



**CONCORD  
MUNICIPAL  
LIGHT PLANT**

ELECTRIC | BROADBAND | ENERGY MANAGEMENT

**Interconnection Application & Service Agreement**

**for Residential Facilities**

**with Inverter Capacity ≤ 167 kW (AC)\***

**Contact Information: Legal Name and address of Interconnecting Customer applicant:**

Customer Name (print): \_\_\_\_\_ Contact Person, if Company: \_\_\_\_\_

Address of Interconnection Facility: \_\_\_\_\_

Mailing Address, if different from above: \_\_\_\_\_

Contact Information (phone & email): \_\_\_\_\_

**Alternative Contact Information (e.g., system installation contractor or coordinating company)**

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

Mailing Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Phone (Day/ Evening): \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

Ownership (if different than above customer): \_\_\_\_\_

**Facility Information: Concord Municipal Light Plant (required – on bill):**

**Account #:** \_\_\_\_\_

**Meter #:** \_\_\_\_\_

Panel Make & Model: \_\_\_\_\_ # Used: \_\_\_\_\_

Inverter Manufacturer, Model Name, & Number: \_\_\_\_\_ # Used: \_\_\_\_\_

Is inverter UL1741 Listed? Yes \_\_\_\_\_ No \_\_\_\_\_

Nominal Output Power of Inverter: \_\_\_\_\_ (Watts) @ \_\_\_\_\_ (Volts AC) Single \_\_\_\_ or Three \_\_\_\_ Phase

**Electrical Contractor: Name, address, phone # & contact name:**

**Customer Signature: I hereby certify that, to the best of my knowledge, all of the information provided in this application is true and I agree to the Service Agreement on the following pages:**

Interconnecting Customer Signature: \_\_\_\_\_ Title (if Company): \_\_\_\_\_ Date: \_\_\_\_\_

**Please return this document to:** Pamela Cady  
Concord Municipal Light Plant  
PO Box 1029 or [pcady@concordma.gov](mailto:pcady@concordma.gov)  
Concord, MA 01742-1029

\*CMLP calculates system wattage (AC) as follows:  
 $((\# \text{ of panels}) * (\text{PTC per Go Solar CA spreadsheet})) / (1,000 \text{ W} / \text{kW}) = \text{kW (AC)}$   
Source data for Go Solar CA's PTC number is either PV Module List here:  
[http://www.gosolarcalifornia.ca.gov/equipment/pv\\_modules.php](http://www.gosolarcalifornia.ca.gov/equipment/pv_modules.php)  
This formula is provided for reference if installer/customer needs to determine if system is ≤ 167 kW AC.

Documents Required for Residential Solar Photovoltaic (PV) Panel Installation Approval Request:

- 1) Residential Interconnection Application (see previous page)
- 2) Residential Interconnection Application Signature Pages (p 2 -3) Note: Installer & Interconnecting Customer initials are required on page 3 if Energy Storage is being installed. All other signature lines on pages 2 -3 are for CMLP use only.
- 3) Interconnection Service Agreement (see following pages 4-7)
- 4) Wiring Diagram
- 5) Cut Sheets for All Equipment (Solar PV Panels & Inverters (+ energy storage equipment if applicable))
- 6) Residential Net Metering Policy Acknowledgement
- 7) If requesting CMLP rebate:
  - a. CMLP Solar PV Rebate Application
  - b. CMLP Solar PV Rebate Terms & Conditions
- 8) If requesting MLP Solar Program Rebate: (solar installations of 25 kW DC or less are eligible)
  - a. MLP Solar Program Rebate Application
  - b. MLP Solar Program Participant's Agreement
  - c. Proof of Property Ownership (tax bill or copy of deed)
- 9) Copy of Resident/System Installer Contract (if requesting CMLP or MLP Solar Program Rebate)
- 10) Azimuth and shading requirements must be met if requesting MLP Solar Program Rebate
- 11) Solar production meter requirements must be met if requesting MLP Solar Program Rebate.

For questions, please contact Pamela Cady at [pcady@concordma.gov](mailto:pcady@concordma.gov) or (978) 318-3149.

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**Approval to INSTALL Facility (For CMLP use only) – Electric GENERATING Equipment**

Installation of the Facility is approved contingent upon the terms and conditions of this Agreement, and agreement to any system modifications, if required (Are system modifications required? Yes\_\_\_ No\_\_\_ ).

CMLP Engineer's Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

CMLP Director's Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

Explanation of Modifications, if any:

**Approval to OPERATE Facility (For CMLP use only) – Electric GENERATING Equipment**

Operation of the Facility is approved contingent upon the terms and conditions of this Agreement, and agreement to any CMLP or customer system modifications, if required.

CMLP Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

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\* **Addition of BATTERY STORAGE system:** Installer Initials: \_\_\_\_\_ Date: \_\_\_\_\_

Interconnecting Customer Initials: \_\_\_\_\_ Date: \_\_\_\_\_

**Approval to INSTALL Facility (For CMLP use only) – Energy STORAGE System**

Installation of the Facility is approved contingent upon the terms and conditions of this Agreement, and agreement to any system modifications, if required (Are system modifications required? Yes\_\_\_ No\_\_\_ ).

CMLP Engineer’s Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

CMLP Director’s Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

Explanation of Modifications, if any:

**Approval to OPERATE Facility (For CMLP use only) – Energy STORAGE System**

CMLP Signature: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

## 167 kW (AC) and under Generator Interconnection – Service Agreement

These terms and conditions set forth interconnection requirements, equipment specifications, and metering arrangements for residential customers who may choose self generation of electric energy using photovoltaic (PV), wind, or co-generation electric generating equipment.

- 1) **Installation Requirements.**
  - a. The PV project electrical work must be performed by a Massachusetts licensed electrician.
  - b. The PV project must be installed according to the manufacturer’s instructions and in compliance with all applicable codes and standards, including:
    - i. Local, state, and/or federal building and electrical laws, codes and practices.
    - ii. All pertinent permits and inspections must be obtained and copies kept on file as may be required by local codes and/or state law. This includes, but is not limited to, permits that may be required by the Town of Concord’s Building Department. The Interconnecting Customers or his/her installation contractor is responsible for contacting the Building Department to assure permits, if necessary, are obtained.
- 2) **Interconnection and Operation.** The Interconnecting Customer may operate the electricity generation equipment, henceforth defined as “Facility,” and interconnect with Concord Municipal Light Plant’s electrical system only after the Facility’s wiring is inspected by the Town of Concord’s Electrical Inspector and after approval for the interconnection has been given by an authorized Concord Municipal Light Plant (also referred to henceforth as “CMLP”) employee.
- 3) **Right of Inspection.** Concord Municipal Light Plant may, upon reasonable notice and at a mutually convenient time, conduct an inspection of the Facility to ensure that all equipment has been appropriately installed and all electrical connections have been made in accordance with Concord Municipal Light Plant policy. At the Facility, CMLP representatives shall identify themselves to the Interconnecting Customer’s representative, state the object of their visit, and conduct themselves in a manner that will not interfere with the construction or operation of the Facility. Concord Municipal Light Plant has the right to refuse to connect the Facility in the event of improper Facility installation or if documentation for same is incomplete.
- 4) **Safe Operation and Maintenance.** The Interconnecting Customer shall be fully responsible to operate, maintain, and repair the Facility.
- 5) **Access and Control.** Concord Municipal Light Plant and other emergency personnel shall have access at all times to the outside-located, unlocked disconnect switch for the Facility. CMLP will have control such that it may open or close the required meter socket bypass.
- 6) **Disconnection.** The Customer shall be required to install a manual disconnect located on the line side, within 10 feet of the meter, and outside of the residence. Concord Municipal Light Plant may temporarily disconnect the Facility for planned or emergency work on Concord Municipal Light Plant’s electrical system.
- 7) **Metering.** All Facilities approved under this Agreement are required to meet the following conditions.
  - a. In addition to the existing utility meter socket, the Interconnecting Customer shall furnish and install a meter socket, if necessary, for use with a PV production meter. Wiring shall be in accordance with the Massachusetts Electrical Code. If applying for an MLP Solar Program Rebate, Locus production meter LGate120-LTEEx-ENE must be installed.
  - b. PV, Wind, and Co-gen systems will require the installation of a detent meter (measures electricity flow to and from the CMLP system) by the Concord Municipal Light Plant. The Concord Municipal Light Plant will install an appropriate meter within ten business days of Concord Municipal Light Plant and Wiring Inspector authorization for Interconnection and Operation.
  - c. The generating facility must be inverter-based.
  - d. If a single-phase Customer-Generating Facility is to be connected to a transformer center tap neutral of a 240 volt service, the addition of the Customer-Generating Facility shall not create an imbalance

between the two sides of the 240 volt service of more than 20% of nameplate rating of the service transformer.

- e. If, at any time, any metering equipment is found to be inaccurate by a margin greater than that allowed under applicable criteria, rules, and standards, CMLP shall cause such metering equipment to be made accurate or replaced. The cost to repair or replace the meter shall be borne by CMLP. Meter readings for the period of inaccuracy shall be adjusted so far as the same can be reasonably ascertained; provided, however, no adjustment prior to the beginning of the preceding month shall be made except by agreement of the Parties. Each Party shall comply with any reasonable request of the other concerning the sealing of meters, the presence of a representative of the other Party when the seals are broken and the tests are made, and other matters affecting the accuracy of the measurement of electricity delivered from the Facility. If either Party believes that there has been a meter failure or stoppage, it shall immediately notify the other.

**8) Net Metering. All Facilities approved under this Agreement qualify for net metering, as approved by Concord Municipal Light Plant.**

- a. **Definition.** "Net metering" means a system of metering electricity in which CMLP credits Customer generation which migrates to the CMLP distribution system when generation is greater than consumption at the Customer location.
- b. **General Provisions.**
  - i. CMLP will offer net metering to their customers who generate electricity on the Customer's side of the meter provided that the generating capacity of the customer's facility does not exceed 167 kilowatts AC. Larger applications must be reviewed on a case-by-case basis.
  - ii. This policy is intended for use at residential properties only: specifically, owner occupied, single family / duplex homes.
  - iii. The Customer is solely responsible for securing and complying with all local permitting processes including zoning, electrical, building inspection, and any and all other special permits that may be required.
  - iv. Eligible generating sources include, but are not limited to: solar, wind, and micro-turbine units which simultaneously generate electricity and recover heat.
  - v. *Traditional gasoline or natural gas fired portable or permanently mounted emergency generators are explicitly excluded from this policy.*
- c. **Price Credits.** The price paid by CMLP for electricity produced by the Customer-Generating Facility may vary with the type of generating facility at the discretion of CMLP. Please see our filed retail Residential Net Metering tariff at <http://www.concordma.gov/DocumentCenter/Home/View/1205> for the actual rate.

**9) Requirements for Inverter-Based Installations.**

- a. CMLP's distribution circuits generally operate with automatic re-closers, which activate following a trip without regard to whether the Facility is keeping the circuit energized. The Interconnecting Customer is responsible for protecting their equipment from being re-connected out of synch with CMLP's system.
- b. All electrical equipment must be new (with the exception of reconditioned meters recertified to meet accuracy standards), Underwriters Laboratory (UL) listed, and compliant with Institute of Electrical and Electronics Engineers (IEEE) standards, or other nationally recognized testing laboratory standards (e.g. CSA, ETL, TUV, etc.)
- c. For Facilities that utilize photovoltaic (PV) technology:
  - i. it is required that the system be installed in compliance with IEEE Standard 929-2000, "IEEE Recommended Practice for Utility Interface of (PV) Systems" or the applicable updated standard.
  - ii. All photovoltaic modules must be certified by a nationally recognized testing laboratory as meeting the requirements of the UL Standard 1703 or the applicable updated standard.
  - iii. The inverter shall meet the Underwriters Laboratories Inc. Standard UL 1741 SA, "Advanced Distributed Energy Resource Testing," and the requirements of IEEE 1547, or the applicable updated standards.

- iv. Exception: UL is not required, but is recommended, for PV projects operating at less than 30 volts.
- d. For Facilities that utilize wind technology or other direct current energy sources and employ inverters for production of alternating current, the inverter shall meet the Underwriters Laboratories Inc. Standard UL 1741, “Standard for Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources”, or the applicable updated standard. Based on the information supplied by the Interconnecting Customer, if CMLP determines the inverter is in compliance with UL 1741, the Interconnecting Customer’s request for interconnection will be approved.
- e. The following information must be submitted by the Interconnecting Customer for review and acceptance by CMLP prior to CMLP approving the Interconnecting Customer’s request for interconnection:
  - The make, model and manufacturer’s specification sheet for the inverter and solar panels.
  - An electrical wiring diagram of the Facility, including interconnection and metering.
    - If applying for an MLP Solar Program Rebate, Locus production meter LGate120-LTEEx-ENE must be installed and shown on diagram.

- 10) **Protection Requirements.** If, due to the interconnection of the Facility, when combined with pre-existing facilities interconnected to CMLP’s system, the rating of any of CMLP’s equipment or the equipment of others connected to CMLP’s system will be exceeded or its control function will be adversely affected, CMLP shall have the right to require the Interconnecting Customer to pay for the purchase, installation, replacement, or modification of equipment to eliminate the condition. Where such action is deemed necessary by CMLP, CMLP will, where possible, permit the Interconnecting Customer to choose among two or more options for meeting CMLP’s requirements as described in this Protection Policy.
- 11) **Indemnification.** Interconnecting Customer and Concord Municipal Light Plant shall each indemnify, defend and hold the other, its officers, employees and agents (including, but not limited to, affiliates, contractors and their employees), harmless from and against all liabilities, damages, losses, penalties, claims, demands, suits and proceedings of any nature whatsoever for personal injury (including death) or property damage to unaffiliated third parties that arise out of, or are in any manner connected with, the performance of this Agreement by that party, except to the extent that such an injury or damages to unaffiliated third parties may be attributable to the negligence or willful misconduct of the party seeking indemnification.
- 12) **Limitation of Liability.** Each party’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 damage actually incurred. In no event shall either party be liable to the other party for any indirect, incidental, special, consequential, or punitive damages of any kind whatsoever.
- 13) **Force Majeure.** An event of Force Majeure means any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm or flood, explosion, breakage or accident to machinery or equipment, any curtailment, order, regulation or restriction imposed by governmental, military or lawfully established civilian authorities, or any other cause beyond either party’s control. A Force Majeure event does not include an act of negligence or intentional wrongdoing. Neither CMLP nor the Interconnecting Customer will be considered in default as to any obligation under Interconnection Requirements if prevented from fulfilling the obligation due to an event of Force Majeure. However, a party whose performance is hindered by an event of Force Majeure shall make all reasonable efforts to perform its obligations under these Interconnection Requirements.
- 14) **Termination.** This Agreement may be terminated under the following conditions:
- a. **By Mutual Agreement.** The Parties agree in writing to terminate the Agreement.
  - b. **By Interconnecting Customer.** The Interconnecting Customer may terminate this Agreement by providing the Concord Municipal Light Plant written notice at least 30 days prior to the termination.

c. **By the Concord Municipal Light Plant.** The Concord Municipal Light Plant may terminate this Agreement if the Facility fails to operate for any consecutive 6-month period, or if the Facility impairs the operation of the electric distribution system or service to other customers or materially impairs the local circuit and the Interconnecting Customer does not cure the impairment.

15) **Assignment / Transfer of Ownership of the Facility.** This Agreement shall survive the transfer of ownership of the Facility to a new owner when the new owner agrees in writing to comply with the terms of this Agreement and so notifies Concord Municipal Light Plant.