CITY OF SCOTTSDALE
PLANNING AND DEVELOPMENT

INTERPRETATIONS & APPLICATIONS OF BUILDING CODES & REGULATIONS 21-7

CODE SECTION: 2021 IgCC Section 701.3

rev. 12/11/24

SUBJECT: IgCC ON-SITE RENEWABLE ENERGY SYSTEMS

The purpose of this interpretation is to clarify the exceptions to renewable energy requirements as amended in Section 701.3 of the 2021 International Green Construction Code (IgCC).

Amended IgCC Section 701.3 reads as follows:

701.3 On-site renewable energy systems. Building projects shall contain on-site photovoltaic systems with a total DC rated capacity in accordance with one of the following:

1. Not less than 3 percent of the annual estimated energy used within the building for building mechanical, service water-heating and lighting.
2. Not less than 2 watts per square foot (22 W/m^2) multiplied by the horizontal projection of the gross roof area over conditioned spaces and semi-heated spaces.

Exceptions to 701.3:

1. A building with gross conditioned floor area less than 5,000 square feet.
2. On-site renewable energy systems, other than photovoltaic systems, that result in an equal or greater annual energy production.
3. All or part of the required renewable energy generation is permitted to be replaced by equivalent annual energy savings, as calculated using the total building performance compliance path in Section C407 of the City Energy Code (IECC).

On-site renewable energy systems shall be tested after installation to verify that the installed performance meets design specifications. A report of the tested performance shall be provided to the building owner, and to the building official, if requested by the city. Onsite renewable energy systems shall be individually metered.

Applications

1) Section 701.3 is not intended to apply to building additions where the area of the addition is less than 50% of existing total building area.
2) On-site renewable energy systems shall be exempt where the required roof area for the solar PV system is shaded for more than 70 percent of daylight hours annually.
3) To meet exception #3 above for the total building performance path, projects must comply with C407.2, item 2 which requires a calculated annual energy cost that is less than or equal to 80% of the annual energy cost of the standard reference design. This equates to a 20% or more energy cost savings. Where ASHRAE 90.1-2019 Chapter 11 or Appendix G is used for total building performance compliance, the calculated annual energy cost shall be less than or equal to 80% of the annual energy cost of the standard reference design. This equates to a 20% or more energy cost savings.

Space Allocation for Solar PV system

Every kW of DC PV capacity requires approximately 100 sq. ft. of roof area depending on panel efficiency, location and orientation.