

IMPACT OF PROPOSED SOLAR SETBACKS ON THE SOLAR INDUSTRY

National Fire Protection Association (NFPA) roof access requirements and
Structural Engineer to analyze and sign off

Regarding:

AN ORDINANCE to create Division 6 of Ch. 115, Art. VII of the Code of
Ordinances of the City of La Crosse regarding Solar Energy Systems.

The proposed ordinance changes of adding in the NFPA Roof Access Requirements would decrease the size of a compliant rooftop solar array up to 20%. This change impacts the business community, the customer, and local jurisdictions in several ways. Consider situations where, due to the setbacks proposed, a customer suddenly cannot install enough solar to offset their total energy load with the smaller footprint. Solar installers face outright loss of potential customers. This is especially true for the growing lower-to-middle income segment of the solar customer community, typically in homes with smaller rooftops and demanding 100% energy load offsets to most quickly recover the solar system cost. This directly impacts installers' business certainty. Even where customers offset only a portion of their energy load with solar, a 20% smaller rooftop array means a similar loss in revenue generated. This could lead to 20% contraction of the solar installer segment. Coupling business revenue loss with increased staffing needs to comply with -- and understand -- the increasingly complex and voluminous regulatory environment, the solar installer sector may see more companies struggling to maintain a viable business. Accordingly, customers may see less choice when seeking the right solar installer to suit their needs. The same is likely true for local jurisdictions with limited staff resources to review solar projects, leading to more regulatory and administrative confusion, increased costs, and delay for all parties in this chain reaction. Because some local jurisdictions no longer send fire fighters on some types of rooftops, such as residential rooftops, these requirements are seen by many in the solar industry as an unnecessary negative impact on their business health.

Regarding:

Propose to remove the requirement that a Structural Engineer sign off on residential Solar PV installations. The current ordinance requires a Structural Engineer to analyze and sign off to see if a residential roof can handle the additional weight of a solar PV system. A roof mounted non-ballasted solar PV system's additional weight contribution is akin to adding a second layer

of shingles. Having this additional Engineering expense added to a solar PV system has many of the same negative impacts as listed earlier in this document. Many localities have adopted the Expedited Permit Process found here:

<http://www.solarabcs.org/about/publications/reports/expedited-permit/pdfs/Expermitprocess.pdf>

The Minnesota Solar Industry has identified value in developing standard tables that outline limitations for the placement of residential rooftop solar electric and solar thermal systems on existing single and multi-family dwelling structures. These tables are intended to encourage safe and structurally reliable systems while reducing costs associated with unnecessary structural review for many residential applications. When installed on the roof structures, solar energy systems create additional load on the structure that the roof may or may not be capable of supporting. The cost to have a structural review of existing conditions completed when a solar installation is proposed can be a barrier to adoption. By generating these tables to identify common building and roof construction types, structural considerations will be addressed in a prescriptive method without the need for a full structural engineering analysis in many cases. Reducing costs and adding certainty may lead to greater adoption and installation of solar technologies.

The Standardized Load Table showing Allowable Additional Dead Load (psf) can be found here:

<http://mn.gov/commerce-stat/pdfs/standardized-load-table-report.pdf>

Please consider removing the National Fire Protection Association (NFPA) roof access requirements and the Structural Engineer sign off requirements on residential Solar PV installations.

Thank you for your consideration.

Tim Gulden

Winona Renewable Energy, LLC

507-312-0190

Expedited Permit Process for Small-Scale PV Systems

The information in this guideline is intended to help local jurisdictions and contractors identify when PV system installations are simple, needing only a basic review, and when an installation is more complex. It is likely that 50%-75% of all residential systems will comply with these simple criteria. For projects that fail to meet the simple criteria, resolution steps have been suggested to provide as a path to permit approval.

Required Information for Permit:

1. Site plan showing location of major components on the property. This drawing need not be exactly to scale, but it should represent relative location of components at site.
2. Specification sheets and installation manuals (if available) for mounting system.

Todd Smith
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Step 1: Structural Review of PV Array Mounting System

Is the array to be mounted on a defined, permitted roof structure? Yes No

If No due to non-compliant roof or a ground mount, submit completed worksheet for the structure WKS1.

Roof Information:

1. Is the roofing type lightweight (Yes = composition, lightweight masonry, metal, etc...) Yes - asphalt/composition

If No, submit completed worksheet for roof structure WKS1 (No = heavy masonry, slate, etc...).

2. Does the roof have a single roof covering? Yes No

If No, submit completed worksheet for roof structure WKS1.

3. Provide method and type of weatherproofing roof penetrations (e.g. flashing, caulk) _____

Mounting System Information:

1. Is the mounting structure an engineered product designed to mount PV modules with no more than an 18" gap beneath the module frames? Yes No

If No, provide details of structural attachment certified by a design professional.

2. For manufactured mounting systems, fill out information on the mounting system below:

- a. Mounting System Manufacturer Spiderrax Product Name and Model# BlackWidow Comp
- b. Total Weight of PV Modules and Rails 1715 lbs
- c. Total Number of Attachment Points 80
- d. Weight per Attachment Point (b÷c) 21.43 lbs (if greater than 45 lbs, see WKS1)
- e. Maximum Spacing Between Attachment Points on a Rail 48 inches (see product manual for maximum spacing allowed based on maximum design wind speed)
- f. Total Surface Area of PV Modules (square feet) 820 ft²
- g. Distributed Weight of PV Module on Roof (b÷f) 2.09 lbs/ft²

If distributed weight of the PV system is greater than 5 lbs/ft², see WKS1.

Expedited Permit Process for PV Systems

I certify that the roof at the above address has only one layer of shingles.



Tim Gulden

Winona Renewable Energy, LLC

Date 9/3/2019