

To: EUC And RMC Commissioners
From: Cyrus Reed, Vice-Chair RMC

Re; Status of solar-ready energy code amendments
May 13, 16

Dear All,

Wanted the RMC and EUC to know work has continued on the proposed solar-ready provisions of the energy code. First, the working group composed of Michael Wong, Kaiba White and myself of the RMC looking at the language met with staff from Austin Energy in late April and made several tweaks to the language.

Subsequently, in early May, Cyrus Reed of the RMC met with Austin Energy staff and the Development Services Department, which oversees plan review and inspection of all commercial and residential buildings, to review the language and as a result, several more changes were made in response to concerns made by DSD over enforceability.

Separately and apart from the solar-ready language itself, DSD members in both plan review and inspections did express general concern that they are understaffed and having a hard time keeping up with construction in Austin, and that the new energy codes being implemented will create additional work. I would propose that both the EUC and RMC at some point consider recommending that city council increase the budget for DSD and hire at least one inspector specifically dedicated to reviewing energy codes, and at least one additional plan review FTE to review construction plans and designs for compliance with energy code provisions. It is clearly a need for the city that is not being served presently.

Then, this week, copies of the draft Commercial and Residential solar-ready language were sent to stakeholders in the building community.

While I believe these solar-ready provisions are now ready for prime-time, in order to give some more time to stakeholders to comment on the latest draft, I would propose that we give an additional month, and take this up for a vote in June. We have told stakeholders they have until May 27th to provide any feedback.

Approval of solar-ready language then would still give time to incorporate the amendments into the energy code, which is slated to go into effect on September 1, 2016, assuming council approval. So at this point, I am happy to discuss these provisions with members of the EUC and RMC, but would ask that we delay a vote for one more month to give the building community additional time to review the latest drafts.

Thank you

Cyrus Reed

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 roof or structure.

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 m²) 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 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 m²) 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 at least one area of not less than 160 square feet (14.86 m²) exclusive of access or set back areas as required by the Fire Code.

Exceptions:

1. Dwellings with less than 600 square feet (55.74 m²) of roof area per dwelling unit.
2. A building with a prospective 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 m²) 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 m²) exclusive of access or set back areas as required by the Fire Code.

Exceptions:

1. Dwellings with less than 400 square feet (37.16 m²) of roof area per dwelling unit.
2. A building with a prospective 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.

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

Where:

$$\text{Potential Solar Area} = \text{Gross Roof Area} - \text{Affected Area}$$

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”.

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