



DELAWARE ELECTRIC CO-OP

"We Keep the Lights On"

14198 Sussex Highway
Greenwood, Delaware 19950
855-DEC-9090

www.delaware.coop

Delaware Electric Cooperative, Inc. **Interconnection Application – Non-Export**

(For use with systems less than 100 kW DC)

This Interconnection Application also serves as a binding contract between Delaware Electric Cooperative, Inc. (hereinafter referred to as DEC) and each signatory listed herein.

DEC members: Ensure that you have received a copy of the preliminarily approved Interconnection Application before allowing installation of any equipment on your property.

Please note that "non-export" means that your system will not be permitted to export any energy to the grid.

General Instructions and Expectations

1. The preliminary portion of this application (Sections 1 through 11) and Addendum A must be submitted via email to interconnection@delaware.coop. The application fee (see Section 6) must be sent via mail to the following address. Optionally, paper applications may be mailed.

Delaware Electric Cooperative, Inc.
ATTN: Interconnection Application
14198 Sussex Highway
Greenwood, DE 19950

2. Should any Interconnection Application require multiple revisions by the Equipment Contractor and subsequent reviews, DEC reserves the right to charge a \$50 fee for each additional review.
3. If battery storage will be utilized, the Battery Storage Interconnection Application form must be submitted alongside the standard Interconnection Application.
4. Any Generating System requiring an upgrade to the DEC utility system will require the Cooperative member to request that specific upgrade. Full payment for all costs associated with the upgrade is required before construction of the generating system is permitted to begin.
5. After DEC has approved and returned the preliminary portion of this application to the Equipment Contractor and member, construction of the generating system may begin.
6. The final portion of this application (Sections 1 through 13 and Addendum A) and a scanned copy of the Inspection Certificate (if applicable) must be submitted for final approval after construction of the Generating System is complete. Upon submittal, DEC will review the application and perform a field inspection of the facilities. Any installations deemed unacceptable to DEC's standards, or any installation that alters the original, approved design intent will be corrected by the Equipment Contractor at no cost to DEC before final approval is granted.
7. When final approval is granted, DEC will return the approved Interconnection application to the Equipment Contractor. Only at that time, will "Permission to Operate" be granted.
8. This application must be filled out in its entirety or it will be returned without review.



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Type of Application: Initial ____ or Addition/Upgrade ____

Ownership: Leased ____ or Member Owned ____

1. DEC Member Information

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

DEC Account Number: _____

2. Equipment Contractor Information

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Email: _____ Phone: _____

3. Electrical Contractor Information (If different from above)

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Email: _____ Phone: _____



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4. Facility & Load Information

Please fill out where applicable below. If the address is the same as Section 1, then the address block does not need to be filled out again.

Sq. ft. of Residence: _____ Past 24-month average usage: _____ (kWh/month)

If less than 24 months but greater than 12 months of usage is available for this property, please specify the past 12-month average usage: _____ (kWh/month)

If less than 12 months of usage is available for this property, please see Section 7 for further guidelines.

Address: _____

City: _____ State: _____ Zip: _____

Nearest DEC equipment tag number: _____

5. General Service Requirements

What size service is required for this system?

Same as existing ____ 200A ____ 320A ____ 400A ____ 600A ____ CT Metering ____

If this is a new account for the sole purpose of this Generating System, what Voltage/Phase will be required?

120/240V – 1Ø ____

120/208V – 1Ø ____

120/208V – 3Ø ____ (Consult DEC before designing 3Ø systems)

277/480V – 3Ø ____ (Consult DEC before designing 3Ø systems)



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6. Application Fee

The application fee is \$50 per application for new or upgraded systems of 25 kW DC or less. For systems over 25 kW DC the fee will be \$50 plus \$1 for each kW DC over the initial 25 kW DC. The application fee for systems where accounts will be aggregated is \$125 per application regardless of kW DC size. All Interconnection Applications submitted to DEC shall be accompanied with the appropriate fee made payable to DEC. The application fee is non-refundable. Applications returned for incomplete information will be subject to an additional \$50 application fee when resubmitted. No applications will be considered without the application fee. Returned checks will be assessed an additional fee based on DEC's Returned Check Policy. Permission to Operate will not be granted for any systems that DEC has not yet received an application fee for. The DEC member account number and name must be included as a memo on the check.

7. Equipment Information (Fill out where applicable)

Type of energy source:

Solar _____ Wind _____ Diesel _____ Natural Gas _____ Fuel Oil _____ Other _____

Will excess energy be exported to DEC? Yes _____ No _____

Forecasted *monthly* production (kWh) _____

(Note: The forecasted monthly production MUST be completed using **4.5 peak sunlight hours per day**)

Generator (or solar collector) Manufacturer, Model Name, and Number: _____

(A copy of the generator nameplate and manufacturer's specification sheet may be supplementally included)

Quantity of PV Modules: _____ Rated output of single PV Module: _____ (Watts)

Inverter Manufacturer, Model Name, and Number: _____

(A copy of the inverter nameplate and manufacturer's specification sheet may be supplementally included)

Quantity of Inverters: _____ Rated output of single inverter: _____ (kW)

Will battery storage be used in conjunction with this system? Yes _____ No _____

If battery storage will be utilized, please complete the supplemental Battery Storage Interconnection Application form included at the end of this application.



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Please fill out the Initial Rating information if there is currently no generating system on site. If adding a generating system to an existing system, fill out the Initial Rating, Added Rating, and the Total Rating sections.

Initial Rating:

DC System Design Capacity _____ (kW)
AC System Design Capacity _____ (kW)

Added Rating:

DC System Design Capacity _____ (kW)
AC System Design Capacity _____ (kW)

Total Rating:

DC System Design Capacity _____ (kW)
AC System Design Capacity _____ (kW)

To comply with Delaware State Law regarding output of an interconnection facility, DEC uses the following formula:

1. Enter the 24-month average usage (kWh): _____ (Per month)
2. Multiply line 1 by 110%: _____ (Maximum output permitted by Delaware law)
3. Enter maximum inverter rating (kVA): _____ (From nameplate, at appropriate voltage)
4. Multiply line 3 by 4.5 (hours): _____ (This is the average kWh produced per day)
5. Multiply line 4 by 365 (days): _____ (This is the average kWh produced per year)
6. Divide line 5 by 12 (months): _____ (This is the average kWh produced per month)

If line six (6) is equal to or less than line two (2), the system, as designed, will be approved by DEC provided that there is sufficient grid capacity for the added generation.

For DEC members that have greater than 12 months of usage history and less than 24 months of usage history, the most recent 12 months of usage history shall be used to obtain the average monthly usage necessary for calculating the inverter size as described above.

For DEC members that have no usage or less than 12 months of usage history, please see below for the maximum allowable generating systems based on the inhabitable sq. ft. of the residence.

Single-wide trailer	Up to 3.8 kW
Double-wide trailer	Up to 6.0 kW
< 2000 sq. f.t residence	Up to 6.2 kW
2000 – 3000 sq. f.t residence	Up to 8.1 kW
3000+ sq. ft. residence	Up to 11.7 kW



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8. Generator Disconnect Switch

A lockable disconnect device shall be installed within three (3) feet of the DEC meter and accessible at all times by DEC personnel. The cost of this device and the installation thereof shall not be the responsibility of DEC.

9. Equipment Certification

Equipment that utilizes inverter technology must be compliant with *IEEE 929* and *Underwriters Lab. UL1741*. Equipment that utilizes a rotating machine must be compliant with DEC's *Technical Requirements for Parallel Operation of Member Owner Generation* document. Non-export generating facilities must utilize reverse power relays and/or other protection functions that prevent the export of power through DEC's meter. **By signing below, the Equipment Contractor certifies that the installed generating equipment meets the appropriate preceding requirement(s) and can supply documentation that confirms compliance.**

Company: _____

Name (print): _____

Date: _____

Signature: _____

Describe how the interconnected generating system will be prevented from exporting any energy to DEC's meter:



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10. Signatures

DEC Member

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

Name (print): _____

Date: _____

Signature: _____

Equipment Contractor

I hereby certify that the information regarding the Generating System is complete, accurate, and shall be installed as designed in accordance with all applicable standards.

Company: _____

Name (print): _____

Date: _____

Signature: _____

Electrical Contractor (if different from above)

I hereby certify that all wiring and installation of associated equipment shall be completed in compliance with all applicable NEC codes.

Company: _____

Name (print): _____

Date: _____

Signature: _____

11. PRELIMINARY Approval to Proceed with Interconnection

Preliminary approval is only valid for 180 days. If an acceptable final application is not received within 180 days of the preliminary approval date, then the entire application is void.

Delaware Electric Cooperative has approved this preliminary application. Yes ____ No ____

Name: _____

Date: _____

Signature: _____



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12. Installation Details

The Generating System will be installed by: Owner _____ State Licensed Electrician _____

Installing Electrician: _____

Company: _____ License No.: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Email: _____ Phone: _____

Supply certification that the generating system has been installed and inspected in compliance with the local Building/Electrical code of the municipality of _____.

Signed (Inspector): _____ Date: _____

(In lieu of signature of Inspector, a copy of the final inspection certificate may be attached)

For digital submissions: If a copy of the final inspection certificate will be submitted, it must be appended to the final Interconnection Application document and sent as a single PDF file to interconnection@delaware.coop

13. FINAL Approval or Non-Approval

Delaware Electric Cooperative has approved this interconnection application. Yes _____ No _____

Name: _____ Date: _____

Signature: _____

"Permission to Operate" has been granted as of: _____

Please note that in order to receive permission to export energy to DEC, a separate net-metering interconnection application must be submitted and approved.



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ADDENDUM A- INTERCONNECTION AGREEMENT TERMS AND CONDITIONS

1. **Scope of Agreement.** The Interconnection Application ("Application") and this Addendum ("collectively the "Agreement") establish the conditions pursuant to which Delaware Electric Cooperative (hereinafter "DEC") and _____ (hereinafter "Member") agree that the electric generating facilities (the "Facilities") listed in the Application may be interconnected to DEC's electric distribution system ("System").

2. **Establishment of Point of Interconnection.** The point where the electric energy first leaves the wires or facilities owned by DEC and enters the wires or facilities provided by Member is the "Point of Interconnection." DEC shall determine the Point of Interconnection in accordance with its rules, regulations, bylaws, rates, and tariffs (the "Rules"), which are incorporated herein by reference. Any interconnection equipment installed by Member ("Interconnection Facilities") shall also be in accordance with the Rules.

3. **Responsibilities of DEC and Member for Installation, Operation and Maintenance of Facilities.** Member will, at their own cost and expense, install, operate, maintain, repair, and inspect, and shall be fully responsible for, the Facilities listed in the Application and Member's Interconnection Facilities. Member's Facilities shall be designed, installed, maintained and operated in a safe and reliable manner, in compliance with all aspects of the Rules, and in accordance with industry standard prudent engineering practice. Maintenance of the Facilities and Interconnection Facilities shall be performed in accordance with the applicable manufacturers' recommended maintenance schedule.

Member also agrees that the design, installation, maintenance and operation of its Facilities and Interconnection Facilities shall minimize the likelihood of a malfunction or other disturbance, damaging or otherwise affecting or impairing the System. Member shall comply with all applicable laws, regulations, zoning codes, building codes, safety rules and environmental restrictions applicable to the design, installation, operation and maintenance of its Facilities and Interconnection Facilities. Member shall obtain all environmental and other permits lawfully required by governmental authorities prior to the commencement of construction of the Facilities and Interconnection Facilities.

DEC will notify Member if there is evidence that operation of the Facilities or Interconnection Facilities causes, or may cause, disruption or deterioration of service to other members of DEC served by the System, or if operation of the Facilities or Interconnection Facilities causes, or may cause, damage or impairment to the System. Member will notify DEC of any emergency or hazardous condition or occurrence with the Facilities or Interconnection Facilities, which could affect safe operation of the System.

4. **Modifications.** Member will not increase the output of the Facilities or make other material changes or modifications to the configuration or operation of the Facilities or Interconnection Facilities without the prior written consent of DEC. In the event that Member plans to undertake a modification that reasonably may be expected to impact the System, Member shall provide DEC with sufficient information to allow DEC to evaluate the potential impact of the modification prior to commencement of any work.

5. **Net Metering.** All power sales to DEC and net metering shall be governed by DEC's tariff and Delaware Code, Chapter 10 of Title 26 (Electric Utility Restructuring). Interconnection of the Facilities with the System does not grant Member the right to export power in excess of the applicable limits set forth in DEC's tariff or Delaware Code, Chapter 10 of Title 26 (Electric Utility Restructuring), nor does it constitute an agreement by DEC to purchase or wheel excess power.



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6. **Limitation of Liability and Indemnification.** (a) Member shall be responsible for the safe installation, maintenance, repair and condition of the Facilities and Interconnection Facilities. DEC does not assume any duty of inspecting Member's lines, wires, switches, or other equipment or property and will not be responsible therefor. Member assumes all liability for and shall indemnify

DEC and its members, directors, officers, managers, employees, agents, representatives, affiliates, successors and assignors shall hold them harmless from and against any claims, losses, costs, and expenses of any kind or character that are the result from Member's negligence or other wrongful conduct in connection with the design, construction, installation, operation or maintenance of the Facilities or Interconnection Facilities. Such indemnity shall include, but is not limited to, financial responsibility for (i) monetary losses; (ii) reasonable costs and expenses of defending an action or claim; (iii) damages related to death or injury; (iv) damages to property; and (v) damages for the disruption of business.

DEC's liability to the other party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission in its performance of this Agreement, shall be limited to the amount of direct damages actually incurred. In no event shall DEC be liable to Member for any indirect, incidental, special, consequential, or punitive damages of any kind whatsoever. Member shall indemnify, defend, and save DEC harmless from any and all damages, losses, claims, including claims and actions relating to injury to or death of any person or damage to property, demand, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to third parties, arising out of or resulting from the construction, design, installation, operation and maintenance of the Facilities.

7. **Right of Access, Equipment Installation, Removal & Inspection.** DEC may send employees, agents or contractors to Member's premises at any time, whether before, during or after the time the Facilities first produce energy to inspect the Facilities and Interconnection Facilities. DEC may monitor and observe the Facility's installation, commissioning (including any testing), startup, operation, and maintenance. DEC shall at all times have direct, unabated access to the disconnect switch and metering equipment of the Facility. DEC shall provide reasonable notice to Member when possible prior to exercising its right of access.

8. **Disconnection of Facilities.**

(a) DEC may temporarily disconnect the Facilities upon any of the following conditions:

- (1) For scheduled outages upon reasonable notice;
- (2) For unscheduled outages or emergency conditions;
- (3) If the Facilities or Interconnection Facilities do not operate in a manner consistent with the Application or these Terms and Conditions;
- (4) For improper installation or if the Facilities or Interconnection Facilities create a safety, reliability or a power quality problem; or
- (5) The Member's Interconnection Facilities are delisted by the Nationally Recognized Testing Laboratory that provided the listing at the time the interconnection was approved.

(b) DEC may permanently disconnect or direct Member to disconnect Member's Facility and Interconnection Facilities if this Agreement is terminated.

9. **Governing Law, Regulatory Authority, and Rules.** The validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the State of Delaware. Nothing in this Agreement is intended to affect any other agreement between DEC and Member. However, in the event that a provision of the Agreement conflicts with any provision of DEC's tariff, the tariff shall control.



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10. **Termination.** This Agreement may be terminated under the following conditions:

(a) By Member: Member may terminate Agreement at any time by providing written notice to DEC;

(b) By DEC: DEC may terminate this Agreement if Member fails to remedy a violation of the terms of this Agreement within 30 calendar days after notice, or such other date as may be mutually agreed to prior to the expiration of the 30 day period.

11. **Severability.** If any portion or provision of this Agreement is held for any reason to be invalid or illegal or unenforceable by any court of competent jurisdiction, such portion shall be deemed to be separate, independent and severable, and the remainder of this Agreement shall remain in full force and effect.

12. **Entirety of Agreement; Amendments.** This Agreement, including the Rules, which are expressly made a part hereof for all purposes, constitutes the entire agreement and understanding between the Parties with regard to the interconnection of the Facilities. No amendments or modifications to this Agreement shall be effective unless in writing and signed by the Parties hereto.

13. **Notices.** Notices given under this Agreement are deemed to have been duly delivered if hand delivered or sent by United States certified mail, return receipt requested, postage prepaid, to Member at the address listed in the Application and to DEC at 14198 Sussex Highway, Greenwood, Delaware 19950.

14. **Member Certification.** I hereby certify that: 1) I have read and understand the Terms and Conditions of the Agreement; 2) I have read and understand the Technical Requirements for Member-Owned Generation; 3) I agree to comply with all provisions of the Terms and Conditions; and 4) to the best of my knowledge and belief, all information provided by me in the Application is true and complete.

Member Signature

Printed Name

Date: _____



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Delaware Electric Cooperative, Inc.
Interconnection Application – Battery Storage
(Supplemental Form - For Use with Interconnection Application)

This application must be completed when installing a battery unit in conjunction with an interconnected generating system. This form shall be submitted along with the Interconnection Application.

1. DEC Member Information

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

DEC Account Number: _____

2. Facility Information

Please fill out where applicable below. If the address is the same as Section 1, then the address block does not need to be filled out again.

Address: _____

City: _____ State: _____ Zip: _____

Nearest DEC equipment tag number: _____

Is this an add-on to an existing member-generated facility: Yes ___ No ___

Stand-alone: ___ With a renewable energy system: ___

Share inverter with a renewable energy system? Yes ___ No ___

If Yes, can it be charged from the distribution grid? Yes ___ No ___

If No, how is the battery energy storage system prevented from being discharged by the distribution system?



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3. Battery Storage Information

Battery System Manufacturer: _____ Model: _____

Battery Type: _____ Battery Charge/Discharge Rating (kW DC): _____

Expected Battery Unit Useful Life (years): _____

Battery Energy Capacity (kWh): _____ PF Setting Range: _____

Total Number of Battery Units: _____ Total Energy Capacity of Battery System (kWh): _____

4. Battery Storage Inverter Information *(if NOT shared with interconnected generating system)*

Manufacturer: _____ Model: _____

Type: Forced Commutated _____ Line Commutated _____

Rated Output Power (kW): _____ Output Voltage (V): _____ Output Current (A): _____

Efficiency (%): _____ Power Factor (%): _____ DC Source/Prime Mover: _____

Inverter UL 1547 Listed: Yes _____ No _____

Rated Input Power (kW): _____ Input Voltage (V): _____ Input Current (A): _____

Open Circuit Voltage (if applicable) (V): _____

Short Circuit Current (if applicable) (A): _____

5. If Using for Frequency Regulation:

Does it have ramp rate control? Yes _____ No _____

Does it have the ability for time-delay? Yes _____ No _____

Does it have the ability to limit maximum charge and discharge? Yes _____ No _____



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Delaware Electric Cooperative, Inc.
Interconnection Application – Battery Storage
(Supplemental Form - For Use with Interconnection Application)

6. Operation Information

Describe the intended operation of the battery:

7. Additional Comments (if applicable)

8. Signature and Member Certification

I hereby certify, to the best of my knowledge, all the information provided in this Application is true and correct:

Company: _____

Name (print): _____

Date: _____

Signature: _____

The application must be submitted via email to interconnection@delaware.coop

Optionally, paper applications may be mailed to the following address:

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