



August 17, 2010

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**Solar Installation Specialty Code; permit,  
plan review & fee methodology**

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**Opportunity for public input:**

Those who would like to provide public testimony may attend a public hearing on August 17, 2010 at 9:30 a.m. The hearing will be located at the Building Codes Division, Conference Room A. Written comments may also be submitted to the contact below. The last day to submit written comments is 5:00 p.m. August 20, 2010.

**Live broadcast via the internet:**

To view the public hearing live, click on "[View live meeting](#)"

**Purpose of the rule:**

These proposed rules adopt the Oregon Solar Installation Specialty Code (OSISC), the first statewide solar code in Oregon and in the Nation. The Oregon Solar Installation Code is part of the division's overall goal to facilitate green building technologies. These proposed rules standardize permit and plan review requirements, and establish fee methodologies for solar installations used by local jurisdictions. These proposed rules would become effective October 1, 2010.

**Citation:**

Adopt: OAR 918-800, 918-050, and 918-305 & Amend: OAR 918-311 and 918-309

To view the proposed amended code language, click the following:

[Proposed amendments to the Oregon Solar Installation Specialty Code.](#)

[Matrix of code changes](#)

**History:**

Existing Oregon specialty codes do not specifically address all aspects of solar installations, local jurisdictions have been requiring different levels of plan review and engineering. No national model code for solar installations currently exists. The division initiated the process by forming an advisory committee for the development of a solar installation code. The 2010 Oregon Structural Specialty Code was used for many of the references to address solar photovoltaic (PV) installations.

The committee worked closely with local jurisdictions, installers, and fire services to craft the code. The committee drafted a prescriptive path and various administrative provisions to allow for simple installations to be constructed without plan review. This code is designed to be a "stand-alone" installation code. Key elements of the code include:

- Primarily on photovoltaic installations.
  - Covers around 80% of the most common types of solar installations. (Residential & Commercial)
  - The electrical provisions are included as an Appendix for easy reference. Electrical provisions will remain as part of the OESC.
  - The provisions of the OSSC will govern the design and engineering of the general system.
  - The prescriptive path, fire fighter access provisions, fee calculations and plan review requirements developed specifically for Oregon.
  - Prescriptive path designed with help from Oregon's engineering groups.
  - Engineered systems will need to follow the design standards in the OSSC. Plan review may be required by the local jurisdiction.
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The division received questions from local jurisdictions and installers about when plan review was required, and how permits should be valued. Nothing in administrative rule existed that would work for all jurisdictions. Part of the division's goal in adopting the solar installation code was simplify and streamline solar installations by addressing solar permitting and plan review. Once the code is adopted, local jurisdictions will have a reasonable period of time to adopt solar permitting methodologies without having to go to give notice to the division. Other legal obligations may still apply. Key elements of solar permitting and plan review:

- Separate electrical and structural permits are required. (Combo permits may be used).
- Plan review rules address what is considered a complex system for renewable energy plan reviews.
  - ✓ Systems greater than 25 Kilowatts are considered complex and a jurisdiction could require plan review.
  - ✓ Solar Structural permit methodology will expedite prescriptive installations. Jurisdictions will be required to set a flat fee for prescriptive installations.
  - ✓ No plan review includes 1 inspection.
- Structural permits for engineered solar systems methodology will be based on the value of the structural components of the system, racking, mounting, rails, labor etc. but excluding the electrical components. Value then placed in the jurisdiction's fee schedule.
  - ✓ Covers 3 inspections.
  - ✓ Additional inspections should be covered at an hourly fee.

**Contact:**

If you have questions or need further information, please contact Hearing Officer Aeron Teverbaugh at 503-373-2160, or [aeron.teverbaugh@state.or.us](mailto:aeron.teverbaugh@state.or.us).

Secretary of State  
**NOTICE OF PROPOSED RULEMAKING HEARING\***  
A Statement of Need and Fiscal Impact accompanies this form.

Department of Consumer and Business Services, Building Codes Division	918
Agency and Division	Administrative Rules Chapter Number
Dolores Wagner	PO Box 14470, Salem, OR 97309
Rules Coordinator	Address
	(503) 373-1258
	Telephone

**RULE CAPTION**

Adopting the 2010 Solar Installation Specialty Code, solar fee methodologies and plan review threshold

**Not more than 15 words that reasonably identifies the subject matter of the agency's intended action.**

August 17, 2010	9:30 a.m.	1535 Edgewater Street NW, Salem, OR 97304	Aeron Teverbaugh
Hearing Date	Time	Location	Hearings Officer

*Auxiliary aids for persons with disabilities are available upon advance request.*

**RULEMAKING ACTION**

Secure approval of new rule numbers (Adopted or Renumbered rules) with the Administrative Rules Unit prior to filing.

**ADOPT:** 918-800-0010, 918-800-0020, 918-800-0030, 918-800-0040, 918-050-0180, and 918-305-0265,

**AMEND:** 918-311-0040 & 918-309-0070

**REPEAL:**

**RENUMBER:**

**AMEND & RENUMBER:**

Stat. Auth.: ORS 183.335, 455.020, 455.048, 455.055, 455.117, 455.496, 479.730 & 479.870

Other Auth.: \_\_\_\_\_

Stats. Implemented: ORS 183.335, 455.020, 455.046, 455.055, 455.117, 479.730 & 479.870

**RULE SUMMARY**

These proposed rules are part of a comprehensive package to adopt Oregon's first Solar Installation Specialty Code (OSISC). The proposed rules adopt the 2010 OSISC in accordance with the administrative procedures in ORS 183. The proposed rules amend sections of the National Electrical Code (NEC) that relate to solar electrical installations. The proposed amendments to the NEC will become part of the Oregon Electrical Specialty Code (OESC).

The proposed rules also adopt a methodology to standardize the method used by jurisdictions to value structural permits for solar installations. The proposed rules include clarifications of electrical and structural fee methodology and plan review requirements for renewable energy permits. The proposed rules create a streamlined process for solar installations across the state, reducing costs for installers and encouraging renewable energy use in Oregon.

The Agency requests public comment on whether other options should be considered for achieving the rule's substantive goals while reducing the negative economic impact of the rule on business.

Friday, August 20, 2010 by 5:00 p.m.

**Last Day for Public Comment** (Last day to submit written comments to the Rules Coordinator)

Patrick Allen		
Signature	Printed name	Date

\*Hearing Notices published in the Oregon Bulletin must be submitted by 5:00 pm on the 15<sup>th</sup> day of the preceding month unless this deadline falls on a weekend or legal holiday, upon which the deadline is 5:00 pm the preceding workday. ARC 920-2005

**STATEMENT OF NEED AND FISCAL IMPACT**

A Notice of Proposed Rulemaking Hearing or a Notice of Proposed Rulemaking accompanies this form.

Department of Consumer and Business Services, Building Codes Division

918

Agency and Division

Administrative Rules Chapter Number

Adopting the 2010 Solar Installation Specialty Code, solar fee methodologies and solar plan review threshold

Rule Caption (Not more than 15 words that reasonably identifies the subject matter of the agency's intended action.)

In the Matter of: Adopting OAR 918-800-0010, 918-800-0020, 918-800-0030, 918-800-0040, 918-050-0180 & 918-305-0265 and amending OAR 918-311-0040 & 918-309-0070.

Statutory Authority: ORS 183.335, 455.020, 455.048, 455.055, 455.117, 455.496, 479. 730 & 479.870

Other Authority:

Stats. Implemented: ORS 183.335, 455.020, 455.046, 455.055, 455.117, 479.730 & 479.870

Need for the Rule(s):

There is currently no standard statewide process for solar installations. These proposed rules are necessary to ensure safe solar installations across the state. Additionally, the proposed rules establish a streamlined path for prescriptive installations decreasing the administrative burden. The proposed fee methodology will contribute to predictability for solar installers while ensuring jurisdictions have the flexibility to recoup the costs of administration and enforcement of the code.

The current electrical fee methodology for renewable energy systems was developed to address systems that were 25 kilowatts or less. The proposed rules are necessary to clarify requirements for larger systems. Additionally, there are no specific guidelines for electrical plan review on renewable energy systems. The proposed rules clarify complex renewable energy systems on which a jurisdiction may require plan review.

Documents Relied Upon, and where they are available: Solar Code Adoption Advisory Committee minutes from September 10 & 24, October 8 & 22, November 5, and December 17, 2009, January 14 & 28, February 25, March 11, April 15, and May 17, 2010; minutes from the June 29, 2010 Construction Industry Energy Board meeting; and draft rules are available from the division's rules coordinator located at 1535 Edgewater Street NW, Salem, OR 97304 and are posted on the division's Web site at [www.bcd.oregon.gov](http://www.bcd.oregon.gov).

Fiscal and Economic Impact: Based on available information the division is unable to estimate the exact fiscal and economic impact. The division anticipates a positive impact on solar installers due standardizing installation, permitting and plan review requirements across the state. The proposed code and rules establish a streamlined process for solar installations that will reduce the costs associated with prescriptive installations.

Statement of Cost of Compliance:

1. Impact on state agencies, units of local government and the public (ORS 183.335(2)(b)(E)):

There may be some nominal financial impact to units of local government due to the requirement to comply with the methodology for structural solar installations. The division intends to post the OSISC on its website so the jurisdictions will not incur the cost of purchasing code books. There will be no requirement for a code change course.

2. Cost of compliance effect on small business (ORS 183.336):

a. Estimate the number of small businesses and types of business and industries with small businesses subject to the rule: There are approximately 85 companies in Oregon doing solar installations, however not all of those businesses do PV installations. Additionally, journeymen electricians and general supervising electricians are qualified under the scope of their license to perform solar installations, but it is unknown how many actually install solar. Because the

structural component of the installations does not require a license the division is unable to determine precisely how many businesses will be impacted

b. Projected reporting, recordkeeping and other administrative activities required for compliance, including costs of professional services: There is likely to be a positive impact on reporting, recordkeeping and other administrative activities because the proposed code and rules establish a streamlined process for solar installations.

c. Equipment, supplies, labor and increased administration required for compliance: Because the proposed rules create a streamlined process and clarify existing rules for electrical permits and plan review the division does not anticipate an impact on the equipment, supplies, labor, or administration required for compliance.

How were small businesses involved in the development of this rule? Small businesses were represented on the rulemaking advisory committee and consulted on various sub-committees related to particular provisions of the OSISC.

Administrative Rule Advisory Committee consulted?: Yes. The Solar Code Adoption Advisory Committee made recommendations resulting in the proposed rules.

If not, why?:

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Signature	Patrick Allen	Date
	Printed name	

Administrative Rules Unit, Archives Division, Secretary of State, 800 Summer Street NE, Salem, Oregon 97310. ARC 925-2007

Board Draft  
7-22-2010

**918-050-0180**

**Statewide Methodology for Solar Structural Installation Permits**

**(1) Structural permits for solar photovoltaic (PV) system installations permits shall be calculated using the following methodology:**

**(a) Fees for installations that comply with the prescriptive path described in section 305.4 of the Oregon Solar Installation Specialty Code (OSISC) shall be a flat fee and includes one (1) inspection and review by the municipality review as defined in section 105.1 of the OSISC.**

**(b)(A) All other installations shall be based on the valuation of the structural elements for the solar panels, including racking, mounting elements, rails, and the cost of labor to install. The cost of the solar equipment, including collector panels, and inverters shall be excluded from the permit valuation. The valuation shall then be applied to the municipality's fee schedule to determine the permit fee.**

**(B) Plan review fees shall be based on a predetermined percentage of the permit fee set by the municipality.**

**(C) Permit fee includes a maximum of 3 inspections. Additional inspections will be charged at an hourly rate.**

**(2) Electrical components of a PV system require an electrical permit. Electrical permits shall be calculated based on the methodology established in OAR 918-309-0020 through 918-309-0070.**

Stat. Auth. ORS 455.048 & 455.055

Stat Implemented ORS 455.046 & 455.055

Hist.: New

**Board Draft**  
**Solar Electrical Permit Fee**  
**7-22-2010**

**918-309-0070**

**Miscellaneous**

Special fees are established for the following items in lieu of fees set under OAR 918-309-0060.

(1) Permit for each domestic water or sewage pump, irrigation pump or circle and its associated controls, excluding service fee, \$63;

(a) Single Circuit. If a well pump or sewage pump and its associated controls are serviced from the house main service, and the pump is installed and ready for inspection, no additional fee is charged. If the pump is installed by another contractor or later, an additional pump fee and a new permit is necessary under this part;

(b) Feeder. If the well has a subpanel, there is a fee for the feeder from the main service to the subpanel and a fee for branch circuits. If the pump is installed later, or by another contractor, a new permit and pump fee is required;

(c) Separate Service. If the well has separate service the fee is based on the service (amps) and the number of branch circuits. If the pump is installed later, or by a different contractor, a new permit and pump fee is required.

(2) Permit for the installation of each electrical sign or outline lighting system supplied by a single branch circuit, \$63.

(3) Each limited energy circuit panel, one or more air-conditioning or heater thermostats installed at a job site, multiple circuit terminal board or installation or extension of limited energy circuits, \$63.

(4) The permit fees in this ~~section~~ **rule** are for up to two inspections and are charged in addition to other fees for electrical service.

(5) Note the exception under OAR 918-309-0030(3)(a)(A) dealing with residential limited energy.

(6) Installation of signal circuits in buildings over three floors. Each floor in excess of three shall be considered a separate panel for the purpose of calculating fees.

(7) Fees for Inspections in Excess of Those Allowed Under OAR 918-309-0030 through 918-309-0060. Charge for each additional inspection to be paid in advance unless requested by a bonded electrical contractor using the bulk label system, \$55.

(8) Fees for Other Inspections not Covered by This Rule. All inspections not provided in this rule shall be charged at \$86 per hour including travel and office time with a minimum charge of one hour.

(9) Fees for Bulk Labels:

(a) Bulk labels sold only to electrical contractors, \$25 per label;

(b) Contractors working under a bulk label system are billed for any difference in the cost of the bulk label and the cost of the permit fees required in this rule.

(10) The fee for swimming pools shall be permitted as provided in OAR 918-309-0040 and 918-309-0060. The inspection of the grounding of the pool shall be included in the permit for the pool and counted as one of the number of allowed inspections under the permit.

(11) Permit fees for renewable electrical energy systems. For renewable electrical energy permit applications, see OAR 918-309-0410. For repairs and maintenance of renewable electrical energy systems, see OAR 918-309-0220(5).

(a) (A) 5 KVA or less: \$79;

~~(b)~~ (B) 5.01 KVA to 15 KVA: \$94;

~~(c)~~ (C) 15.01 KVA to 25 KVA: \$156.

(b) For wind generation systems

(A) 25.01 KVA to 50 KVA: \$204;

(B) 50.10 KVA to 100 KVA: \$469;

(C) For systems that exceed 100 KVA the permit fee shall be calculated in accordance with OAR 918-309-0040.

(c)(A) For solar generation systems each additional KVA over 25 will be charged an additional \$6.25 per KVA. The permit charge will not increase beyond the calculation for 100 KVA.

(B) Additional inspections beyond those in section (4) of this rule will be billed at an hourly rate.

Stat. Auth.: ORS 479.870

Stats. Implemented: ORS 479.870

Hist.: BCA 16-1990, f. 6-27-90, cert. ef. 7-1-90; BCA 6-1991(Temp), f. 3-21-91, cert. ef. 7-1-91; BCA 10-1991, f. 4-26-91, cert. ef. 7-1-91; BCD 19-1996, f. 9-17-96, cert. ef. 10-1-96; Renumbered from 918-260-0260; BCD 9-1998(Temp), f. 6-2-98, cert. ef. 7-1-98 thru 12-27-98; BCD 18-1998, f. 9-30-98, cert. ef. 10-1-98; BCD 19-1999, f. 12-30-99, cert. ef. 1-1-00; BCD 23-2000, f. 9-29-00, cert. ef. 10-1-00; BCD 9-2001(Temp), f. 8-15-01, cert. ef. 9-4-01 thru 3-3-02; BCD 10-2001, f. 9-28-01, cert. ef. 10-1-01; BCD 23-2001(Temp), f. 12-28-01, cert. ef. 1-1-02 thru 6-29-02; BCD 4-2002, f. 3-8-02, cert. ef. 4-1-02; BCD 9-2002, f. 3-29-02, cert. ef. 4-1-02

**Board Draft**  
**7-22-2010**

**918-311-0040**

**Electrical Plan Review for Complex Structures**

(1) A jurisdiction providing electrical code plan review services may only require electrical plan review for a complex structure. For the purpose of this rule, “complex structures” have an electrical system designed, constructed or reconstructed with any of the following:

~~(a) Ampacity:~~

~~(Aa)~~ A service or feeder beginning at 400 Amps where the available fault current exceeds 10,000 Amps at 150 Volts or less to ground or exceeds 14,000 Amps for all other installations;  
or

~~(Bb)~~ Installation of a 150 KVA or larger separately derived system as defined in Article 100 of the **National Electrical Code (NEC)**; or

~~(Cc)~~ Addition of a new motor load of 100 HP or more; or

~~(Dd)~~ Fire pump installations as defined in Article 695 of the NEC; or

~~(Ee)~~ Emergency systems installations as defined in Article 700 of the NEC; or

~~(Ff)~~ A service or feeder rated at 600 Amps or over; **or**

~~(gg)~~ Voltage. More than 600 supply volts nominal; **or**

**(h) Renewable Energy. Renewable electrical energy systems rated over 25 KVA; or**

**(i)** Height. More than three stories; **or**

**(j)** Occupancy.

(A) Six or more residential units in one structure; or

(B) An “A” (Assembly) occupancy, “E” (Educational) occupancy, or “I-2” or “I-3” (Institutional) occupancy as defined in the adopted Oregon Structural Specialty Code; or

(C) Any of the following special occupancies as described in Chapter 5 of the NEC adopted by the board in OAR 918-305-0100:

(i) Hazardous (Classified) locations as defined in Articles 500 to 516; or

(ii) Installations in patient care areas of health care facilities as defined in Article 517; or

(iii) Agricultural buildings used for commercial purposes, as defined in Article 547; or

(iv) Floating buildings as defined in Article 553; or

(v) Marinas and boat yards as defined in Article 555; or

(ke) Recreational Vehicle Park. A new recreational vehicle park, or any addition or alteration to an existing park.

(2) Plan review is not required for work permitted through minor installation labels under OAR 918-309-0210 to 918-309-0260.

(3) A jurisdiction requiring electrical plan review may not require plan review on more than one building or structure under construction or reconstruction at the same job site, as long as:

- (a) The electrical systems of the buildings or structures are materially alike, and;
- (b) A person obtains electrical permits for the buildings or structures within a reasonable time.

(4) Standardized Format for Plan Review. When electrical plan review is required the electrical plan shall meet the following requirements:

- (a) Copies. Submit two sets of electrical plans;
- (b) Readability. The plans shall be drawn to scale, contain definitions for legends used, be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the applicable electrical code requirements, laws, ordinances, rules and regulations;

(c) Contents. The plans shall contain the following minimum requirements:

- (A) Feeder riser diagram showing panel location and circuit schedules;
- (B) One line riser diagram showing bonding and grounding and conductor sizes;
- (C) Available fault current on the line side of service disconnect;
- (D) Complete load calculations, or provide applicable load records, for all new installations and for additions to existing installations;
- (E) Fixture schedule, showing type, location and layout of the fixtures;
- (F) Address of the installation and name of owner and address;
- (G) Identification of the employer, identification and signature of person who prepared the plan, license number if the person is an electrical supervisor and professional registration number if the person is an architect or registered professional electrical engineer; and
- (H) Location of emergency systems, identifying the power source and the system on plan.

(5) Nothing in these rules shall prohibit a jurisdiction from requiring a lighting energy budget.

(6) Nothing in these rules shall prohibit the owner or the owner's agent from requesting and receiving plan review for non-complex structures.

[Publications: Publications referenced are available from the agency.]

Stat. Auth.: ORS 479.870, 455.117

Stats. Implemented: ORS 479.870, 455.117

Hist.: BCA 33-1991(Temp), f. & cert. ef. 9-30-91; BCA 44-1991, f. & cert. ef. 12-26-91; BCD 19-1996, f. 9-17-96, cert. ef. 10-1-96; Renumbered from 918-320-0330; BCD 23-2000, f. 9-29-00, cert. ef. 10-1-00; BCD 7-2006, f. 6-7-06, cert. ef. 10-1-06

**DIVISION 800  
RENEWABLE ENERGY STANDARDS**

**918-800-0010**

**Adopted Oregon Solar Installation Specialty Code**

**Effective October 1, 2010, the 2010 Oregon Solar Installation Specialty Code and those standards referenced within are adopted as the division standards for the installation of the structural components for the installation, alteration, replacement or repair of solar photovoltaic systems.**

**[Publications: Publications referenced are available from the agency.]**

**Stat. Auth.: ORS 455.020 & 455.496**

**Stat. Implemented: ORS 455.020**

**Hist.: New**

**918-800-0020**

**Amendments to the Oregon Solar Installation Specialty Code**

**(1) The Oregon Solar Installation Specialty Code is adopted and amended pursuant to OAR chapter 918, division 8. Amendments adopted for inclusion into the Oregon Solar Installation Specialty Code are placed in this rule, showing the section reference, a descriptive caption, and a short description of the amendment.**

**Stat. Auth.: ORS 185.335, 455.020 & 455.496**

**Stat. Implemented: ORS 183.335 & 455.020**

**Hist.: New**

**918-800-0030**

**Reasonable Notice to Interested Parties**

**Prior to the adoption, amendment or repeal of any rule, relating to the Oregon Solar Installation Specialty Code, the Building Codes Division shall give notice of the proposed adoption, amendment or repeal:**

**(1) In the Secretary of State's Bulletin referred to in ORS 183.360, at least 21 days prior to the effective date; and**

**(2) By making the notice available to persons as established under ORS 183.335 (8).**

**Stat. Auth.: ORS 185.335, 455.020 & 455.496**

**Stat. Implemented: ORS 183.335**

**Hist.: New**

**918-800-0040**

**Electrical Component of Solar Photovoltaic Installations**

**Electrical requirements for photovoltaic installations are found in Oregon Electrical Specialty Code, Chapter 690.**

**Stat. Auth.: ORS 455.496& 479.730**

**Stat. Implemented: ORS 479.730 & 455.020**

**Hist.: New**