BOARD/COMMISSION RECOMMENDATION

Electric Utility Commission

Recommendation No. 20160620-006

Solar-Ready Zone Amendment to the Energy Code

WHEREAS, Austin Energy and the City of Austin have been a leader in the country on sustainable building codes designed to encourage energy efficient and sustainable building design;

WHEREAS, Austin Energy and the City of Austin set a Zero Energy Capable Homes Initiative (Council Resolution No. 20071018-036) for new single-family homes constructed under the 2015 Energy Code;

WHEREAS, Austin Energy and the City of Austin have a Green Building Program to foster the design and construction of sustainable and efficient buildings;

WHEREAS, Austin Energy and the City of Austin recently proposed new building energy codes based on the 2015 International Energy Conservation Code (IECC) and the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) 2013-90.1 scheduled for a public hearing by the City Council on June 23, 2016;

WHEREAS, Austin Energy and the City of Austin have set long-term goals for energy efficiency, demand reduction, and local solar, including a minimum of 200 MWs of local solar by 2025, as approved by the City Council on December 14, 2014;

WHEREAS, the existing 2015 IECC includes an appendix called Appendix RB, or a Solar-Ready Zone appendix that allows local jurisdictions to require local builders to make new homes “solar-ready;”

WHEREAS, the proposed Solar-Ready Zone amendments have been shared with commercial and residential builders, architects, the members of the Electric Utility Commission, the Resource Management Commission and the Development Service Department at the City of Austin;

WHEREAS, the proposed Solar-Ready Zone amendments are limited to design changes to encourage adequate space for future solar PV systems and electrical panels, but do not require that any equipment be installed;

WHEREAS, the proposed Solar-Ready Zone amendments includes exceptions for smaller homes and smaller commercial buildings, homes and commercial buildings

that are already incorporating renewable systems into their building design, or buildings that are shaded by trees or other buildings; and

WHEREAS, adoption of the Solar-Ready Zone amendments would help encourage compliance with both the City of Austin's Zero Energy Capable Homes Initiative and with Austin Energy's 2025 local solar goal;

NOW THEREFORE, BE IT RECOMMENDED BY THE ELECTRIC UTILITY COMMISSION OF THE CITY OF AUSTIN:

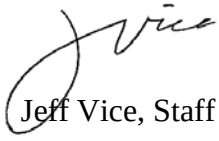
1. The Austin City Council adopt a commercial and residential Solar-Ready Zone amendment (attached) to the Residential and Commercial Energy Codes that would go into effect six months after adoption by the City Council; and that

2. The Solar-Ready Zone amendments be included as part of the adoption of the technical codes being developed by the Development Services Department, expected to be sent to City Council before the end of the year.

Date of Approval: June 20, 2016

Record of the Vote: Approved by the Electric Utility Commission on a vote of 7-1, with Commissioner Heidebrecht against, and Commissioners Mahmood, Norris and Stout absent.

Attest:



Jeff Vice, Staff Liaison

RESIDENTIAL SOLAR READY

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.

R407.1. General. New detached one- and two-family dwellings, town homes, and multifamily buildings not more than four stories above grade shall have a Solar-Ready Zone. The Solar-Ready Zone shall not be shaded by other parts of the building.

> **Exception:** New residential buildings with a permanently installed on-site renewable energy system with an output of not less than one watt per square foot (.092 m^2) of conditioned floor area.

R407.2. Construction document requirements for Solar-Ready Zone. Construction documents shall indicate the Solar-Ready Zone.

R407.3. Obstructions. Solar-Ready Zones shall be free from and not shaded by obstructions, including but not limited to vents, chimneys, parapets and roof-mounted equipment.

R407.4. Roof load documentation. The structural design loads for roof dead load and roof live load shall be clearly indicated on the construction documents.

R407.7. 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.

R407.8. One- and two-family dwellings. New detached one- and two-family dwellings shall have a total Solar-Ready Zone area of not less than 240 square feet (22.3 m^2) per dwelling, exclusive of mandatory access or setback areas as required by the Fire Code. The Solar-Ready Zone shall be oriented between 90 and 300 degrees of true North. The Solar-Ready Zone shall be comprised of areas not less than six feet (1.83 m) on one side and at least one area of not less than 160 square feet (14.86 m^2) exclusive of access or set back areas as required by the Fire Code.

Exceptions:

1. Dwellings with less than 600 square feet (55.74 m^2) of roof area per dwelling unit.
2. A building with a Solar-Ready Zone that is shaded by trees or adjacent structures for more than 50 percent of daylight hours on March 21 of the year the project is permitted.

R407.9. Townhomes. Townhomes shall have a total Solar-Ready Zone area of not less than 160 square feet (14.86 m^2) per dwelling unit, exclusive of mandatory access or setback areas as required by the Fire Code. The Solar-Ready Zone shall be oriented between 90 and 300 degrees of true North. The Solar-Ready Zone shall be comprised of areas not less than six feet (1.83 m) on a side and at least one area of not less than 100 square feet (9.29 m^2) exclusive of access or set back areas as required by the Fire Code.

Exceptions:

1. Dwellings with less than 400 square feet (37.16 m^2) of roof area per dwelling unit.
2. A building with a Solar-Ready Zone that is shaded by trees or adjacent structures for more than 50 percent of daylight hours on March 21 of the year the project is permitted.

R407.10 Multifamily buildings. New low-rise multifamily buildings of four stories or fewer shall have Solar-Ready Zones that in aggregate are not less than 35% of the total roof area of the building.

Exception: A building with a Solar-Ready Zone that is shaded by trees or adjacent structures for more than 50 percent of daylight hours on March 21.

COMMERCIAL SOLAR READY

C402.6 (2015 IECC) and 5.4.6 (ASHRAE 90.1-2013) Commercial Solar Ready – A designated Solar-Ready 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 such as but not limited to vents, pipes, ducts, equipment, etc., and must comply with access, pathway, smoke ventilation, spacing, and other requirements of the City of Austin Land Development Code.

Exceptions:

1. Potential Solar Area < 2,000 square feet (185.8 square meters)
2. High hazard buildings (Group H)
3. Roofs located within the downtown network as identified in Appendix A of the current Austin Energy Distribution Interconnection Guide
4. When compliance with section C406.5 is demonstrated

C402.6.1 Solar ready area. The size of the Solar-Ready Zone is defined in Equation 4-5.5.

Solar-Ready Zone Area = 0.50 * Potential Solar Area **(Equation 4-5.5)**

Where:

Potential Solar Area = Gross Roof Area – Affected Area

Affected Area is defined as the following areas:

1. Areas of the roof that are shaded for at least 50% of daylight hours as modeled on March 21.
2. Areas of non Low-Slope roofs that are oriented from 300° northwest, north to 90° east.
3. Gross area of all skylights.
4. Area of rooftop equipment including required access paths.
5. Those areas required by the fire code or by other sections of the Land Development Code to not contain solar equipment.
6. Areas of roofs used as heliports or for rooftop parking.
7. Green roofs and occupied rooftop areas.

No part of the Potential Solar Area can lie in an Affected Area. The designated Solar-Ready Zone and the Potential Solar Area can be made up of multiple sub-areas. Each sub-area must be at least 80 square feet (7.432 square meters) and must be a rectangle the short side of which measures at least 5 feet (1524 millimeters).

C402.6.2 Structural loads. Areas of the roof that are part of the Solar-Ready Zone shall have their structural design loads for roof dead load and roof live load clearly indicated on the construction documents.

C402.6.3 Equipment location and interconnection pathway. 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.

C402.6.4 Electrical distribution system. 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".