



Rooftop Solar- Contractors

This document guides contractors through the solar interconnection and permitting process for City of Loveland solar and energy storage installations and serves as a checklist for both commercial and residential photovoltaic solar and energy storage system installations within the City.

For information for residents about rooftop solar installations, including the benefits of rooftop solar, go [here](#).

Solar installation checklist for contractors

Step 1: File an interconnection request application

Prior to applying for a Distributed Energy Resources (DER)/Solar building permit, the applicant must submit an interconnection request application:

Apply via email

Fill out, and return [this application](#) and [customer authorization](#) form to der@cityofloveland.org.

Here are resources to reference during your application process:

Important notes about your application

- Incomplete information in your application will result in delay of the review and issuance of your building permit.
- You may be required to apply for multiple permits for the proposed DER/Solar system. This will be indicated on the Notice to Proceed letter from Loveland Water and Power, Distributed Energy Resources (DER) Division, which is sent in response to an approved application.
- For questions regarding Loveland Electric's utility interconnection review process please reach out to the Distributed Energy Resources (DER) Division at der@cityofloveland.org.
- For questions regarding Commercial DER/Solar installations please email der@cityofloveland.org to request a copy of our Commercial DER application form.

Meet all requirements from City of Loveland Building Division and Loveland Water and Power Design shall meet all applicable conditions of the Loveland Electric's [Requirements for Electric Service](#), and the [City of Loveland Building Division's Current Building Codes](#).

Meet all contractor licensing requirements

For DER/Solar projects the following minimum contractor licenses are required. Additional licensing may be required dependent upon the projects scope and application. Contractor License Application forms and instructions can be found on the Building Division's [Contractor Licensing](#) page.

Required Licenses (minimum):

- Current City of Loveland Class C -**OR**- Class C Limited License
 - **Class C** requirements include ICC passed examination **OR** a valid license from a reciprocal jurisdiction (please reach out to contractorlicensing@cityofloveland.org for reciprocal jurisdictions)
 - Commercial DER projects may require a Class A or B License dependent on project details
 - **Class C Limited** requirements include valid NABCEP license **OR** a valid license from a reciprocal jurisdiction (please reach out to contractorlicensing@cityofloveland.org for reciprocal jurisdictions)
- Current City of Loveland Issued Electrical License

Step 2: Your application will receive a completeness review

When our team receives your DER application we'll check it to ensure we have all the information we need to successfully process your request for interconnection. We'll notify you with any questions, or when we're finished.

Step 3: Your application will receive a technical review

After we confirm your application is complete we'll move on to our technical review. During the technical review we'll check to see if any special provisions or upgrades are required to connect your system to our distribution grid. We'll notify you with any questions, or when we're finished.

Step 4: Receive your Notice to Proceed letter

If your application is approved you'll receive a Notice to Proceed letter. That letter will contain the information, instructions and next steps needed for your specific installation.

Upon receiving Notice to Proceed use the following checklist(s) to determine if your DER/Solar building permit package(s) is complete:

Meet submission requirements for Service Change/Service Upgrade Building Permit

For DER/Solar projects that require electric service equipment changes, repairs, replacements or upgrades please submit the following documents to eplan-buildingfasttrack@cityofloveland.org for review:

- Notice to Proceed letter from Loveland Electric, Distributed Energy Resources Division
 - [See example here](#)
- A fully signed ESW with Service Change or Upgrade details from Loveland Electric, Distribution Design Division
 - [See example here](#)
- A completed Electrical Fast Track permit application form from City of Loveland Building Division page
 - Application form found on the Building Division's Residential Forms page:
 - Fast Track Submittals > Electrical Fast Track

Meet requirements for DER/Solar System Building Permit

All DER/Solar projects require a building permit. Please submit the following documents to Eplan-Res@cityofloveland.org for review:

- Notice to Proceed letter from Loveland Electric, Distributed Energy Resources Division
 - [See example here](#)
- A completed Solar Residential permit application form from City of Loveland Building Division page
 - Application form found on the Building Division's Residential Forms page:
 - Residential Application Packets > Solar
- A plan review fee deposit (Balance of fees are due at the time of permit issuance)
- Construction plans containing the following:
 - Site Plan
 - Equipment Outside of Structure
 - Type of isolation device
 - Location of the existing service disconnect
 - Location of all roof-mounted equipment, including ridgeline and edge setbacks
 - Location and connection of all grounding electrode conductors
 - Dimensions between equipment and property lines
 - Location of AC disconnect (must be within 10 ft. of the meter). Disconnect must be lockable in open position and provide a visible break.
 - **Note:** See the **Pole or Ground-Mounted Panels** section below for additional site plan requirements.
 - DER/PV/BESS labeling per 2023 NEC guidelines
 - Show location and content of labels
 - Clear signage must be located at the meter and on the DER/BESS/Solar system itself – both High Voltage Danger and Emergency Shut-Off
 - Elevation drawings for Exterior and Interior Equipment
 - Detailing location of service entrance equipment
 - Meter equipment
 - DER/SOLAR AC disconnect
 - DER/SOLAR inverters/combiner boxes, and all other added equipment on structure with horizontal and vertical clearances shown from ground level, windows, doors, other utilities, other equipment, etc.
 - Floor Plan – Equipment within the Structure
 - Location of all disconnects and isolation devices
 - Type of isolation device (AC Disconnect must still be on the outside of the structure within 10 feet of the meter.)
 - Location of all batteries (if applicable)
 - Location of inverters
 - Location of Battery Energy Storage
 - Location and connection of all grounding electrode conductors
 - Location of all equipment within structures
 - Label the use of the room in which the equipment is placed
 - Stamped Electrical One-Line Diagram
 - Label whether the system is stand-alone, grid-tied, or hybrid
 - Conductor sizes

- Conductor insulation types (i.e., THHN, THWN, direct burial cable, etc.)
- Conductor material types (i.e., copper/aluminum)
- Conduit sizes
- Conduit materials (i.e., non-metallic, EMT, etc.)
- Over current device ratings
- Existing and new panel amperage ratings (bus ratings)
- Series and parallel configuration of the module connection
- **Note:** The City of Loveland does not allow line-side connections
- Equipment Requirements
 - Module short circuit current ratings
 - Module open circuit voltage ratings
 - Module series fuse ratings
 - Inverter output circuit current rating
 - Inverter must be IEEE 1547 2018 and UL 1741 SA17 certified
 - Manufacturer specification sheets for all equipment (i.e. batteries, inverters, disconnects, modules, charge controllers, over-current devices etc.)
 - Method of grounding for modules and array
 - **Note:** Voltage correction factor is based on 2023 NEC guidelines in the FPN.
- Solar Panels (Solar Modules)
 - Provide the following for **Roof-Mounted Panels**:
 - A Colorado licensed design professional's evaluation regarding the dead-load capability of the existing roof structure and its ability to support the added weight of the PV panels
 - For flat roof installations, provide method of repair for roof penetrations.
- Pole or Ground-Mounted Panels
 - A Colorado licensed design professional footing design
 - Site Plan Review Waiver approval (as of January 1, 2011)
 - Site Plan to include the following:
 - Location of panel(s) on property
 - Dimensions for panel(s) to property lines
 - Dimensions from panel(s) to other structures on the property and property easements

Step 5: Receive Permission to Operate

Once you've completed all required final inspections, system validation, and complete your interconnection agreement we'll issue you a Permission to Operate allowing you to turn on the DER system. Know that your customer's next electric bill will have a summary table showing how their Self-Generation bill is calculated. The new electric meter keeps track of all the electricity the solar power system sends to us, and all the electricity we send to the customer.



City of Loveland
Residential Solar Permit Application
Building Division * 410 E 5th Street * Loveland, CO
80537 General Information (970) 962-2505
Inspection Line (970) 962-2100



Prior to submittal of this application, please:

- 1.) Verify your contractor holds a valid City of Loveland contractor license prior to applying
- 2.) If highlighted area is inapplicable, please put N/A
- 3.) Application must be signed by contractor or authorized signer listed on contractor license

Job Site Address:		
General Contractor:	License #:	Phone:
Valuation: \$	Email:	
Electrical Contractor:	License #:	Phone:
Valuation: \$	Email:	
Owner Name:	Phone:	
Address:		
City:	State:	Zip:
Contact:	Phone:	Email:
Check one:	<input type="checkbox"/> New Construction <input type="checkbox"/> Existing Home	
Electrical Work	Service Size	AMPS
Work Description: (Please note if electrical meets minimum code requirements)		
OWNER/CONTRACTOR SIGNATURE OF UNDERSTANDING AND AGREEMENT		
I hereby certify that the setback distances proposed by this permit application are accurate and do not violate applicable ordinances, rules or regulations of the City of Loveland or covenants, easements or restrictions of record; that all measurements shown, and allegations made are accurate; that I have read and agree to abide by all conditions printed on this application and that I assume full responsibility for compliance with the City of Loveland building code and all other applicable City of Loveland ordinances for work under this permit. Plans subject to field inspection.		
PRINT NAME: _____		
SIGNATURE: _____	DATE: _____	
Permit #: _____		
Received by: _____		
Date: _____		
Approvals: _____		
Total Fees Due: \$ _____		
Please e-mail this form and all supporting documents to <u>Eplan-Res@cityofloveland.org</u>		