilities and shall have the sole responsibility for the safety and electrical protection of its facilities, irrespective of the condition of Nolin's or EKPC's Interconnection Facilities. This protection shall include automatic sensing and immediate disconnection from a faulted or de-energized Nolin line, and shall prevent the Seller from energizing a de-energized Nolin line.

ii. Parallel Operation. Switching to place the generator in Seller's Qualifying Facility in or out of service and parallel operation with EKPC's or Nolin's system shall be coordinated with the EKPC system operator and designated Nolin operating personnel as set forth in Article IV and Article VI of the Interconnection Manual.

iii. Reactive Power. The Seller shall operate its Qualifying Facility to furnish its own reactive power (kvar) requirements, consistent with Section 6.01 of the Interconnection Manual. Under the condition wherein the Seller generates all of its own power requirements and/or supplies excess power and energy to EKPC, reactive power (kvar) flow from Nolin toward the Seller shall be subject to the Reactive Power Service charge specified in Schedule D.

d. Operation and Maintenance of the Interconnection Facilities. Each part of the Interconnection Facilities owned by the Seller, as designated in Schedule A, shall be maintained by Seller or by owner's agent or representative in accordance with the Interconnection Manual, Operating Requirements, Good Utility Practices, and all Applicable Laws and Regulations. Seller shall pay a Monthly Interconnection Service Charge as specified in Schedule B in order to reimburse EKPC and Nolin for any transmission, operational, costs related to the ongoing usage, operation and maintenance of t would not have been incurred by either of them if EKPC interconnected operation with the Seller. These monthly charges shall be determined on the basis of utility cost recovery concepts and may be adjusted by EKPC and Nolin on an annual basis.

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e. Modifications and Upgrades of Interconnection Facilities. Seller is responsible for all costs in relation to changes in its interconnection and protective equipment as may be required from time to time to meet changing conditions and requirements on Nolin's System or the transmission system owned by EKPC or other interconnected utilities. In the event that load growth or other needs on the EKPC's transmission system or Nolin's Systems require the construction of new facilities in the future to replace or supplement the Interconnection Facilities identified in Schedule A, EKPC or Nolin, as applicable, shall give Seller six (6) months advance notice, including a cost estimate for the new facilities and a date when costs for said facilities are anticipated to be incurred. Seller shall pay such estimated costs or provide EKPC and/or Nolin with acceptable security for payment, as described hereinabove, by the date specified in such notice. Consistent with Section 3.01(b), Seller shall pay all actual costs incurred for such new interconnection facilities prior to the in-service date for such facilities.

f. Records Retention. The Seller shall maintain records regarding all maintenance of the QF and Interconnection Facilities, and upon reasonable prior notice, Seller shall make those records available for inspection by EKPC and Nolin during regular business hours.

g. Laws and Authorizations. Seller shall comply with all Applicable Laws and Regulations and Authorizations applicable to its performance of its obligations under this Agreement, except where non-compliance will not have an adverse effect on EKPC, Nolin, their rights under this Agreement or Seller's ability to perform its obligations under this Agreement.

h. Relationship to Interconnection Manual. The Parties acknowledge and agree that the cost recovery provisions set forth in Section 7.01 through Section 7.03 and Section 8.01 through Section 8.04 of the Interconnection Manual are either inapplicable or are superseded by the cost recovery provisions set forth in this Section 3.01. EKPC's and Nolin's recovery of Interconnection Costs shall be governed exclusively by the terms of this Section 3.01 and not by the terms of the Interconnection Manual.

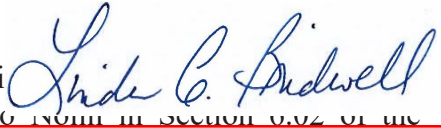
3.02 Rights and Obligations of EKPC and Nolin.

a. Design and Construction of Interconnection Facilities. EKPC and Nolin shall design, construct and install the Interconnection Facilities that they respectively own in accordance with the Interconnection Manual, Operating Requirements, Good Utility Practices, and all Applicable Laws and Regulations. EKPC and Nolin shall be under no obligation to design, order or install equipment or incur any other costs or expenses relating to the subject Interconnection Facilities until payment of the estimated Interconnection Costs has been received, or security for said payment, in a form acceptable to EKPC and Nolin, is provided by Seller.

b. Operation and Maintenance of the Interconnection Facilities. EKPC and Nolin shall operate and maintain the Interconnection Facilities that they respectively own, as set forth in Schedule A, in accordance with the Interconnection Manual, Operating Requirements, Good Utility Practices, and all Applicable Laws and Regulations.

c. Disconnection. EKPC shall have the same right to disconnect the Qualifying Facility as already granted to EKPC in Section 3.02 of the Interconnection Manual.

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d. Laws and Authorizations. EKPC and Nolin shall comply with all Applicable Laws and Regulations and Authorizations applicable to their respective performance of obligations under this Agreement, except where non-compliance will not have an adverse effect on any other Party, any other Party's rights under this Agreement or, as applicable, EKPC's or Nolin's ability to perform its obligations under this Agreement.

3.03 Disclaimer. EKPC's and Nolin's acceptance of the plans specifications, and operating characteristics for the Seller's System, or any revisions or modification thereof, and EKPC's and Nolin's inspection of the Seller's System and subsequent authorization to energize the interconnection, or later consent to any change or modification of the design or operating characteristics of the Seller's System, shall not be construed as confirming or endorsing the design, or as warranting the safety, durability, or reliability of the Seller's System. Neither EKPC nor Nolin assumes any duty to review or inspect the Seller's System to assess its safety, durability, or reliability. EKPC and Nolin shall not, by reason of any review, acceptance, inspection, or failure to review or inspect, be responsible for any aspect of the Seller's System, including, but not limited to its safety, details of design, adequacy, or capacity thereof, nor shall EKPC's or Nolin's acceptance or approval be deemed to be an endorsement of the safe condition of the Seller's System.

#### ARTICLE IV – METERS

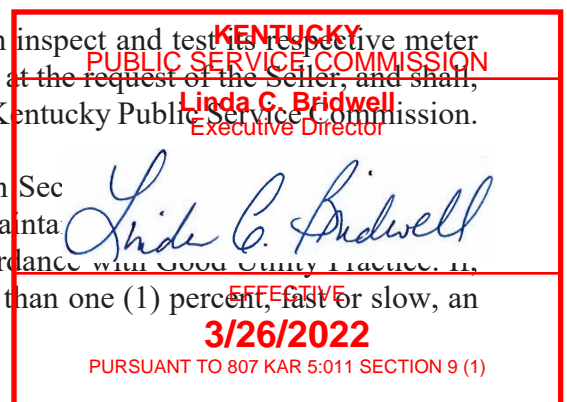
4.01 Meters. EKPC and Nolin shall specify, own, install, operate and maintain the metering equipment, which is specified in Schedule A and which EKPC and Nolin deem appropriate, based on the size and other characteristics of the Qualifying Facility. EKPC and Nolin shall use such metering equipment to measure the power and energy sold by the Seller to EKPC, measure backup service provided to the Seller by Nolin, and monitor voltage and reactive power flows on the interconnection. The metering equipment for Nolin and the metering equipment for EKPC are designated by the reference "utility meter."

4.02 Readings. Nolin shall read the meter at the Delivery Point following the end of each month. The amount of power delivered to EKPC during the preceding month shall be determined from such readings, as such readings may be adjusted pursuant to Section 4.05. Nolin shall read its meter in accordance with its normal business practice and the regulations of the Kentucky Public Service Commission.

4.03 Metering Modifications. Any modifications that the Seller may request with respect to the metering equipment may be made at the sole discretion of EKPC or Nolin, as applicable. Any additional costs incurred in making such modifications shall be borne by the Seller.

4.04 Inspection and Testing. EKPC and Nolin shall each inspect and test its respective meter as frequently as deemed appropriate by EKPC and Nolin, or at the request of the Seller, and shall, at a minimum, comply with requirements as set forth by the Kentucky Public Service Commission.

4.05 Accuracy. In addition to the obligations set forth in Sec Manual, EKPC and Nolin shall each calibrate its meter to maintain one (1) percent as far as is reasonably practical and in accordance with good utility practice. If, at any test, a meter shall be found to be inaccurate by more than one (1) percent, fast or slow, an





adjustment shall be made through mutual agreement among EKPC, Nolin, and the Seller to compensate for the effects of such inaccuracy over the period of inaccuracy that may be established. Any corrections in billings resulting from inaccurate metering shall be made in the next monthly bill rendered, and such corrections, when made, shall constitute full adjustment. Notwithstanding the provisions of Section 5.01(b) of the Interconnection Manual, if at any time a meter shall fail to register, EKPC and Seller or Nolin and Seller, as applicable, shall determine through mutual agreement the meter registrations to be used for billing purposes by using an appropriate methodology.

## ARTICLE V – PURCHASES AND BILLING

5.01 Power Purchases. Any power and energy purchased by EKPC from Seller shall be metered and accounted for separately from power and energy delivered and sold hereunder to Seller by Nolin and shall be purchased in accordance with the tariffs, rules, and regulations established by EKPC and approved by the Kentucky Public Service Commission for qualifying cogeneration and small power production facilities.

### 5.02 Billing.

a. An accounting for amounts due hereunder shall be rendered by EKPC as soon as is reasonably practicable following the meter reading, and shall incorporate such information as may reasonably be necessary or desirable to determine the payments for power delivered to the Delivery Point during the preceding month, and other amounts due hereunder.

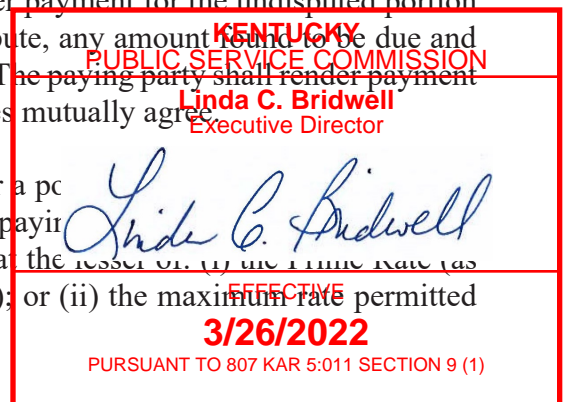
b. In the event that Seller owes any amount to EKPC pursuant to this Agreement, EKPC shall send Seller a statement of the amount then due and shall incorporate such information as may be reasonably necessary or desirable to determine the payments and other amounts due hereunder.

c. In the event of the termination or expiration of this Agreement, EKPC shall, within twenty (20) business days of the date of termination or expiration, provide a final billing statement to Seller that indicates any amounts owed by Seller or to be paid by EKPC.

### 5.03 Payment and Interest.

a. Payments. All payments shown to be due to Seller by EKPC on a billing statement shall be tendered to Seller along with the billing statement no later than the fifteenth day of each month. Any payments owed by Seller to EKPC shall be paid by the last day of each month in which the billing statement was tendered by EKPC. If the paying party, in good faith, disputes a portion of any billing statement, the paying party shall render payment for the undisputed portion of such bill to the billing party. Upon resolution of the dispute, any amount found to be due and payable to the billing party shall be paid to the billing party. The paying party shall render payment by wire transfer, or such other payment method as the Parties mutually agree.

b. Interest. If the paying party fails to pay all or a portion of a bill within the time stated in the preceding paragraph, the paying party shall pay the unpaid portion of the bill, which interest shall accrue daily at the maximum rate permitted published in the Wall Street Journal) plus two percent (2%); or (ii) the maximum rate permitted



by applicable law, from and including the due date of such amount, but excluding the date the delinquent amount is paid. If any portion of a disputed amount is ultimately determined to be due to the billing party, such amount shall be due and payable not later than ten (10) days after resolution of the Dispute, and the paying party shall owe interest on such portion of such disputed amount to the extent that such portion is determined to be due and owing to the billing party, which interest shall accrue daily at the lesser of: (i) the Prime Rate (as published in the Wall Street Journal) plus two percent (2%); or (ii) the maximum rate permitted by applicable law, from and including the original due date of such amount, but excluding the date the disputed amount is paid.

c. Offsets. Any Party may at any time offset any amounts owed by it against any and all amounts that may be due and owed to another Party under this Agreement.

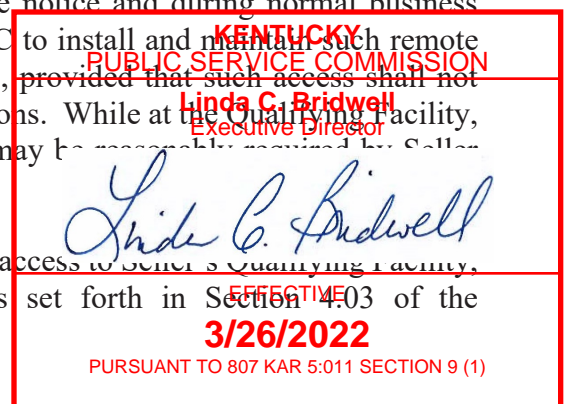
5.04 Nolin's Services. Any delivery of electric power and energy and reactive support supplied to the Seller by Nolin shall be metered and accounted for separately from the power and energy delivered and sold hereunder by the Seller to EKPC and shall be provided in accordance with the Schedules attached hereto or the rates, rules and regulations established by Nolin and approved by the Kentucky Public Service Commission for Supplementary, Backup, Maintenance or Interruptible power, as applicable, and any changes in such Schedules rates, rules and regulations as may become effective in the future. In addition, Nolin will charge an administrative fee of \$69.50 per month to Seller for the costs of administrative tasks associated with this Agreement.

5.05 Monthly Backup Service Charge. The Seller understands and agrees Nolin, of which it is a member, will impose a monthly backup service charge and charge for reactive power support, as provided in Section 3.01(c)(iii) and shown in Schedule D, for the use of Nolin facilities and service in such amounts as are from time to time required by the Seller. For each monthly billing period, Nolin shall determine from recorded meter data the quantities of backup power and energy delivered to the Seller and reactive power charges due to Nolin in the previous month. By the 15<sup>th</sup> of the month, Nolin shall prepare and send to the Seller a statement showing any amounts due to Nolin for Backup Power Service power and energy delivered, reactive power charges, and Interconnection Service Charges as specified in Section 3.01(d). Such statement shall show the total amount of power delivered to the Seller, the reactive power amounts subject to charge, and shall indicate how such amounts were determined. Payment for Nolin's invoice to Seller shall follow the normal billing date per applicable bill cycle.

## ARTICLE VI – PROPERTY RIGHTS AND ACCESS

6.01 Communications and Data Logging Systems. Seller shall provide EKPC with adequate space within the centralized control house or similar structure of the Qualifying Facility to accommodate a reasonable remote terminal owned by EKPC. Seller shall also provide EKPC with access to the Qualifying Facility, upon reasonable advance notice and during normal business hours, as may be necessary and appropriate to enable EKPC to install and maintain such remote terminal in a manner consistent with Good Utility Practice, provided that such access shall not unreasonably interfere with Seller's normal business operations. While at the Qualifying Facility, EKPC personnel shall observe such safety precautions as may be reasonably required by Seller and communicated to EKPC in writing.

6.02 Right of Access. EKPC shall have the same right of access to Seller's Qualifying Facility, Seller's Interconnection Facilities and EKPC's meter as set forth in Section 4.03 of the



Interconnection Manual. Such inspections shall not relieve the Seller from its obligations to maintain the facilities in satisfactory operating conditions and shall, in no way, be deemed an endorsement of the safe condition of the Qualifying Facility. While present on the property of Seller, EKPC personnel shall observe such safety precautions as may be reasonably required by Seller and communicated to EKPC in writing.

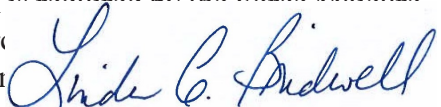
6.03 Removal of Equipment. Upon termination of this Agreement for any reason, any part or all of the Interconnection Facilities then owned by EKPC or Nolin may be removed by such owner at such owner's cost and expense. Any portion of the Interconnection Facilities owned by the Seller at the termination of this Agreement shall remain the Seller's property.

## ARTICLE VII – FORCE MAJEURE

7.01 Force Majeure Defined. "Force Majeure" shall mean an event or circumstance beyond the reasonable control of and without the fault or negligence of the Party claiming Force Majeure, which, despite the exercise of reasonable diligence, cannot be or be caused to be prevented, avoided or removed by such Party. Force Majeure shall include, to the extent consistent with the preceding sentence: an act of God; war (declared or undeclared); sabotage; riot; insurrection; civil unrest or disturbance; military or guerilla action; banditry; terrorist activity or a threat of terrorist activity which, under the circumstances, would be considered a precursor to actual terrorist activity; economic sanction or embargo; civil strike, work stoppage, slow-down, or lock-out that are of an industry or sector-wide nature and that are not directed solely or specifically at the affected Party; explosion; fire; earthquake or seaquake; abnormal weather condition; hurricane; flood; lightning; high winds; drought; peril of the sea; the binding order of any Governmental Authority (provided that the affected Party has in good faith considered reasonably contesting such order); the failure to act on the part of any Governmental Authority (provided that such action has been timely requested and diligently pursued); unavailability of equipment, supplies or products, but only to the extent caused by an event of circumstance of Force Majeure; and failure of equipment. With respect to the Seller, Force Majeure shall also include (to the extent beyond the reasonable control of and without the fault or negligence of Seller) any interruption in distribution service on Nolin's side of the Delivery Point. No Party shall be deemed to have suffered an event of Force Majeure due to the failure of equipment which that Party is responsible for operating or maintaining unless the equipment has been operated and maintained in accordance with Good Utility Practice. Neither the lack of money nor changes in market conditions shall constitute an event of Force Majeure.

7.02 Effect of Force Majeure. If any Party is rendered wholly or partly unable to perform its obligations under this Agreement or its performance is delayed because of Force Majeure, that Party shall be excused from whatever performance it is unable to perform or delayed in performing due to the Force Majeure to the extent so affected, provided that: a) the Party affected by such Force Majeure, as soon as reasonably practical after the commencement of such event, gives the other Parties prompt oral notice, followed by a written notice within forty-eight (48) hours after such oral notice, fully describing the particulars of the occurrence; b) the suspension of performance is of no greater scope and of no longer duration than is required by the Force Majeure event; and c) the Party whose performance is affected by such Force Majeure shall make reasonable efforts to overcome and remedy its inability to perform.

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7.03 Affect on Payment Obligations. Notwithstanding any other provision of this Agreement, a Party suffering a Force Majeure event is not relieved from tendering payment(s) that are obligated to be paid pursuant to this Agreement. Force Majeure shall not be a defense to any payment that is lawfully owed.

7.04 Deadlines Extended; Termination. Whenever a Party is required to commence or complete any action within a specified period and is prevented or delayed by Force Majeure from commencing or completing such action within the specified period, such period shall be extended by an amount equal to the duration of such event of Force Majeure occurring or continuing during such period except as otherwise specifically provided in this Agreement; provided, however, that in no event shall a Force Majeure extend any term of this Agreement. If any Force Majeure prevents the Seller from delivering power for more than thirty (30) consecutive days, then EKPC may terminate this Agreement upon written notice to Seller and no Party shall have any liability arising out of such termination.

## ARTICLE VIII – RISK OF LOSS AND INDEMNIFICATION

### 8.01 Risk of Loss.

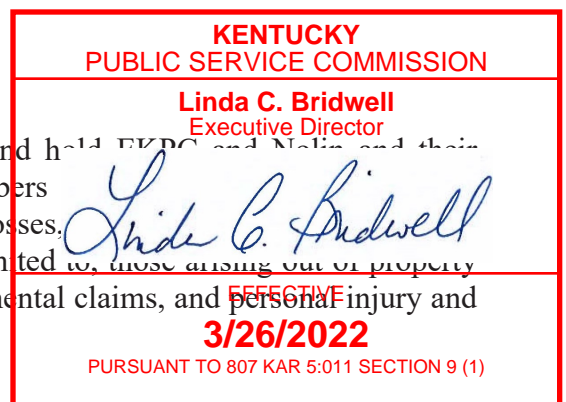
a. Seller. As between EKPC and Seller, Seller shall be responsible for and shall bear the full risk of loss: (i) with respect to any loss of or damage to any property located on Seller's side of the Delivery Point; and (ii) with respect to any personal injury or death, or loss of or damage to any other property arising out of the ownership or leasing, operation or maintenance of any property of Seller on Seller's side of the Delivery Point; provided, however, that Seller shall not be responsible for any loss, damage, or injury to the extent that such loss, damage, or injury arises out of the negligence or willful misconduct of EKPC or Nolin.

b. EKPC. As between EKPC and Seller, EKPC shall be responsible for and shall bear the full risk of loss: (i) with respect to any loss of or damage to any property located on EKPC's side of the Delivery Point, and (ii) with respect to any personal injury or death, or loss of or damage to any other property arising out of the ownership, operation or maintenance of any property of EKPC on EKPC's side of the Delivery Point, provided, however, that EKPC shall not be responsible for any loss, damage, or injury to the extent that such loss, damage, or injury arises out of the negligence or willful misconduct of Seller or Nolin.

8.02 Environmental Claims. The Seller assumes liability for any and all claims, demands, actions, violations, notices or causes of action of any kind arising from or relating to the design, construction, installation, operation, maintenance or dismantling of the Qualifying Facility that arise from or relate to violations of any environmental statutes, regulations, rules or orders whether federal, state or local in nature.

### 8.03 Indemnification.

a. By Seller. Seller shall indemnify, defend and hold EKPC and Nolin and their respective employees, directors, officers, managers, members against any and all third party claims, suits, damages, losses, (including reasonable attorneys' fees) including, but not limited to, those arising out of property damage to the property of EKPC, Nolin or others, environmental claims, and personal injury and



bodily injury (including death, sickness and disease) to the extent caused by Seller's: (i) material breach of any obligation, representation or warranty contained in this Agreement; or (ii) negligence or willful misconduct.

b. By EKPC. EKPC shall indemnify, defend and hold Seller and Nolin and their respective employees, directors, officers, managers, members, shareholders and agents, harmless from and against any and all third party claims, suits, damages, losses, liabilities, expenses and costs (including reasonable attorneys' fees) including, but not limited to, those arising out of property damage, environmental claims, and personal injury and bodily injury (including death, sickness and disease) to the extent caused by EKPC's: (i) material breach of any obligation, representation or warranty contained in this Agreement; or (ii) negligence or willful misconduct.

c. By Nolin. Nolin shall indemnify, defend and hold Seller and EKPC and their respective employees, directors, officers, managers, members, shareholders and agents, harmless from and against any and all third party claims, suits, damages, losses, liabilities, expenses and costs (including reasonable attorneys' fees) including, but not limited to, those arising out of property damage, environmental claims, and personal injury and bodily injury (including death, sickness and disease) to the extent caused by Nolin's: (i) material breach of any obligation, representation or warranty contained in this Agreement; or (ii) negligence or willful misconduct.

d. Apportionment. If, due to the joint, concurring, comparative or contributory negligence or willful misconduct of the Parties, any Party incurs any cost or expense arising out of any claim, cause or demand, such cost or expense shall be allocated between the Parties in proportion to their respective degrees of negligence or willful misconduct contributing to such claim, cause or demand.

e. Employees. No Party shall be deemed an employee of the other Party. No Party shall bring any claim against another Party with respect to any liability for compensation under any applicable state or federal worker's compensation act, including worker's compensation and/or employer's liability claims of employees. Each Party shall be liable for all claims of the Party's own employees arising out of any provision of any workers' compensation law.

f. Notice and Participation.

i. If any Party entitled to indemnification hereunder (the "Indemnified Party") intends to seek indemnification under this Article from another Party (the "Indemnifying Party") with respect to any claim, cause or demand, the Indemnified Party shall give the Indemnifying Party notice of such claim, cause or demand upon the receipt of actual knowledge or information by the Indemnified Party of any possible claim, cause or demand or of the commencement of such claim, which notice shall in no event be later than the later of: (A) fifteen (15) business days prior to the last day for responding to such claim, cause or demand; or (B) one-half of the period allowed for responding to such claim, cause or demand. The Indemnifying Party shall have no liability under this Article for any claim, cause or demand for which such notice is not provided, but only to the extent that the failure to give such notice materially impairs the ability of the Indemnifying Party to respond to or to defend the claim, cause or demand.

ii. The Indemnifying Party shall have the right to assume the defense of any claim, cause or demand, at its sole cost and expense, with counsel designated by the Indemnifying

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Party and reasonably satisfactory to the Indemnified Party; provided, however, that if the defendants in any such proceeding include both the Indemnified Party and the Indemnifying Party, and the Indemnified Party shall have reasonably concluded that there may be legal defenses available to it which are different from or additional to those available to the Indemnifying Party, the Indemnified Party shall have the right to select separate counsel, at the Indemnifying Party's expense, to assert such legal defenses and to otherwise participate in the defense of such claim, cause or demand on behalf of such Indemnified Party, and the Indemnifying Party shall be responsible for the reasonable fees and expenses of such separate counsel.

iii. Should any Indemnified Party be entitled to indemnification under this Section as a result of a claim, cause or demand by a third party, and should the Indemnifying Party fail to assume the defense of such claim, cause or demand within a reasonable period of time, the Indemnified Party may, at the expense of the Indemnifying Party, contest (or, with or without the prior consent of the Indemnifying Party), settle such claim, cause or demand.

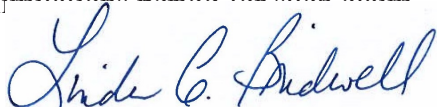
iv. Except to the extent expressly provided herein, no Indemnified Party shall settle any claim, cause or demand with respect to which it has sought or is entitled to seek indemnification pursuant to this Section unless: (A) it has obtained the prior written consent of the Indemnifying Party; or (B) the Indemnifying Party has failed to provide, within a reasonable period of time, security, in a form reasonably satisfactory to the Indemnified Party, securing the payment of any cost or expense, up to the amount of the proposed settlement.

v. Except to the extent expressly provided otherwise herein, no Indemnifying Party shall settle any claim, cause or demand with respect to which it may be liable to provide indemnification pursuant to this Section without the prior written consent of the Indemnified Party, provided, however, that if the Indemnifying Party has reached a bona fide settlement agreement with the plaintiff(s) in any such proceeding, which settlement includes a full release of the Indemnified Party for any and all liability with respect to such claim, cause or demand, and the Indemnified Party does not consent to such settlement agreement, then the dollar amount specified in the settlement agreement, plus the Indemnified Party's reasonable legal fees and other costs related to the defense of the claim, cause or demand paid or incurred prior to the date of such settlement agreement, shall act as an absolute maximum limit on the indemnification obligation of the Indemnifying Party with respect to the claim, cause or demand, or portion thereof, that is the subject of such settlement agreement.

g. Net Amount. In the event that an Indemnifying Party is obligated to indemnify and hold any Indemnified Party harmless under this Article, the amount owing to the Indemnified Party shall be the amount of such Indemnified Party's actual cost and expense, net of any insurance or other recovery actually received by the Indemnified Party.

h. Assertion of Claims. No claim, cause or demand of any kind shall be asserted against any Party, whether arising out of contract, tort (including negligence), strict liability, or any other cause of or form of action, unless it is filed in a court of competent jurisdiction, or a demand for arbitration is made, within the applicable statute of limitations period for such claim, cause or demand.

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i. No Release of Insurers. The provisions of this Article shall not be deemed or construed to release any insurer from its obligation to pay any insurance proceeds in accordance with the terms and conditions of valid and collectible insurance policies.

j. Survival of Obligation. The duty to indemnify under this Article shall continue in full force and effect notwithstanding the expiration or termination of this Agreement, with respect to any cost or expense arising out of an event or condition which occurred or existed prior to such expiration or termination.

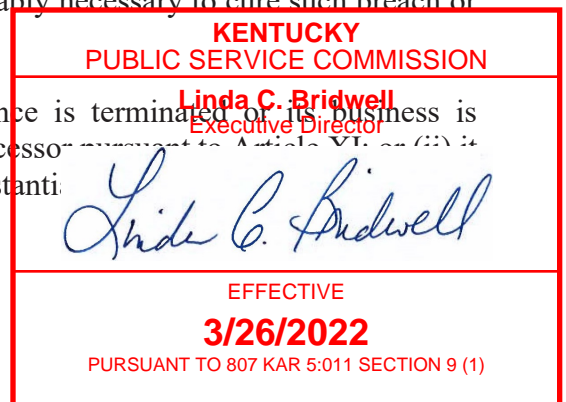
8.04 Limitation of Liability. For a breach of any provision of this Agreement for which an express remedy or measure of damages is provided, such express remedy or measure of damages shall be the sole and exclusive remedy. Unless expressly herein provided, no Party shall be liable for consequential, incidental, punitive exemplary or indirect damages, lost profits or other business interruption damages, by statute (to the extent permitted by law), in tort or contract or otherwise (except to the extent that an Indemnifying Party is obligated under Section 8.02 to indemnify against third party claims for consequential, incidental, punitive, exemplary or indirect damages or lost profits or business interruption damages). The limitations herein imposed on remedies and the measure of damages is without regard to the cause or causes related thereto, including the negligence of any Party, whether such negligence be sole, joint or concurrent, or active or passive. To the extent any damages required to be paid hereunder for a breach are liquidated, the Parties acknowledge that the liquidated damages are reasonable in light of the anticipated harm that would be caused by the breach, the difficulties of proof of loss, and the inconvenience or non-feasibility of otherwise obtaining an adequate remedy. EXCEPT AS SET FORTH IN THIS AGREEMENT, THERE ARE NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE SUBJECT MATTER OF THIS AGREEMENT.

## ARTICLE IX - EVENTS OF DEFAULT AND REMEDIES

9.01 Events of Default by EKPC or Nolin. EKPC or Nolin, respectively, shall be in default under this Agreement upon the happening or occurrence of any of the following events or conditions, each of which shall be an "Event of Default" for purposes of this Agreement:

a. EKPC or Nolin breaches or fails to observe or perform any of its material obligations under this Agreement, other than the obligations described in Section 9.01(c), unless within thirty (30) days after written notice from Seller specifying the nature of such breach or failure, EKPC or Nolin either cures such breach or failure or, if such cure cannot reasonably be effected by the payment of money and cannot reasonably be completed within thirty (30) days, commences such cure during the initial thirty (30) day period and thereafter diligently pursues such cure during such additional period of time as is reasonably necessary to cure such breach or failure.

b. EKPC or Nolin is dissolved, or its existence is terminated or its business is discontinued, unless: (i) this Agreement is assigned to a successor pursuant to Article XI, or (ii) it is merged into a successor corporation which continues substantially all of its business.



c. EKPC or Nolin fails to pay, when due, any amount due hereunder, and such failure continues for a period of seven (7) business days following the receipt by it of a written notice of such failure from Seller.

d. Any representation or warranty of EKPC or Nolin set forth in this Agreement was false or misleading in any material respect when made, unless: (i) the fact, circumstance or condition that is the subject of such representation or warranty is made true within thirty (30) days after Seller has given notice thereof to it; provided, however, that if the fact, circumstance or condition that is the subject of such representation or warranty cannot be corrected within such thirty (30) day period and if it commences to correct the fact, circumstance or condition that is the subject of such representation during the initial thirty (30) day period, and thereafter proceeds with all due diligence, to correct the fact, circumstance or condition that is the subject of such representation or warranty, such period shall be extended for such further period as shall be reasonably necessary for it to correct the same with all due diligence; and (ii) such cure removes any adverse effect on Seller of such fact, circumstance or condition being otherwise than as first represented, or such fact, circumstance or condition being otherwise than as first represented does not materially adversely affect Seller.

e. EKPC or Nolin shall: (i) file a voluntary petition in bankruptcy or file a voluntary petition or otherwise commence any action or proceeding seeking reorganization, liquidation, arrangement or readjustment of its debts or for any other relief under the any Bankruptcy Law, or consent to, approve of, or acquiesce in, any such petition, action or proceeding; (ii) apply for or acquiesce in the appointment of a receiver, liquidator, sequestrator, custodian, trustee or similar officer for it or for all or any part of its property; (iii) make an assignment of this Agreement for the benefit of creditors; or (iv) be insolvent or be unable generally to pay its debts as they become due.

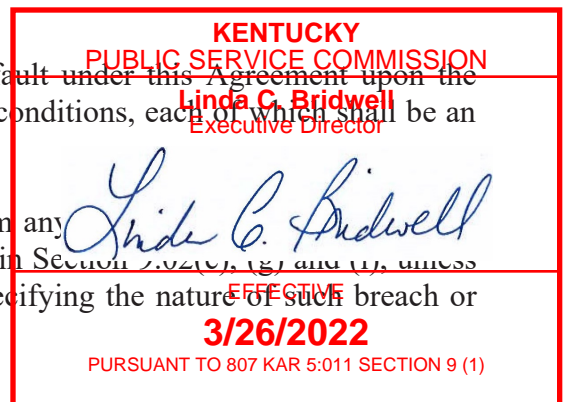
f. A proceeding or case is commenced, without the application or consent of EKPC or Nolin, in any court of competent jurisdiction, seeking: (i) the liquidation, reorganization, dissolution, winding-up, or composition or adjustment of its debts; (ii) the appointment of a trustee, receiver, custodian, liquidator or the like, of it or of all or any substantial part of its assets; or (iii) similar relief in respect of it under any bankruptcy law, and such proceeding or case shall continue un-dismissed, or an order, judgment or decree approving or ordering any of the foregoing shall be entered and continue un-stayed and in effect, for a period of ninety (90) days from commencement of such proceeding or case or the date of such order, judgment or decree.

g. EKPC or Nolin makes an assignment of this Agreement in violation of Article XI.

h. In no circumstance shall EKPC be liable for an Event of Default by Nolin nor shall Nolin be liable for an Event of Default by EKPC.

9.02 Events of Default By Seller. Seller shall be in default under this Agreement upon the happening or occurrence of any of the following events or conditions, each of which shall be an "Event of Default" for purposes of this Agreement:

a. Seller breaches or fails to observe or perform any obligations under this Agreement, other than the obligations described in Section 9.02(c), (d) and (f), unless Seller cures such breach or failure within thirty (30) days after written notice from EKPC specifying the nature of such breach or failure.





failure, Seller either cures such breach or failure or, if such cure cannot reasonably be effected by the payment of money and cannot reasonably be completed within thirty (30) days, commences such cure during the initial thirty (30) day period and thereafter diligently pursues such cure during such additional period of time as is reasonably necessary to cure such breach or failure.

b. Seller is dissolved, or Seller's existence is terminated or its business is discontinued, unless this Agreement is assigned to a successor pursuant to Article XI.

c. Seller fails to pay, when due, any amount due hereunder, and such failure continues for a period of seven (7) business days following the receipt by Seller of a written notice of such failure from EKPC.

d. Any representation or warranty of Seller set forth in this Agreement was false or misleading in any material respect when made, unless: (i) the fact, circumstance or condition that is the subject of such representation or warranty is made true within thirty (30) days after EKPC has given notice thereof to Seller; provided, however, that if the fact, circumstance or condition that is the subject of such representation or warranty cannot be corrected within such thirty (30) day period and if Seller commences to correct the fact, circumstance or condition that is the subject of such representation during the initial thirty (30) day period, and thereafter proceeds with all due diligence, to correct the fact, circumstance or condition that is the subject of such representation or warranty, such period shall be extended for such further period as shall be reasonably necessary for Seller to correct the same with all due diligence; and (ii) such cure removes any adverse effect on EKPC of such fact, circumstance or condition being otherwise than as first represented, or such fact, circumstance or condition being otherwise than as first represented does not materially adversely affect EKPC.

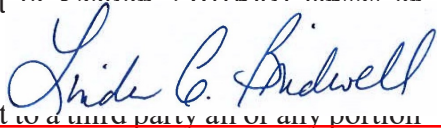
e. Seller shall: (i) file a voluntary petition in bankruptcy or file a voluntary petition or otherwise commence any action or proceeding seeking reorganization, liquidation, arrangement or readjustment of its debts or for any other relief under any Bankruptcy Law, or consent to, approve of, or acquiesce in, any such petition, action or proceeding; (ii) apply for or acquiesce in the appointment of a receiver, liquidator, sequestrator, custodian, trustee or similar officer for it or for all or any part of its property; (iii) make an assignment of this Agreement for the benefit of creditors; or (iv) be insolvent or be unable generally to pay its debts as they become due.

f. A proceeding or case is commenced, without the application or consent of Seller in any court of competent jurisdiction, seeking: (i) the liquidation, reorganization, dissolution, winding-up, or composition or adjustment of debts of Seller; (ii) the appointment of a trustee, receiver, custodian, liquidator or the like, of Seller or of all or any substantial part of its assets; or (iii) similar relief in respect of Seller under any bankruptcy law, and such proceeding or case shall continue un-dismissed, or an order, judgment or decree approving or ordering any of the foregoing shall be entered and continue un-stayed and in effect, for a period of ninety (90) days from commencement of such proceeding or case or the date of such order, judgment or decree.

g. Any letter of credit provided by Seller pursuant to Section 2.01(b)(2) lapses on defaults.

h. Seller shall sell, assign, transfer or otherwise divert to a third party all or any portion of the power produced from the Qualifying Facility.

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i. Seller shall relinquish all possession and control of the Qualifying Facility, except for as permitted pursuant to Article XI or to a contractor of Seller in accordance with Good Utility Practice, if such relinquishment of possession and control is not cured within thirty (30) days following the receipt by Seller of a written notice thereof from EKPC.

j. Seller makes an assignment of this Agreement in violation of Article XI.

### 9.03 Remedies.

a. General. Upon an Event of Default by a Party, another Party shall have the right, but not the obligation, to terminate this Agreement with respect to all obligations arising after the date a notice identifying the applicable Event(s) of Default and terminating the Agreement is delivered to the defaulting Party (“Notice of Early Termination”). A Notice of Early Termination is effective on the date it is delivered to the defaulting Party (“Early Termination Date”). Delivery of a Notice of Early Termination shall not relieve the non-defaulting Party of making timely payment for any amounts owed relating to obligations arising prior to the delivery of the Notice of Early Termination. If an Event of Default by a Party under this Agreement leads to termination of this Agreement, the non-defaulting Party may pursue all remedies available to it in law or equity and the defaulting Party’s liability hereunder shall be determined as follows:

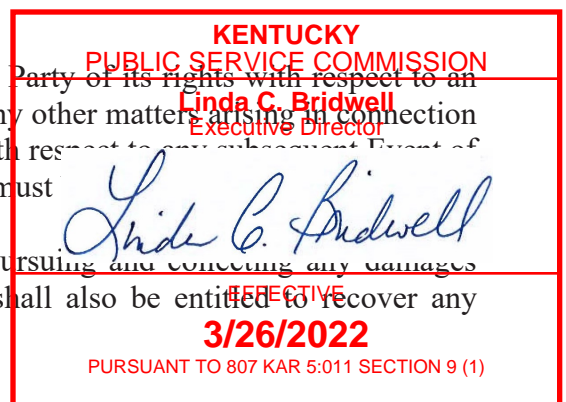
i. For a termination arising from an Event of Default by Seller, the Seller shall be liable for a Termination Payment equal to the sum of: (A) all Interconnection Costs actually expended by EKPC or Nolin from the effective date of this Agreement through the date the Notice of Early Termination is delivered to the defaulting Party, both dates inclusive; and which have not yet been paid by Seller; and (B) any amounts due for services or obligations covered by Schedule C, Schedule D or Schedule E. For purposes of the preceding sentence, “sums actually expended” shall include all payments and obligations to make future payments by EKPC or Nolin arising from or in any way relating to the terms of this Agreement, whether incurred in the planning, designing, permitting, seeking of regulatory approval, development, construction or interconnection of the Qualifying Facility and associated power and energy.

ii. For a termination arising from an Event of Default by EKPC, EKPC shall be liable for a Termination Payment equal to the sum of: (A) the amount of all unpaid billing statements for power delivered by Seller; and (B) any refund due to Seller for overpayment of Interconnection Costs.

iii. For a termination arising from an Event of Default by Nolin, Nolin shall be liable for a Termination Payment equal to the amount of any refund due to Seller for overpayment of Interconnection Costs.

b. No Waiver. Any waiver at any time by any Party of its rights with respect to an Event of Default under this Agreement, or with respect to any other matters arising in connection with this Agreement, shall not be deemed to be a waiver with respect to any subsequent Event of Default or other matter. Any waiver under this Agreement must

c. Costs, Expenses and Attorneys’ Fees. In pursuing and collecting any damages pursuant to this Section 9.03, the non-defaulting Parties shall also be entitled to recover any



reasonable costs, expenses or attorneys' fees arising from or relating to the pursuit of remedies set forth above.

9.04 Suspension of Performance. Notwithstanding any other provision of this Agreement, if an Event of Default shall have occurred and be continuing, the non-defaulting Parties, upon notice to the defaulting Party, shall have the right, but not the obligation: (i) to suspend performance under this Agreement with respect to such defaulting Party pending the exercise of other remedies provided hereunder (provided, however, that Seller may suspend performance immediately upon the delivery of a notice to EKPC when EKPC has committed an Event of Default pursuant to Section 9.01(e)), which suspension may continue for a period not to exceed sixty (60) days; and (ii) to exercise any remedy available at law or in equity; provided, however, that the collection of the Termination Payment shall be the non-defaulting Party's sole and exclusive remedy for any damages due hereunder.

9.05 Election of Remedies

a. Except as specifically limited in this Agreement, each and every right, power and remedy of a Party, whether specifically stated in this Agreement, or otherwise existing, may be exercised concurrently or separately, from time to time, and so often and in such order as may be deemed expedient by the exercising Party, and the exercise or the beginning of the exercise of any such right, power or remedy shall not be deemed a waiver of the right to exercise, at the same time or thereafter, any other right, power or remedy. No delay or omission of a Party in the exercise of any right, power or remedy shall impair or operate as a waiver thereof or of any other right, power or remedy then or thereafter existing.

b. Notwithstanding any other provision of this Article, neither Party shall terminate this Agreement following the occurrence of an Event of Default by another Party if, prior to the defaulting Party's receipt of a notice of such termination, and notwithstanding the expiration or unavailability of any cure period provided under this Agreement, the defaulting Party shall have cured the Event of Default.

c. Each Party agrees that it has a duty to mitigate damages and covenants that it will use commercially reasonable efforts to minimize damages it may incur as a result of another Party's performance or non-performance of this Agreement.

9.06 Dispute Resolution.

a. General Provisions. Every dispute of any kind or nature between EKPC, Nolin and Seller arising out of or in connection with this Agreement (each a "Dispute") shall be resolved in accordance with this Section, to the extent permitted by law.

b. Referral to Senior Management.

i. Upon the occurrence of a Dispute, any Party may deliver a notice to the other Parties requesting that the Dispute be referred to the senior management of such Party. Such notice shall include the names of the senior management of such Party to resolve the Dispute, and a schedule of their availability during the thirty (30) day period following the date of the notice. Any such notice shall be delivered within a reasonable time after



the Dispute arises, but in no event shall it be delivered less than thirty (30) days before the institution of legal or equitable proceedings based on such Dispute would be barred by any applicable statute of limitations.

ii. Within seven (7) days after receipt of a notice pursuant to the preceding paragraph, the other Parties shall provide a notice to the requesting Party indicating the names of the senior management of the Party nominated to attempt to resolve the Dispute, and a schedule of their availability during the remainder of the thirty (30) day period following the date of the notice.

iii. During the remainder of the thirty (30) day period following delivery of the original notice, the nominated members of the senior management of the Parties shall meet as frequently as possible, and shall attempt in good faith to resolve the Dispute. Unless the Parties agree otherwise in writing prior to the commencement of such thirty (30) day period, neither Party shall be entitled to invoke or rely on any admissions, settlement offers or other statements made during the course of such discussions in any subsequent arbitration or legal proceedings.

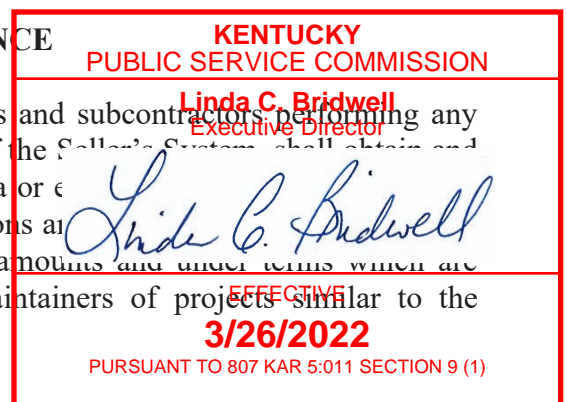
c. Commission Proceeding. Any Dispute that has not been resolved within thirty (30) days of the delivery of a notice in accordance with Section 9.06(b) shall be resolved by: (i) the filing of an appropriate pleading before the Kentucky Public Service Commission to the extent that the subject matter of the Dispute is within the jurisdiction of the Commission; or (ii) the filing of an appropriate action in the Circuit Court of Clark County, Kentucky.

d. Continued Performance. During the conduct of Dispute resolution procedures pursuant to this Section: (i) the Parties shall continue to perform their respective obligations under this Agreement; and (ii) no Party shall exercise any other remedies hereunder arising by virtue of the matters in dispute; provided, however, that nothing in this Section shall be construed: (A) to prevent Seller from suspending performance in the event that EKPC has not paid undisputed amounts due and owing to Seller under this Agreement; or (B) to prevent EKPC from suspending performance hereunder (other than payments for power previously provided to EKPC) in the event that Seller ceases providing power hereunder.

9.07 Effect of Termination. No termination of this Agreement following an Event of Default shall relieve the defaulting Party of its liability and obligations hereunder, and a non-defaulting Party may take whatever action at law or in equity may appear necessary or desirable to enforce performance and observance of any obligations under this Agreement, and the rights given hereunder shall be in addition to all other remedies available to the Parties, either, at law, in equity, or otherwise, for the breach of this Agreement, provided, however, that any damages for the termination of this Agreement shall be as provided in Section 9.03.

## ARTICLE X – INSURANCE

10.01 Coverage and Amounts. Seller, and all contractors and subcontractors performing any services in connection with the operation or maintenance of the Seller's System, shall obtain and maintain in force commercial general liability and umbrella or excess liability coverage and property insurance for injury to persons and property, and workers' compensation insurance and workman's compensation insurance, all in amounts and under terms which are generally carried by owners or lessees, operators or maintainers of projects similar to the



Qualifying Facility, but in no case less than \$2,000,000.00 for public liability for bodily injury and \$1,000,000.00 for property damage. Seller's liability under this Agreement is not limited to the amount of insurance coverage required herein.

10.02 Evidence of Insurance. Upon request made on or after the Authorization Date, Seller shall provide EKPC and Nolin with insurance certificates reasonably acceptable to EKPC and Nolin evidencing that insurance coverages for the Qualifying Facility are in compliance with the specifications for insurance coverage set forth in this Article X. Such insurance and certificates shall: (a) include EKPC and Nolin as additional insured beneficiaries under the commercial general liability and umbrella liability policies; (b) provide a waiver of any rights of subrogation against EKPC, its affiliates and subsidiaries; and (c) indicate that the commercial general liability and umbrella liability policies have been extended as described above. All policies shall be written with insurers with A.M. Best Company ratings of at least A-. All policies shall be written on an occurrence basis, except as provided in Section 10.04. The commercial general liability and umbrella liability policies shall: (i) provide that Seller's policy shall be primary in all instances regardless of like coverages, if any, carried by EKPC or Nolin; and (ii) provide for claims by one insured against another such that, except for the limits of insurance, the insurance shall apply separately to each insured against whom a claim is made or suit is brought.

10.03 Modification of Insurance. If any insurance required to be maintained by Seller hereunder ceases to be available on commercially reasonable terms in the commercial insurance market, Seller shall provide written notice of such fact to EKPC and Nolin, accompanied by a certificate from an independent insurance advisor of recognized national standing, certifying that such insurance is not available on commercially reasonable terms in the commercial insurance market for electric generating plants of similar type, geographic location and design. Upon delivery of such notice, Seller shall be relieved of the affected obligation, and Seller shall use commercially reasonable efforts to obtain other insurance that would provide comparable protection against the risk to be insured.

10.04 Term Insurance. All insurance required under this Agreement shall cover occurrences during the term(s) of this Agreement. In the event that any insurance as required herein is commercially available only on a "claims-made" basis, such insurance shall provide for a retroactive date not later than the Authorization Date and such insurance shall be maintained by Seller, with a retroactive date not later than the retroactive date required above, for a minimum of three (3) years after the expiration of the final term of this Agreement.

## ARTICLE XI - SALE, TRANSFER OR ASSIGNMENT

11.01 Assignment to Non-Affiliates. With the exception of EKPC's right, title and interest in Environmental Attributes, this Agreement may not be assigned, in whole or in part, by any Party without the prior written consent of the other Parties. Such consent may be given by the assignor, the assignee agrees in writing, in form and substance satisfactory to the non-assigning Parties, to assume and to perform each and every obligation of the assignor under this Agreement; (ii) the assignment does not impair any security given by the assigning Party hereunder unless the assignor posts replacement security which meets the requirements of this Agreement; (iii) the assignor has obtained, prior to the assignment, such Authorizations as may be required by the Rules and Regulations. Any assignment in violation hereof shall be null and void and shall constitute an Event of Default by the assigning Party.

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11.02 Assignment to Affiliates. Notwithstanding Section 11.01, any Party may assign this Agreement to an affiliate of such Party without the consent of the other Parties, provided, however, that the assigning Party shall remain liable for all of its obligations under this Agreement unless and until the consent of the non-assigning Parties is secured in accordance with Section 11.01. The assigning Party shall notify the other Parties of the occurrence of any event described in this paragraph.

## ARTICLE XII - MISCELLANEOUS

### 12.01 Representations and Warranties.

a. Representations and Warranties of EKPC and Nolin. EKPC and Nolin, solely as applied to each of them in their individual capacity, make the following representations and warranties to Seller:

i. It is a corporation duly organized and in good standing under the laws of the Commonwealth of Kentucky, and is duly qualified to conduct business in Kentucky.

ii. It possesses all requisite legal power and authority to enter into and perform its obligations under this Agreement and to carry out the transaction(s) contemplated herein. It has all legal power and authority to transact the business in which it engages or proposes to engage, and holds or reasonably expects to obtain all Authorizations necessary and required therefore.

iii. Its execution, delivery and performance of this Agreement have been duly authorized by, and are in accordance with, its articles of incorporation or other organization documents; this Agreement has been duly executed and delivered for it by the signatories so authorized; and this Agreement constitutes its legal, valid and binding obligation, enforceable against it in accordance with the terms thereof.

iv. Its execution and delivery of this Agreement: (A) will not result in a material breach or violation of, or constitute a material default under, any applicable law or Authorization, or any contract, lease or other agreement or instrument to which it is a party, or by which it or its properties may be bound or affected; and (B) does not require any Authorization, or the consent, authorization or notification of any other person, or any other action by or with respect to any other person.

v. Its performance of this Agreement: (A) will not result in a material breach or violation of, or constitute a material default under, any applicable law or Authorization, or any contract, lease or other agreement or instrument to which it is a party, or by which it or its properties may be bound or affected; and (B) does not require any Authorization, or the consent, authorization or notification of any other person, or any other actions by or with respect to any other person, other than: (I) Kentucky Public Service Commission approval; (II) such Authorizations, consents, authorizations, notifications, and other actions as have already been obtained, made, or taken, as applicable; and (III) such Authorizations, consents, approvals, not are not required to have been obtained, made, or taken, as applicable to the representation and warranty is made, and which are reasonably expected to be obtained, made, or taken on a timely basis and in due course.

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vi. No suit, action or arbitration, or legal, administrative or other proceeding is pending, or to its knowledge, has been threatened against it that would affect the validity or enforceability of this Agreement or the ability of such buyer to perform its obligations hereunder in any material respect, or that would, if adversely determined, have a material adverse effect on its business or financial condition. There are no bankruptcy, insolvency, reorganization, receivership or other arrangements proceedings, pending against or being contemplated by it, or, to its knowledge, threatened against it.

vii. It is not in breach of, in default under, or in violation of, any applicable law, or the provisions of any Authorization, or in breach of, in default under, or in violation of, any provision of any promissory note, indenture or any evidence of indebtedness or security therefore, lease, contract or other agreement by which it is bound, except for any such breaches, defaults or violations which, individually or in the aggregate, could not reasonably be expected to have a material adverse effect on its business or financial condition or its ability to perform any obligations hereunder.

b. Representations and Warranties of Seller. Seller makes the following representations and warranties to EKPC and Nolin:

i. Seller is a corporation duly organized and in good standing under the laws of the Commonwealth of Kentucky, and is duly qualified to conduct business in Kentucky.

ii. Seller possesses all requisite legal power and authority to enter into and perform its obligations under this Agreement and to carry out the transaction(s) contemplated herein. Seller has all legal power and authority to transact the business in which it engages or proposes to engage, and holds or reasonably expects to obtain all Authorizations necessary and required therefore.

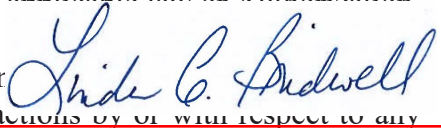
iii. Seller's execution, delivery and performance of this Agreement have been duly authorized by, and are in accordance with, its articles of incorporation or other organization documents; this Agreement has been duly executed and delivered for it by the signatories so authorized; and this Agreement constitutes its legal, valid and binding obligation, enforceable against it in accordance with the terms thereof.

iv. Seller's execution and delivery of this Agreement: (A) will not result in a material breach or violation of, or constitute a material default under, any applicable law or Authorization, or any contract, lease or other agreement or instrument to which it is a party, or by which it or its properties may be bound or affected; and (B) does not require any Authorization, or the consent, authorization or notification of any other person, or any other action by or with respect to any other person.

v. Seller's performance of this Agreement: (A) will not result in a material breach or violation of, or constitute a material default under, any applicable law or Authorization, or any contract, lease or other agreement or instrument to which it or its properties may be bound or affected; and (B) does not require any Authorization, or the consent, authorization or notification of any other person, or any other action by or with respect to any other person, other than: (I) such Authorizations, consents, authorizations, notifications, and other

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actions as have already been obtained, made, or taken, as applicable; and (II) such Authorizations, consents, approvals, notifications, or other actions which are not required to have been obtained, made, or taken, as applicable, prior to the date on e which the representation and warranty is made, and which are reasonably expected to be obtained, made or taken on a timely basis and in due course.

vi. No suit, action or arbitration, or legal, administrative or other proceeding is pending, or to Seller’s knowledge, has been threatened against Seller that would affect the validity or enforceability of this Agreement or the ability of such buyer to perform its obligations hereunder in any material respect, or that would, if adversely determined, have a material adverse effect on the business or financial condition of Seller. There are no bankruptcy, insolvency, reorganization, receivership or other arrangements proceedings, pending against or being contemplated by Seller, or, to Seller’s knowledge, threatened against it.

vii. Seller is not in breach of, in default under, or in violation of, any applicable law, or the provisions of any Authorization, or in breach of, in default under, or in violation of, any provision of any promissory note, indenture or any evidence of indebtedness or security therefore, lease, contract or other agreement by which it is bound, except for any such breaches, defaults or violations which, individually or in the aggregate, could not reasonably be expected to have a material adverse effect on the business or financial condition of Seller or its ability to perform its obligations hereunder.

12.02 Term. This Agreement, and any amendments hereto, shall have an Initial Term commencing on the effective date and expiring five (5) years after the date that the last required Authorization was granted by the Kentucky Public Service Commission, the Administrator of the Rural Utilities Service or any other applicable Governmental Authority (“Authorization Date”). Upon the expiration of the Initial Term, the Agreement shall automatically renew on a year to year basis until terminated, unless terminated as provided in Section 9.03(a) or Section 12.03.

12.03 Termination. In addition to an early termination pursuant to Section 9.03, any party may terminate this Agreement at the expiration of the Initial Term or during any subsequent one year term thereafter by giving the other parties at least ninety (90) days advance notice in writing prior to the end of such Initial Term or any subsequent one year term. Termination shall not affect any obligation accrued prior to such termination or any other obligation which, pursuant to the terms of this Agreement, survives termination.

12.04 Notices. Any notice required by this Agreement to be given in writing shall be deemed properly given if and when delivered in person, or sent by registered or certified mail, postage prepaid to the person specified below:

If to EKPC:

President & Chief Executive Officer  
East Kentucky Power Cooperative, Inc.  
4755 Lexington Road  
P.O. Box 707  
Winchester, Kentucky 40392-0707





If to Nolin:

President & Chief Executive Officer  
Nolin Rural Electric Cooperative Corporation  
411 Ring Road  
Elizabethtown, Kentucky 42701

If to Seller:

General Manager  
Swope Enterprises, LLC  
1100 North Dixie Avenue  
Elizabethtown, Kentucky 42701

Notice may also be delivered to such other person or address as a Party may have been designated in a written notice given by or on behalf of the Party entitled to receive notice to the other Parties.

12.05 Confidentiality.

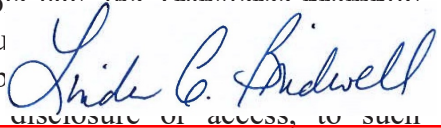
a. Duty of Confidentiality. Any Proprietary Information of a Party (the "Transferor") which is disclosed to or otherwise received or obtained by another Party (the "Transferee") incident to this Agreement is disclosed, and shall be held, in confidence, and the Transferee shall not (subject to paragraphs (b) and (c) below) publish or otherwise disclose any Proprietary Information of the Transferor to any person for any reason or purpose whatsoever, or use any Proprietary Information for any purpose other than performance under this Agreement, without the prior written approval of the Transferor, which approval may be granted or withheld by the Transferor in its sole discretion. Without limiting the generality of the foregoing, each Party shall observe at a minimum the same safeguards and precautions with regard to the Transferor's Proprietary Information which such Party observes with respect to its own information of the same or similar kind.

b. Disclosures to Employees, Contractors and Affiliates. Each Party agrees that it will make available Proprietary Information received from another Party to its employees, contractors and affiliates only on a need-to-know basis, and that all persons to whom such Proprietary Information is made available will be made aware of the confidential nature of such Proprietary Information, and will be required to agree to hold such Proprietary Information in confidence under terms substantially identical to the terms hereof.

c. Disclosures to Governmental Authorities. Notwithstanding the foregoing:

i. A Transferee may provide any Proprietary Information to any Governmental Authority having jurisdiction over or asserting a right to obtain such information, provided that: (A) such Governmental Authority orders that such Proprietary Information be provided; and (B) unless prohibited from so doing by applicable law, the Transferee promptly advises the Transferor of any request for such information by such Governmental Authority and cooperates in giving the Transferor an opportunity to present objections to such disclosure or access, to such Governmental Authority.

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ii. Each Party may, to the extent required, disclose Proprietary Information to any Governmental Authority in connection with the application for any required Authorization, provided that, unless prohibited from so doing by applicable law, the Transferee shall advise the Transferor of any Proprietary Information that Transferee will disclose to the Governmental Authority prior thereto and shall cooperate in giving the Transferor an opportunity to present objections, requests for limitation, and/or requests for confidentiality or other restrictions on disclosure or access, to such Governmental Authority.

iii. Either Party may disclose such Proprietary Information regarding the terms of this Agreement as such Party deems necessary to enable it to comply with the Securities Exchange Act of 1934, or the rules, regulations and forms of the Securities and Exchange Commission, issued thereunder or the applicable rules of any stock exchange.

d. Injunctive Relief. In the event of a breach or threatened breach of the provisions of paragraph (a) above by any Transferee, the Transferor shall be entitled to an injunction restraining such Party from such breach. Nothing contained herein shall be construed as prohibiting the Transferor from pursuing any other remedies available at law or equity for such breach or threatened breach of this Agreement.

e. Continuing Obligation. The obligation to retain Proprietary Information in confidence shall continue in full force and effect during the term of the Agreement and for a period of two (2) years thereafter, notwithstanding the expiration or termination of this Agreement, with respect to any information obtained by any Party prior to such expiration or termination.

f. Definition of Proprietary Information:

i. The term "Proprietary Information" means all information, written or oral, which has been or is disclosed by the Transferor, or by any person on behalf of the Transferor, or which otherwise becomes known to the Transferee, or to any person associated with such Transferee, or any other person in a confidential relationship with, the Transferee, and which: (A) relates to matters such as patents, trade secrets, research and development activities, draft or final contracts or other business arrangements, books and records, resource data and analysis, generation data and analysis, budgets, cost estimates, pro forma calculations, engineering work product, environmental compliance, vendor lists, suppliers, manufacturing processes, energy consumption, pricing information, private processes, and other similar information, as they may exist from time to time; (B) relates to the existence or the terms, including pricing, of this Agreement; or (C) the Transferor expressly designates in writing to be confidential.

ii. Notwithstanding anything to the contrary in the preceding paragraph, Proprietary Information shall exclude information falling into any of the following categories: A) information that, at the time of disclosure hereunder, is in the public domain, other than information that entered the public domain by breach of this Agreement by Transferee; B) information that, after disclosure hereunder, enters the public domain, other than information that enters the public domain by breach of this Agreement by Transferee; C) information that enters the public domain by breach of this Agreement by Transferee, other than that obtained from third parties, that prior to disclosure hereunder, was in the possession, either without limitation on disclosure to others or subsequently becoming free of such limitation; D) information obtained by Transferee from a third party having an independent right

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to disclose the information; or E) information that is available through independent research without use of or access to the Proprietary Information.

12.06 No Partnership. Notwithstanding any provision of this Agreement to the contrary, Seller, EKPC and Nolin do not intend to create hereby any lease, joint venture, partnership, association taxable as a corporation, or other entity for the conduct of any business for profit. No Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, another Party. The Parties agree to take, on a timely basis, all voluntary action as may be necessary to be excluded from treatment as a partnership under the Internal Revenue Code, and, if it should appear that one or more changes to this Agreement would be required in order to prevent the creation of such a business entity, the Parties agree to negotiate promptly in good faith with respect to such changes.

12.07 No Duty To Third Parties. Except as provided in Article X and Article XI, this Agreement is for the sole benefit of the Parties hereto, and nothing in this Agreement nor any action taken hereunder shall be construed to create any duty, liability or standard of care to any person not a party to this Agreement. Except as specifically provided herein, no person shall have any rights or interest, direct or indirect, in this Agreement or the services to be provided hereunder, or both, except the Parties hereto. Except as provided in Article X and Article XI, the Parties specifically disclaim any intent to create any rights in any person as a third-party beneficiary to this Agreement or the services to be provided hereunder, or both.

12.08 Dedication. No undertaking by one Party to the other under this Agreement shall constitute the dedication of that Party's system or any portion thereof to another Party or to the public or affect the status of Seller as an independent entity and not a public utility or public service company.

12.09 Duplicative Terms. The Parties acknowledge and agree that the following portions of the Interconnection Manual are superseded by the corresponding provisions set forth herein above: Section 9.01 (Assignment), Section 9.02 (Indemnification), Section 9.03 (Limitation of Liability and Damages), Section 9.04 (Force Majeure) and Section 9.06 (Confidentiality).

12.10 Entire Agreement. This Agreement contains the entire agreement among the Parties hereto with respect to the subject matter hereof and supersedes all prior agreements and understandings relating to such subject matter. Except for any modification which this Agreement expressly authorizes a party to make unilaterally, no modification or waiver of any term or provision of this Agreement shall be effective unless it is in writing and signed by all of the Parties.

12.11 Interpretation. The headings of the Articles in this Agreement have been inserted for convenience only and shall in no way affect the interpretation of any of the terms or provisions hereof.

12.12 Applicable Law and Venue. This Agreement shall be construed and interpreted in accordance with the laws of the Commonwealth of Kentucky except to the extent federal law is applicable. Any action, case, proceeding, matter or dispute shall be brought in the Circuit Court of Clark County, Kentucky.

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12.13 Severability. Whenever possible, each provision of this Agreement shall be interpreted in such manner as to be effective and valid, but if any provision of this Agreement or the application thereof shall be prohibited or held invalid, such prohibition or invalidity shall not affect any other provisions or the application of any other provision which can be given without the invalid provision or application, and to this end the provisions of this Agreement are declared to be severable.

12.14 Counterparts. This Agreement may be executed simultaneously in three (3) or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument.

**[The remainder of this page intentionally left blank.]**



IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized officers and have caused their seals to be affixed as of the date first written above.

**EAST KENTUCKY POWER COOPERATIVE, INC.**

BY: David Crews

JJT

FDW

ITS: Sr VP Power Supply

**NOLIN RURAL ELECTRIC COOPERATIVE CORPORATION**

BY: Ladguy R. Lee

ITS: President and CEO

**SWOPE ENTERPRISES, LLC**

BY: [Signature]

ITS: Secretary

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## Schedule A – Interconnection Facilities

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**Schedule B – Interconnection Manual**

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**Manual of Small Generator Interconnection  
Requirements for Direct Interconnection  
with EKPC Member Cooperative  
Distribution Systems  
(For Generating Facilities of 10 MW or Less)**

***NOLIN RECC***

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## PREAMBLE

The Manual of Small Generator Interconnection Requirements for Direct Interconnection with Member Distribution Systems (For Generating Facilities of 10 MW or Less) (the “Manual”) is a compendium of the technical, legal and financial requirements which must be satisfied in order for an electric generation facility with a rated capacity of 10 MW or less to directly interconnect and operate in parallel with the electric distribution system of a distribution cooperative within the East Kentucky Power Cooperative, Inc. (“EKPC”) system. The purpose of these requirements is to provide reasonable protection and minimize the risks to the personnel and property of the Member Distribution System (“Member”), EKPC, and the Interconnection Customer arising from the construction and operations of unaffiliated generation sources that will potentially impact the value, safety and reliability of the Member’s Distribution System, as required by the Member’s co-generation tariff on file with the Kentucky Public Service Commission.

## ARTICLE I - DEFINITIONS

1.01 “Affected System” shall mean an electric transmission or distribution system other than the Member's Distribution System that may be affected by the proposed interconnection, including, but not limited to the EKPC Transmission System.

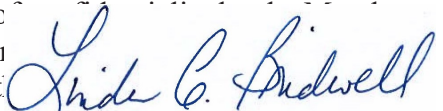
1.02 “Applicable Laws and Regulations” shall mean all duly enacted applicable federal, state and local laws, regulations, rules, ordinances, codes, decrees, judgments, directives, or judicial or administrative orders, permits and other duly authorized actions of any Governmental Authority.

1.03 “Business Day” shall mean each day of the week, Monday through Friday inclusive, but shall not include Federal Reserve bank holidays.

1.04 “Confidential Information” shall mean all information, written or oral, which has been or is disclosed by the Member, EKPC, or the Interconnection Customer, or by any Person on behalf of the Member, EKPC, or the Interconnection Customer, or which otherwise becomes known to the Member, EKPC, or the Interconnection Customer, or to any Person associated with the Member, EKPC, or the Interconnection Customer, or any other Person in a confidential relationship with the Member, EKPC, or the Interconnection Customer, and which: a) relates to matters such as patents, trade secrets, research and development activities, draft or final contracts or other business arrangements, books and records, solar data and analysis, generation data and analysis, budgets, cost estimates, pro forma calculations, engineering work product, environmental compliance, vendor lists, suppliers, manufacturing processes, energy consumption, pricing information, private processes, and other similar information, as they may exist from time to time; b) relates to the existence or the terms of this Manual; or c) the Member, EKPC, or the Interconnection Customer expressly designates in writing to be confidential. Confidential Information shall exclude information falling into any of the following categories: a) information that, at the time of disclosure hereunder or thereafter, is in the public domain, other than information that entered the public domain by breach of the duty of confidentiality of EKPC, or the Interconnection Customer; b) information, other than information that entered the public domain, that prior to disclosure hereunder, was already in the

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Interconnection Customer's possession, either without limitation on disclosure to others or subsequently becoming free of such limitation; c) information obtained by the Member, EKPC, or the Interconnection Customer from a third party having an independent right to disclose the information; or d) information that is available through independent research without use of or access to the Confidential Information.

1.05 "Delivery Meter" shall have the meaning given in Section 5.01(a).

1.06 "Delivery Point" shall mean the Delivery Meter.

1.07 "Distribution System" shall mean the Member's facilities and equipment used to distribute electricity to end users directly from nearby generators or from interconnections with EKPC's Transmission System which transports bulk power.

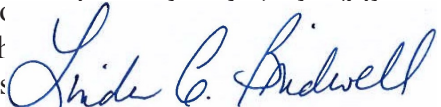
1.08 "Distribution Upgrades" shall mean any and all additions, modifications or upgrades to the Member's Distribution System required at or beyond the Delivery Point at which the Small Generating Facility interconnects with the Member's Distribution System to accommodate the interconnection of the Small Generating Facility with the Member's Distribution System. "Distribution Upgrades" shall exclude Interconnection Facilities.

1.09 "Emergency Condition" shall mean a condition or situation: a) that in the judgment of the party making the claim is imminently likely to endanger life or property; or b) that, in the case of the Member, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to the Member's Distribution System, the Member's Interconnection Facilities or the EKPC Transmission System; or c) that, in the case of the Interconnection Customer, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to, the Small Generating Facility or the Interconnection Customer's Interconnection Facilities.

1.10 "Energy" shall mean three-phase, 60 hertz, alternating current energy generated at the Small Generating Facility.

1.11 "Force Majeure" shall mean an event or circumstance beyond the reasonable control of and without the fault or negligence of the party claiming Force Majeure, which, despite the exercise of reasonable diligence, cannot be or be caused to be prevented, avoided or removed by such party. Force Majeure shall include, to the extent consistent with the preceding sentence: an act of God; war (declared or undeclared); sabotage; riot; insurrection; civil unrest or disturbance; military or guerilla action; banditry; terrorist activity or a threat of terrorist activity which, under the circumstances, would be considered a precursor to actual terrorist activity; economic sanction or embargo; civil strike, work stoppage, slow down, or lock out that are of an industry or sector-wide nature and that are not directed solely or specifically at the affected party; explosion; fire; earthquake or seaquake; abnormal weather condition; hurricane; flood; lightning; high winds; drought; peril of the sea; the binding order of any Governmental Authority (provided that the affected party has in good faith considered reasonably c to act on the part of any Governmental Authority (provided th requested and diligently pursued); unavailability of equipment, s

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the extent caused by an event of circumstance of Force Majeure; and failure of equipment. With respect to the Interconnection Customer, Force Majeure shall also include (to the extent beyond the reasonable control of and without the fault or negligence of the Interconnection Customer) any interruption in distribution service on Member's side of the Delivery Point. No party shall be deemed to have suffered an event of Force Majeure due to the failure of equipment which that party is responsible for operating or maintaining unless the equipment has been operated and maintained in accordance with Good Utility Practice. Neither the lack of money nor changes in market conditions shall constitute an event of Force Majeure.

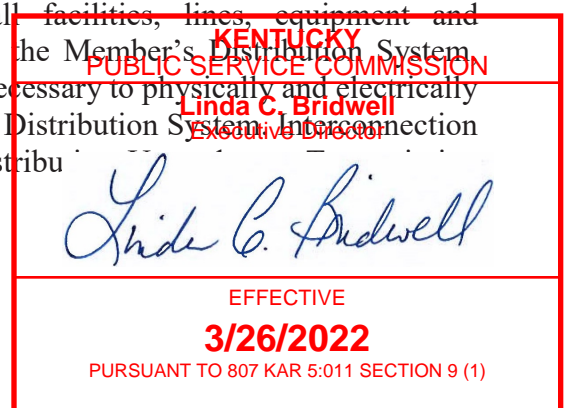
1.12 “Good Utility Practice” shall mean any of the practices, methods and acts employed by owners and/or lessors, operators or maintainers of electric generation, transmission or distribution facilities similar in size and operational characteristics to the Small Generating Facility, Interconnection Facilities, Distribution System and Transmission System which, in the exercise of reasonable judgment in the light of the facts known or that reasonably should have been known at the time that a decision was made, could reasonably have been expected to accomplish the desired result at the lowest reasonable cost, consistent with licensing and regulatory considerations, environmental considerations, reliability, safety, protection of lives and property, expedition, the technical specifications and manufacturer's maintenance requirements, and the applicable requirements of any Governmental Authority. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region.

1.13 “Governmental Authority” shall mean the federal government of the United States, and any state, county or local government, and any regulatory department, body, political subdivision, commission (including the Kentucky Public Service Commission and FERC), agency, instrumentality, ministry, court, judicial or administrative body, taxing authority, or other authority of any of the foregoing (including any corporation or other entity owned or controlled by any of the foregoing), any regional transmission organization or independent system operator, any national or regional reliability organization or council (including NERC) or any reliability coordinator, in each case, having jurisdiction or authority over the Manual (or any portion thereof), the Member, the Interconnection Customer, the Facility or the Buyer’s Distribution System, whether acting under actual or assumed authority.

1.14 “Independent Party” shall mean a party not affiliated with the Member, EKPC, or the Interconnection Customer.

1.15 “Interconnection Customer” shall mean any Person that proposes to interconnect its Small Generating Facility with the Member's Distribution System.

1.16 “Interconnection Facilities” shall mean all facilities, lines, equipment and appurtenances between the Small Generating Facility and the Member’s Distribution System, including any modification, additions or upgrades that are necessary to physically and electrically interconnect the Small Generating Facility to the Member’s Distribution System. Interconnection Facilities are sole use facilities and shall not include Distribution System Upgrades.



1.17 “Letter of Credit” shall mean an irrevocable, transferable, standby letter of credit, issued by a major U.S. commercial bank or a financial institution with a Credit Rating of at least: a) “A-” by Standard and Poor’s or “A3” by Moody’s Investment Services; and b) assets of at least \$1,000,000,000.

1.18 “Member” shall mean a Kentucky cooperative corporation: a) formed under Chapter 279 of the Kentucky Revised Statutes for the primary purpose of distributing electricity to end users; b) that has been granted a certified service territory by the Kentucky Public Service Commission; and c) has entered into a membership agreement with EKPC.

1.19 “Operating Requirements” shall mean any operating and technical requirements that may be imposed by a regional transmission organization, independent system operator, control area coordinator, balancing authority, Member or EKPC.

1.20 “Person” shall mean any legal or natural person, including any individual, corporation, partnership, limited liability company, joint stock company, association, joint venture, trust, governmental or international body or agency, or other entity.

1.21 “Reasonable Efforts” shall mean efforts that are timely and consistent with Good Utility Practice and are otherwise substantially equivalent to those a Person would use to protect its own interests.

1.22 “Small Generating Facility” shall mean the Interconnection Customer's device for the production of electricity, but shall not include the Interconnection Customer's Interconnection Facilities.

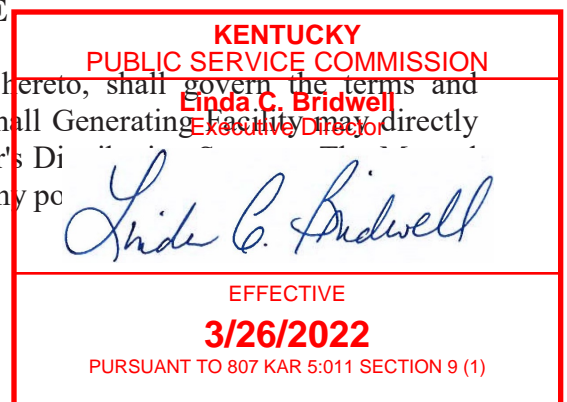
1.23 “Tariff” shall mean the Member’s or Affected System's Tariff through which transmission service or interconnection service are offered, as filed with the Kentucky Public Service Commission or FERC, and as amended or supplemented from time to time, or any successor tariff.

1.24 “Transmission System” shall mean the facilities owned, controlled or operated by EKPC that are used to transmit electric power to the Member and to or from Affected Systems.

1.25 “Transmission Upgrades” shall mean any and all additions, modifications or upgrades to EKPC’s Transmission System to accommodate the interconnection of the Small Generating Facility with the Member’s Distribution System or to allow wheeling of power across EKPC’s transmission system.

## ARTICLE 2 – SCOPE

2.01 Scope. The Manual and all attachments hereto, shall govern the terms and conditions under which the Interconnection Customer’s Small Generating Facility may directly interconnect with, and operate in parallel with, the Member's Distribution System. This Agreement shall remain in full force and effect throughout the term of any po



into between the Member and the Interconnection Customer or the period of actual interconnection, whichever is longer.

2.02 Power Purchases. The Manual does not constitute an agreement to purchase or deliver the Interconnection Customer's power by either the Member or EKPC. The purchase or delivery of power and other services that the Interconnection Customer may require must be set forth in a separate power purchase agreement(s) between the Member and the Interconnection Customer.

### ARTICLE 3 – INTERCONNECTION OBLIGATIONS

3.01 Obligations of the Member, the Interconnection Customer, and EKPC. The Member, the Interconnection Customer, and EKPC shall perform all obligations set forth herein in accordance with all Applicable Laws and Regulations, Operating Requirements, and Good Utility Practice. The Member, the Interconnection Customer, and EKPC shall respectively, construct, operate, maintain, repair, inspect, and be fully responsible for the Interconnection Facilities that each currently or subsequently may own unless otherwise specified in the Attachments incorporated herein. The Interconnection Facilities shall adequately protect the personnel and property of the Member, The Interconnection Customer, and EKPC and other Persons from damage and injury. The allocation of responsibility for the design, installation, operation, maintenance and ownership of Interconnection Facilities shall be delineated in the Attachments to this Manual.

#### 3.02 Obligations of the Interconnection Customer.

a. General. The Interconnection Customer shall design, construct, interconnect, operate and maintain its Small Generating Facility and construct, operate, and maintain its Interconnection Facilities as set forth herein and in accordance with all Applicable Laws and Regulations, Operating Requirements, Good Utility Practice and shall reasonably minimize the likelihood of a disturbance adversely affecting or impairing the Member's Distribution System, EKPC's Transmission System, or any other Affected Systems.

b. Standards. Without limiting the obligations owed by the Interconnection Customer, the Small Generating Facility and Interconnection Customer's Interconnection Facilities shall meet or exceed: 1) specifications provided by the National Electrical Safety Code, the American National Standards Institute, IEEE and Underwriter's Laboratory that are in effect at the time of construction; 2) the technical and functional interconnection requirements set forth in Attachment 4; and 3) any other applicable federal, state or local codes or standards.

c. Manufacturer's Maintenance Schedules. The Interconnection Customer shall adhere to the recommended maintenance schedule of the applicable manufacturer of each component of the Small Generating Facility and Interconnection Facilities.

#### 3.03 Obligations of the Member and EKPC.

~~es. The Interconnection Customer shall adhere to the recommended maintenance schedule of the applicable manufacturer of each component of the Small Generating Facility and Interconnection Facilities.~~

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a. General. The Member shall design, construct, operate, and maintain its Distribution System and Interconnection Facilities as set forth herein and in accordance with all Applicable Laws and Regulations, Operating Requirements and Good Utility Practice. EKPC shall design, construct, operate, and maintain its Transmission System and Interconnection Facilities as set forth herein and in accordance with all Applicable Laws and Regulations, Operating Requirements and Good Utility Practice.

b. Coordination. EKPC shall coordinate with the Member to support the interconnection of the Small Generating Facility into the Member's Distribution System. When applicable, the Member shall inform EKPC of activities relating to the engineering studies and commissioning tests set forth in Attachment 4.

3.04 Milestones. The Member and Interconnection Customer shall agree on milestones for which each is responsible and list them in Attachment 3 of this Manual. A deadline for performance of the obligations under this provision may be extended by agreement. If the Member or Interconnection Customer anticipates that it will be unable to meet a milestone for any reason other than a Force Majeure Event, it shall: a) immediately notify the other party of the reason(s) for not meeting the milestone; b) propose the earliest reasonable alternate date by which it can attain this and future milestones, and c) request appropriate amendments to Attachment 3. The party affected by the failure to meet a milestone shall not unreasonably withhold agreement to such an amendment unless: a) it will suffer significant uncompensated economic or operational harm from the delay; b) attainment of the same milestone has previously been delayed; or c) it has reason to believe that the delay in meeting the milestone is intentional or unwarranted. EKPC shall be provided with a copy of Attachment 3 and all amendments thereto.

3.05 Infrastructure Protection. Infrastructure security of electric system equipment and operations and control hardware and software is essential to ensure day-to-day reliability and operational security. The Member and Interconnection Customer shall, to the greatest extent possible, comply with Good Utility Practice regarding infrastructure protection, including satisfaction of basic standards for system infrastructure and operational security, including physical, operational, and cyber-security practices.

#### ARTICLE 4 – AUTHORIZATION, TESTING AND RIGHT OF ACCESS

4.01 Authorization Required Prior to Parallel Operation. The Interconnection Customer shall not operate its Small Generating Facility in parallel with the Member's Distribution System without prior written authorization of the Member. The Member will provide such authorization once the Member receives notification that the Interconnection Customer has complied with all applicable parallel operation and testing requirements. Such authorization shall not be unreasonably withheld, conditioned, or delayed. The Member shall use Reasonable Efforts to list any applicable parallel operation requirements other than those set forth in the Attachments hereto. Additionally, the Member shall notify the Interconnection Customer of any changes to these requirements as soon as they are known. The Member shall make Reasonable Efforts to cooperate with the Interconnection Customer in meeting requirements necessary for the Interconnection Customer to commence parallel operations by the in-service date.

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4.02 Initial Testing and Inspection. The Interconnection Customer shall test and inspect its Small Generating Facility prior to interconnection. Such testing shall, at a minimum, comply with the requirements of Attachment 4. The Interconnection Customer shall notify the Member of such activities no fewer than five (5) Business Days (or as may otherwise be mutually agreed) prior to such testing and inspection. Testing and inspection shall occur on a Business Day. The Member and EKPC may, at its own expense, send properly accredited representatives to the Small Generating Facility site to inspect the Small Generating Facility and observe the testing. If requested at the time of testing, the Interconnection Customer shall provide the Member with a written test report within five (5) business days when such testing and inspection is completed. The Member shall acknowledge that it has received the Interconnection Customer's written test report, however, such written acknowledgment shall not be deemed to be or construed as any representation, assurance, guarantee, or warranty by the Member as to the safety, durability, suitability, or reliability of the Small Generating Facility or any associated control, protective, and safety devices owned or controlled by the Interconnection Customer or the quality of power produced by the Small Generating Facility.

4.03 Right of Access. Following the initial inspection process described above, the Interconnection Customer shall allow properly accredited representatives of the Member to have access to the Facility, upon advance notice and during any Business Day, to observe the operation and maintenance of the Small Generating Facility or Interconnection Customer's Interconnection Facilities. Such representatives shall observe such safety precautions as may be required by the Interconnection Customer and communicated to the Member in writing and shall conduct themselves in a manner that will not interfere with the operation or maintenance of the Small Generating Facility or Interconnection Customer's Interconnection Facilities.

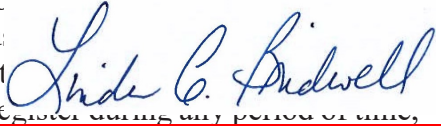
## ARTICLE 5 – METERING

### 5.01 Installation.

a. Location. Energy delivered by the Interconnection Customer to the Member pursuant to a power purchase agreement shall be measured by a meter (“Delivery Meter”) located at the Delivery Point, and shall have the metering instrument transformers, which measure the output of the Small Generating Facility, located on the Member's side of any transformer of the Interconnection Facilities. Should the Interconnection Customer require an express feeder to deliver energy directly to a Member substation, the Delivery Meter shall be located within the Member substation.

b. Cost and Installation. The Member shall specify, install, own, operate, and maintain the Delivery Meter. All Delivery Metering equipment, installation, maintenance, and operating costs will be borne by the Interconnection Customer. The Delivery Meter used to determine the billing hereunder shall be sealed, and such seals shall be broken only when tested by the Member, and only when the Delivery Meter is to be inspected, tested, adjusted, or replaced as described in Section 5.02 and Section 5.03. If applicable, the Interconnection Customer shall provide access, per 807 KRS 5:006 Section 19, for the Member to the Delivery Meter at all reasonable times for the purposes of inspecting, testing, adjusting, or replacing the meter, provided that such access shall not unreasonably interfere with the Member's normal business operations. In the event that the Delivery Meter fails to register during any period of time,

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the Member shall estimate the amount of Energy delivered during such period using an appropriate methodology.

5.02 Meter Testing. The accuracy of the Delivery Meter shall be tested and verified by the Member, at the Interconnection Customer's expense, prior to commercial operation of the facility. The Delivery Meter shall be tested by the Member, at the Interconnection Customer's expense, per 807 KRS 5:006 General Rules Sections 16 and 17, and 807 KAR 5:041 Electric. The Interconnection Customer may, at its own expense, at any time, per 807 KAR 5:006 Section 18, request the Member to test the Delivery Meter. Upon receiving written notice, the Member shall have forty-five (45) days to perform such test. All tests shall be coordinated to minimize the impact on Small Generating Facility operations.

5.03 Corrections and Maintenance. If, upon testing, the Delivery Meter is found to be inaccurate, the Delivery Meter shall be promptly adjusted or replaced by the Member to record correctly. The Interconnection Customer shall have the right to have a representative present whenever the Delivery Meter is, replaced, repaired, tested, calibrated, or adjusted.

## ARTICLE 6 – SMALL GENERATING FACILITY OPERATIONS

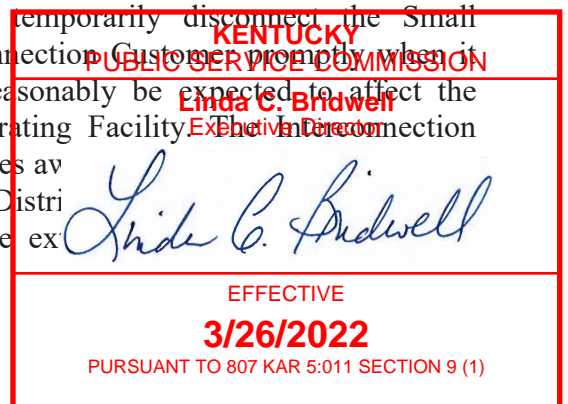
6.01 Reactive Power. The Interconnection Customer shall design the Small Generating Facility to maintain a composite power delivery at continuous rated power output at the Point of Delivery at a power factor within the range specified in Attachment 4 of this document unless the Member has established different requirements that apply to all similarly situated generators in the control area on a comparable basis. The requirements of this paragraph shall not apply to wind generators.

### 6.02 Disconnection.

a. Expiration/Termination of a Power Purchase Agreement. The Small Generating Facility shall be disconnected from the Member's Distribution System upon the expiration or termination of any purchase power agreement in effect between the Interconnection Customer and the Member. All costs required to effectuate such disconnection shall be borne by the Interconnection Customer unless the disconnection is the result of a default under an applicable power purchase agreement or a violation of any term of this Manual by the Member.

b. Temporary Disconnections. Temporary disconnections shall continue only for so long as reasonably necessary under Good Utility Practice. Permissible temporary disconnections shall include:

(i) Emergency Conditions. Under Emergency Conditions, the Member may immediately suspend interconnection service and temporarily disconnect the Small Generating Facility. The Member shall notify the Interconnection Customer promptly when it becomes aware of an Emergency Condition that may reasonably be expected to affect the Interconnection Customer's operation of the Small Generating Facility. The Interconnection Customer shall notify the Member promptly when it becomes aware of an Emergency Condition that may reasonably be expected to affect the Member's Distribution Systems, including EKPC's Transmission System. To the extent



notification shall describe the Emergency Condition, the extent of the damage or deficiency, the expected effect on the operation of the facilities and operations of both the Member and Interconnection Customer, its anticipated duration, and the necessary corrective action.

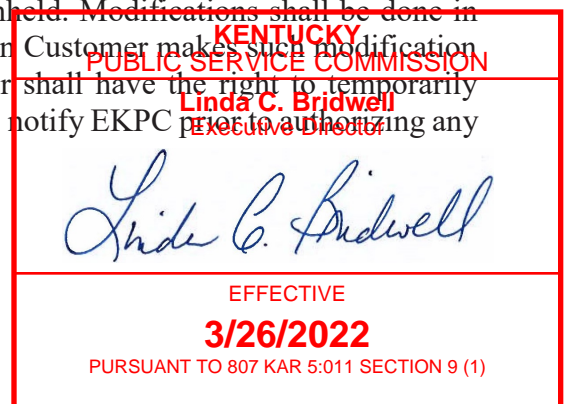
(ii) Routine Maintenance, Construction, and Repair. Either the Member or the Interconnection Customer may interrupt interconnection service or curtail the output of the Small Generating Facility and temporarily disconnect the Small Generating Facility from the Member's Distribution System when necessary for routine maintenance, construction, and repairs on the Member's Distribution System or the Small Generating Facility. Both the Member and the Interconnection Customer shall use Reasonable Efforts to provide the other with five (5) Business Days notice prior to any such interruption. The Member and Interconnection Customer shall use Reasonable Efforts to coordinate such reduction or temporary disconnection with each other.

(iii) Forced Outages. During any forced outage affecting either the Small Generating Facility or the Member's Distribution System, the affected party may suspend interconnection service to effect immediate repairs. The affected party shall use Reasonable Efforts to provide the other party with prior notice. If prior notice is not given, written documentation explaining the circumstances of the disconnection shall be provided after the fact upon request.

c. Reconnection. The Interconnection Customer and Member shall cooperate with each other to restore the Small Generating Facility, Interconnection Facilities, and the Member's Distribution System to their normal operating state as soon as reasonably practicable following a temporary disconnection.

6.03 Adverse Operating Effects. The Member shall notify the Interconnection Customer as soon as practicable if, based on Good Utility Practice, operation of the Small Generating Facility may cause disruption or deterioration of service to other customers served by the Member, or if operating the Small Generating Facility could cause damage to the Member's Distribution System or Affected Systems, including EKPC's Transmission System. Supporting documentation used to reach the decision to disconnect shall be provided to the Interconnection Customer upon request. If, after notice, the Interconnection Customer fails to remedy the adverse operating effect within a reasonable time, the Member may disconnect the Small Generating Facility. Except to the extent that an Emergency Condition exists, the Member shall provide the Interconnection Customer with five (5) Business Days notice of such disconnection.

6.04 Modification of the Small Generating Facility. The Interconnection Customer must receive written authorization from the Member before making any change to the Small Generating Facility that may have a material impact on the safety or reliability of the Member's Distribution System. Such authorization shall not be unreasonably withheld. Modifications shall be done in accordance with Good Utility Practice. If the Interconnection Customer makes such modification without the Member's prior written authorization, the latter shall have the right to temporarily disconnect the Small Generating Facility. The Member shall notify EKPC prior to authorizing any such modification to the Small Generating Facility.



6.05 Environmental Releases. The Interconnection Customer shall notify the Member, first orally and then in writing, of the release of any hazardous substances, any asbestos or lead abatement activities, or any type of remediation activities related to the Small Generating Facility or the Interconnection Facilities, each of which may reasonably be expected to affect the Member. The notifying party shall: a) provide the notice as soon as practicable, provided such party makes a good faith effort to provide the notice no later than twenty-four (24) hours after such party becomes aware of the occurrence; and b) promptly furnish the Member with copies of any publicly available reports filed with any Governmental Authorities addressing such events.

6.06 Wheeling. Unless otherwise required by law or tariff, the Distribution System may allow for any excess Energy produced by the Small Generating Facility to be wheeled across its distribution system for delivery to the EKPC Transmission System or other Affected Systems. Unless otherwise required by law or tariff, wheeling fees shall be calculated in accordance with Attachment 6. The Interconnection Customer may wheel power across EKPC's Transmission System in accordance with EKPC's Open Access Transmission Tariff.

## ARTICLE 7 – COST ALLOCATION FOR INTERCONNECTION FACILITIES AND DISTRIBUTION UPGRADES

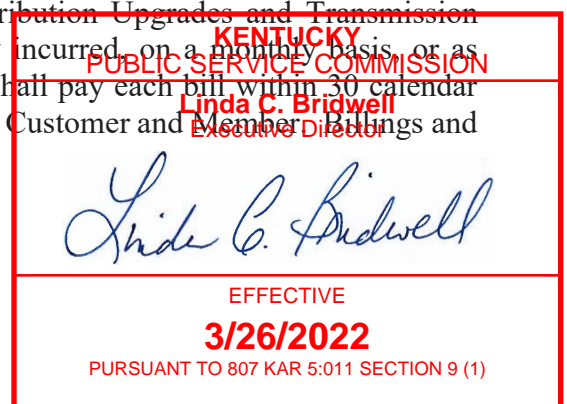
7.01 Interconnection Facilities. The Interconnection Customer shall pay for the capital, operations and maintenance costs of the Interconnection Facilities itemized in Attachment 1. The Member shall provide a best estimate cost for the purchase and construction of its Interconnection Facilities and shall provide a detailed itemization of such costs. Costs associated with Interconnection Facilities may be shared with other entities that may benefit from such facilities by agreement of the Interconnection Customer, such other entities, and the Member. The Interconnection Customer shall pay all reasonable expenses associated with a) owning, operating, maintaining, repairing, and replacing its own Interconnection Facilities; and b) operating, maintaining, repairing, and replacing the Member's Interconnection Facilities.

7.02 Distribution Upgrades. The Member shall design, procure, construct, install, and own the Distribution Upgrades described in Attachment 5 of this Manual. If the Member and the Interconnection Customer agree, the Interconnection Customer may construct Distribution Upgrades that are located on land owned by the Interconnection Customer. The capital, operations and maintenance costs of the Distribution Upgrades shall be paid to the Member by the Interconnection Customer.

### 7.03 Billing and Payment Procedures; Audits.

a. Billing and Payment. The Member shall bill the Interconnection Customer for the costs of Member's Interconnection Facilities, Distribution Upgrades and Transmission Upgrades, described in Attachments 1 and 5, and actually incurred, on a monthly basis, or as otherwise agreed by them. The Interconnection Customer shall pay each bill within 30 calendar days of receipt, or as otherwise agreed to by Interconnection Customer and Member. Billings and payments shall be addressed as follows:

If to the Member:



Member: \_\_\_\_\_  
Attention: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

If to the Interconnection Customer:

Interconnection Customer: \_\_\_\_\_  
Attention: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

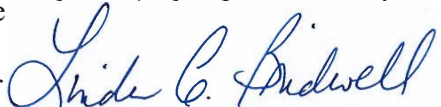
b. Final Accounting. Within three months of completing the construction and installation of the Member's Interconnection Facilities, Distribution Upgrades and Transmission Upgrades described in Attachments 1 and 5, the Member shall provide the Interconnection Customer with a final accounting report. If the Interconnection Customer's cost responsibility exceeds its previous aggregate payments, the Member shall invoice the Interconnection Customer for the amount due and the Interconnection Customer shall make payment to the Member within 30 calendar days. If the Interconnection Customer's previous aggregate payments exceed its cost responsibility, the Member shall refund to the Interconnection Customer an amount equal to the difference within 30 calendar days of the final accounting report.

7.04 Interconnection Customer's Credit Support. Within five (5) Business Days of entering into any power purchase agreement to which this Manual shall apply, the Interconnection Customer shall deliver to the Member a Letter of Credit in the amount of \$\_\_\_\_\_ to secure the Interconnection Customer's obligations as set forth in Article 7 and Article 8 herein. The Letter of Credit shall remain in place for at least six (6) months, and any outstanding Letter of Credit shall be renewed or replaced prior to its expiration by a replacement Letter of Credit in the same amount and for a term of at least six (6) months (provided, however, that the last such Letter of Credit shall have an expiration date that is no earlier than ninety (90) days following the date of the Member's issuance of the final accounting report required by Section 7.03(b)), which Letter of Credit shall be delivered to Buyer no later than twenty (20) days before the expiration of the replaced Letter of Credit, and which process shall be repeated as necessary until the Member has been paid for the costs of all Interconnection Facilities, Distribution System Upgrades and Transmission Upgrades. The Letter of Credit shall include a provision for at least thirty (30) days advance notice to Member of any expiration or early termination of the Letter of Credit so as to allow Member sufficient time to exercise its rights under the Letter of Credit if the Interconnection Customer fails to renew or replace the Letter of Credit prior to such expiration or early termination.

**ARTICLE 8 – COST ALLOCATION FOR  
EKPC TRANSMISSION SYSTEM UPGRADES**

8.01 Applicability. Article 8 shall apply in the event the Interconnection Customer anticipates using the EKPC Transmission System to Upgrade its Transmission Systems; or b) the Interconnection Customer or the Member

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operating conditions, the Small Generating Facility may cause a backflow of power onto the EKPC Transmission System.

8.02 Consultations. Prior to the Member authorizing the Interconnection Customer to begin operation of the Small Generating Facility in parallel to the Member's Distribution System, the Member and EKPC shall consult regarding the anticipated and foreseeable affects of the Small Generating Facility on the EKPC Transmission System.

8.03 Transmission Upgrades. In the event that EKPC determines, in its sole discretion, that upgrades will be reasonably necessary to facilitate wheeling of power from the Small Generating Facility across the EKPC Transmission System or to protect the EKPC Transmission System from any backflow of power from the Small Generating Facility, EKPC shall provide a best estimate cost for the purchase and construction of the Network Upgrades and shall provide a detailed itemization of such costs in Attachment 5. Upon execution of any power purchase agreement between a Member and an Interconnection Customer and the posting of the Interconnection Customer's Credit Support set forth in Section 7.04, EKPC shall construct the Transmission Upgrades in accordance with Good Utility Practice.

8.04 Billing and Payment. The capital cost of the Transmission Upgrades shall be paid by the Member as a one-time payment due prior to the commencement of construction or installation of the Transmission Upgrades. The Member shall be reimbursed for the cost of the Transmission Upgrades by the Interconnection Customer in accordance with Section 7.03. Payments to EKPC shall be addressed as follows:

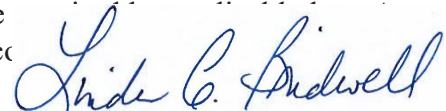
East Kentucky Power Cooperative, Inc.  
Attention: CFO  
P.O. Box 707  
Winchester, KY 40392-0707  
Tel. (859) 744-4812  
Fax. (859) 744-6008

## ARTICLE 9 - ASSIGNMENT, INDEMNITY, LIABILITY AND DAMAGES, FORCE MAJEURE, INSURANCE AND CONFIDENTIALITY

### 9.01 Assignment.

a. Assignment to Non-Affiliates. No rights, obligations or obligations arising from this Manual may be assigned, in whole or in part, by either the Member or Interconnection Customer without the prior written consent of the non-assigning party. Such consent may require that: i) the assignee agrees in writing, in form and substance satisfactory to the non-assigning party, to assume and to perform each and every obligation of the assignor under this Manual; ii) the assignment does not impair any security given by the assigning party hereunder unless the assignee posts replacement security which meets the requirements of Section 7.04; and, iii) the assignee has obtained, prior to the assignment, such authorizations as may be required by law. Any assignment in violation hereof shall be null and void and shall be treated as such by the assigning party.

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Executive Director



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b. Assignment to Affiliates. Notwithstanding Section 9.01(a), either the Interconnection Customer or Member may assign this Manual to an affiliate of such party without the consent of the non-assigning party, provided, however, that the assigning party shall remain liable for all of its obligations under this Manual unless and until the consent of the non-assigning party is secured in accordance with Section 9.01(a). The assigning party shall notify the other party of the occurrence of any event described in this paragraph.

9.02 Indemnity.

a. Duty to Indemnify. The Interconnection Customer shall indemnify, defend and hold the Member and EKPC and its employees, directors, officers, managers, members and agents, harmless from and against any and all third party claims, suits, damages, losses, liabilities, expenses and costs (including reasonable attorneys' fees) including, but not limited to, those arising out of property damage to the property of the Member and EKPC, environmental claims, and personal injury and bodily injury (including death, sickness and disease) to the extent caused by a material breach of any obligation contained in this Manual, negligence or willful misconduct of the Interconnection Customer. The duty to indemnify under this paragraph shall continue in full force and effect notwithstanding the expiration or termination of any power purchase agreement between the Interconnection Customer and the Member with respect to any cost or expense arising out of an event or condition which occurred or existed prior to such expiration or termination, or during the period of interconnection, whichever is longer.

b. Employees. The Interconnection Customer shall not be deemed an employee of the Member or EKPC nor shall it bring any claim against the Member or EKPC with respect to any liability for compensation under any applicable state or federal worker's compensation act, including worker's compensation and/or employer's liability claims of employees. The Interconnection Customer shall be liable for all claims of their employees arising out of any provision of any workers' compensation law.

9.03 Limitation of Liability and Damages. The Member or EKPC shall not be liable for consequential, incidental, punitive exemplary or indirect damages, lost profits or other business interruption damages, by statute (to the extent permitted by law), in tort or contract or otherwise (except to the extent that an Indemnifying Party is obligated under Section 9.02 to indemnify against third party claims for consequential, incidental, punitive, exemplary or indirect damages or lost profits or business interruption damages). The limitations herein imposed on remedies and the measure of damages is without regard to the cause or causes related thereto, including the negligence of the Member or EKPC, whether such negligence be sole, joint or concurrent, or active or passive. EXCEPT AS SET FORTH IN THIS MANUAL, THERE ARE NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE SUBJECT MATTER OF THIS MANUAL.

9.04 Force Majeure. If a Force Majeure event prevents the Interconnection Customer from fulfilling any obligations under the Manual, the Force Majeure event ("Affected Party") shall promptly notify

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via the telephone, of the existence of the Force Majeure event. The notification must specify in reasonable detail the circumstances of the Force Majeure event, its expected duration, and the steps that the Affected Party is taking to mitigate the effects of the event on its performance. The Affected Party shall keep the others informed on a continuing basis of developments relating to the Force Majeure event until the event ends. The Affected Party will be entitled to suspend or modify its performance of obligations under this Manual (other than the obligation to make payments) only to the extent that the effect of the Force Majeure event cannot be mitigated by the use of Reasonable Efforts. The Affected Party will use Reasonable Efforts to resume its performance as soon as possible.

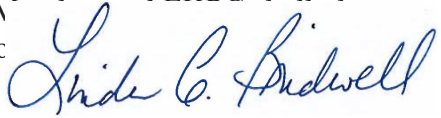
9.05 Insurance. In addition to, or as a part of, any insurance required by a power purchase agreement, the Interconnection Customer shall, at its own expense, maintain in force general liability insurance without any exclusion for liabilities related to the interconnection. The amount of such insurance shall be sufficient to insure against all reasonably foreseeable direct liabilities given the size and nature of the generating equipment being interconnected, the interconnection itself, and the characteristics of the system to which the interconnection is made, but in no event shall be less than \$ \_\_\_\_\_. Such insurance shall be obtained from an insurance provider authorized to do business in Kentucky and certification that such insurance is in effect shall be provided upon request of the Member, except that the Interconnection Customer shall show proof of insurance to the Member no later than ten (10) Business Days prior to the anticipated commercial operation date.

9.06 Confidentiality.

a. Duty of Confidentiality. Any Confidential Information of the Member or EKPC which is disclosed to or otherwise received or obtained by the Interconnection Customer incident to an interconnection shall be held, in confidence, and the Interconnection Customer (subject to paragraphs (b) and (c) below) may not publish or otherwise disclose any Confidential Information of the Member or EKPC to any Person for any reason or purpose whatsoever, or use any Confidential Information for any purpose other than to effectuate the interconnection, without the prior written approval of the Member (or EKPC), which approval may be granted or withheld by the Member (or EKPC) in its sole discretion. Without limiting the generality of the foregoing, the Interconnection Customer shall observe at a minimum the same safeguards and precautions with regard to the Member's or EKPC's Confidential Information which such party observes with respect to its own information of the same or similar kind.

Any Confidential Information of the Interconnection Customer which is disclosed to or otherwise received or obtained by the Member or EKPC incident to an interconnection shall be held, in confidence, and the Member and EKPC (subject to paragraphs (b) and (c) below) may not publish or otherwise disclose any Confidential Information of the Interconnection Customer to any Person for any reason whatsoever, or use any Confidential Information for any purpose other than to effectuate the interconnection, without prior written approval of the Interconnection Customer, which approval may be granted or withheld by the Interconnection Customer in its sole discretion. Without limiting the generality of the foregoing, the Member and EKPC shall observe at a minimum the same safeguards and precautions with regard to

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Confidential Information which such party observes with respect to its own information of the same or similar kind.

b. Disclosures to Employees, Contractors and Affiliates. The Interconnection Customer will make available Confidential Information received from the Member or EKPC to its employees, contractors and affiliates only on a need-to-know basis, and all Persons to whom such Confidential Information is made available will be made aware of the confidential nature of such Confidential Information, and will be required to agree to hold such Confidential Information in confidence under terms substantially identical to the terms hereof. The Member and EKPC shall observe the same conduct towards the Interconnection Customer's Confidential Information disclosures.

c. Disclosures to Governmental Authorities. Notwithstanding the foregoing, the Interconnection Customer may provide any Confidential Information to any Governmental Authority having jurisdiction over or asserting a right to obtain such information, provided that: i) such Governmental Authority: A) orders that such Confidential Information be provided; or B) such Governmental Authority requires disclosure of the Confidential Information in connection with the application for any required authorization; and ii) unless prohibited from so doing by applicable law, the Interconnection Customer promptly advises the Member (or EKPC) of any request for such information by such Governmental Authority and cooperates in giving the Member (or EKPC) an opportunity to present objections, requests for limitation, and/or requests for confidentiality or other restrictions on disclosure or access, to such Governmental Authority. The Member and EKPC shall observe the same conduct towards the Interconnection Customer's Confidential Information disclosures.


d. Injunctive Relief. In the event of a breach or threatened breach of the provisions of paragraph (a) above by the Interconnection Customer, the Member (or EKPC) shall be entitled, without limitation, to an injunction restraining such party from such breach, or likewise, in the event of a breach or threatened breach of the provisions of paragraph (a) above by the Member or EKPC, the Interconnection Customer shall be entitled, without limitation, to an injunction restraining such party(s) from such breach

e. Continuing Obligation. The obligation to retain the Member's, EKPC's, or the Interconnection Customer's Confidential Information in confidence shall continue in full force and effect throughout the period of interconnection and for a period of two (2) years thereafter, notwithstanding the expiration or termination of any power purchase agreement between the Member and the Interconnection Customer.

## ARTICLE 10 – MISCELLANEOUS

10.01 Waiver. The failure of the Member or the Interconnection Customer to insist, on any occasion, upon strict performance of any provision of this Manual will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such party. Any waiver of this Manual shall, if requested, be provided in writing.

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10.02 No Partnership. This Manual shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties with respect to the interconnection or to impose any partnership obligation or partnership liability upon the Member, EKPC, or the Interconnection Customer. No Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind any other Party.

10.03 Subcontractors. Any Party may utilize the services of any subcontractor(s) deemed appropriate to perform the obligations set forth herein; provided, however, that subcontractors comply with all applicable terms and conditions of this Manual in providing such services. The creation of any subcontract relationship shall not relieve any Party of any of its respective obligations hereunder. Each Party shall be fully responsible to any other Party for the acts or omissions of any subcontractor hired as if no subcontract had been made. Any applicable obligation imposed herein upon any Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of such party. The obligations under this paragraph will not be limited in any way by any limitation of subcontractor's insurance.

10.04 Notices. Any written notice, demand, or request required or authorized herein shall be deemed properly given if delivered in person, via overnight U.S. mail or courier service or facsimile. Any notice or request required or permitted to be given and not required herein to be given in writing may be so given by telephone. All notices shall be delivered to the designated representative specified below:

If to the Interconnection Customer:

Interconnection Customer: \_\_\_\_\_  
Attention: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

If to the Member:

Member: \_\_\_\_\_  
Attention: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

If to East Kentucky Power Cooperative, Inc.

East Kentucky Power Cooperative, Inc.  
Attention: CEO  
Address: PO Box 707  
City: Winchester State: KY Zip: 40392-0707  
Phone: 859-744-4812 Fax: 859-744-6008



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**Attachment 1**

**Description and Costs of the Interconnection Facilities and Metering Equipment**

Equipment, including the Interconnection Facilities, and metering equipment shall be itemized and identified as being owned by the Interconnection Customer, the Member, or EKPC. The Member will provide a best estimate itemized cost of its Interconnection Facilities and metering equipment, and a best estimate itemized cost of the annual operation and maintenance expenses associated with its Interconnection Facilities and metering equipment.



**One-line Diagram Depicting the Small Generating Facility, Interconnection  
Facilities, Metering Equipment, and Distribution Upgrades.  
Operating Procedures**



**SCOPE OF WORK**

TO INSTALL A SOLAR PHOTOVOLTAIC (PV) SYSTEM ON THE SWOPE TOYOTA PREMISES, LOCATED AT 1085 NORTH DIXIE HIGHWAY, ELIZABETHTOWN, KY. THE POWER GENERATED BY THE PV SYSTEM WILL BE INTERCONNECTED WITH THE UTILITY GRID THROUGH THE EXISTING ELECTRICAL SERVICE EQUIPMENT. THE PV SYSTEM DOES NOT INCLUDE STORAGE BATTERIES.

**SYSTEM RATING**

341 KW DC STC  
275 KW AC

**EQUIPMENT SUMMARY**

- (946) SUNPOWER SPR-X22-360-COM-MLSD PV MODULES
- (03) (SMA STP 60-US-41) PV INVERTERS
- (02) (SMA STP 62-US-41) PV INVERTERS

**SHEET INDEX**

- PV-0 COVER
- PV-1 SITE MAP AND PV LAYOUT
- PV-2.0 STRING MAP 1
- PV-2.1 STRING MAP 2
- PV-3.0 ELECTRICAL DIAGRAM
- PV-3.1 ELECTRICAL CALCULATIONS
- PV-4 LABELS

**APPLICABLE CODES**

ELECTRICAL CODE  
INTERNATIONAL BUILDING CODE  
SPECIALTY ELECTRICAL STANDARDS

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**PROJECT LOCATION**



**VICINITY MAP**

DESIGN & DRAFTING BY:  
GORDON GUNN, PE, NABCEP

REVISIONS	DATE	REV
DESCRIPTION	01/26/2021	A
DESIGN PACKET		

**CONTRACTOR**

**FREEDOM SOLAR POWER**  
FREEDOM SOLAR LLC  
4801 FREDRICH LN, STE 100  
AUSTIN, TX 78744  
TELE: # 281921  
TYPE: FIRM # F17890

PROJECT NAME  
**SWOPE TOYOTA, 36304  
1085 NORTH DIXIE HIGHWAY  
ELIZABETHTOWN, KY, 42701  
(270) 737-2181**

SHEET NAME  
**COVER**

SHEET SIZE  
**ANSI B  
11" x 17"**

SHEET NUMBER  
**PV-0**

**NABCEP CERTIFIED**  
PV Installation Professional  
Gordon Gunn  
Certification # 091209-69  
26jan2021

DESIGN & DRAFTING BY:  
GORDON GUNN, PE, NABCEP

REVISIONS	DATE	REV
DESIGN PACKET	01/26/2021	A

CONTRACTOR



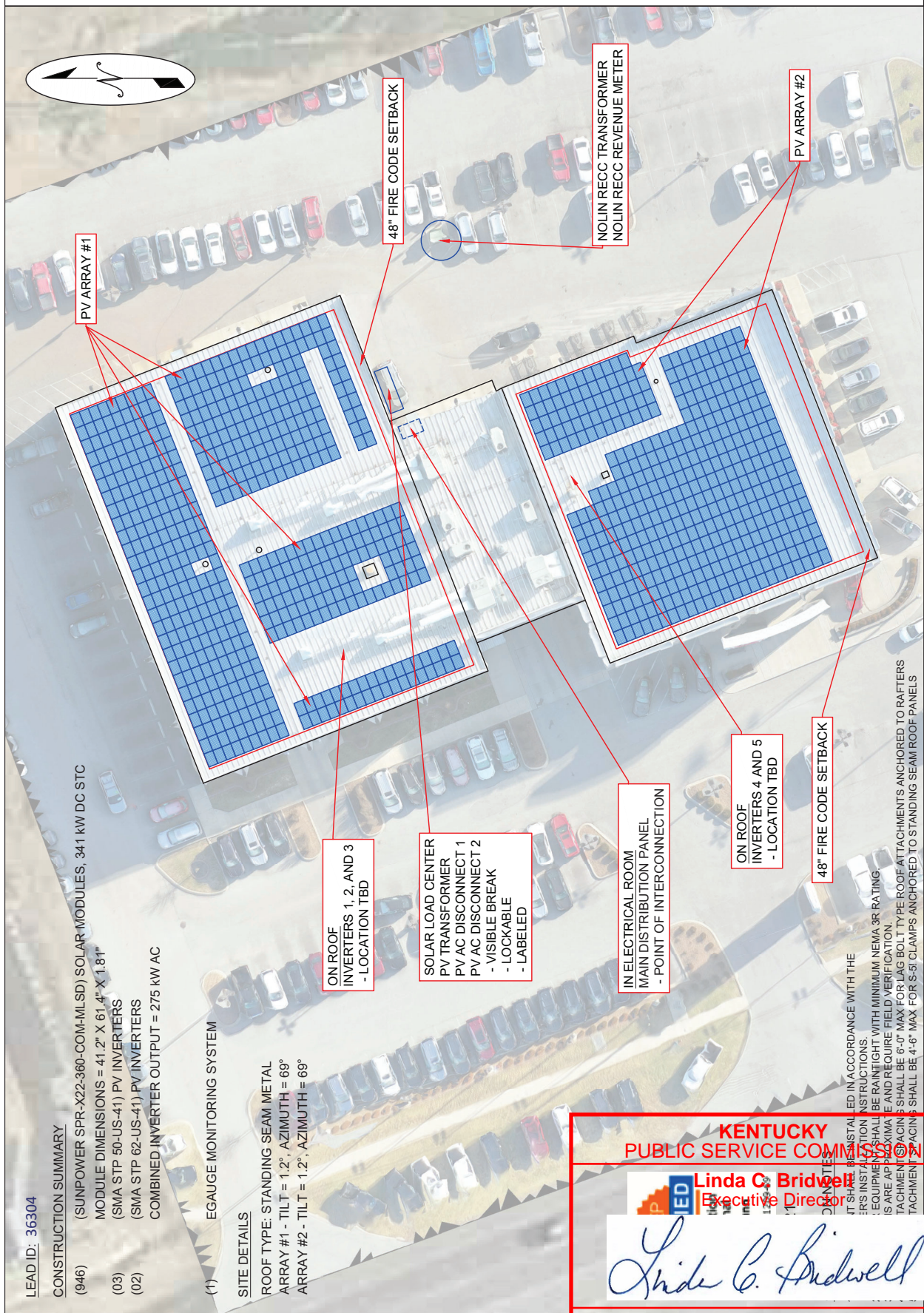
**FREEDOM SOLAR POWER**  
FREEDOM SOLAR LLC  
4801 FREDERICH LN, STE 100  
AUSTIN, TX 78744  
NABCEP # 1517890

PROJECT NAME  
SWOPE TOYOTA, 36304  
1085 NORTH DIXIE HIGHWAY  
ELIZABETHTOWN, KY, 42701  
(270) 737-2181

SHEET NAME  
SITE MAP &  
PV LAYOUT

SHEET SIZE  
ANSI B  
11" x 17"

SHEET NUMBER  
PV-1



LEAD ID: 36304

CONSTRUCTION SUMMARY

(946) (SUNPOWER SPR-X22-360-COM-MLSD) SOLAR MODULES, 341 kW DC STC  
MODULE DIMENSIONS = 41.2" X 61.4" X 1.81"  
(03) (SMA STP 50-US-41) PV INVERTERS  
(02) (SMA STP 62-US-41) PV INVERTERS  
COMBINED INVERTER OUTPUT = 275 kW AC

(1) MEGA MONITORING SYSTEM

SITE DETAILS

ROOF TYPE: STANDING SEAM METAL  
ARRAY #1 - TILT = 1.2°, AZIMUTH = 69°  
ARRAY #2 - TILT = 1.2°, AZIMUTH = 69°

ON ROOF  
INVERTERS 1, 2, AND 3  
- LOCATION TBD

SOLAR LOAD CENTER  
PV TRANSFORMER  
PV AC DISCONNECT 1  
PV AC DISCONNECT 2  
- VISIBLE BREAK  
- LOCKABLE  
- LABELED

IN ELECTRICAL ROOM  
MAIN DISTRIBUTION PANEL  
- POINT OF INTERCONNECTION

ON ROOF  
INVERTERS 4 AND 5  
- LOCATION TBD

48" FIRE CODE SETBACK

IT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. EQUIPMENT SHALL BE RAIN TIGHT WITH MINIMUM NEMA 3R RATING. IS ARE APPLICABLE AND REQUIRE FIELD VERIFICATION. ATTACHMENT SPACING SHALL BE 6" MAX FOR LAG BOLT TYPE ROOF ATTACHMENTS ANCHORED TO RAFTERS AND 4"-6" MAX FOR S-S CLAMPS ANCHORED TO STANDING SEAM ROOF PANELS.

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CONTRACTOR



**FREEDOM<sup>SM</sup>**  
**SOLAR POWER**

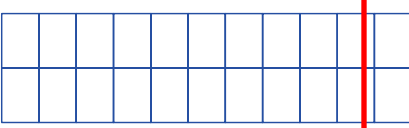
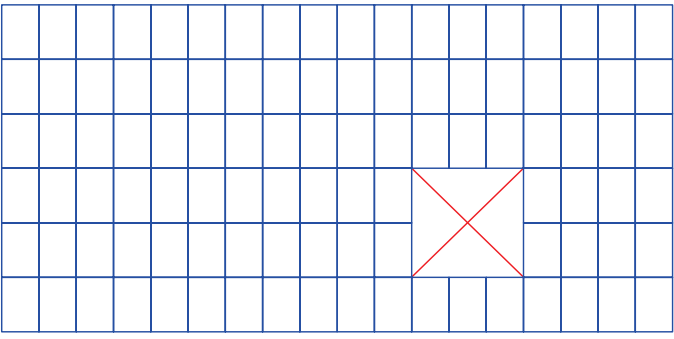
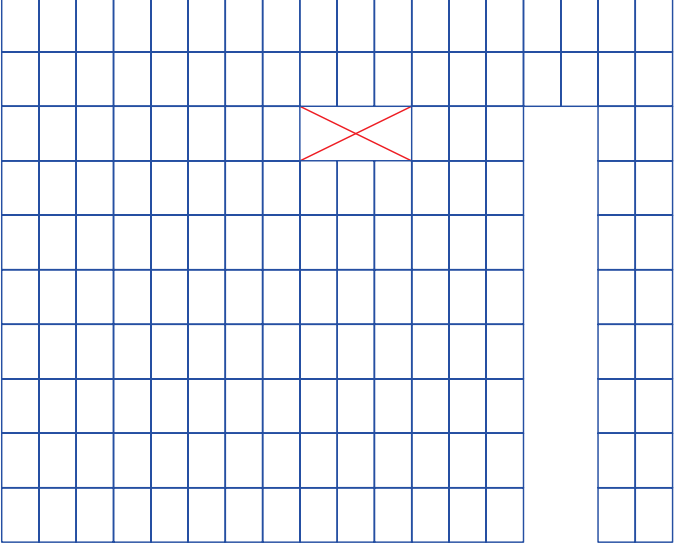
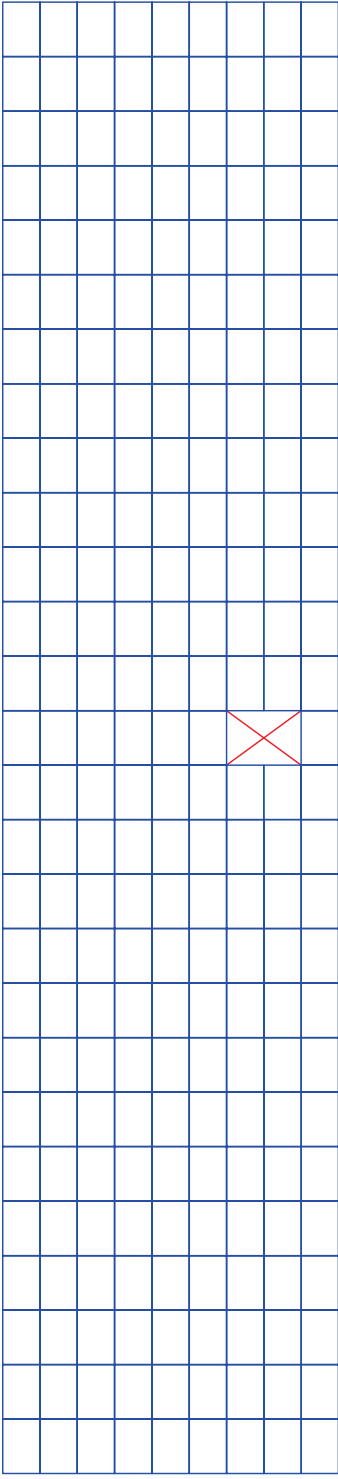
4801 FREEDOM CIRCLE, STE. 100  
AUSTIN, TX 78744  
TELE. # 2821  
TYPE FIRM # F-17090

PROJECT NAME  
SPOPE TOYOTA, 36304  
1085 NORTH DIXIE HIGHWAY  
ELIZABETHTOWN, KY, 42701  
(270) 737-2181

SHEET NAME  
STRING MAP  
1

SHEET SIZE  
ANSI B  
11" x 17"

SHEET NUMBER  
PV-2.0




**CERTIFIED**  
PV Installation  
Professional  
Gordon Gunn  
Certification # 091209-69  
26Jan2021

VER 1 S/N  
VER 2 S/N  
VER 3 S/N

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Executive Director



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GORDON GUNN, P.E., NABCEP

REVISIONS

DESCRIPTION	DATE	REV
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CONTRACTOR



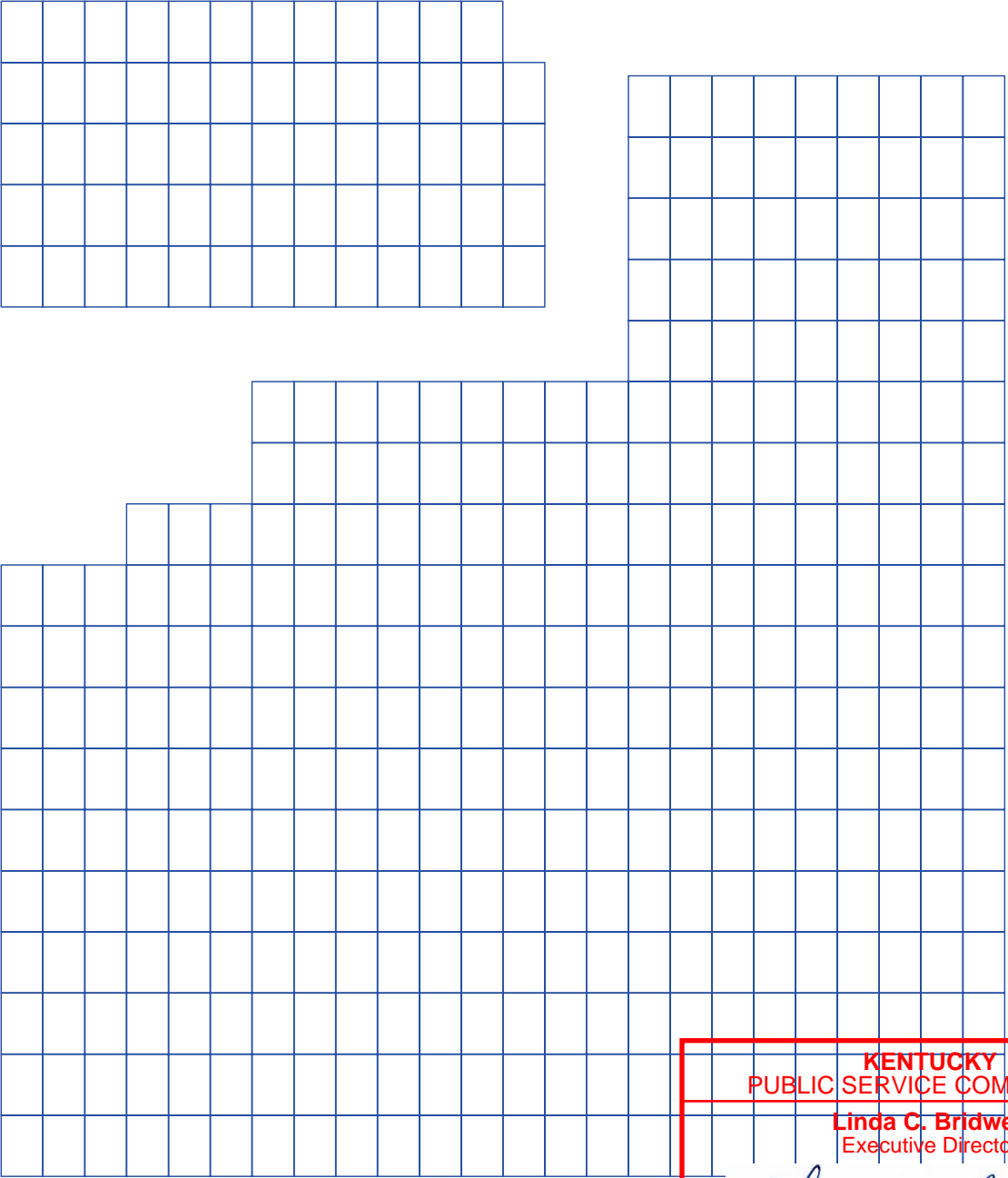
**FREEDOM<sup>SM</sup>**  
**SOLAR POWER**  
4801 FREEDOM BLVD, STE 100  
AUSTIN, TX 78744  
TELE: # 28621  
TYPE: PHM # F-17080

PROJECT NAME  
SWOPE TOYOTA, 36304  
1085 NORTH DIXIE HIGHWAY  
ELIZABETHTOWN, KY, 42701  
(270) 737-2181

SHEET NAME  
STRING MAP  
2

SHEET SIZE  
ANSI B  
11" x 17"

SHEET NUMBER  
PV-2.1




**CERTIFIED**  
PV Installation  
Professional  
Gordon Gunn  
Certification # 091209-69  
26Jan2021

IVER 4 S/N  
IVER 5 S/N

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# ELECTRICAL CALCULATIONS

## CALCULATIONS FOR CURRENT CARRYING CONDUCTORS

PV SOURCE CIRCUIT WIRE AMPACITY CALCULATION:  
 MODULE STRING MAX DC CURRENT = (1.25)(6.48A) = 8.10A  
 CONTINUOUS USE:  
 AWG #10 75°C DERATED AMPACITY = (0.80)(35.0A) = 28.0 A  
 28.0A > 8.10A  
 WORST CASE CONDITIONS OF USE:  
 AWG #10 90°C DERATED AMPACITY = (0.91)(40.0A)(0.45) = 16.4A  
 16.4 A > 8.10A

PV OUTPUT CIRCUIT WIRE AMPACITY CALCULATION:  
 MAXIMUM DC CURRENT = (1.25)(16.0A) = 20.0A  
 FOR (3) C COMBINEP STRINGS MAX DC CURRENT = (3)(8.10A) = 24.3A  
 CONTINUOUS USE:  
 AWG #6 75°C DERATED AMPACITY = (0.80)(50.0A) = 40.0 A  
 40.0A > 24.3A  
 WORST CASE CONDITIONS OF USE:  
 AWG #6 90°C DERATED AMPACITY = (0.91)(55.0A) = 50.0  
 50.0A > 24.3A

INVERTER OUTPUT WIRE AMPACITY CALCULATION:  
 64.0A PER INVERTER (SMA STP 50-US-41)  
 CONTINUOUS USE:  
 AWG #2 ALUMINUM 75°C DERATED AMPACITY = (0.80)(80.0A) = 72.0A  
 72.0 A > 64.0A  
 CONDITIONS OF USE:  
 AWG #2 ALUMINUM 90°C DERATED AMPACITY = (0.91)(100A) = 91.0A  
 91.0A > 64.0A

80.0A PER INVERTER (SMA STP 62-US-41)  
 CONTINUOUS USE:  
 AWG #1 ALUMINUM 75°C DERATED AMPACITY = (0.80)(100A) = 80.0A  
 80.0 A = 80.0A  
 CONDITIONS OF USE:  
 AWG #1 ALUMINUM 90°C DERATED AMPACITY = (0.91)(115A) = 104A  
 104A > 80.0A

COMBINED INVERTER OUTPUT WIRE AMPACITY CALCULATION:  
 64.0A PER INVERTER (SMA STP 50-US-41) X3  
 80.0A PER INVERTER (SMA STP 62-US-41) X2  
 COMBINED CURRENT @480V = (3)(64.0A) + (2)(80.0A) = 352A  
 CONTINUOUS USE @280V = (480V/208V)(352A) = 813A

CONTINUOUS USE @480V:  
 (1) SETS 300KCMIL ALUMINUM 75°C DERATED AMPACITY = (2)(0.80)(230A) = 368A  
 368A < 813A  
 CONDITIONS OF USE:  
 (1) SETS 300KCMIL ALUMINUM 90°C DERATED AMPACITY = (2)(0.91)(260A) = 473A  
 473A < 352A

CONTINUOUS USE @280V:  
 (1) SETS 500KCMIL ALUMINUM 75°C DERATED AMPACITY = (4)(0.80)(310A) = 992A  
 992A > 813A  
 (1) SETS 350KCMIL COPPER 75°C DERATED AMPACITY = (4)(0.80)(310A) = 992A  
 992A > 813A  
 CONDITIONS OF USE:  
 (1) SETS 500KCMIL ALUMINUM 90°C DERATED AMPACITY = (4)(0.91)(350A) = 1274A  
 1274A > 813A  
 (1) SETS 350KCMIL COPPER 90°C DERATED AMPACITY = (4)(0.91)(350A) = 1274A  
 1274A > 813A

PER NEC 240.4(C) WHERE THE OCPD PROTECTING A CONDUCTOR IS RATED AT 100A OR GREATER, THE AMPACITY OF THE CONDUCTOR SHALL BE EQUAL TO OR GREATER THAN THE RATING OF THE OCPD.

## CALCULATION FOR MAXIMUM DC VOLTAGE

USING MANUFACTURER TEMPERATURE CORRECTION FACTOR  
 STC Voc = 69.5V  
 Tmin = -18°C = 43°C BELOW STC  
 VOLTAGE TEMPERATURE COEFFICIENT = -167 4mV/°C  
 $\Delta V = (-167 \text{ 4mV/}^\circ\text{C})(-43^\circ\text{C}) = 7.20V$   
 MAXIMUM Voc = 7.20V + 69.5V = 76.7V  
 MAXIMUM DC VOLTAGE (STRINGS OF 13) = (13)(76.7V) = 997V

## CALCULATIONS FOR OVERCURRENT DEVICES

INVERTER OCPD:  
 64.0A PER INVERTER (SMA STP50-US-41)  
 MINIMUM OCPD = (64.0A)(1.25) = 80.0A  
 USE (3) 3P-80A BREAKERS IN SOLAR LOAD CENTER FOR INVERTER OCPD  
 80.0A PER INVERTER (SMA STP62-US-41)  
 MINIMUM OCPD = (80.0A)(1.25) = 100.0A  
 USE (2) 3P-100A BREAKERS IN SOLAR LOAD CENTER FOR INVERTER OCPD  
 PV SYSTEM OCPD:  
 64.0A PER INVERTER (SMA STP 50-US-41) X3  
 80.0A PER INVERTER (SMA STP 62-US-41) X2  
 COMBINED CURRENT @480V = (3)(64.0A) + (2)(80.0A) = 352A  
 COMBINED CURRENT @208V = (480V/208V)(352A) = 813A  
 MINIMUM OCPD @480V = (352A)(1.25) = 440A  
 USE (3) 400A FUSES IN PV AC DISCONNECT 1 FOR PV SYSTEM OCPD @480V  
 MINIMUM OCPD @228V = (813A)(1.25) = 1017A  
 USE (3) 1200A FUSES IN PV AC DISCONNECT 2 FOR PV SYSTEM OCPD @208V

DESIGN & DRAFTING BY:  
 GORDON GUINI, PE, NABCEP

REVISIONS	DATE	REV
DESCRIPTION	01/20/2021	A
DESIGN PACKET		



PROJECT NAME  
 SWOPE TOYOTA, 36304  
 1085 NORTH DIXIE HIGHWAY  
 ELIZABETHTOWN, KY, 42701  
 (270) 737-2181

SHEET NAME  
 ELECTRICAL  
 CALCULATIONS

SHEET SIZE  
 ANSIB  
 11" x 17"

SHEET NUMBER  
 PV-3.1



KENTUCKY  
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 Linda C. Bridwell  
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DESIGN & DRAFTING BY:  
GORDON GUNN, PE, NABCEP

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PROJECT NAME  
SWOPE TOYOTA, 36304  
1085 NORTH DIXIE HIGHWAY  
ELIZABETHTOWN, KY, 42701  
(270) 737-2181

SHEET NAME  
SYSTEM LABELING DETAIL

SHEET SIZE  
ANSI B  
11" x 17"

SHEET NUMBER  
PV-4

- SIGNAGE REQUIREMENTS**
- > RED BACKGROUND
  - > WHITE LETTERING
  - > MIN. 3/8" LETTER HEIGHT
  - > ALL CAPITAL LETTERS
  - > ARIAL OR SIMILAR FONT
  - > REFLECTIVE, WEATHER RESISTANT MATERIAL, UL 969

**WARNING**  
POWER SOURCE OUTPUT CONNECTION. DO NOT RELOCATE THIS OVERCURRENT DEVICE

REQ'D BY: NEC 705.12(B)(2)(3)(b) **D**  
APPLY TO:  
DISTRIBUTION EQUIPMENT ADJACENT TO BACK-FED BREAKER

**WARNING: PHOTOVOLTAIC POWER SOURCE**

REQ'D BY: NEC 690.31(G)(3) **C**  
APPLY TO:  
RACEWAYS, CABLE TRAYS, OTHER WIRING METHODS, AND ENCLOSURES THAT CONTAIN PV SYSTEM DC CONDUCTORS

**WARNING**  
ELECTRIC SHOCK HAZARD. DO NOT TOUCH TERMINALS, LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION.

REQ'D BY: NEC 690.13(B) **B**  
APPLY TO:  
PV DISCONNECT

**PV SYSTEM DISCONNECT**

REQ'D BY: NEC 690.13(B) **A**  
APPLY TO:  
PV DISCONNECT

**MONITORING**

REQ'D BY: FREEDOM SOLAR **H**  
APPLY TO:  
MONITORING DEVICE ENCLOSURE

**REVENUE METER**

REQ'D BY: AHJ **G**  
APPLY TO:  
REVENUE METER SOCKET (IF APPLICABLE)

**PV METER**

REQ'D BY: AHJ **F**  
APPLY TO:  
PV METER SOCKET (IF APPLICABLE)

**2" ADDRESS NUMBERS**

REQ'D BY: AHJ **E**  
APPLY TO:  
REVENUE METER SOCKET (IF APPLICABLE)

**RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM**

REQ'D BY: 2020 NEC 690.56(B)(2) **J**  
APPLY TO:  
RAPID SHUTDOWN SWITCH (PV AC DISCONNECT NEAREST THE INTERCONNECTION)

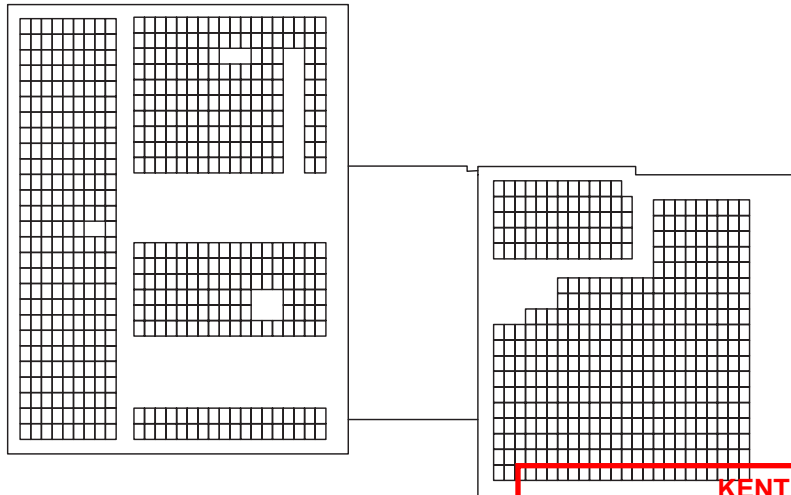


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NOTE: NOT ALL LABELS MAY BE APPLICABLE

DRAW IN CONTROLLED ACCESS ZONE (CAZ) BOUNDARY AND LADDER PLACEMENT ON SITE PLAN BELOW.

HARD HAT IS REQUIRED AT ALL TIMES IN CAZ



DESIGN & DRAFTING BY:  
GORDON GUNN, PE, NABCEP

DESCRIPTION	DATE	REV
DESIGN PACKET	01/26/2021	A

CONTRACTOR

**FREEDOM SOLAR POWER**  
FREEDOM SOLAR, LLC  
4801 FREDRICH LN, STE 100  
AUSTIN, TX 78744  
Gordon Gunn  
TBPE FIRM # 11-1890

PROJECT NAME  
SWOPE TOYOTA, 36304  
1085 NORTH DIXIE HIGHWAY  
ELIZABETHTOWN, KY, 42701  
(270) 737-2181

SHEET NAME  
SAFETY PLAN

SHEET SIZE  
ANSI B  
11" x 17"

SHEET NUMBER  
PV-6

**CONDUCT SAFETY MEETING WITH ALL CREW MEMBERS ON SITE AT THE BEGINNING OF EACH JOB. USE SIGN IN SHEET BELOW.**

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**GUEST SIGN IN**

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

JOB START DATE: \_\_\_\_\_

ENT PERSON: \_\_\_\_\_

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Executive Director

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# SunPower® X-Series Commercial Solar Panels | X22-360-COM

## More than 22% Efficiency

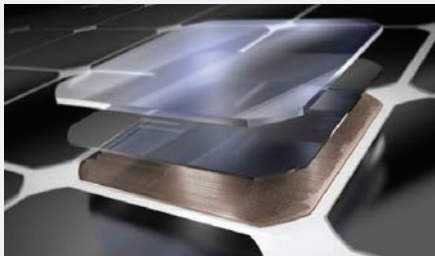
Captures more sunlight and generates more power than conventional panels.

## Maximum Performance

Designed to perform in demanding real-world conditions of high temperatures, partial shade from overhead wires, and low light.<sup>1,2,4</sup>

## Commercial Grade

Intended for commercial sites where maximum energy production is critical.



**Maxison® Solar Cells: Fundamentally better**  
Engineered for performance, designed for reliability.

## Engineered for Peace of Mind

Designed to deliver consistent, trouble-free energy over a very long lifetime.<sup>3,4</sup>

## Designed for Reliability

The SunPower Maxison Solar Cell is the only cell built on a solid copper foundation. Virtually impervious to the corrosion and cracking that degrade conventional panels.<sup>3</sup>

Same excellent durability as E-Series panels.  
#1 Rank in Fraunhofer durability test.<sup>9</sup>  
100% power maintained in Atlas 25+ comprehensive durability test.<sup>10</sup>

## High Performance & Excellent Reliability



SPR-X22-360-COM

## Highest Efficiency<sup>5</sup>

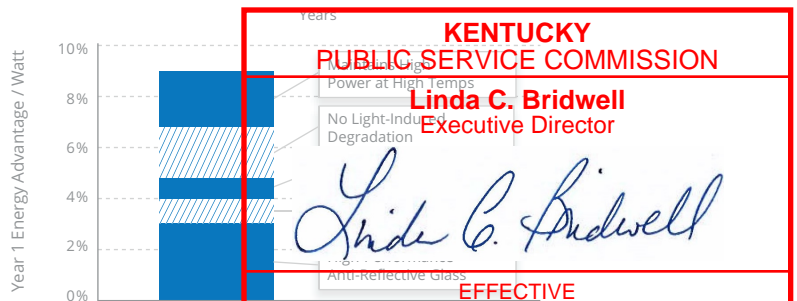
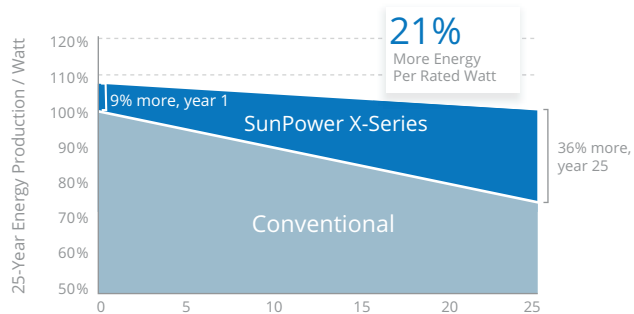
### Generate more energy per square foot

X-Series commercial panels convert more sunlight to electricity by producing 38% more power per panel<sup>1</sup> and 70% more energy per square foot over 25 years.<sup>1,2,3</sup>

## Highest Energy Production<sup>6</sup>

### Produce more energy per rated watt

More energy to power your operations. High year-one performance delivers 8–10% more energy per rated watt.<sup>2</sup> This advantage increases over time, producing 21% more energy over the first 25 years to meet your needs.<sup>3</sup>



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 Executive Director

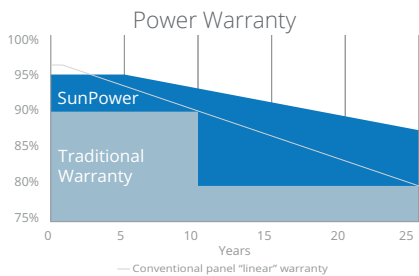
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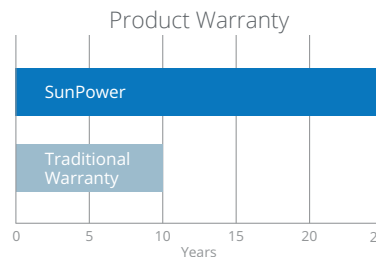


# SunPower® X-Series Commercial Solar Panels | X22-360-COM

## SunPower Offers The Best Combined Power And Product Warranty



More guaranteed power: 95% for first 5 years,  
-0.4%/yr. to year 25<sup>7</sup>



Combined Power and Product defect 25-year coverage<sup>8</sup>

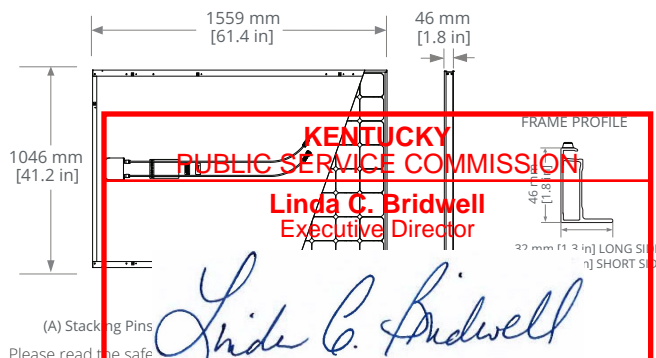
Electrical Data	
SPR-X22-360-COM	
Nominal Power (Pnom) <sup>11</sup>	360 W
Power Tolerance	+5/-3%
Avg. Panel Efficiency <sup>12</sup>	22.2%
Rated Voltage (Vmpp)	59.1 V
Rated Current (Impp)	6.09 A
Open-Circuit Voltage (Voc)	69.5 V
Short-Circuit Current (Isc)	6.48 A
Max. System Voltage	1000 V UL & 1000 V IEC
Maximum Series Fuse	15 A
Power Temp Coef.	-0.29% / °C
Voltage Temp Coef.	-167.4 mV / °C
Current Temp Coef.	2.9 mA / °C

Tests And Certifications	
Standard Tests <sup>13</sup>	UL1703 (Type 2 Fire Rating), IEC 61215, IEC 61730
Quality Certs	ISO 9001:2008, ISO 14001:2004
EHS Compliance	RoHS, OHSAS 18001:2007, lead free, REACH SVHC-163, PV Cycle
Sustainability	Cradle to Cradle Certified™ Silver (eligible for LEED points) <sup>14</sup>
Ammonia Test	IEC 62716
Desert Test	10.1109/PVSC.2013.6744437
Salt Spray Test	IEC 61701 (maximum severity)
PID Test	Potential-Induced Degradation free: 1000 V <sup>9</sup>
Available Listings	UL, TUV, JET, CEC

Operating Condition And Mechanical Data	
Temperature	-40° F to +185° F (-40° C to +85° C)
Impact Resistance	1 inch (25 mm) diameter hail at 52 mph (23 m/s)
Appearance	Class B
Solar Cells	96 Monocrystalline Maxeon Gen III
Tempered Glass	High-transmission tempered anti-reflective
Junction Box	IP-65, MC4 compatible
Weight	41 lbs (18.6 kg)
Max. Load	Wind: 50 psf, 2400 Pa, 244 kg/m² front & back Snow: 112 psf, 5400 Pa, 550 kg/m² front
Frame	Class 2 silver anodized; stacking pins

### REFERENCES:

- All comparisons are SPR-X21-345 vs. a representative conventional panel: 250 W, approx. 1.6 m², 15.3% efficiency.
- Typically 8–10% more energy per watt, BEW/DNV Engineering "SunPower Yield Report," Jan 2013.
- SunPower 0.25%/yr degradation vs. 1.0%/yr conv. panel. Campeau, Z. et al. "SunPower Module Degradation Rate," SunPower white paper, Feb 2013; Jordan, Dirk "SunPower Test Report," NREL, Q1-2015.
- "SunPower Module 40-Year Useful Life" SunPower white paper, May 2015. Useful life is 99 out of 100 panels operating at more than 70% of rated power.
- Highest of over 3,200 silicon solar panels, Photon Module Survey, Feb 2014.
- 1% more energy than E-Series panels, 8% more energy than the average of the top 10 panel companies tested in 2012 (151 panels, 102 companies), Photon International, Feb 2013.
- Compared with the top 15 manufacturers. SunPower Warranty Review, May 2015.
- Some restrictions and exclusions may apply. See warranty for details.
- X-Series same as E-Series, 5 of top 8 panel manufacturers tested in 2013 report, 3 additional panels in 2014. Ferrara, C., et al. "Fraunhofer PV Durability Initiative for Solar Modules: Part 2". Photovoltaics International, 2014.
- Compared with the non-stress-tested control panel. X-Series same as E-Series, tested in Atlas 25+ Durability test report, Feb 2013.
- Standard Test Conditions (1000 W/m² irradiance, AM 1.5, 25° C). NREL calibration Standard: SOMS current, LACCS FF and Voltage.
- Based on average of measured power values during production.
- Type 2 fire rating per UL1703:2013, Class C fire rating per UL1703:2002.
- See salesperson for details.



See [www.sunpower.com/facts](http://www.sunpower.com/facts) for more reference information.  
For more details, see extended datasheet: [www.sunpower.com/datasheets](http://www.sunpower.com/datasheets).

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**SUNPOWER®**

Document # 514617 Rev B /LTR...





# SUNNY TRIPOWER CORE1 33-US / 50-US / 62-US

STP 33-US-41 / STP 50-US-41 / STP 62-US-41

**UP TO 60% FASTER  
INSTALLATION FOR  
COMMERCIAL PV SYSTEMS**



- |   |  |   |   |
|---|--|---|---|
| <p><b>Fully integrated</b></p> <ul style="list-style-type: none"> <li>• Innovative design requires no additional racking for rooftop installation</li> <li>• Integrated DC and AC disconnects and overvoltage protection</li> <li>• 12 direct string inputs for reduced labor and material costs</li> </ul> | <p><b>Increased power, flexibility</b></p> <ul style="list-style-type: none"> <li>• Multiple power ratings for small to large scale commercial PV installations</li> <li>• Six MPP trackers for flexible stringing and maximum power production</li> <li>• ShadeFix, SMA's proprietary shade management solution, optimizes at the string level</li> </ul> | <p><b>Enhanced safety, reliability</b></p> <ul style="list-style-type: none"> <li>• Integrated SunSpec PLC signal for module-level rapid shutdown compliance to 2017 NEC</li> <li>• Next-gen DC AFCI arc-fault protection certified to new Standard UL 1699B Ed. 1</li> </ul> | <p><b>Smart monitoring, control, service</b></p> <ul style="list-style-type: none"> <li>• Advanced smart inverter grid support capabilities</li> <li>• Increased ROI with SMA ennexOS cross sector energy management platform</li> <li>• SMA Smart Connected proactive O&amp;M solution reduces time spent diagnosing and servicing in the field</li> </ul> |
|---|--|---|---|

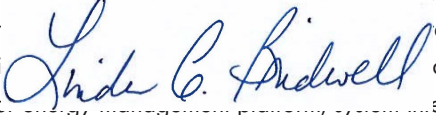
## SUNNY TRIPOWER CORE1 33-US / 50-US / 62-US

It stands on its own

The Sunny Tripower CORE1 is the world's first free-standing PV inverter for commercial rooftops, sunroom ground mount and repowering legacy solar projects. From distribution to construction to operation, the Sunny Tripower CORE1 enables logistical, material, labor and service cost reductions, and is the most versatile cost-effective solution for commercial PV systems. It features SunSpec PLC for rapid shutdown and enhanced DC AFCI arc-fault protection to meet the latest safety standards. With Sunny Tripower CORE1 and SMA's ennexOS cross sector energy management platform, SMA can deliver comprehensive commercial energy solutions for increased ROI.




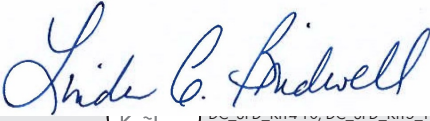
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Technical data	Sunny Tripower CORE1 33-US	Sunny Tripower CORE1 50-US	Sunny Tripower CORE1 62-US
<b>Input (DC)</b>			
Maximum array power	50000 Wp STC	75000 Wp STC	93750 Wp STC
Maximum system voltage		1000 V	
Rated MPP voltage range	330 V... 800 V	500 V... 800 V	550 V... 800 V
MPPT operating voltage range		150 V... 1000 V	
Minimum DC voltage / start voltage		150 V / 188 V	
MPP trackers / strings per MPP input		6/2	
Maximum operating input current / per MPP tracker		120 A / 20 A	
Maximum short circuit current per MPPT / per string input		30 A / 30 A	
<b>Output (AC)</b>			
AC nominal power	33300 W	50000 W	62500 W
Maximum apparent power	33300 VA	53000 VA	66000 VA
Output phases / line connections		3 / 3-(N)-PE	
Nominal AC voltage		480 V / 277 V WYE	
AC voltage range		244 V... 305 V	
Maximum output current	40 A	64 A	80 A
Rated grid frequency		60 Hz	
Grid frequency / range		50 Hz, 60 Hz / -6 Hz... +6 Hz	
Power factor at rated power / adjustable displacement		1 / 0.0 leading... 0.0 lagging	
Harmonics THD		<3%	
<b>Efficiency</b>			
CEC efficiency	97.5%	97.5%	97.5%
<b>Protection and safety features</b>			
Load rated DC disconnect		●	
Load rated AC disconnect		●	
Ground fault monitoring: Riso / Differential current		● / ●	
DC AFCI arc-fault protection		●	
SunSpec PLC signal for rapid shutdown		●	
DC reverse polarity protection		●	
AC short circuit protection		●	
DC surge protection: Type 2 / Type 1+2		○ / ○	
AC surge protection: Type 2 / Type 1+2		○ / ○	
Protection class / overvoltage category (as per UL 840)		I / IV	
<b>General data</b>			
Device dimensions (W/H/D)	621 mm / 733 mm / 569 mm (24.4 in x 28.8 in x 22.4 in)		
Device weight	84 kg (185 lbs)		
Operating temperature range	-25 °C... +60 °C (-13 °F... +140 °F)		
Storage temperature range	-40 °C... +70 °C (-40 °F... +158 °F)		
Audible noise emissions (full power @ 1m and 25 °C)	65 dB(A)		
Internal consumption at night	5 W		
Topology	Transformerless		
Cooling concept	OptiCool (forced convection, variable speed fans)		
Enclosure protection rating	Type 4X, 3SX (as per UL 50E)		
Maximum permissible relative humidity (non-condensing)	100%		
<b>Additional information</b>			
Mounting	Free-standing with included mounting feet		
DC connection	Amphenol UTX PV connectors		
AC connection	Screw terminals - 4 AWG to 4/0 AWG CU/AL		
LED indicators (Status / Fault / Communication)	●		
Network interfaces: Ethernet / WLAN / RS485	● (2 ports) / ● / ○		
Data protocols: SMA Modbus / SunSpec Modbus / Webconnect	● / ● / ●		
Multifunction relay	●		
ShadeFix technology for string level optimization	●		
Integrated Plant Control / Q on Demand 24/7	● / ●		
Off-Grid capable / SMA Fuel Save Controller compatible	● / ●		
SMA Smart Connected (proactive monitoring and service support)	●		
<b>Certifications</b>			
Certifications and approvals	UL 1741, UL 1699B Ed. 1, UL 1998, CSA 22.2 107-1, PV Rapid Shutdown System Equipment		
FCC compliance	FCC Part 15 Class A		
Grid interconnection standards	IEEE 1547, UL 1741 SA - CA Rule 21, HECO Rule 14H		
Advanced grid support capabilities	L/HFRT, L/HVRT, Volt-VAr, Volt-Watt, Frequency-Watt, Ramp Rate Control, Fixed Power Factor		
<b>Warranty</b>			
Standard	10 years		
Optional extensions	3 / 20 years		
Optional features	● Standard features - Not available		
Type designation	STP 33-US-41	STP 50-US-41	STP 62-US-41
<b>Accessories</b>			
	SMA Data Manager M EDMM-US-10		SMA Sensor Module MD.SEN-US-40
	Universal Mounting UMS_KIT-10		IT2

Toll Free +1 888 4 SMA USA  
www.SMA-America.com

**10 years**  
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**3/26/2022**  
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**SMA America, LLC**

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Project Details			
<b>Name</b>	Swope Hyundai	<b>Date</b>	08/31/2021
<b>Location</b>	1085 North Dixie Highway, Elizabethtown, KY 42701	<b>Total modules</b>	946
<b>Module</b>	SunPower: SPR-X22-360-COM (46mm)	<b>Total watts</b>	340,560
<b>Dimensions</b>	61.38" x 41.18" x 1.81" (1559.05mm x 1045.97mm x 46.0mm)	<b>Attachments</b>	1,698
<b>ASCE</b>	7-10	<b>Rails per row</b>	2

System Weight	
<b>Total system weight</b>	45,069.5 lbs
<b>Weight/attachment</b>	26.5 lbs
<b>Racking weight</b>	6,274.1 lbs
<b>Distributed weight</b>	2.7 psf

Load Assumptions	
<b>Wind exposure</b>	B
<b>Wind speed</b>	115 mph
<b>Ground snow load</b>	15 psf
<b>Attachment spacing portrait</b>	4.0'

Roof Information			
<b>Roof material</b>	Metal	<b>Building height</b>	30 ft
<b>Roof attachment</b>	L-Foot Only	<b>Roof slope</b>	9 °
<b>Attachment hardware</b>	Square	<b>Risk category</b>	II

Span Details XR100 - Portrait		
Zone	Max span	Max cantilever
1	8' 10"	3' 6"
2	8' 10"	3' 6"
3	8' 1"	3' 3"

Reaction Forces XR100 - Portrait			
Zone	Down (lbs)	Uplift (lbs)	Lateral (lbs)
1	211	91	27
2	211	190	27
3	211	301	27

Roof Section 1		
Definition	Roof Section Weights	Roof Section (all segments)
540 modules	Total weight: 25,818.9 lbs	Provided rail: 4138' [194 x 17', 60 x 14']
East-West rail orientation	Weight/attachment: 26.4 lbs	Attachments: 978
Portrait module orientation	Total Area: 9,654.9 sq ft	Splices: 140
Graphical entry	Distributed weight: 2.7 psf	Clamps: 1194

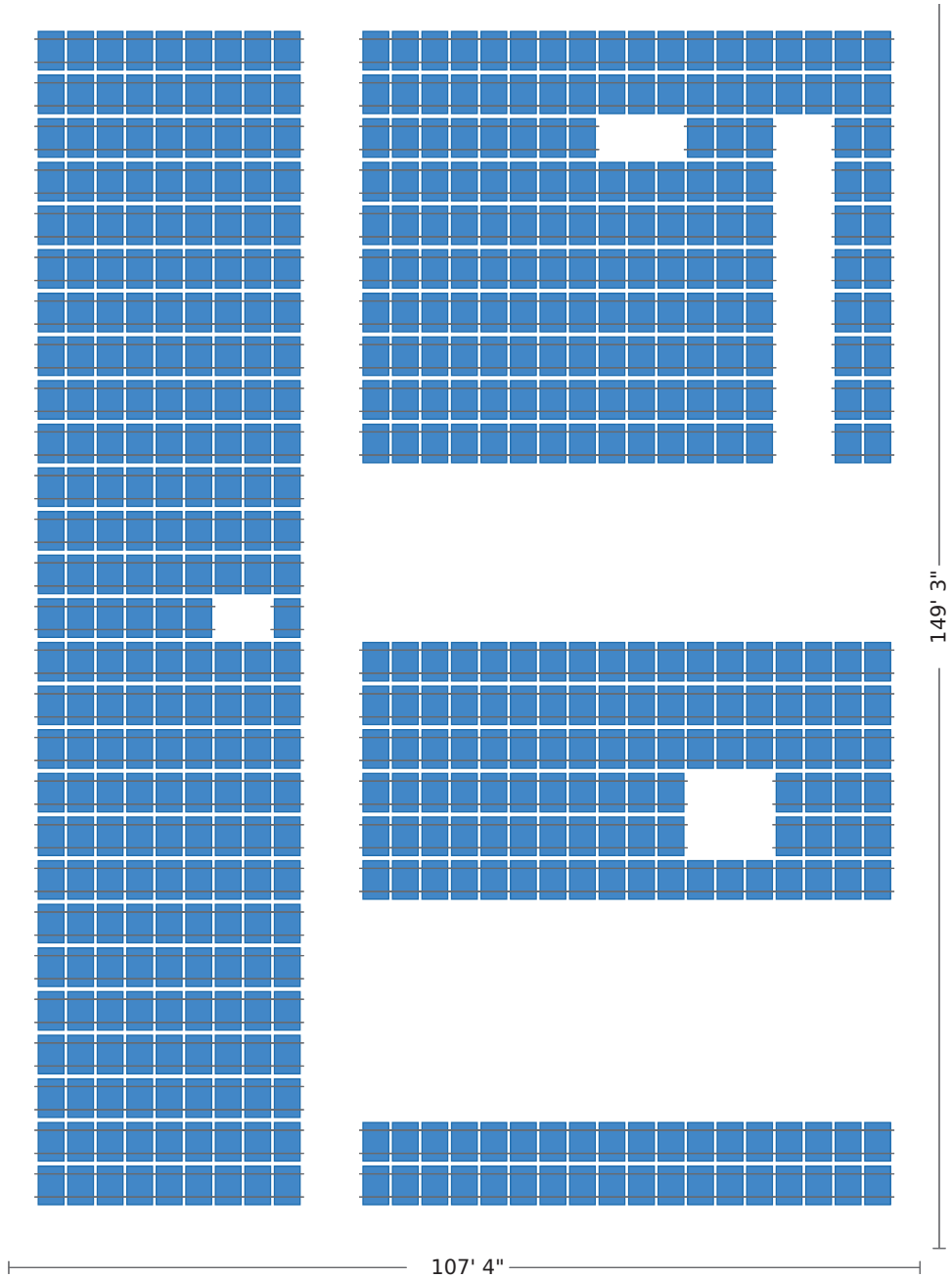
**Diagram**

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**Segments**

Columns	Length	Cantilever	Cantilever Violations	Rail	Attachments	Splices	Clamps
9	31' 4"	1' 8"	None	68' [4 x 17']	16	2	20
<b>Row segment totals (x 26) →</b>				<b>1768' [104 x 17']</b>	<b>416</b>	<b>52</b>	<b>520</b>
18	62' 6"	1' 3"	None	130' [2 x 14', 6 x 17']	32	6	38
<b>Row segment totals (x 8) →</b>				<b>1040' [16 x 14', 48 x 17']</b>	<b>256</b>	<b>48</b>	<b>304</b>
8	27' 10"	1' 11"	None	56' [4 x 14']	14	2	18
3	10' 6"	1' 3"	None	28' [2 x 14']	6	0	8
2	7' 1"	1' 6"	None	28' [2 x 14']	4	0	6
<b>Row segment totals (x 8) →</b>				<b>224' [16 x 14']</b>	<b>32</b>	<b>0</b>	<b>48</b>
14	48' 7"	4"	None	102' [6 x 17']	26	4	30
<b>Row segment totals (x 7) →</b>				<b>714' [42 x 17']</b>	<b>182</b>	<b>28</b>	<b>210</b>
6	20' 11"	5"	None	56' [4 x 14']	12	2	14
1	3' 7"	0"	None	28' [2 x 14']	4	0	4
11	38' 3"	1' 1"	None	84' [6 x 14']	20	4	24
<b>Row segment totals (x 2) →</b>				<b>168' [12 x 14']</b>	<b>40</b>	<b>8</b>	<b>48</b>
4	14'	1'	None	28' [2 x 14']	8	0	10
<b>Row segment totals (x 2) →</b>				<b>56' [4 x 14']</b>	<b>16</b>	<b>0</b>	<b>20</b>

**Roof Section 2**

Definition	Roof Section Weights	Roof Section (all segments)
406 modules	Total weight: 19,250.7 lbs	Provided rail: 2894' [146 x 14', 50 x 17']
East-West rail orientation	Weight/attachment: 26.7 lbs	Attachments: 720
Portrait module orientation	Total Area: 7,240.9 sq ft	Splices: 150
Graphical entry	Distributed weight: 2.7 psf	Clamps: 858

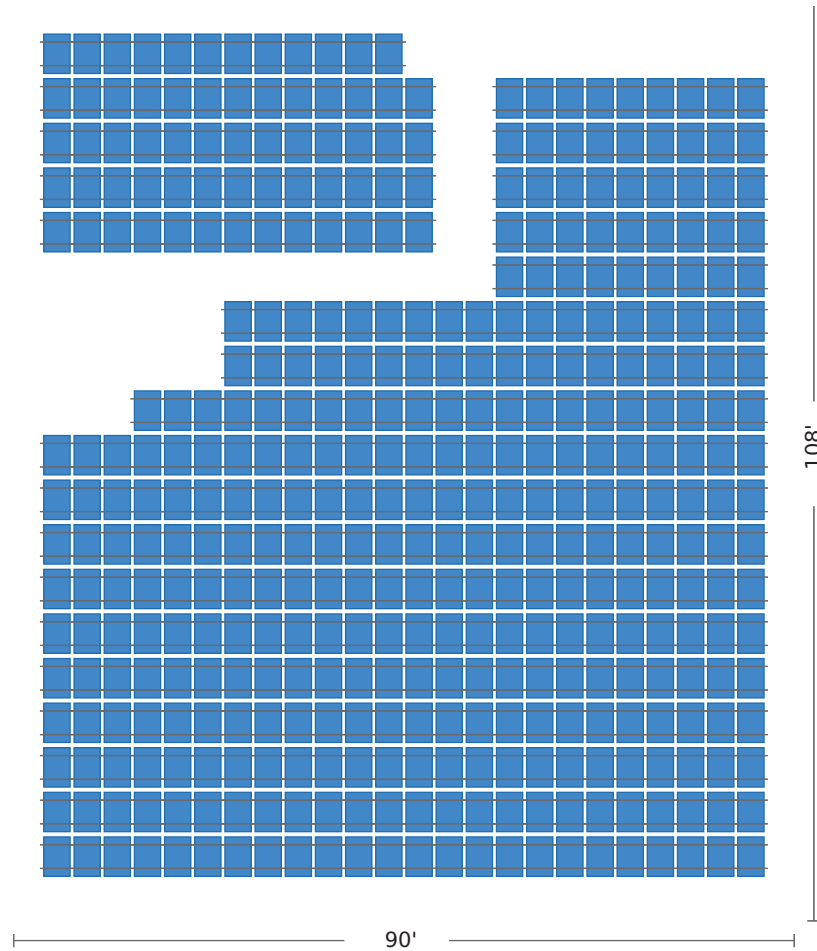
**Diagram**

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**Segments**

Columns	Length	Cantilever	Cantilever Violations	Rail	Attachments	Splices	Clamps
12	41' 8"	10"	None	<b>84' [6 x 14']</b>	<b>22</b>	<b>4</b>	<b>26</b>
13	45' 2"	7"	None	96' [2 x 14', 4 x 17']	24	4	28
<b>Row segment totals (x 4) →</b>				<b>384' [8 x 14', 16 x 17']</b>	<b>96</b>	<b>16</b>	<b>112</b>
9	31' 4"	1' 8"	None	68' [4 x 17']	16	2	20
<b>Row segment totals (x 5) →</b>				<b>340' [20 x 17']</b>	<b>80</b>	<b>10</b>	<b>100</b>
18	62' 6"	1' 3"	None	130' [2 x 14', 6 x 17']	32	6	38
<b>Row segment totals (x 2) →</b>				<b>260' [4 x 14', 12 x 17']</b>	<b>64</b>	<b>12</b>	<b>76</b>
21	72' 10"	5"	None	<b>146' [8 x 14', 2 x 17']</b>	<b>38</b>	<b>8</b>	<b>44</b>
24	83' 3"	1' 7"	None	168' [12 x 14']	42	10	50
<b>Row segment totals (x 10) →</b>				<b>1680' [120 x 14']</b>	<b>420</b>	<b>100</b>	<b>500</b>

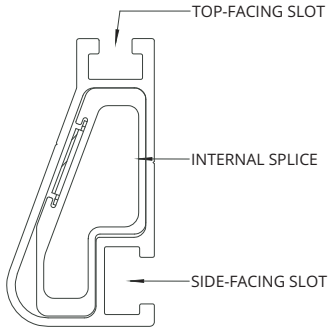
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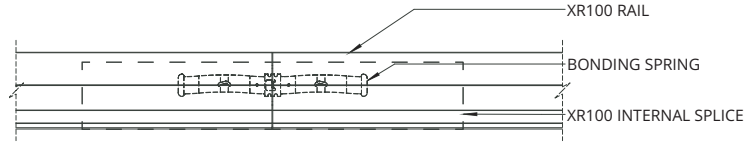


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**Splice Details**

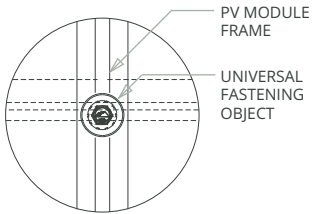


XR100

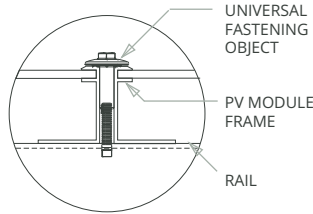


Splice Connection

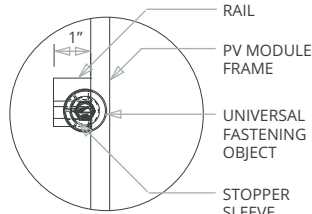
**Clamp Detail**



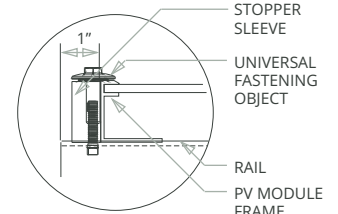
Mid Clamp, Plan



Mid Clamp, Front



End Clamp, Plan



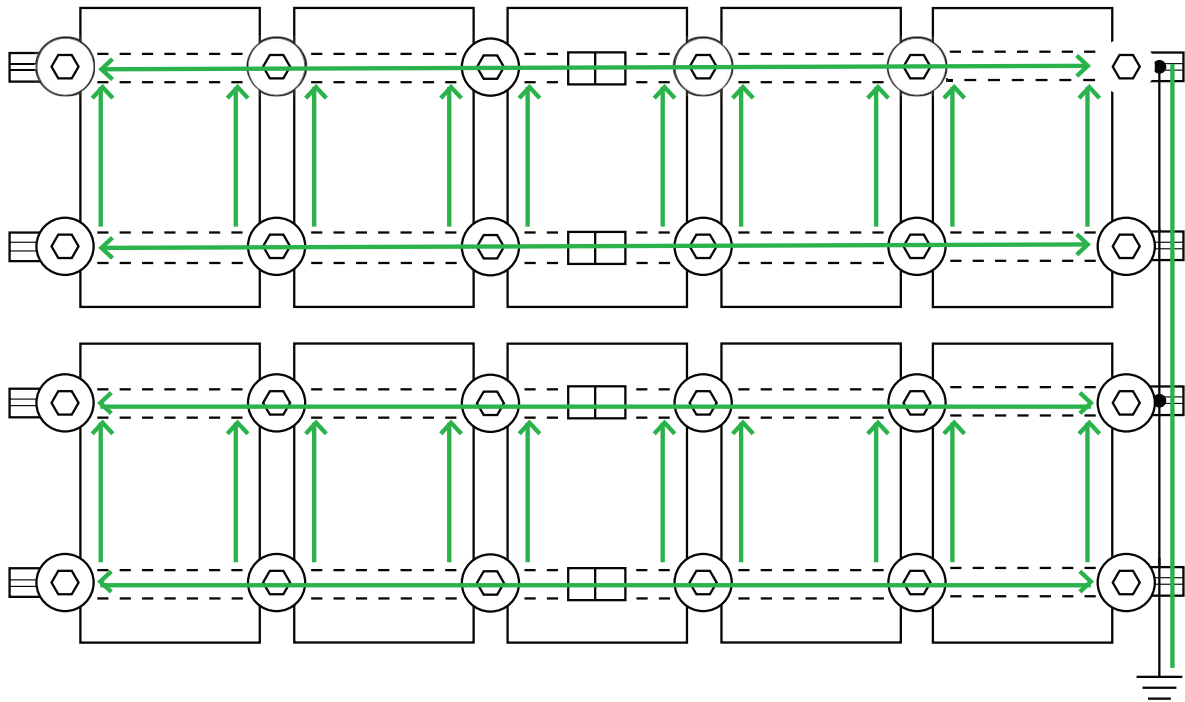
End Clamp, Front

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**Grounding Diagram**



 UFO Clamp

 Grounding Lug \*

 Fault Current Ground Path

 Min 10 AWG Copper Wire \*

 Bonded Splice (Rail Connection)

\* Grounding Lugs and Wire are not required in systems using Enphase microinverters.

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**Bill of Materials**

<b>Part</b>	<b>Spares</b>	<b>Total Qty</b>
<b>Rails &amp; Splices</b>		
XR-100-204A XR100, Rail 204" (17 Feet) Clear	0	244
XR-100-168A XR100, Rail 168" (14 Feet) Clear	0	206
XR100-BOSS-01-M1 Bonded Splice, XR100	0	290
<b>Clamps &amp; Grounding</b>		
UFO-CL-01-A1 Universal Module Clamp, Clear	0	2052
UFO-STP-46MM-M1 Stopper Sleeve, 46MM, Mill	0	320
XR-LUG-03-A1 Grounding Lug, Low Profile	0	80
<b>Attachments</b>		
LFT-03-M1 Slotted L-Foot, Mill	0	1698
BHW-SQ-02-A1 Square-Bolt Bonding Hardware	0	1698

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STEVE D. JOHNSON  
Electrical Inspector  
(270) 735-3288 (cell)

200 West Dixie Avenue  
P.O. Box 550  
Elizabethtown, KY 42702  
(270) 765-6121



CITY OF ELIZABETHTOWN  
Planning & Development

Meter #  
380156

\_\_\_\_\_ KENTUCKY UTILITIES      FAX 270-769-2165

NOLIN RECC      FAX 270-982-3120

\*\*\*THE FOLLOWING PROPERTY IS RELEASED FOR ELECTRICAL SERVICE\*\*\*

Date: 11-5, 2021

Residential: \_\_\_\_\_ Commercial:

Last Name: CAS REAL ESTATE LLC First: \_\_\_\_\_

Address: 1085 N. DIXIE AVE.

Entrance Size: \_\_\_\_\_ AMP      Heat: \_\_\_\_\_ Electric \_\_\_\_\_ Gas \_\_\_\_\_ KW \_\_\_\_\_

Water Heater: \_\_\_\_\_ Gas \_\_\_\_\_ Electric \_\_\_\_\_

Comments: INSTALLED SOLAR SYSTEM

(Swope Toyota)

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**Milestones**

In-Service Date: \_\_\_\_\_

Critical milestones and responsibility as agreed to by the Parties:

**Milestone/Date Responsible Party**

(1)	_____	_____
(2)	_____	_____
(3)	_____	_____
(4)	_____	_____
(5)	_____	_____
(6)	_____	_____
(7)	_____	_____
(8)	_____	_____
(9)	_____	_____
(10)	_____	_____

Agreed to by:

For the Member \_\_\_\_\_ Date \_\_\_\_\_

For the Transmission Owner (If Applicable) \_\_\_\_\_ Date \_\_\_\_\_

For the Interconnection Customer \_\_\_\_\_ Date \_\_\_\_\_



**Technical and Functional Requirements for Interconnecting the Interconnection  
Customer's Small Generating Facility with the Member's Distribution System**



# Technical and Functional Requirements for Interconnecting Distributed Generation with the EKPC Electrical Distribution System



**East Kentucky Power Cooperative**

Prepared by:

Paul A. Dolloff, Ph.D.  
Senior Engineer, EKPC Research and Development

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**APPROVALS**

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**Technical and Functional Requirements for  
Interconnecting Distributed Generation with the  
EKPC Electrical Distribution System**



\_\_\_\_\_  
Senior Engineer

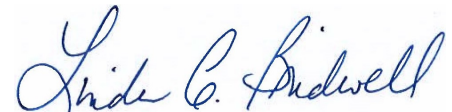
\_\_\_\_\_  
Date

\_\_\_\_\_  
Senior Vice President – Power Supply

\_\_\_\_\_  
Date

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**COMPANY OVERVIEW**

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East Kentucky Power Cooperative (EKPC) is a not-for-profit, generation and transmission (G&T) electric utility cooperative that is owned by sixteen (16) distribution electric utility cooperatives, collectively known as the Member Systems. EKPC's purpose is to generate and deliver wholesale electricity to the Member Systems who distribute power to retail customers (members). The Member Systems own and maintain their own distribution and metering systems; EKPC owns and maintains all distribution substations.

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## INTRODUCTION

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This document specifies the minimum requirements for the safe and effective operation of Distributed Generation (DG) up to 10 MVA interconnecting with either an existing Member System's radially operated electrical distribution feeder (up to 25kV) or directly to an EKPC distribution substation via an express feeder. DG systems may not be interconnected to loop feed distribution systems, spot networks, or grid networks.

All DG interconnections that do NOT qualify for net metering in Kentucky must be approved by both EKPC and the Member System to which the DG will be interconnected.

For simplicity, this document will use the term "DG" to refer to any distributed generator, co-generator, or small power producer facility that does NOT qualify for net metering. The term "utility" will be used to refer to either EKPC or the Member System (as appropriate) to which interconnection is being sought.

DG owners/operators and utility personnel shall use this document when planning the installation of interconnected DG systems. Although this document establishes criteria and requirements for interconnection, this manual is not a design handbook.

This document provides the minimum functional technical requirements that are universally needed to help assure a safe and technically sound interconnection. As such, the requirements contained within this document may not cover all details for specific DG installations. Therefore, the DG is encouraged to discuss project plans with the Member System and EKPC before designing, constructing, and purchasing equipment for the DG facility.

The interconnection requirements set forth in this document for the parallel operation of DG with the utility's distribution system are provided for substation and distribution interconnections of synchronous generators, induction generators, D.C. generators with inverters, and other inverter based generating technologies.

At the utility's discretion, all requirements in this document may be superseded by requirements given in the following standards:

ANSI Std. 1547-2003, "IEEE Standard for Interconnecting Distributed Resources with Electric Power Systems;"

ANSI C84.1-1995, "Electric Power Systems and Equipment – Voltage Ratings (60Hz);"

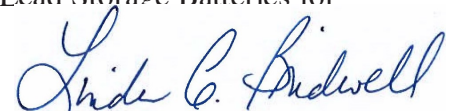
IEEE Std 519-1992, "Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems;"

IEEE Std. 929-2000, "Recommended Practice for Utility Interface of Photovoltaic (PV) Systems;"

IEEE Std. 485-1983, "Recommended Practice for Sizing Large Lead Storage Batteries for Generating Stations and Substations."

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**LIMITATIONS**

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As their wholesale and service provider, this interconnection document has been developed by EKPC on behalf of the Member Systems. All applicants must check with the Member System from which permission to interconnect is being sought to determine if additional requirements exist.

This document is not intended for net metering installations. Net metering rules and regulations are included in each Member System's net metering tariff.

DG installations with capacity greater than 10 MVA will need to contact EKPC for interconnection rules and regulations.

This document is not intended for DG installations seeking to interconnect with the EKPC transmission system at voltages 69 kV and above. For these installations, all applicants must contact EKPC for the appropriate documents.

The minimum required protective relaying and safety devices and requirements specified in this document are necessary to ensure the safety of utility workers and the public. In addition, these requirements are intended to protect utility facilities and other customer equipment from damage and disruptions caused by faults, malfunctions, and improper operation of the DG facility. The minimum protective relaying and interconnection requirements given in this document do not necessarily include additional protective and safety devices as may be required by industry and/or government codes and standards, equipment manufacturer requirements, and prudent engineering design and practice to fully protect the DG facility or facilities; compliance with these regulations are the sole responsibility of the DG.

The information in this document contains general information about the interconnection requirements for customer owned DG facilities. All applicable regulatory, technical, safety, and electrical requirements and codes are not contained in their entirety in this document. DG facilities are also subject to contractual and other legal requirements, which are only summarized in this document. Those regulations, requirements, contracts, and other materials contain complete information concerning DG interconnection and take precedence over the general provisions in this document.

This document, as well as the various other agreements and rate schedules, are subject to revision. Therefore, the DG is encouraged to check with the Member System and EKPC for the latest revision prior to commencing a DG project requiring interconnection and parallel operation with the utility distribution system.



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## **DG GENERATING REQUIREMENTS**

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The utility will permit any applicant to operate DG in parallel with the utility's electrical distribution system whenever such operation can take place without adversely affecting other customers, the general public, utility equipment, and utility personnel. To minimize this interference caused by the interconnection of DG, the DG shall meet the criteria given in this attachment.

The DG operating requirements outlined in this attachment shall be met at the point of common coupling (PCC). The PCC is defined as that electrical point where the distribution system owned and operated by the utility interconnects to the DG facility's distribution system. Often, but not always, the PCC is the metering point. The PCC is not to be confused with the DG point of interconnection. The DG point of interconnection is that electrical point where the output terminals of a DG system interconnect to an electrical distribution system, which may or may not be the same point as the PCC.

The DG operating requirements outlined in this attachment apply to the interconnection of either a single DG unit or the aggregate of multiple DG units within a single DG facility.

The DG operating requirements outlined in this attachment are functional and apply to all generating technologies: Synchronous generators, induction generators, D.C. generators with inverters, and other inverter based generating technologies.

### **VOLTAGE<sup>1</sup>**

The DG shall not actively regulate the voltage at the PCC.

In general, the Member System maintains a voltage schedule consistent with ANSI Std. C84.1-1995 Range A. With that, a DG shall produce voltages within 5% of the nominal voltage of the distribution system to which the DG is interconnected.

Under certain emergency situations, the Member System distribution system may operate within  $\pm 10\%$  of nominal voltage. The DG is required to provide voltage sensing equipment and an automatic means of disconnecting to protect their equipment during abnormal voltage operation.

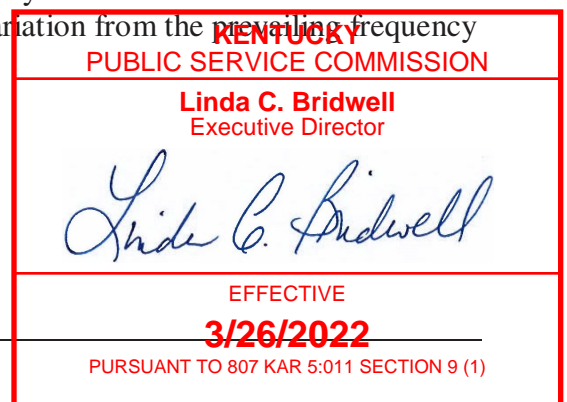
The DG must disconnect its generating equipment if the DG cannot maintain a voltage within 10% of the nominal voltage of the Member System's distribution system.

### **FREQUENCY**

The nominal operating frequency of the utility's distribution system is 60 Hz. The DG shall be designed for this frequency and will not contribute to any variation from the prevailing frequency when the DG is in operation.

---

<sup>1</sup> 807 KAR 5:041. Electric. Section 6. Voltage and Frequency.



**POWER FACTOR**

DG systems using synchronous generators shall absorb or produce reactive energy (VAr) such that the overall power factor is between 0.90 lagging and unity or between unity and 0.9 leading, respectively. The utility may request that the DG adjust the power factor within the above stated limits.

DG systems using induction generators with nameplate power factor below unity, shall install reactive energy capacity (capacitors) such that the DG will operate within 1% (leading or lagging) of unity power factor.

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## **POWER QUALITY**

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The interconnection of DG to the utility distribution system shall not degrade the power quality for existing utility customers. The utility may install power quality monitoring equipment to verify compliance of the DG with the power quality requirements outlined in this document. Should the DG be found to be out of compliance, the DG will be responsible for reimbursing the utility for the cost of the power quality monitoring equipment, telecommunication equipment and services, and studies of the power quality data analysis.

## **FLICKER**

Though defining the particular amount and frequency of voltage flicker that constitutes a problem is highly subjective, this requirement is necessary to minimize the adverse voltage effects to other customers on the utility system.

Any voltage flicker resulting from the interconnection of the DG to the utility distribution system shall not exceed the “Border Line of Irritation” curve given in Figure 10-3 – Maximum Permissible Voltage Fluctuations of IEEE Std 519-1992.

## **SYNCHRONIZATION**

When energizing the DG in parallel with the utility’s distribution system, the DG shall:

- i. Not cause a voltage fluctuation greater than  $\pm 5\%$  of the prevailing voltage on the utility’s distribution system;
- ii. Not cause a dip in voltage on the utility’s distribution system due to inrush currents in excess of two volts on a 120 volt base;
- iii. Meet the flicker requirements outlined in this document.

## **HARMONICS**

In general, the utility restricts the injection of voltage and current harmonics to limits defined in the IEEE Std. 519-1992. With that, the total harmonic distortion (THD) of voltage or current created by a DG must not exceed 5% of the fundamental, 60 Hz voltage or current waveform.

$$\% THD = \frac{\sqrt{\sum_{i=2}^{\infty} h_i^2}}{h_1} \times 100$$

Where:

$h_i$  = the magnitude of the  $i^{\text{th}}$  harmonic of either voltage or current;

$h_1$  = the magnitude of the fundamental voltage or current.

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Any single harmonic shall not exceed 3% of the fundamental frequency.

$$\% \text{ Single Harmonic Component Distortion} = \frac{h_i}{h_1} \times 100$$


Where:

$h_i$  = the magnitude of the  $i^{\text{th}}$  harmonic of either voltage or current;

$h_1$  = the magnitude of the fundamental voltage or current.

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## **SYSTEM PROTECTION**

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Abnormal conditions can arise on the utility's distribution system that require a response from interconnected DG to ensure safety of utility personnel and the general public. Additionally, the DG shall provide adequate protection to ensure safety to DG personnel and avoid damage to DG facilities.

The DG shall provide adequate protection to avoid damage to utility facilities and other utility customers' facilities during abnormal DG operation or DG fault conditions.

### **TRANSFER TRIP**

If at any time it is determined that the DG cannot provide adequate protection to the utility distribution system for any abnormal condition discussed in this attachment, the DG shall furnish and install a transfer trip receiver(s) at its facility to receive a tripping signal(s) originating from a utility location(s). This additional protection would also necessitate the DG to reimburse the utility for the purchase and installation of transfer trip equipment at the utility location(s) and a communications channel and associated equipment between the utility location(s) and the DG facility.

Should the utility deem that a transfer trip system is required, the utility will specify all equipment and the choice of telecommunication including protocol necessary for the transfer trip scheme. The DG shall purchase and install a utility approved Remote Terminal Unit (RTU) and a utility grade relay with targets. This relay will be used to trip the DG interconnection breaker(s) and provide an alarm(s) to the RTU.

In some instances, it may be advantageous to simultaneously trip both the DG interconnection breaker(s) and the DG generator breaker(s). The DG is encouraged to discuss this additional functionality of the transfer trip scheme with the utility.

With utility approval, a generator breaker contact may be used to disable transfer trip of the interconnection breaker when the generator breaker is open.

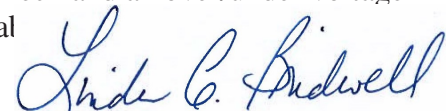
The DG shall not be allowed to operate in parallel with the utility if either the RTU or the associated telecommunication system necessary for the transfer trip scheme is out of service or otherwise unavailable.

### **INADVERTENT ENERGIZATION**

The DG shall not interconnect and operate in parallel with the utility distribution system when the utility distribution system is de-energized.

The DG interconnection breaker shall be automatically locked out and prevented from closing into a de-energized or partially de-energized (loss of any one phase) utility distribution system. The interconnection breaker close circuit shall include a synch check and an over/under voltage permissive contact to prevent closing the breaker when unfavorable

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**FAULTS ON THE UTILITY**

The DG shall detect and automatically disconnect from the utility distribution system for faults on the utility distribution system to which it is connected.

See the Reclosing Coordination and Reconnection requirements given in this attachment.

**UNINTENTIONAL ISLANDING**

An island is the condition in which a portion of the utility’s distribution system is energized solely by the DG, while that portion of the distribution system is electrically separated from the rest of the utility’s distribution system.

At no time shall the DG be allowed to form an island in which a portion of the utility’s distribution system is energized solely by the DG. The DG shall detect and disconnect from the utility’s distribution system within two seconds of the formation of an island.

**RECLOSING COORDINATION**

The EKPC transmission lines have automatic instantaneous and time delay reclosing. Likewise, the Member System distribution feeders have automatic instantaneous and time delay reclosing.

The DG is responsible for protecting its equipment and facility from being reconnected out-of-synchronism with the utility distribution system after automatic reclosing of a utility transmission line or distribution feeder breaker. The DG shall provide high speed protective relaying to remove its equipment from the utility’s distribution system prior to automatic reclosures.

To avoid the DG from providing fault current, the DG shall disconnect from the utility distribution system to which it is connected prior to reclosure by utility breakers.

The DG will receive reclosing timing schemes for the distribution feeder and transmission line relays, as applicable, from the utility. As a general rule, those utility breakers set for instantaneous reclosing will have a re-strike time in the range of 6 to 8 cycles (0.1 to 0.133 seconds).

**VOLTAGE**


The DG shall disconnect from the utility distribution system when the prevailing voltage on utility distribution system is less than 88% or greater than 110% of the nominal voltage of the utility’s distribution system.

**FREQUENCY**

The DG shall disconnect from the utility distribution system when the prevailing frequency on utility distribution system is less than 59.8 Hz or greater than 60.5 Hz.

**RECONNECTION**

Following an abnormal condition on the utility’s distribution system, the utility shall attempt to ascertain if and/or when the utility distribution system has

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configuration can accommodate reconnection of the DG. The DG must obtain permission from the utility prior to reconnecting in parallel with the utility distribution system.<sup>2</sup>

**DG INTERCONNECTION BREAKER RELAY**

The following are the minimum relay requirements for the interconnection and generator (as appropriate) breakers:

- A. All DG interconnection and generator (as appropriate) breaker relays shall be utility grade;
- B. Phase over-current relays (one per phase) with instantaneous and voltage restraint time delay. One ground over-current relay with instantaneous and time delay elements. Each element of the phase and ground relays shall have its own target;
- C. Over/under voltage relays, which monitors (is installed) on the utility side of the interconnection breaker;
- D. Over/under frequency relays, which monitors (is installed) on the utility side of the interconnection breaker;
- E. Directional power (reverse power flow) relays may be required to limit power flow to contractual agreements;
- F. All solid state relays requiring an auxiliary power source shall be powered from a DG station battery; ac to DC converters are unacceptable. The station battery shall be sized for an eight hour duty cycle in accordance with IEEE Std. 485-1983. At the end of the duty cycle, the battery shall be capable of tripping and closing all DG interconnection and generator (as appropriate) breakers;
- G. All DG interconnection relaying shall have dedicated current transformers (CTs). All relaying CTs shall have a minimum accuracy of C200. Saturation current shall not be more than 10% of the available fault current at the PCC.

**ISOLATION DEVICE**

The DG shall install and maintain a lockable, visible-break isolation device (disconnect switch) or motor-operated disconnecting device at the PCC (or at the generator terminals, as appropriate, for co-generation installations). The disconnecting device shall be appropriately labeled and accessible to utility personnel at all times.

<sup>2</sup> See agreed upon operating procedures.

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**MAINTENANCE AND OPERATING REQUIREMENTS**

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After the DG is in service, the utility reserves the right to test or review, on request, the calibration and operation of all protective equipment including relays, circuit breakers, batteries, etc. at the interconnection, as well as review DG maintenance records. A review of the calibration and operation of protective equipment may include utility-witnessed trip testing of the interconnection and generator (as appropriate) breakers by its associated protective relays.

The failure of the DG to maintain its interconnection equipment in a manner acceptable to the utility or to furnish maintenance records on demand may result in the DG being prevented from operating in parallel with the utility.

**OWNERSHIP**

The protective equipment (relays, breakers, etc.) located at the PCC required to disconnect the DG from the utility shall be owned, operated, and maintained by the DG.

**INTERCONNECTION BREAKER RELAY SETTING CALCULATIONS**

All calculations for the DG's interconnection breaker relay shall be submitted for review and acceptance by the utility to assure protection of utility equipment and reliability of service to the adjacent utility customers.

The DG shall be required to change relay settings, if necessary, to accommodate changes in the utility system.

**CALIBRATION AND FUNCTIONAL TRIP TESTS**


The DG shall be responsible to have calibration and functional trip tests performed on its fault and isolation protection equipment including the DG station batteries. These tests shall be performed prior to placing equipment in service. Thereafter, station batteries will be tested annually, while relays will be tested once every three years.

Copies of these test results shall be submitted to the utility no later than five working days after completion of the tests.

All testing and calibration shall be performed by a qualified, independent, testing organization acceptable to the utility in accordance with industry standards and shall be submitted to the utility for review and acceptance. Battery tests shall meet the requirements of IEEE Std. 450-1987. The utility reserves the right to witness and accept or reject the results of all tests. The utility shall be notified of testing five business days in advance.

**POWER QUALITY**

If harmonic distortion or flicker problems affecting other customers' equipment can be traced to the parallel operation of the DG with the utility, the DG shall not be allowed to operate in parallel with the utility until the problem is corrected.


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**DG SITE WORK**

If the utility is requested to work at the DG site, the utility operating and maintenance personnel shall inspect the site to ensure that all utility safety requirements have been met. If not, commencement of the requested work shall be delayed until conditions are deemed safe by the utility.

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## SPECIAL CONSIDERATIONS

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### REAL-TIME MONITORING

For those DG systems with rated (nameplate) capacity of 1 MW or greater (single unit or aggregate behind a single PCC), a Supervisory Control and Data Acquisition (SCADA) system is required. As part of the SCADA system, the DG shall purchase and install a utility approved Remote Terminal Unit (RTU) that shall provide key operating parameters of the DG to EKPC's Energy Management System (EMS) in real-time. The key DG operating parameters include but are not limited to:

- A. Status
  - i. Interconnection breaker and generator breakers;
  - ii. Generator or inverter run and availability;
- B. Alarms
  - i. Loss of DC to interconnection and generator breakers;
  - ii. Loss of DC to RTU and loss of ac to RTU battery charger;
- C. Analog Telemetry
  - i. Real time voltage, current, real power (watts), reactive power (VArS), and power factor at each breaker at the PCC;
  - ii. Metering Data: Dual direction, pulse accumulation of MWhr and MVARhr;
- D. Transfer Trip (if equipped)
  - i. Output trip signal;
  - ii. Input trip/alarm signal from interconnection breaker target relay;
  - iii. Loss of transfer trip alarm.

When real-time monitoring of the DG is required, the utility will specify all equipment and the choice of telecommunication including protocol necessary for the scheme.

The DG shall not be allowed to operate in parallel with the utility if either the RTU or the associated telecommunication system necessary for the transfer trip scheme is out of service or otherwise unavailable.

With utility permission, the DG shall be allowed to operate in parallel with the utility if either the RTU or the associated telecommunication system necessary for providing all but the transfer trip scheme to the utility is out of service or otherwise unavailable.

All costs for additional hardware and software for integration on the utility's EMS necessary for the DG interconnection shall be the responsibility of the DG.

Should the Member System have a SCADA system in place and wish to receive any or all of these same DG operating parameters:

- i. The Member System reserves the right to require DG to be available for DG installations of less than 1 MW;



- ii. The Member System will make every effort to reduce or eliminate redundant equipment and telecommunications burden of the DG by leveraging existing telecommunications in-place between EKPC and the Member System.

**DIRECT SUBSTATION INTERCONNECTIONS**

All costs associated with upgrading the utility’s distribution substation to accommodate an interconnection of the DG by means of a dedicated (express) feeder are the responsibility of the DG. These costs include, but are not limited to:

- A. Engineering design;
- B. Labor for construction, inspection, and testing;
- C. Equipment:
  - i. Breaker and associated protection equipment;
  - ii. Grade work;
  - iii. Additional fencing;
  - iv. Ground grid extension;
  - v. Bus extension and associated support structures
  - vi. Foundation work.

Details of the cost of construction, operation, long term maintenance, and ownership issues of the distribution feeder shall be negotiated between the DG and the utility.

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**METERING**

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Depending upon the contractual agreement between the DG and the utility, metering may be required by EKPC, the Member System, or both. The DG shall contact EKPC and/or the Member System, as appropriate to the installation, to obtain metering requirements.

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- B. Relay functional diagram showing:
  - i. Current transformer (CT) circuits and turns ratio;
  - ii. Potential transformer (PT) circuits and turns ratio;
  - iii. Relay connections;
  - iv. Protective control circuits;Note: All interconnections with utility circuits should be clearly labeled.
- C. Three-line:
  - i. ac schematic diagrams of transformers;
  - ii. ac schematic diagrams of the bus protection relay;
  - iii. Transformer connections;
  - iv. Grounding connections;
- D. Interconnection breaker data:
  - i. ac and DC schematic diagrams;
  - ii. Speed curve;
- E. Protective relay equipment list:
  - i. Manufacturer make and model number;
  - ii. Relay ranges;
  - iii. Manufacturer bulletins;
  - iv. Relay curves and proposed settings;
- F. Generator nameplate data:
  - i. Transient impedance;
  - ii. Sub-transient impedance;
  - iii. Synchronous impedance;
- G. Transformer
  - i. Nameplate data;
  - ii. Positive sequence impedance;
  - iii. Negative sequence impedance;
- H. Generator protection scheme.
- I. Equipment specifications
- J. Telecommunication Protocol

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**COMMISSIONING TEST**

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The DG will not be allowed to interconnect and operate in parallel with the utility's distribution system until appropriate commission tests, specified in this document, have been performed.

After construction is complete, functional tests of all protective equipment shall be performed by a qualified testing company acceptable to the utility. The utility reserves the right to witness such tests. For these tests, the utility must be given at least five business days written notice (or as otherwise mutually agreed) of the test schedule.

If the protective relay settings have been correctly applied and the functional tests are successful, the utility will permit the DG to interconnected and operate in parallel with the utility distribution system.



**Description of Distribution Upgrades and Transmission Upgrades and Best Estimate of Such Costs**

The Member and EKPC shall describe Distribution Upgrades and Transmission Upgrades and provide an itemized best estimate of the cost of the Distribution Upgrades and Transmission Upgrades and annual operation and maintenance expenses associated with each. The costs and annual expenses shall be functionalized as either distribution or transmission related.



**Calculation for Wheeling Energy Across a Member Distribution System to the EKPC Transmission System**

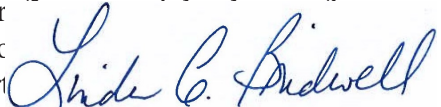
**Distribution Wheeling Rate**

The Distribution Wheeling Rate shall be calculated by applying an Annual Fixed Charge Rate to the Net Distribution Line Investment. The result of this calculation will be divided by the 12-month sum of the monthly wholesale coincident peak demands for the EKPC Member Cooperative. The resulting Distribution Wheeling Rate per kW shall be multiplied by the capacity wheeled by the third party or EKPC. The Distribution Wheeling Rate shall be based on the financial information filed in the EKPC Member Cooperative's annual report to the Kentucky Public Service Commission (Commission). The Distribution Wheeling Rate shall be recalculated every June 1<sup>st</sup> to reflect the most current financial information.

Annual Fixed Charge Rate. The Annual Fixed Charge Rate shall allow for the recovery of depreciation expense, operation and maintenance (O&M) expense, and administrative and general (A&G) expenses associated with EKPC Member Cooperative's distribution system. The Annual Fixed Charge Rate shall also include a return on the investment in the distribution facilities of EKPC Member Cooperative. The components of the Annual Fixed Charge Rate shall be calculated in the following manner:

- a. Depreciation Expense. The annual depreciation expense associated with the distribution plant shall be divided by the calendar year-end total distribution plant to calculate the depreciation portion of the Annual Fixed Charge Rate. The annual depreciation expense associated with the distribution plant shall be calculated by multiplying the total annual depreciation expense by the percentage of the calendar year-end total distribution plant to the calendar year-end total electric plant in service.
- b. O&M Expense. The annual distribution O&M expense shall be divided by the calendar year-end total distribution plant to calculate the O&M portion of the Annual Fixed Charge Rate.
- c. A&G Expense. The annual A&G expense associated with the distribution plant shall be divided by the calendar year-end total distribution plant to calculate the A&G portion of the Annual Fixed Charge Rate. The annual A&G expense associated with the distribution plant shall be calculated by multiplying the total annual A&G expense by the percentage of the calendar year-end total distribution plant to the calendar year-end total electric plant in service.
- d. Return on Investment. The return on investment r... capital approach. The debt portion of capitalizatio... end balance of all long-term debt. The equity port...

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the calendar year-end balance in the Patronage Capital account minus EKPC generation and transmission capital credits (G&TCCs). The cost of debt is calculated by dividing the calendar year-end balance for interest on long-term debt by the calendar year-end balance of all long-term debt. The cost of equity is based on the Times Interest Earned Ratio (TIER) authorized by the Commission in the EKPC Member Cooperative's last base rate case. The cost of equity is calculated by dividing the amount of margins required to achieve the authorized TIER by the calendar year-end balance in the Patronage Capital account minus EKPC G&TCCs.

Net Distribution Line Investment. The Net Distribution Line Investment is the net book value for two distribution plant accounts: Poles, Towers and Fixtures – Account 364, and Overhead Conductors and Devices – Account 365. The net book value for each account is determined by taking the calendar year-end balance for the account minus the corresponding accumulated depreciation at calendar year-end. The corresponding accumulated depreciation is calculated by multiplying the total accumulated depreciation balance for distribution plant at calendar year-end by a percentage of the calendar year-end balances for either Account 364 or 365 to the total calendar year-end total distribution plant.

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**SMALL GENERATOR INTERCONNECTION REQUEST APPLICATION FORM**

**Member:** Swope Enterprises, LLC (Toyota)

Designated Contact Person: Devon McCarley - Freedom Solar

Address: 1100 N Dixie Ave - Elizabethtown, KY 42701

Telephone Number: 512-657-7618

Fax: N/A

E-Mail Address: Devon@freedomssolarpower.com

An Interconnection Request is considered complete when it provides all applicable and correct information required below.

**Preamble and Instructions**

An Interconnection Customer who requests an interconnection must submit this Interconnection Request by hand delivery, mail, e-mail, or fax to the Member.

**Processing Fee or Deposit:**

The Interconnection Customer shall submit to the Member a deposit not to exceed \$1,000 towards the cost of the feasibility study.

**Interconnection Customer Information**

Legal Name of the Interconnection Customer (or, if an individual, individual's name)

Name: Swope Enterprises, LLC (Toyota)

Contact Person: Susan Schmidt

Mailing Address: 1100 N Dixie Ave

City: State: Zip: Elizabethtown, KY 42701

Facility Location (if different from above): \_\_\_\_\_

Telephone (Day): 859-684-5651 Telephone (Evening): \_\_\_\_\_

Fax: N/A E-Mail Address: sschmidt@freedomssolarpower.com



Alternative Contact Information (if different from the Interconnection Customer)

Contact Name: \_\_\_\_\_

Title: \_\_\_\_\_ N/A \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone (Day): \_\_\_\_\_ N/A \_\_\_\_\_ Telephone (Evening): \_\_\_\_\_

Fax: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_ N/A \_\_\_\_\_

Application is for:  New Small Generating Facility  
 Capacity addition to Existing Small Generating Facility

If capacity addition to existing facility, please describe:

Will the Small Generating Facility be used for any of the following?

Net Metering? Yes \_\_\_\_\_ No

To Supply Power to the Interconnection Customer? Yes  No \_\_\_\_\_

To Supply Power to Others? Yes  No \_\_\_\_\_

For installations at locations with existing electric service to which the proposed Small Generating Facility will interconnect, provide:

Nolin  
(Local Electric Service Provider\*)

4002046301  
(Existing Account Number\*)

[\*To be provided by the Interconnection Customer if the local electric service provider is different from the Member]

Contact Name: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone (Day): \_\_\_\_\_ Telephone (Evening): \_\_\_\_\_

Fax: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_



Requested Point of Interconnection: \_\_\_\_\_

Interconnection Customer's Requested In-Service Date: 12/6/21

**Small Generating Facility Information**

Data apply only to the Small Generating Facility, not the Interconnection Facilities.

Energy Source: X Solar \_\_\_ Wind \_\_\_ Hydro \_\_\_

Hydro Type (e.g. Run-of-River): \_\_\_\_\_

Diesel \_\_\_ Natural Gas \_\_\_ Fuel Oil \_\_\_ Other (state type) \_\_\_\_\_

Prime Mover: \_\_\_ Fuel Cell \_\_\_ Recip Engine \_\_\_ Gas Turb  
\_\_\_ Steam Turb \_\_\_ Microturbine X PV \_\_\_ Other

Type of Generator: \_\_\_ Synchronous \_\_\_ Induction X Inverter

Generator Nameplate Rating: 341 - DC kW

Generator Nameplate Rating: 275 - AC kW

Interconnection Customer or Customer-Site Load: none kW (if none, so state)

Typical Reactive Load (if known): N/A

Maximum Physical Export Capability Requested: 5-10 kW

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

Equipment Type	Certifying Entity
1. <u>SunPower SPR-X22-360-COM</u>	<u>UL Certified</u>
2. <u>SMA STP Inverters</u>	<u>UL Certified</u>
3. _____	_____
4. _____	_____
5. _____	_____

Is the prime mover compatible with the certified protective relay package? \_\_\_ Yes \_\_\_ No  
N/A

Generator (or solar collector)

Manufacturer, Model Name & Number: SunPower - SPR-X22-360-COM-MI SD

Version Number: X22

Nameplate Output Power Rating in kW: (Summer) 275 AC

Nameplate Output Power Rating in kVA: (Summer) \_\_\_\_\_





Individual Generator Power Factor

Rated Power Factor: Leading: 0 Lagging: 0

Total Number of Generators in wind farm to be interconnected pursuant to this

Interconnection Request: 0 Elevation: \_\_\_\_\_ Single phase \_\_\_ Three phase X

Inverter Manufacturer, Model Name & Number (if used): SMA America - STP 50-US-41 & 62-US-41

List of adjustable set points for the protective equipment or software: N/A

Note: A completed Power Systems Load Flow data sheet must be supplied with the Interconnection Request.

**Small Generating Facility Characteristic Data (for inverter-based machines)**

Max design fault contribution current:74.21A & 89.54A Instantaneous or RMS? RMS

Harmonics Characteristics: Less than 3%

Start-up requirements: None

**Small Generating Facility Characteristic Data (for rotating machines)**

RPM Frequency: N/A

(\*) Neutral Grounding Resistor (If Applicable): N/A

Synchronous Generators:

Direct Axis Synchronous Reactance, Xd: \_\_\_\_\_ P.U.

Direct Axis Transient Reactance, X' d: \_\_\_\_\_ P.U.

Direct Axis Subtransient Reactance, X'' d: N/A P.U.

Negative Sequence Reactance, X2: \_\_\_\_\_ P.U.

Zero Sequence Reactance, X0: \_\_\_\_\_ P.U.

KVA Base: \_\_\_\_\_

Field Volts: N/A

Field Amperes: \_\_\_\_\_

Induction Generators:

Motoring Power (kW): \_\_\_\_\_

I2 t or K (Heating Time Constant): N/A

Rotor Resistance, Rr: \_\_\_\_\_

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Stator Resistance, Rs: \_\_\_\_\_  
 Stator Reactance, Xs: \_\_\_\_\_  
 Rotor Reactance, Xr: \_\_\_\_\_ N/A \_\_\_\_\_  
 Magnetizing Reactance, Xm: \_\_\_\_\_  
 Short Circuit Reactance, Xd'': \_\_\_\_\_  
 Exciting Current: \_\_\_\_\_  
 Temperature Rise: \_\_\_\_\_  
 Frame Size: \_\_\_\_\_  
 Design Letter: \_\_\_\_\_ N/A \_\_\_\_\_  
 Reactive Power Required In Vars (No Load): \_\_\_\_\_  
 Reactive Power Required In Vars (Full Load): \_\_\_\_\_  
 Total Rotating Inertia, H: \_\_\_\_\_ Per Unit on kVA Base

Note: Please contact the Member prior to submitting the Interconnection Request to determine if the specified information above is required.

Excitation and Governor System Data for Synchronous Generators Only:

Provide appropriate IEEE model block diagram of excitation system, governor system and power system stabilizer (PSS) in accordance with the regional reliability council criteria. A PSS may be determined to be required by applicable studies. A copy of the manufacturer's block diagram may not be substituted.

**Interconnection Facilities Information**

Will a transformer be used between the generator and the point of common coupling?  
 Yes \_\_\_ No

Will the transformer be provided by the Interconnection Customer?  Yes \_\_\_ No

Transformer Data (If Applicable, for Interconnection Customer-Owned Transformer):

Is the transformer: \_\_\_ single phase  three phase? Size: 300 kVA  
 Transformer Impedance: 4 % on 300 kVA Base

If Three Phase:

Transformer Primary: 208 Volts  Delta \_\_\_ Wye \_\_\_ Wye Grounded  
 Transformer Secondary: 480/277 Volts \_\_\_ Delta  Wye \_\_\_ Wye Grounded  
 Transformer Tertiary: \_\_\_ Volts \_\_\_ Delta \_\_\_ Wye \_\_\_ Wye Grounded

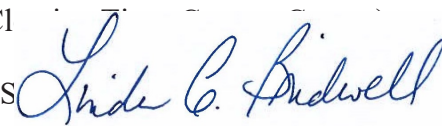
Transformer Fuse Data (If Applicable, for Interconnection Customer-Owned Fuse):

(Attach copy of fuse manufacturer's Minimum Melt and Total CI

Manufacturer: \_\_\_\_\_ Type: \_\_\_\_\_

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Interconnecting Circuit Breaker (if applicable):

Manufacturer: \_\_\_\_\_ N/A \_\_\_\_\_ Type: \_\_\_\_\_

Load Rating (Amps): N/A Interrupting Rating (Amps): N/A Trip Speed (Cycles): N/A

Interconnection Protective Relays (If Applicable):

If Microprocessor-Controlled:

List of Functions and Adjustable Setpoints for the protective equipment or software:

	Setpoint Function	Minimum	Maximum
1.	_____		
2.	_____		
3.	_____	N/A	
4.	_____		
5.	_____		
6.	_____		

If Discrete Components:

(Enclose Copy of any Proposed Time-Overcurrent Coordination Curves)

Manufacturer: Type: \_\_\_\_\_ Style/Catalog No.: \_\_\_\_\_ Proposed Setting: \_\_\_\_\_  
 Manufacturer: Type: \_\_\_\_\_ Style/Catalog No.: \_\_\_\_\_ Proposed Setting: \_\_\_\_\_  
 Manufacturer: Type: N/A Style/Catalog No.: N/A Proposed Setting: N/A  
 Manufacturer: Type: \_\_\_\_\_ Style/Catalog No.: \_\_\_\_\_ Proposed Setting: \_\_\_\_\_  
 Manufacturer: Type: \_\_\_\_\_ Style/Catalog No.: \_\_\_\_\_ Proposed Setting: \_\_\_\_\_

Current Transformer Data (If Applicable):

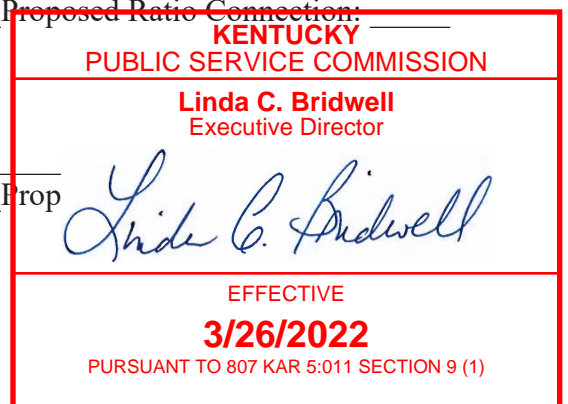
(Enclose Copy of Manufacturer's Excitation and Ratio Correction Curves)

Manufacturer: \_\_\_\_\_ N/A \_\_\_\_\_  
Type: \_\_\_\_\_ Accuracy Class: \_\_\_\_\_ Proposed Ratio Connection: \_\_\_\_\_

Manufacturer: \_\_\_\_\_ N/A \_\_\_\_\_  
Type: \_\_\_\_\_ Accuracy Class: \_\_\_\_\_ Proposed Ratio Connection: \_\_\_\_\_

Potential Transformer Data (If Applicable):

Manufacturer: \_\_\_\_\_ N/A \_\_\_\_\_  
Type: \_\_\_\_\_ Accuracy Class: \_\_\_\_\_ Prop \_\_\_\_\_



Manufacturer: \_\_\_\_\_ N/A  
Type: \_\_\_\_\_ Accuracy Class: \_\_\_\_\_ Proposed Ratio Connection: \_\_\_\_\_

**General Information**

Enclose copy of site electrical one-line diagram showing the configuration of all Small Generating Facility equipment, current and potential circuits, and protection and control schemes. This one-line diagram must be signed and stamped by a licensed Professional Engineer if the Small Generating Facility is larger than 50 kW. Is One-Line Diagram Enclosed?

Yes  No

Enclose copy of any site documentation that indicates the precise physical location of the proposed Small Generating Facility (e.g., USGS topographic map or other diagram or documentation). Proposed location of protective interface equipment on property (include address if different from the Interconnection Customer's address)

Enclose copy of any site documentation that describes and details the operation of the protection and control schemes.

Is Available Documentation Enclosed?  Yes  No

Enclose copies of schematic drawings for all protection and control circuits, relay current circuits, relay potential circuits, and alarm/monitoring circuits (if applicable).

Are Schematic Drawings Enclosed?  Yes  No

**Applicant Signature**

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

For Interconnection Customer: Devon McCarley


Date: 11/30/21



## Certification of Small Generator Equipment Packages

- 1.0 Small Generating Facility equipment proposed for use separately or packaged with other equipment in an interconnection system shall be considered certified for interconnected operation if (1) it has been tested in accordance with industry standards for continuous utility interactive operation in compliance with the appropriate codes and standards referenced below by any Nationally Recognized Testing Laboratory (NRTL) recognized by the United States Occupational Safety and Health Administration to test and certify interconnection equipment pursuant to the relevant codes and standards listed in SGIP Attachment 3, (2) it has been labeled and is publicly listed by such NRTL at the time of the interconnection application, and (3) such NRTL makes readily available for verification all test standards and procedures it utilized in performing such equipment certification, and, with consumer approval, the test data itself. The NRTL may make such information available on its website and by encouraging such information to be included in the manufacturer's literature accompanying the equipment.
- 2.0 The Interconnection Customer must verify that the intended use of the equipment falls within the use or uses for which the equipment was tested, labeled, and listed by the NRTL.
- 3.0 Certified equipment shall not require further type-test review, testing, or additional equipment to meet the requirements of this interconnection procedure; however, nothing herein shall preclude the need for an on-site commissioning test by the parties to the interconnection nor follow-up production testing by the NRTL.
- 4.0 If the certified equipment package includes only interface components (switchgear, inverters, or other interface devices), then an Interconnection Customer must show that the generator or other electric source being utilized with the equipment package is compatible with the equipment package and is consistent with the testing and listing specified for this type of interconnection equipment.
- 5.0 Provided the generator or electric source, when combined with the equipment package, is within the range of capabilities for which it was tested by the NRTL, and does not violate the interface components' labeling and listing performed by the NRTL, no further design review, testing or additional equipment on the customer side of the point of common coupling shall be required to meet the requirements of this interconnection procedure.
- 6.0 An equipment package does not include equipment provided by the utility.
- 7.0 Any equipment package approved and listed in a state by that state's regulatory body for interconnected operation in that state prior to the effective date of these Small Generator interconnection procedures shall be considered certified under these procedures for use in that state.

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**Data to Be Provided by the Interconnection Customer  
with the Facilities Study Agreement**

Provide location plan and simplified one-line diagram of the plant and station facilities. For staged projects, please indicate future generation, distribution circuits, etc.

On the one-line diagram, indicate the generation capacity attached at each metering location. (Maximum load on CT/PT)

On the one-line diagram, indicate the location of auxiliary power. (Minimum load on CT/PT) Amps

One set of metering is required for each generation connection to the new ring bus or existing Member station. Number of generation connections: 1

Will an alternate source of auxiliary power be available during CT/PT maintenance?  
Yes \_\_\_\_\_ No X

Will a transfer bus on the generation side of the metering require that each meter set be designed for the total plant generation? Yes \_\_\_\_\_ No X  
(Please indicate on the one-line diagram).

What type of control system or PLC will be located at the Small Generating Facility?

N/A

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What protocol does the control system or PLC use?

N/A

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Please provide a 7.5-minute quadrangle map of the site. Indicate the plant, station, distribution line, and property lines.

Physical dimensions of the proposed interconnection station:

N/A

---

Bus length from generation to interconnection station:

N/A

---

Line length from interconnection station to Member's Distribution



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Tower number observed in the field. (Painted on tower leg)\*:  
N/A

---

Number of third party easements required for distribution lines\*:  
N/A

---

\* To be completed in coordination with Member.

Is the Small Generating Facility located in Member's service area?

Yes  No

If No, please provide name of local provider:

---

Please provide the following proposed schedule dates:

Begin Construction Date: 11/10/21

Generator step-up transformers receive back feed power Date: \_\_\_\_\_

Generation Testing Date: 11/30/21

Commercial Operation Date: 12/10/21



## Schedule C – Power Purchase Rates

### I. Initial Rates

- A. Capacity will equal EKPC’s non-dispatchable rate as set forth in its Cogeneration and Small Power Production Power Purchase Rate Schedule Over 100 kW from Non-Dispatchable Generation Sources. For the current year, said rate is \$0 per kW.
- B. QF will be paid monthly for the electric power produced by non-dispatchable generation facilities and purchased by EKPC at the value of the real-time locational marginal price for energy set by PJM at the EKPC zonal node during each hour of the day at the time of delivery. The payment will be offset by a market administration fee of \$0.00016 per kWh to cover EKPC's market participation costs.

### II. Subsequent Rate Changes

Upon the one year anniversary date of the Authorization Date of the Agreement, and on each anniversary date thereafter, the rates for Capacity and Energy set forth above shall be reset based upon the rates set forth in EKPC’s Cogeneration and Small Power Production Power Purchase Rate Schedule Over 100 kW as it is then in effect on each such anniversary date that the Agreement remains in effect.





## Schedule D – Monthly Backup Service and Reactive Support Charges

Shall follow Nolin’s applicable tariffed rate schedules.



## Schedule E – Interconnection Service Charges

I. Monthly Interconnection Service Charge

NOT APPLICABLE

II. Distribution Cooperative Transmission Service Charges

Nolin charges for providing transmission service shall be recovered in accordance with Section 6.06 of the Interconnection Manual and Attachment 6 thereto.

NOT APPLICABLE

