IPSWICH ELECTRIC LIGHT DEPARTMENT

SOLAR INTERCONNECTION PROCESS

272 HIGH STREET ● IPSWICH, MA 01938 ● (978) 356-6635 ● WWW.IPSWICHUTILITIES.ORG

Purpose

In order to ensure the safety and stability of the Electric Light Department's Distribution System, customers seeking to install distributed solar photovoltaic systems, which will feed back onto the ELD's system, must provide information about the project and receive written authorization prior to interconnection. Unauthorized interconnections may result in injury to persons and damage to equipment or property for which the customer will be liable.

Customers seeking to apply for the *Muni Solar Rebate Program* must receive pre-approval for interconnection from the Electric Light Department.

Process

1. ***Verify you've had a Home Energy Assessment*** to identify the most cost-effective efficiency upgrades for your home. Every Electric Light Department (ELD) customer is eligible for a free home energy audit, which you can schedule by calling the HELPS program hotline at *(888) 333-7525*.

2. ***Find a solar installer that you trust***. Your installer will be your primary resource for navigating everything from financing options and incentives, to permitting and construction. You'll want to make sure you're working with a company that will take the time to make sure you understand everything about the process. If you're not sure where to start, try the Massachusetts Clean Energy Center's website at *masscec.com/solar-electricity* for general information about how solar PV works and for resources that may help you find an installer.

3. ***Review our Distributed Generation Policy*** available online at *IpswichUtilities.org*. Interconnection applications that do not comply with this policy will result delay interconnection pre-approval.

    - ***If applying for the Muni Solar Rebate Program,*** review the requirements online at *Mass.gov*. The ELD has elected to conform with the Department of Energy Resources' minimum requirements for rebate eligibility (i.e. <20% shading, 90° - 270° azimuth, etc).
    - ***If applying for the Muni Solar Rebate Program,*** *be aware that rebates are contingent upon the retirement of the Massachusetts Class 1 RECs.*

4. ***Complete your application package*** and submit to *helps-pv@ipswichutilities.org*. Be sure to should include all of the requirements listed below. Your application package will be reviewed within 10 business days and approved applicants will receive an Interconnection Pre-Approval Letter.

    - ***If applying for the Muni Solar Rebate Program,*** submit your Pre-Approval Letter under the "Municipal Utility Approval" section to show you have received preliminary approval to proceed with your interconnection.

5. ***After receiving your Pre-Approval Letter,*** as well as any other required permits or approvals for incentive programs, you can begin with the installation of your system.

6. ***Schedule an Interconnection Inspection*** with the ELD once the installation is complete. At your inspection, the Meter Superintendent will verify that the system is appropriately interconnected to the ELD's distribution system, and issue a Permission to Operate to turn on the system. **Please note, systems cannot be turned on prior to the interconnection inspection.**

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Application Requirements

☐ **Application**	Make sure all fields are completed and correspond with supporting documentation.
☐ **Site Plan**	Must show the orientation of the panels as well as their location with respect to the building, transformer, main switchboard, utility disconnect switch, existing electric meter, new production meter to be installed by the ELD, and any other pertinent electrical equipment.
☐ **Single Line Drawing**	Must show all pertinent electrical equipment from the panel to the meter including panel configuration, inverter(s), main electric panel, battery storage (if included), utility disconnect switch, existing electric meter, and new production meter to be installed by the ELD.
☐ **Shade Report**	Required for calculation of expected production.
☐ **Product Spec Sheets**	Must include spec sheets for the panels, inverter(s), disconnect switch, battery storage (if included), and any other pertinent electrical equipment.
☐ **Contract & Quote**	Copy of signed agreement between customer and installer with system cost estimate.
☐ **Recent Electric Bill**	Your bill should show 12-months of usage history. If submitting a proforma to show an expected increase in load, it must be completed by a licensed electrician.

Additional Installer Guidance

- **Production meter**
  - Installation of a dedicated production meter is currently a requirement for solar interconnection. The ELD will install the production meter during the Interconnection Inspection.
  - The production meter must be located next to the customer's current electric meter. If this is not possible, contact the ELD's Meter Superintendent for more information.
  - The cost of the meter ($170) will be billed to the customer on their next electric bill.

- **Utility Disconnect Switch**
  - The disconnect switch must be a blade-type switch ("knife switch"). The pullout switches commonly used in air-conditioning units and spas are not acceptable and will not be approved. The customer is solely responsible for the maintenance of all fuses in fused blade-type disconnect switches.
  - The disconnect switch must be installed in a readily accessible location within 10 feet of the customer's service panel, where the ELD's personnel can operate the switch at any time.

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SOLAR INTERCONNECTION EQUIPMENT SITING

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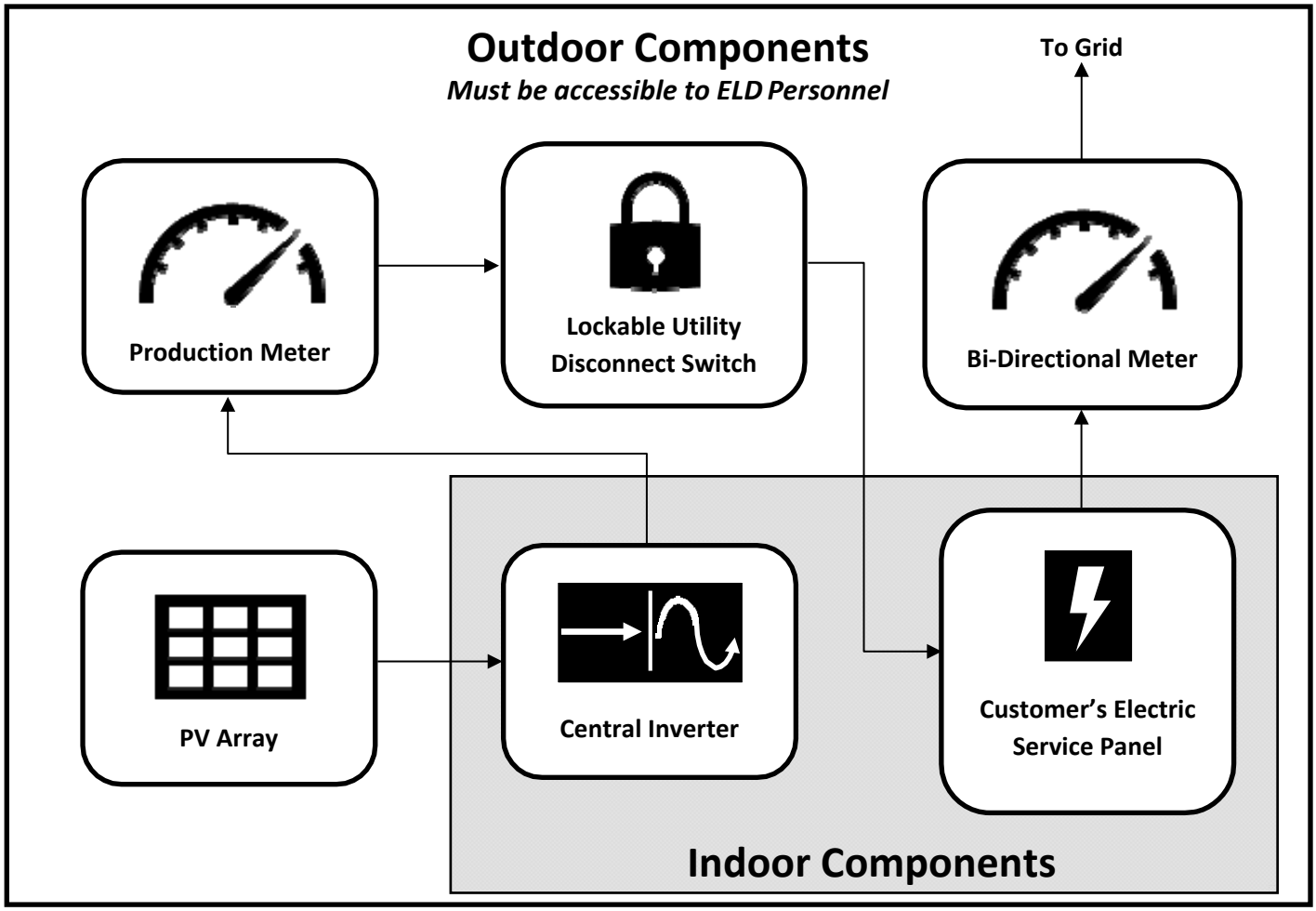

Equipment Siting Requirements for Solar PV System

1. Meter Sockets are to be located outdoors and to be furnished and installed by the Customer's electrician.

2. Both the Solar PV Production Meter the Bi-Directional Meter shall be supplied and owned by the ELD. Both of these meters must be located outdoors.

3. If the Customer's current electric meter is not a Bi-Directional Meter, a new Bi-Directional Meter will be installed in the existing meter socket provided it is in good condition as determined by ELD personnel. If it is not in good condition, it shall be replaced at the Customer's expense.

4. To assure the safety of the ELD's employees and other customers, the Customer shall install equipment to prevent the flow of electricity into the distribution system when the ELD's supply is out of service. This equipment shall be subject to the ELD's approval. In addition, the PV system must have a lockable system isolation disconnect switch installed in very close proximally to the Bi-Directional Meter. This isolation switch shall be identified by the words "*PV System Isolation Disconnect Switch*" on a red plastic plate with white lettering at least ¼" in height.

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SOLAR INTERCONNECTION APPLICATION

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Customer

Customer Name: _____ Electric Account: **E** _____

Street Address: _____ Phone Number: _____

City, State & Zip: _____ Email: _____

Primary Installer

Company: _____ Primary Contact: _____

Contractor License # _____ Role/Title: _____

Street Address: _____ Phone Number: _____

City, State & Zip: _____ Email: _____

Secondary Installer/Contractor (if necessary)

Company: _____ Primary Contact: _____

Contractor License # _____ Role/Title: _____

Street Address: _____ Phone Number: _____

City, State & Zip: _____ Email: _____

System Information

Project/System Name: _____

PV Modules

Manufacturer: _____ Quantity of Modules: _____

Model #: _____ Rated Output per Module (DC-W): _

Efficiency of Module: _____ Total Array Surface Area (sq. ft.): __

Inverter(s)

Manufacturer: _____ Quantity of Inverters: _____

Model #: _____ Rated Output per Inverter (AC-W): _

Efficiency of Inverter(s): _____ Inverter(s) Location: _____

Monitoring

Provider/Platform: _____ Access to Historic Data (Y/N): ____

Internet Connected (Y/N): _____ Cost (Upfront & Reoccurring): ____

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Storage

Manufacturer:_____ Type (Li-Ion, lead-acid, etc.): _____

Model #:_____ Communication Protocol: _____

Roundtrip Efficiency:_____ Coupling (AC/DC): _____

Rated Continuous Discharge Power (kW):_____ Total Energy (kWh): _____

60-Min. Max Discharge Power (kW):_____ Usable Energy (kWh): _____

Energy Management Controls (list all modes): _____

Primary Function (list in order of importance if multiple): _____

System Details

Array Type:
- ☐ Fixed
- ☐ Single axis azimuth tracking
- ☐ Dual axis tracking
- ☐ Inclination adjusted seasonally
- ☐ Other: _____

Array Location:
- ☐ Rooftop
- ☐ Pole or ground mount

Array Tilt (deg.): _____

Array Azimuth (deg.): _____

Utility Disconnect Location:_____ Production Meter Location: _____

Max Rated System Output (DC-kW):_____ Annual Production Before Shading (kWh): _____

Annual Solar Access (%):_____ Annual Production After Shading (kWh): _____

Gross Project Cost (before incentives):_____ Expected System Payback (yrs.): _____

Expected Incentives (Source & Amount): _____

Signatures

By signing your name below, you certify you have read and agree to the terms outlined in Ipswich Electric Light Department's *Distributed Generation Net Metering Policy*. You also certify that the above application is complete and accurate to the best of your knowledge.

Customer Signature: _____ *Date:* _

Installer Signature: _____ *Date:* _