

Memorandum

To: Robert P. Oglesby
Executive Director

Date : February 22, 2017

Telephone: (916) 654-5013

From: **Dave Ashuckian, P.E.**
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California Energy Commission
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Subject: **POSSIBLE FINDINGS THAT THE CITY OF SANTA MONICA’S LOCAL BUILDING ENERGY STANDARDS: ORDINANCE SECTIONS 4.201.3,4,5 AND 5.201.3,4 (PART (A)) AND SECTIONS 8.36.020 AND 8.36.030 (PART (B)) MEET THE REQUIREMENTS PURSUANT TO TITLE 24 PART 1 CHAPTER 10 SECTION 10-106**

Summary of Item

The city of Santa Monica has submitted two separate application packages (referred to here as “part (a)” and “part (b)”) and requested that we consider them independently.

The California Public Resources Code establishes a process that allows local governmental agencies, such as cities or counties, to adopt and enforce local energy standards that are more stringent than, or equivalent to but different from, the statewide standards. This process, described in Public Resources Code Section 25402.1, Subdivision (h)(2), and the *2016 Building Energy Efficiency Standards* (2016 Standards) provided in California Code of Regulations, Title 24, Part 1, Chapter 10, Section 10-106, requires local governmental agencies to apply to the California Energy Commission for this finding.

As part (a) of this ordinance, the city of Santa Monica will require: 1) All new one and two family dwellings to install a solar electric photovoltaics (PV) system with a minimum total wattage 1.5 times the square footage of the dwelling or with a total wattage that will offset 75 - 100 percent of the Time Dependent Valuation energy budget. 2) All new multi-family dwellings to install a solar electric photovoltaics (PV) system with a minimum total wattage 2.0 times the square footage of the building footprint. 3) All new non-residential, high rise residential, hotel, and motel buildings to install a solar electric photovoltaics (PV) system with a minimum total wattage 2.0 times the square footage of the building footprint.

The local governmental agency must submit an application to the Executive Director of the Energy Commission, which must be approved before the local energy standards may be enforced. This application must contain:

- 1) The proposed energy standards.
- 2) The local governmental agency's energy-savings and cost-effectiveness findings and supporting analyses.
- 3) A statement or finding by the local governmental agency that the local energy standards will require buildings to be designed to consume no more energy than permitted by Title 24, Part 6.
- 4) A finding or determination required under the California Environmental Quality Act. (Standards, § 10-106.)

As part (b) of this ordinance, the city of Santa Monica will require: 1) All new low-rise residential buildings to be designed to use 15 percent less energy than the allowed energy budget established by the 2016 Standards, and achieve an Energy Design Rating (EDR) of Zero. 2) All new high rise residential, non-residential buildings, hotels, and motels to be designed to use 10 percent less energy than the allowed energy budget established by the 2016 Standards.

In reviewing these applications, for both parts (a) and (b), the Energy Commission must find that the standards will require the reduction of energy consumption levels permitted by the current 2016 Standards and that the local governmental agency's governing body, at a public meeting, adopted its determination that the standards are cost effective. (Pub. Resources Code, § 25402.1, Subd. (h)(2); Standards, § 10-106.)

The details of the applications and staff's review of the applications are attached.

Summary of Staff's Application Review

The complete applications, including the local ordinance and cost effectiveness analysis, will be made available on the Energy Commission website as part of the back-up materials for the proposed agenda item when presented to the Energy Commission for action. The applications have been posted on the webpage for Local Ordinances Exceeding the 2016 Building Energy Efficiency Standards. Currently, the submitted applications are docketed on the Energy Commission's website under 16-BSTD-07 for a 60-day public comment period, which concluded on February 17, 2017.

As detailed in the attachment, staff reviewed the city of Santa Monica's applications for its local energy standards enumerated in ordinance Sections 4.201.3,4,5 and 5.201.3,4 (part (a)); and Sections 8.36.020 and 8.36.030 (part (b)). Staff found that the applications contain all of the application components required by Section 10-106, Subdivision (b) of the 2016 Standards. Specifically, the city's applications contain:

- 1) Proposed energy standards.
- 2) Findings and supported analysis on the energy savings and cost effectiveness of the proposed energy standards.

- 3) Finding that the local energy standards will require buildings to be designed to consume no more energy than permitted by Title 24, Part 6.
- 4) CEQA determination.

In addition, staff reviewed the application to determine whether the standards will require the reduction of energy consumption levels permitted by the current 2016 Standards.

Project Manager

Ingrid Neumann, Building Standards Office.

Staff Position

Staff has found that the applications meet all requirements under Public Resources Code Section 25402.1, Subd. (h)(2), and Section 10-106 of the 2016 Standards

The city has been informed that the approved ordinance sections will be enforceable during the time that the *2016 Building Energy Efficiency Standards* are effective. If the statewide standards are subsequently revised or amended (as they are regularly on a three-year cycle), the ordinance Sections 4.201.3,4,5; 5.201.3,4; 8.36.020 and 8.36.030 are no longer enforceable. If the city wishes to enforce either of these local energy standards, or other local energy standards revised in response to the updated statewide standards, under Public Resources Code Section 25402.1, Subdivision (h)(2), and Section 10-106 of the 2016 Standards, the city must submit a new application.

Oral Presentation Outline

Staff will be available at the March 8, 2017, business meeting to provide a brief summary if requested and to answer questions.

Business Meeting Participants

Ingrid Neumann, Building Standards Office.

Commission Action Requested

Approval of staff's finding that the city of Santa Monica's locally adopted energy standards are more stringent than, or equivalent to, but different from, the *2016 Building Energy Efficiency Standards*.

**Summary of Staff’s Finding of Diminution of Energy Consumption in
Review of the City of Santa Monica’s Local Building Energy Efficiency Standards
Ordinance Sections 4.202.3,4,5 and 5.201.3,4 (part (a)) and
Sections 8.36.020 and 8.36.030 (part (b))**

Local governmental agencies may adopt and enforce local energy standards provided the Energy Commission find that the standards will require buildings to be designed to consume no more energy than permitted by Title 24 Part 6. A complete application package pursuant to Public Resources Code Section 25402.1, Subdivision (h)(2), and the *2016 Building Energy Efficiency Standards* (2016 Standards) provided in California Code of Regulations, Title 24, Part 1, Chapter 10, Section 10-106 must be received by the Energy Commission.

Staff reviewed the city of Santa Monica’s applications to determine if the applications contain the necessary components required by Section 10-106, Subdivision (b) of the 2016 Standards. In addition, staff determined whether the standards will require the diminution of energy consumption levels permitted by the current 2016 Standards, and staff confirmed whether the local governmental agency’s governing body, at a public meeting, adopted its determination that the standards are cost effective. (Pub. Resources Code, § 25402.1, Subd. (h)(2); Standards, § 10-106.)

The following analysis supports staff’s position that the city of Santa Monica has met the requirements of Public Resources Code Section 25402.1, Subdivision (h)(2), and Section 10-106 of the Standards for both applications.

1. Proposed energy standards.

On October 25, 2016, Santa Monica’s City Council approved the first reading of the amendments to the Energy Code in Ordinance Sections 4.202.3,4,5 and 5.201.3,4 (part (a)) and Sections 8.36.020 and 8.36.030 (part (b)). The cost effectiveness studies for each part were also heard and approved on this date. The city of Santa Monica will schedule a second reading to finalize the adoption of the proposed local energy standards once they are approved by the Energy Commission.

The city is required to submit its proposed energy standards to the Energy Commission as part of its complete application. (Pub. Resources Code, § 25402.1, Subd. (h)(2); Standards, § 10-106, Subd. (b)(1).) The complete applications were received by the Energy Commission on November 18, 2016, and posted for the 60-day public comment period on December 20, 2016. The comment period ends on February 17, 2017.

As part (a) of this ordinance, the city modified Sections 8.106.055 and 8.106.080 of the Santa Monica Municipal Code to amend and adopt as mandatory Sections 4.201 and 5.201 of the 2016 California Green Building Standards Code as follows:

4.201.3 For new pool construction in low-rise residential structures renewable energy must be used for heating. The surface area of the solar collectors used to generate such renewable energy must be equal to or greater than 70 percent of the surface area of the pool; or at least 60 percent of the total energy necessary for heating must come from renewable sources. Electrical resistance heaters that are not powered directly by renewable energy courses shall not be used to heat pool water. The requirements of

this Section shall be waived or reduced, by the minimum extent necessary, in situations where installation of solar water heating is technically infeasible.

4.201.4 All new one and two family dwellings are required to install a solar electric photovoltaic (PV) system using one of the following methods:

1. Install a solar PV system with a minimum total wattage 1.5 times the square footage of the dwelling or;
2. Install a solar PV system or other renewable energy system that will offset 75 percent -100 percent of the Time Dependent Valuation (TDV) energy budget.
3. Demonstrate that the TDV energy budget is reduced by the same wattage required by (1) above.

The requirements of this Section shall be waived or reduced, by the minimum extent necessary, in situations where production of electric energy from solar panels is technically infeasible due to lack of available unshaded areas.

4.201.5 All new low-rise multifamily (more than two) residential dwellings are required to install a solar electric photovoltaic (PV) system with a minimum total wattage 2.0 times the square footage of the dwelling. The requirements of this Section shall be waived or reduced, by the minimum extent necessary, in situations where production of electric energy from solar panels is technically infeasible due to lack of available unshaded areas.

5.201.3 For new pool construction in nonresidential, high-rise residential, hotel and motel structures renewable energy must be used for heating. The surface area of the solar collectors used to generate such renewable energy must be equal to or greater than 70 percent of the surface area of the pool; or at least 60 percent of the total energy necessary for heating must come from renewable sources. Electrical resistance heaters that are not powered directly by renewable energy courses shall not be used to heat pool water. The requirements of this Section shall be waived or reduced, by the minimum extent necessary, in situations where installation of solar water heating is technically infeasible.

5.201.4 All new nonresidential, high-rise residential, hotel and motel structures are required to install a solar electric photovoltaic (PV) system with a minimum total wattage 2.0 times the square footage of the building. The requirements of this Section shall be waived or reduced, by the minimum extent necessary, in situations where production of electric energy from solar panels is technically infeasible due to lack of available unshaded areas.

As part (b) of this ordinance, the city modified Sections 8.36.020 and 8.36.030 of the Santa Monica Municipal Code to amend and adopt as mandatory the following:

8.36.020 Energy Efficiency – Low rise residential

All new low-rise residential buildings shall be designed to use fifteen percent (15 percent) less energy than the allowed energy budget established by the 2016 California Energy Code, and achieve an Energy Design Rating (EDR) of Zero.

8.36.030 Energy Efficiency – High-rise residential, non-residential, hotels and motels

All new high-rise residential buildings, non-residential buildings, hotels and motels shall be designed to use ten percent (10 percent) less energy than the allowed energy budget established by the 2016 California Energy Code.

It should be noted that the PV compliance credit is not given in climate zone 6 and thus the amount of energy required by all types of new occupancies will be directly reduced by the amounts indicated above. The additional requirement of meeting a zero EDR for low rise residential occupancies does necessitate onsite generation after making the 15 percent efficiency improvement in order to reach the Zero Net Energy (ZNE) designation.

2. Applicants energy-savings and cost-effectiveness determinations and supporting analyses.

The city submitted its determinations and supporting analysis on the energy savings and cost effectiveness of the proposed energy standards with its completed applications, as required by Section 10-106, Subdivision (b)(2) of the 2016 Standards. Staff confirmed that these materials were made publicly available and were considered by Santa Monica's City Council as a part of the adoption of the local ordinances. (The Energy Commission does not independently re-analyze applicants' determinations of cost effectiveness where they have been subject to a public adoption process.)

For part (a), the city of Santa Monica worked closely with Eco Motion to develop the cost effectiveness study was submitted with the city's completed application.

For part (b), the city of Santa Monica worked closely with TRC Energy Associates to develop the cost effectiveness study that was submitted with the city's completed application. The Energy Commission itself is held to a very stringent requirement of showing consumer cost effectiveness for all measures adopted into the statewide energy standards. Local jurisdictions may have more latitude for determining cost effectiveness such as using less conservative assumptions or including unique benefits that apply locally.

The city of Santa Monica found the utility cost savings were \$2.87 per Watt, which is below the assumed cost to install estimated at \$2.96 per Watt including the New Solar Homes Partnership (NSHP) and the Federal Tax Incentives. As the city noted in their application, this does not provide a direct savings to the consumer but they valued the site generated electricity on a societal level.

The city of Santa Monica found that an EDR 0 was cost effective with a Benefit to Cost ratio of 2.1 using a societal savings model. Santa Monica found a benefit of \$6.67 per Watt using 2016 TDV values for the generated energy; that is, the analysis assumed that the total benefit of generating one Watt of electricity via on-site solar PV is directly equivalent to the total cost of generating and shipping one Watt of electricity via the grid. This may or may not be possible locally depending on the current and planned electric grid infrastructure and differs from using TDV to quantify costs of generation that vary over time and assess the impacts of avoided generation resulting from direct reductions in consumption.

Staff confirmed that the city's determinations of cost effectiveness were adopted by the governing body of the city at a public meeting of the city council on October 25, 2016. (Pub. Resources Code, § 25402.1, subd. (h)(2).)

3. Energy Commission Staff's finding that the local energy standards will require buildings to be designed to consume no more energy than permitted by Title 24, Part 6.

Section 10-106, Subdivision (b)(3) requires local governmental agencies to submit a statement or finding "that the local energy standards will require buildings to be designed to consume no more energy than permitted by Part 6." The city submitted its finding with its applications in the Chief Building Official's cover letters to the commissioners.

The Energy Commission is required to find that the city's local energy standards "will require buildings to be designed to consume no more energy than permitted by Title 24, Part 6." (Standards, § 10-106, Subd. (a); Pub. Resources Code, § 25402.1, Subd. (h)(2).)

Adoption of a solar PV installation requirement for newly constructed buildings will ensure that less energy will be consumed by buildings complying with the new ordinance than would be used by buildings complying with the 2016 Energy Standards. Part (a): the addition of solar PV in all new occupancies will provide a portion of the energy otherwise obtained from the grid, on site from renewable sources. Part (b): the requirement that all occupancies be built to be 15 percent more efficient than the 2016 Standards also ensures a diminution of energy consumption. The proposed energy provisions do not otherwise modify any of the requirements in Title 24, Part 6. This ensures that the modifications to the energy provisions proposed by the city will require buildings to be designed to consume no more energy than permitted by the 2016 Energy Code.

4. California Environmental Quality Act Assessment.

The last requirement of Section 10-106 of the 2016 Standards concerns the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq. Section 10-106, Subdivision (b)(4) requires the city to submit, with its application, "any findings, determinations, declarations or reports, including any negative declaration or environmental impact report, required pursuant to [CEQA]."

In adopting local ordinances such as this one, the city is required to comply with CEQA. (See Pub. Resources Code, §§ 21080, subd. (a), 21063; Cal. Code Regs., Tit. 14, §§ 15020-15022, 15379.) Even though the Energy Commission has the authority to approve local energy standards under Section 25402.1, Subdivision (h)(2) of the Public Resources Code, and Section 10-106 of the 2016 Standards, the lead agency for local energy standards is the city because it will implement and enforce these standards (Cal. Code Regs., Tit. 14, §§ 15050, 15051).

The Energy Commission staff has reviewed and considered city of Santa Monica's CEQA findings for both applications. Santa Monica's City Council found with certainty that there is no possibility that the ordinance will have a significant negative effect on the environment. Therefore, the city of Santa Monica found that the ordinance is exempt under the "common sense" provision of CEQA (Cal. Code Regs. Tit. 14, § 15061, Subd. (b)(3).).

The Energy Commission found, on June 10, 2015, that the 2016 revision of the *Building Energy Efficiency Standards* would have no net adverse impact on the environment and

adopted a Negative Declaration for the *2016 Building Energy Efficiency Standards*. (See Notice of Determination at http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/15-day_language/2015-06-11_Notice_of_Determination.pdf.)

Since all local codes must be at least as stringent as the standards, staff can conclude that any ordinance that proposes to exceed such standards is expected to have no net adverse impact on the environment. Staff has considered and concurs with the CEQA assessment that was performed and the findings that were reached.