

Memorandum

To: ROBERT P. OGLESBY
Executive Director

Date: August 28, 2015

Telephone: (916) 654-5013

From: **California Energy Commission** - Dave Ashuckian, Deputy Director
Efficiency Division
1516 Ninth Street
Sacramento CA 95814-5512

Subject: **POSSIBLE APPROVAL OF THE CITY OF PALO ALTO'S LOCAL BUILDING ENERGY STANDARDS: ORDINANCE NO. 5326, SECTION 16.17**

Summary of Item

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 2013 Building Energy Efficiency Standards (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 approval of these local energy standards.

The local governmental agency must submit an application to the Executive Director of the Energy Commission, and this application 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; and (4) a finding or determination required under the California Environmental Quality Act. (Standards, § 10-106.)

In reviewing this application, the Energy Commission must find that the standards will require the diminution of energy consumption levels permitted by the current 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 application and staff's review of the application are attached.

Summary of Staff's Application Review

The complete application, 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 Commission for action. The application will also be posted on the web-page for Local Ordinances Exceeding the 2013 Building Energy Efficiency Standards upon Energy Commission approval of the local ordinance.

As detailed in the attachment, staff reviewed the City of Palo Alto's application for approval of its local energy standards enumerated in Ordinance No. 5326, Section 16.17. Staff found that the application contains all of the components required by Section 10-106, Subdivision (b) of the Standards. Specifically, the City of Palo Alto's application contains:

- The City of Palo Alto's proposed energy standards;
- The City of Palo Alto's findings and supported analysis on the energy savings and cost effectiveness of the proposed energy standards;
- The City of Palo Alto'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; and
- The City of Palo Alto's CEQA determination.

In addition, staff reviewed the application to determine whether the standards will require the diminution of energy consumption levels permitted by the current Standards. Staff also confirmed that the local governmental agency's governing body, at a public meeting, adopted its determination that the standards are cost effective.

Project Manager

Ingrid Neumann, Building Standards Office.

Staff Position

Energy Commission staff has found that the application meets all requirements under Public Resources Code section 25402.1, Subd. (h)(2), and Section 10-106 of the Standards. Energy Commission staff believes that the City of Palo Alto should be commended for seeking the energy savings that result from this local energy ordinance.

The City of Palo Alto has been informed that the approved ordinance will be enforceable during the time that the 2013 Building Energy Efficiency Standards are effective. If the statewide Standards are subsequently revised or amended (as they are on a three-year cycle), Ordinance No. 5326, Section 16.17 may no longer be enforced. The City of Palo Alto must submit an application to enforce either these

local energy standards, or 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 Standards.

Oral Presentation Outline

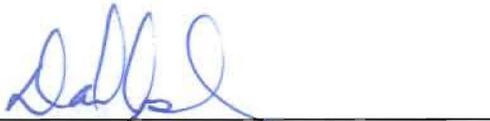
Staff will be available at the Energy Commission September 9, 2015, Business Meeting, to provide a brief summary if requested and to answer questions that may arise.

Business Meeting Participants

Ingrid Neumann, Building Standards Office.

Commission Action Requested

Approval of the City of Palo Alto's locally adopted energy standards that are more stringent than the 2013 Building Energy Efficiency Standards.



Dave Ashuckian, Deputy Director
Efficiency Division

**Summary of Staff's Review of the Application to
Approve the City of Palo Alto's Local Building Energy Efficiency Standards
Ordinance No. 5326, Section 16.17**

Local governmental agencies are required to apply to the Energy Commission for approval of local energy standards pursuant to Public Resources Code section 25402.1, subdivision (h)(2), and the 2013 Building Energy Efficiency Standards (Standards) provided in California Code of Regulations, Title 24, Part 1, Chapter 10, Section 10-106.

Staff reviewed the City of Palo Alto's application to determine if the application contains the necessary components required by Section 10-106, Subdivision (b) of the Standards. In addition, staff determined whether the standards will require the diminution of energy consumption levels permitted by the current 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 Palo Alto has met the requirements of Public Resources Code Section 25402.1, Subdivision (h)(2), and Section 10-106 of the Standards.

1. Proposed energy standards.

The City of Palo Alto is required to submit its proposed energy standards to the Commission as part of its complete application. (Pub. Resources Code, § 25402.1, Subd. (h)(2); Standards, § 10-106, Subd. (b)(1).) The City of Palo Alto submitted its completed application, including its proposed energy standards, on August 10, 2015. The original application was received June 17, 2015, after being heard by the Palo Alto City Council on May 11, 2015; however, several errata were identified during the 60-day comment period.

On August 31, 2015, the Palo Alto City Council approved the revised Ordinance 5326 adopting the 2013 California Building Energy Efficiency Standards, repealing Municipal Code Section 16.18, and completely replacing Section 16.17. Section 16.17 of the City Municipal Code includes the following energy efficiency requirements as mandatory, which exceed the 2013 Standards.

- All newly constructed single-family residential, multi-family residential, and nonresidential buildings must demonstrate that the TDV Energy of the proposed building design is at least 15 percent less than the TDV Energy of the Standard Building Design (i.e., a building designed to just meet the requirements of the Standards).
- All additions, alterations, or tenant improvements to existing buildings must follow either the performance path or the prescriptive path as outlined below:

Performance Path: by demonstrating that the TDV Energy savings of the proposed project exceeds the TDV Energy of the Standard Design by the following amounts:

- Single-family residential: 5 percent.

- Multi-family residential: 10 percent.
- Nonresidential: 5 percent.

The following exceptions apply to additions, alterations and tenant improvements:

1. Multi-family residential alterations that are less than 50 percent of the existing square footage and include replacement or alteration of only one of the following:
 - a. HVAC System
 - b. Building Envelope
 - c. Hot Water System
 - d. Lighting System
2. Single-family or two-family residential additions or alterations of less than 1,000 square feet.
3. Nonresidential tenant improvements, alterations or renovations less than 5,000 square feet that include the replacement or alteration of only one of the following:
 - a. HVAC System
 - b. Building Envelope
 - c. Hot Water System
 - d. Lighting System

Prescriptive Path:

- Single-family and multi-family projects that include a complete roof alteration must use roofing material with an Aged Solar Reflectance of 0.28 or greater.
- Additions to single-family residential buildings must use high performance walls with a U-factor of 0.048 or lower.
- Nonresidential projects that include a complete roof alteration must use roofing materials with an Aged Solar Reflectance that comply with the following requirements:
 - Steep Slope: 0.34 or greater.
 - Low Slope: 0.7 or greater.
- Additions or alterations to indoor lighting on nonresidential projects must be 15 percent below the 2013 Standard Lighting Energy Usage.

The ordinance also modifies two aspects of the Solar Ready requirements of Title 24, Part 6 § 110.10.

- Single-family residential buildings must provide a solar zone minimum area of 500 square feet.
- All residential buildings must install conduit for future solar installations.

2. Energy-savings and cost-effectiveness findings and supporting analyses.

The City of Palo Alto also submitted its findings and supported analysis on the energy savings and cost effectiveness of the proposed energy standards, as required by Section 10-106, Subdivision (b)(2) of the Standards, with its completed application.

The City of Palo Alto included a Cost-Effectiveness Study for all elements of the proposed ordinance with their completed application. The Cost-Effectiveness Study was provided by TRC Energy Services for the City. TRC assessed the cost effectiveness of the proposed energy standards by analyzing each specific measure applied to the building prototypes using the Energy Commission adopted Life-Cycle Cost Methodology. TRC established residential single-family and multi-family building prototypes as well as nonresidential building prototype that are consistent with the building permit activity in the City of Palo Alto. TRC determined the cost of each efficiency measure relying upon the Energy Commission Codes and Standards Enhancement (CASE) reports and their own cost research. TRC determined energy savings by using CBECC-Res and CBECC-Com, respectively, to model the residential and nonresidential prototype buildings that they developed.

TRC determined that the single-family residential buildings complying with the proposed energy standard would save approximately 7 kBtu/sf, which is 22 percent better than the 2013 Standard Building Design. Multi-family buildings would save 10 kBtu/sf and exceed the 2013 Standards by 23 percent. Nonresidential buildings would save 24 kBtu/sf and exceed the 2013 Standard by 16 percent. TRC determined that the measures used to comply with the proposed energy standard are cost effective, with a benefit-cost ratio of greater than 1 in all cases.

Staff confirmed that the City of Palo Alto's determination that the standards are cost effective was adopted by the governing body of the City of Palo Alto at a public meeting on August 31, 2015. (Pub. Resources Code, § 25402.1, Subd. (h)(2).)

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.

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 of Palo Alto submitted its finding with its application.

The Energy Commission is also required to find that the City of Palo Alto'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).)

The proposed energy standard specifically adopts and enforces the 2013 Energy Code in Section 16.17.010 and requires greater energy efficiency of all qualified buildings (as described above) in direct comparison with the 2013 Energy Code. This ensures that the modifications proposed by the City of Palo Alto will require buildings to be designed to consume no more energy than permitted by the 2013 Energy Code.

4. California Environmental Quality Act Assessment.

The last requirement of section 10-106 of the Standards concerns the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq. Section 10-106, Subdivision (b)(4) requires the City of Palo Alto 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 ordinances like Ordinance No. 5326, the City of Palo Alto 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 Standards, the lead agency for local energy standards is the City of Palo Alto because it will implement and enforce these standards (Cal. Code Regs., Tit. 14, §§ 15050, 15051).

The Energy Commission staff, acting on behalf of the Energy Commission as a responsible agency, has reviewed and considered the City of Palo Alto’s CEQA documents and findings prior to recommending approval of Ordinance No. 5326, Section 16.17.

The Council of the City of Palo Alto found with certainty that there is no possibility that the ordinance will have a significant negative effect on the environment. Therefore, the Council of the City of Palo Alto found on August 31, 2015, that the project is exempt under the “common sense” provision of CEQA (Cal. Code Regs. Tit. 14, § 15061(b)(3)).

The Energy Commission found, in April of 2012, that the 2013 revision of the Building Energy Efficiency Standards would have no net adverse impact on the environment and adopted a Negative Declaration for the 2013 Building Energy Efficiency Standards (see Order Adopting Proposed Regulations and Negative Declaration (May 31, 2012) at www.energy.ca.gov/title24/2013standards/rulemaking/notices/2012-05-31_Adoption_Order_No_12-0531-5_TN-65677.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. Energy Commission staff has considered and concurs with the CEQA assessment that was performed and the findings that were reached.

In addition, staff recommends that the Energy Commission independently find that the City of Palo Alto’s local energy standards are not subject to CEQA because there is no possibility that implementing the standards may have a significant adverse effect on the environment. (Cal. Code Regs. Tit. 14, § 15061, Subd. (b)(3).) Staff anticipates that the local energy standards will have significant environmental benefits for the City of Palo Alto because the local standards are even more protective of the environment than the state-wide Standards, which were previously found to have no significant adverse effect on the environment.