

Resolved, the Resource Management Commission finds that in order to help meet its net-zero energy capable goal set by City Council in 2007, encourage the use of alternative energy, and help transform our local electricity grid, Austin Energy should add a Solar-Ready Zone amendment to its proposed update to the 2015 Energy Building Code. Proposed Draft Solar-Ready Zone amendments can be found attached for both residential and commercial buildings. Alternatively, Austin Energy could also adopt Appendix RB of the 2015 International Energy Conservation Code, while applying it to all buildings covered under its residential code, as well as a separate commercial solar-ready provision. Exceptions should be granted for smaller buildings, shaded buildings, as well as buildings that already incorporate solar PV or solar thermal systems.

RESIDENTIAL SOLAR-READY ZONE LANGUAGE

General. These Provisions Shall be Applicable for New Construction Upon the Effective Adoption of the Residential Energy Code in 2016.

Definitions

SOLAR-READY ZONE. A section or sections of the roof or building structure designated and reserved for the future installation of a solar photovoltaic or solar thermal system.

R____. General. New detached one- and two-family dwellings, multiple single-family dwellings (townhouses) with not less than 400 square feet of roof area oriented between 100 degrees and 280 degrees of true north and low-rise multi-family buildings of four stories or fewer shall comply with Sections R____ through R____. The solar-ready zone shall not be shaded by other parts of the building roof or structure.

Exceptions:

1. New residential buildings with a permanently installed on-site renewable energy system.
2. A building with a solar-ready zone that is shaded by trees or adjacent structures for more than 60 percent of daylight hours annually.
3. Detached dwellings having total floor area less than or equal to 800 square feet (74.32 m²).

R____. Construction document requirements for solar-ready zone. Construction documents shall indicate the solar-ready zone. Construction documents shall also indicate an acceptable location in proximity to the utility meter and electrical service panel, and of appropriate size to enable future mounting of inverter, disconnects, metering equipment, and other wall mounted components, taking into account required setbacks from building openings and other utility meters.

R____. Solar-ready zone area. For new detached one- and two-family dwellings, and multiple single-family dwellings (townhouses) the total solar-ready zone shall not be less than 240 square feet (22.30 m²) exclusive of mandatory access or set back areas as required by the International Fire Code. New multiple single-family dwellings (townhouses) three stories or fewer above grade and with a total floor area less than or equal to 1,800 square feet (167.24 m²) per dwelling shall have a solar-ready zone area of not less than 160 square feet (14.86 m²). The solar-ready zone shall be comprised of areas not less than five feet (1524 mm) in width and at least one area of not less than

120 square feet (11.15 m²) exclusive of access or set back areas as required by the International Fire Code.

For low-rise multifamily buildings of four stories or fewer, the solar-ready zone shall have a total area that is not less than 25% of the total roof area of the building after subtracting any skylight area from the roof area and any area shaded by objects which are not on the roof or any other part of the building.

R___. Obstructions. Solar-ready zones shall be free from obstructions, including but not limited to vents, chimneys, parapets and roof-mounted equipment.

R___. Roof load documentation. The structural design loads for roof dead load and roof live load shall be clearly indicated on the construction documents.

R___. Interconnection pathway. Construction documents shall indicate pathways for routing of conduit or plumbing from the solar-ready zone to the electrical service panel or service hot water system.

R___. Installation of related equipment. Equipment necessary for the operation of a solar photovoltaic system, including inverters, meters, and service disconnects shall be located as required by the Austin design criteria manual.

R___. Electrical service reserved space. The main electrical service panel shall have a reserved space to allow installation of a dual pole circuit breaker for future solar electric installation and shall be labeled "For Solar Electric." The reserved space shall be positioned at the opposite (load) end from the input feed location or main circuit location.

2015 IECC C402.6 and 90.1-2013 5.4.6 Commercial Solar Ready – A Designated Solar Zone shall be identified on the construction documents as “Reserved For Future Solar Installation”. This zone must lie within the Potential Solar Area, be free from obstructions, and must comply with access, pathway, smoke ventilation, spacing, and other requirements of the Land Development Code.

The size of the Designated Solar Zone is defined in Equation 4-5.5.

$$\text{Designated Solar Zone Area} = 0.50 * \text{Potential Solar Area} \quad \text{(Equation 4-5.5)}$$

Where:

Potential Solar Area = Gross Roof Area – Affected Area

and:

Affected Area = Shaded Area + Skylight Area + Equipment Area + Required Setbacks

Shaded Area = Area of the roof that is shaded by obstructions for at least 15% of daylight hours annually

Skylight Area = Gross area of all skylights

Equipment Area = Area of rooftop equipment including required access paths

Required Setbacks = Those areas required by the fire code or by other sections of the Land Development Code to not contain solar equipment.

No part of the Potential Solar Area can lie in an Affected Area. The Designated Solar Zone and the Potential Solar Area can be made up of multiple sub-areas. Each sub-area must be at least 80 sqft and must be a rectangle the short side of which measures at least 5 ft.

Exceptions:

1. Potential Solar Area < 2000 sqft
2. Additions with a roof area less than 20% of existing roof area
3. When roofs are used as heliports or for rooftop parking
4. High hazard buildings
5. Pitched roofs
6. Roofs located within the downtown network

For areas of the roof that are part of the Designated Solar Zone, the structural design loads for roof dead load and roof live load shall be clearly indicated on the construction documents.

The construction documents shall indicate a location for inverters and metering equipment and a pathway for routing of conduit from the solar zone to the point of interconnection with the electrical service.

The electrical service distribution system shall have reserved space to allow for the future installation of solar electric and shall be permanently marked as “For Future Solar Electric”.