



Marblehead Municipal Light Department (MMLD)

Customer Interconnection Application

This document includes:

- A Flow Chart with numbered steps, detailing the Town of Marblehead's complete Interconnected Distributed Energy Resource (DER) Permitting process, from start to finish.
- The MMLD Interconnection Application – a two-paged document that's Step 2 in the DER Permit process.
- Interconnected DER – Customer Terms and Conditions- a three-page supplement to the general MMLD Customer Terms and Conditions of Electrical Service.

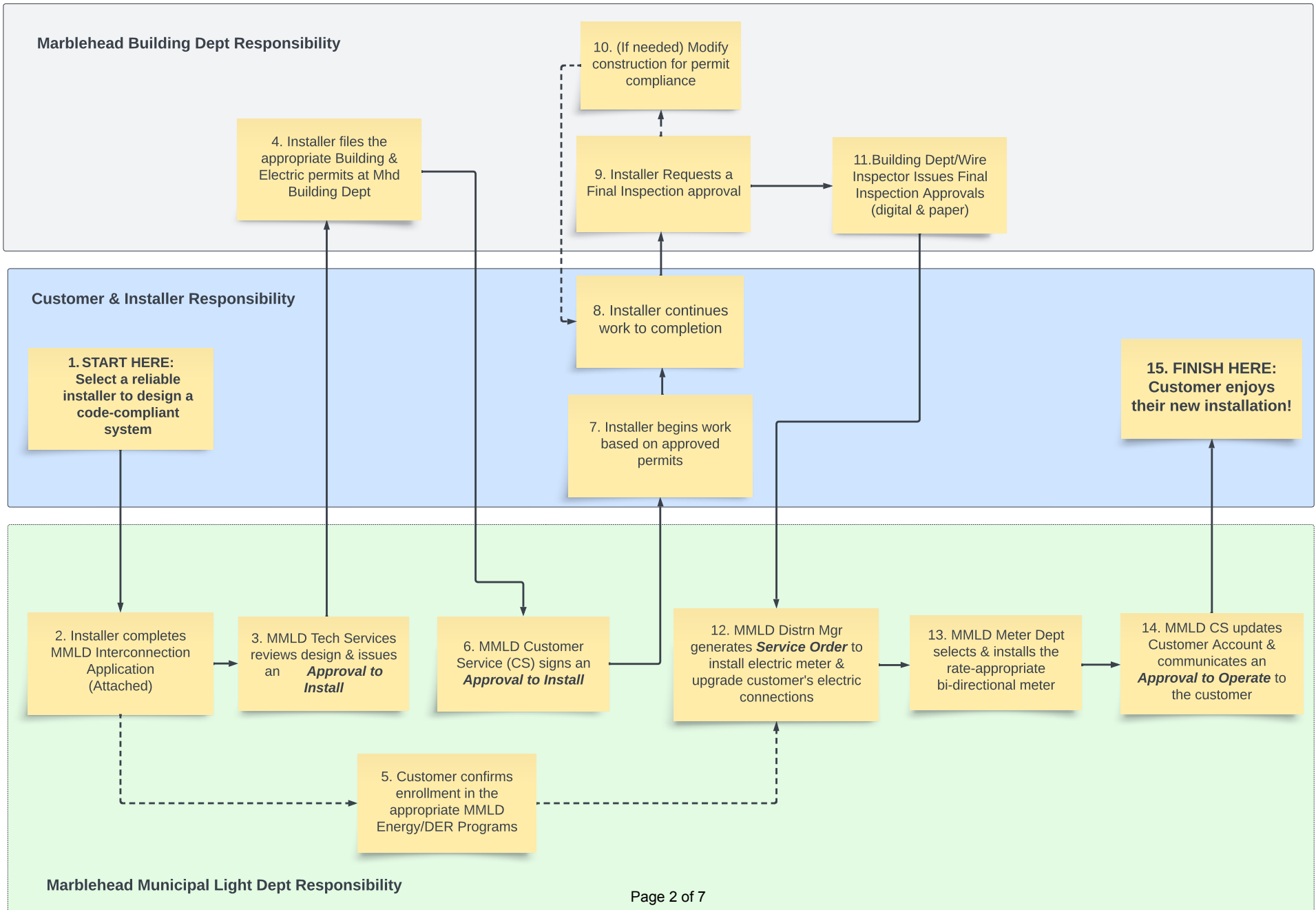
If you have any questions:

- General questions and questions about the application process, please contact our Customer Service representatives at 781-631-5600, email us at customerservice@mhdld.com, or stop by our office at 80 Commercial St.
- Of a technical nature, contact our Engineering Manager Colin Coleman at 781-631-0240 or email ccoleman@mhdld.com.
- Other questions or concerns, contact our General Manager Joe Kowalik at 781-631-0240 or jkowalik@mhdld.com.

Town of Marblehead Permitting Process

for *Interconnected* Distributed Energy Resources (DER): Solar PV Array and/or Battery Electric Storage System

May 24, 2024





Marblehead Municipal Light Department (MMLD)

Customer Interconnection Application and Service Agreement

For Solar PV arrays and/or Battery Storage Systems

Applicant Contact Information:

Customer Name (print): _____

Address of Interconnection Facility: _____

Mailing Address, if different from above: _____

City: _____ State: _____ Zip Code: _____

Telephone (mobile): _____ (home): _____

E-Mail Address: _____ MMLD Account #: _____

Installation Vendor Contact Information: (System Installation Contractor):

Vendor Name: _____ Key Contact Name: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Telephone (mobile): _____ (Office): _____

E-Mail Address: _____

(If separate from above) Electrical Contractor:

Vendor Name: _____ Key Contact Name: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Telephone (mobile): _____ (Office): _____

E-Mail Address: _____

New Equipment Information:

Energy Resource(s): Solar PV Battery Other _____

Estimated Installation Date: _____ Estimated In-Service Date: _____

Solar PV Panel: Manufacturer & Model: _____ # of Panels: _____

Inverter Manufacturer & Model: _____ # of Inverters: _____

Is the Inverter UL1741 approved? Yes No

Max Output Power of Each Inverter: _____ (Watts) @ _____ (Volts AC) Single or Three Phase

Total PV System Output 1 (# of panels x max power/panel (W DC) x CEC inverter efficiency/1,000): _____ (kW)

Total PV System Output 2 (maximum power output per inverter (W) x # of inverters/1,000): _____ (kW)

REQUIRED: Please attach a one-line electrical diagram for the proposed electrical system.

Battery Storage System: Manufacturer and Model: _____ # of Units: _____

Is the battery system UL9540 approved? Yes No

Total Battery System Charge/Discharge Power kW (DC): _____ Total Battery System Energy kWh (DC): _____

Total Battery System Charge/Discharge Power kW (AC): _____ Total Battery System Energy kWh (AC): _____

REQUIRED: Please attach a one-line electrical diagram for the proposed electrical system.

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 Terms and Conditions on the following pages:

Interconnecting Customer Signature: _____

Title (if Company): _____ Date: _____

Installer Name _____ Signature: _____ Date: _____

Please complete and return this document to:

Marblehead Municipal Light Department
PO Box 369
80 Commercial St.
Marblehead, MA 01945

Or email to: customerservice@mhdld.com

Approval to INSTALL Facility (For MMLD use only)

Installation of the Facility is approved contingent upon the terms and conditions of this Agreement and MMLD approval of any MMLD or customer system modifications, if required. Are system modifications required? Yes No

MMLD Signature: _____ Title: _____ Date: _____

Approval to OPERATE Facility (For MMLD use only)

Installation of the Facility is approved contingent upon the terms and conditions of this Agreement, and MMLD approval of any MMLD or customer system modifications, if required. Are system modifications required? Yes No

If yes, please explain an end of application.

MMLD Signature: _____ Title: _____ Date: _____

Explanation of Modifications, if any:

Customer Interconnected Distributed Energy Resource (DER) - Terms and Conditions

These terms and conditions set forth interconnection requirements, equipment specifications, and metering arrangements for residential customers who may choose to connect to the MMLD electrical distribution system one or more of the following items: solar photovoltaic (PV) equipment, wind, or co-generation electric generating equipment, and/or a battery electric storage system.

- 1) **Installation Requirements.**
 - a. The Interconnecting Customer or his/her installation contractor is responsible for ensuring all Building Department, Fire Department and Wire Inspector required permits are obtained.
 - b. All project electrical work must be performed by a Massachusetts licensed electrician.
 - c. The entirety of the project must be installed according to the manufacturer's instructions, and in compliance with all applicable codes and standards, including local, state, and/or federal building and electrical codes, laws, and practices.
- 2) **Interconnection and Operation.** The Interconnecting Customer may operate the electricity generation equipment, henceforth defined as "Facility," and interconnect with Marblehead Municipal Light Department's electrical system only after the Facility is inspected by the Town of Marblehead's Wire inspector and after approval for the interconnection has been given by an authorized Marblehead Municipal Light Department employee.
- 3) **Right of Inspection.** Marblehead Municipal Light Department 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 Marblehead Municipal Light Department policy. At the Facility, MMLD 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. Marblehead Municipal Light Department 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.** Marblehead Municipal Light Department and other emergency personnel shall have access at all times to the outside-located, unlocked disconnect switch for the Facility. MMLD will have control such that it may open or close the disconnect.
- 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. Marblehead Municipal Light Department may temporarily disconnect the Facility for planned or emergency work on Marblehead Municipal Light Department's electrical system.
- 7) **Metering.** All Facilities approved under this Agreement are required to meet the following conditions.
 - a. The Interconnecting Customer shall furnish and install the disconnect and wiring in accordance with Massachusetts Electrical Code.
 - b. Solar PV, Battery, and combined PV + Battery systems will require the installation of a detent meter (to measure the bi-directional electricity flow to and from the MMLD system) by the Marblehead Municipal Light Department. The Marblehead Municipal Light Department will install an appropriate meter within ten business days of Marblehead Municipal Light Department receiving authorization from the Building Inspector and the Wiring Inspector in the form of Final Inspection approval, after which MMLD will issue Approval to Operate for the facility.
 - 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 department standards, MMLD shall cause such metering equipment to be made accurate or replaced. The cost to repair or replace the meter shall be borne by MMLD. 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) **Bi-directional Metering. All Facilities approved under this Agreement qualify for bi-directional metering, as approved by Marblehead Municipal Light Department.**

a. **Definition.** "Bi-directional metering" means a system of metering electricity in which MMLD credits the Customer for electricity that migrates to the MMLD distribution system.

b. **General Provisions**

- i. MMLD will offer bi-directional metering to customers who install a DER on the Customer's side of the meter.
- ii. 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.
- iii. Eligible Distributed Energy Resources include solar PV, wind, micro-turbine units which simultaneously generate electricity and recover heat, and battery electric storage systems.
- iv. *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 MMLD for electricity received by the Customer-Interconnected Facility may vary with the type of generating facility, at the discretion of MMLD.

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

- a. MMLD'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 MMLD's system.
- b. All electrical equipment must be new (with the exception of reconditioned MMLD meters, recertified to meet accuracy standards), UL listed, and compliant with IEEE standards.
- c. For Facilities that utilize solar photovoltaic (PV) technology, 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. The inverter shall meet the Underwriters Laboratories Inc. Standard UL 1741, "Static Inverters and Charge Controllers for Use in PV Power Systems" or the applicable updated standard. Based on the information supplied by the Interconnecting Customer, if MMLD determines the inverter complies with UL 1741 or the applicable updated standard, the Interconnecting Customer's request for interconnection will be approved.
- 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, "Static Inverters and Charge Controllers for Use in Photovoltaic Power Systems" or the applicable updated standard. Based on the information supplied by the Interconnecting Customer, if MMLD determines the inverter complies 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 MMLD prior to MMLD's approving the Interconnecting Customer's request for interconnection:

- The make, model and manufacturer's specification sheet for the inverter and solar panels.
- An electrical one-line diagram of the Facility, including interconnection and metering.

- 10) **Protection Requirements.** If, due to the interconnection of the Facility, when combined with pre-existing facilities interconnected to MMLD's system, the rating of any of MMLD's equipment or the equipment of others connected to MMLD's system will be exceeded or its control function will be adversely affected, MMLD 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 MMLD, MMLD will, review all feasible options for meeting this Protection Requirement.
- 11) **Indemnification.** A Customer with an approved Interconnected Facility and the Marblehead Municipal Light Department 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 MMLD 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 Marblehead Municipal Light Department written notice at least 30 days prior to the termination and removal of the Interconnected Facility.
 - c) **By the Marblehead Municipal Light Department.** The Marblehead Municipal Light Department 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.