

Solar System Sizing

Issue Date:
October 2022

Issued by: Kendall Minor,
Utilities Executive Director

Purpose:

The purpose of this policy for Solar System Sizing is to provide specific details and procedures for the allowable sizing of customer-sited renewable energy generation resources in alignment with Fort Collins Municipal Code Sections 26-464 through 26-470. Nothing contained herein is intended to supersede the Fort Collins Municipal Code.

Applicability:

This policy applies to the Utilities Electric Service Areas of the City.

Authorized by:

City Council, October 2022

Utilities Executive Director, October 2022

Executive Summary

These administrative rules adhere to the legal parameters and objectives established in the Fort Collins Municipal Code Sections 26-464 through 26-470. The processes and procedures contained within are based on procedures established and tested under the Solar Rebate Program (Program) from 2010 to date. The Program is managed by Utilities Energy Services division in collaboration with Light & Power, Finance and Customer Connections. The Utilities Program Manager (UPM) is supported by the Utilities Program Specialist (UPS) who are primarily responsible for the implementation of these requirements.

Solar System Sizing Summary: As described in this policy:

- For customer-owned systems, allowable solar sizing is determined by compliance with either:
 - intended renewable energy offset is no more than 200% of the customer's annual electric use at the time of interconnection application, or
 - generating capacity is no more than the allowable reference system size (currently 12 kW-DC, based on the residential customer class average annual electricity consumption).
- Systems that are not owned by the customer will be limited to an intended renewable energy offset of less than 120%.
- If sufficient electric use history is not available, then Utility established standard values can be substituted.
- Sizing takes into account generation onsite and Community Solar shares.
- Sizing does not include the Green Energy Program participation, the share of grid energy delivered to all customers generated by renewable resources, or on-site battery storage equipment.

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Sizing Assessment Terms and Methods: Sizing analysis of solar PV systems and other qualifying renewable generators refers to the following terms and methods:

- *Intended renewable energy offset* = (modeled annual energy production of all renewable sources) / (average annual electric consumption), where:
 - *Annual energy production of all renewable sources* is the sum of the modeled average annual energy production (or average of observed data for installed generation) of qualified renewable energy generation sources located onsite as well as offsite sources owned by the customer or benefitting that unique customer account (such as Community Solar)
 - *Average annual electric consumption* is the customer's total electric energy consumption at the site over the previous 24 calendar months divided by 2.
- *Allowable reference system size:* Staff will annually review the annual sector consumption values and determine a system size that aligns with the 200% sizing criteria on an average basis. *The value of this reference size is 12 kilowatts-DC as of October 2022 for residential customers, based on the residential customer class average annual electricity consumption.*
- For customers who have less than 6 months of electric usage history that's representative of their full occupation of the premises, the best available information on the electric use of the proposed building(s) will be substituted. New homes may use a Home Energy Rating Score (HERS) or other energy modeling provided for energy code compliance. For older homes, Utilities reference data for energy use per square foot will be combined with Larimer County Tax Assessor's office building size data (sum of "Total Sq Ft" + the "Bsmt. Fin. Sq Ft" values) to calculate annual electric use. For example, the average annual electric consumption for single-family detached homes with gas heat built before 2020 is 3 kWh per square foot of conditioned space.

Solar System Size Allowance

- For solar systems not owned by the owner of the property where installed, solar system sizing is limited to 120% of intended renewable energy offset.
- For solar systems owned by the same owner as the property where it is to be installed, solar PV system sizing is limited by the following combination of program rules:
 - At the time of project application, the contractor shall provide the intended renewable energy offset percentage.
 - Staff will approve the system size if either of the following conditions are met:
 - intended renewable energy offset is less than 200%, or
 - system size is less than the allowable reference system size (currently 12 kW-DC, based on the residential customer class average annual electricity consumption).
 - If the total size of the generation system is greater than allowable reference system size and the intended energy offset is greater than 200%, the customer may submit an exception request documenting why the system is oversized. Exceptions related to electrification of customer loads or anticipated increases in use may be approved on a case-by-case basis.

This policy is subject to revision at the discretion of the Utilities Executive Director.