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| **Docket Number:** | 17-BSTD-01 |
| **Project Title:** | 2019 Building Energy Efficiency Standards PreRulemaking |
| **TN #:** | 217749 |
| **Document Title:** | ICC-SRCC Comments on Renewable Water Heating in 2019 CEC PreRulemaking |
| **Description:** | Comments in support of the NRDC Renewable Water Heating Model Ordinance proposal, recommendations for enhancements to improve consumer protections and expand qualifying technologies. |
| **Filer:** | Shawn Martin |
| **Organization:** | Solar Rating and Certification Corporation |
| **Submitter Role:** | Public |
| **Submission Date:** | 5/26/2017 12:17:49 PM |
| **Docketed Date:** | 5/26/2017 |

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May 26, 2017

Mr. Christopher Meyer
Building Standards Office
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Dear Mr. Meyer,

The Solar Rating and Certification Corporation (ICC-SRCC) is pleased to offer comments regarding the 2019 Building Energy Efficiency Standards PreRulemaking, and in particular the Renewable Water Heating Model Ordinance submitted by NRDC, et al (Docket # 17-BSTD-01). ICC-SRCC also wishes to submit recommendations for revisions to the proposed Renewable Model Water Heating Ordinance to enhance consumer protections and expand the qualifying technologies.

ICC-SRCC is a non-profit, accredited, independent third-party certification organization, who has operated a national solar thermal equipment certification program since 1980. Today, as a member of the ICC family of companies, ICC-SRCC's purpose is to provide authoritative performance ratings, certifications and standards for renewable energy products. Our programs protect and provide guidance to consumers, incentive providers, government and industry.

**ICC-SRCC is strongly supportive of the CEC efforts to develop a model solar photovoltaic ordinance and also of the concept of a complimentary Renewable Water Heating Ordinance.**

We support the proposal in Docket # 17-BSTD-01 for a Renewable Water Heating Model Ordinance with the following recommendations.

**1. Consumer Protection**. The proposed ordinance addresses solar thermal water heating systems in Compliance Option 2. ICC-SRCC recommends that the ordinance also include a requirement that the solar thermal water heating systems be certified to the ICC 900/SRCC 300 Solar Thermal System Standard (SRCC Standard 300) to ensure that the systems meet minimum requirements for safety and durability. SRCC Standard 300 currently cited in codes from the International Code Council, 2016 CEC (CA Title 24, Part 6 and Appendix RA4) and the EPA ENERGY STAR® Residential Water Heater Specification. Many programs offering incentives for solar thermal systems in the state, such as the California Solar Initiative (CSI) Thermal Program, reference and require certification to SRCC Standard 300. Requiring compliance with this standard will ensure consistency with existing codes, regulations and incentive programs and provide important consumer protections to the residents of California.

ICC-SRCC recommends the following provision be included in Compliance Option 2 as follows:

> *Compliance option 2, prescriptive method: the domestic hot water shall be delivered by a solar thermal water heating system with a solar fraction of 60%. Solar thermal water heating systems*

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*shall be certified to the ICC 901/SRCC 300 Solar Thermal System Standard by the Solar Rating and Certification Corporation (ICC-SRCC) or other approved and accredited certification body.*

**2. Solar Photovoltaic Water Heaters**. The compliance options specified in the proposed ordinance omit an emerging renewable water heating technology that is already available on the market and accepted by the CSI Thermal Incentive Program – photovoltaic (PV) water heaters. These renewable water heaters utilize one or more photovoltaic modules directly connected to an electric water heater with resistive elements. SRCC has incorporated these systems into the OG-300 Solar Thermal System Certification Program. As a result system performance metrics, compatible with those of solar thermal systems, are available. SRCC currently certifies 11 different models of PV water heaters.

ICC-SRCC recommends Compliance Option 2 be further modified as follows:

> *Compliance option 2, prescriptive method: the domestic hot water shall be delivered by a solar thermal water heating system or photovoltaic water heating system with a solar fraction of 60%. Solar thermal and photovoltaic water heating systems shall be certified to the ICC 901/SRCC 300 Solar Thermal System Standard by the Solar Rating and Certification Corporation (ICC-SRCC) or other approved and accredited certification body.*

ICC-SRCC further recommends the use of the following definition of PV water heaters:

> *Photovoltaic (PV) Water Heater- A system designed to convert energy contained within solar radiation using one or more photovoltaic modules and transfer it to water in the form of thermal energy.*

**3. Regional Performance**. Compliance Option 2 specifies a solar fraction of 60%. Solar fraction varies by location, depending on the localized environmental conditions like solar resources and temperature. Incentive programs in California such as CSI make use of the CEC Building Climate Zones to differentiate the performance of solar thermal systems throughout the state. ICC-SRCC provides performance ratings for each of the 16 CA climate zones for each OG-300 certified system. At the time of writing, ICC-SRCC certifies a total of 979 different solar thermal systems within the OG-300 program (click here for a directory of SRCC-certified systems).

Accordingly ICC-SRCC recommends Compliance Option 2 be further modified as follows:

> *Compliance option 2, prescriptive method: the domestic hot water shall be delivered by a solar thermal water heating system or photovoltaic water heating system with a solar fraction of 60% or more in the CEC Building Climate Zone where the system is installed. Solar thermal and photovoltaic water heating systems shall be certified to the ICC 901/SRCC 300 Solar Thermal System Standard by the Solar Rating and Certification Corporation (ICC-SRCC) or other approved and accredited certification body.*

ICC-SRCC believes that the proposed revisions to the Renewable Water Heating Model Ordinance proposed in Docket # 17-BSTD-01 will further enhance the ordinance. It will better ensure that the systems provide the performance expected, while functioning safely and durably. The proposed

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standards and certifications are consistent with existing codes, regulations and standards used throughout the state. ICC-SRCC appreciates that opportunity to comment on the 2019 Building Energy Efficiency Standards PreRulemaking, and is committed to assist the state of California in its efforts to meet its energy and greenhouse gas emission goals. Please feel free to contact me with any questions you may have on our recommendations.

Sincerely,

Shawn E. Martin

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Enc. CAC CEC Building Climate Zone Map

# Building Climate Zones
## California, 2015