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**Response to the California Energy Commission's Draft Staff Report for  
Hearth Products**

*Additional submitted attachment is included below.*

# Hearth Products

Codes and Standards Enhancement (CASE) Initiative  
For PY 2019: Title 20 Standards Development

Response to the California Energy  
Commission's Draft Staff Report for  
**Hearth Products**  
**18-AAER-06**

July 29, 2019

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# 1. Purpose

The Codes and Standards Enhancement (CASE) initiative presents recommendations to support the California Energy Commission's (Energy Commission) efforts to update California's Appliance Efficiency Regulations (Title 20) to include new requirements or to upgrade existing requirements for various technologies. The three California Investor Owned Utilities (IOUs) – Pacific Gas and Electric Company (PG&E), San Diego Gas and Electric (SDG&E), and Southern California Edison (SCE) – sponsored this effort (herein referred to as the Statewide CASE Team). The program goal is to prepare and submit proposals that will result in cost-effective enhancements to improve the energy and water efficiency of various products sold in California. The content presented herein reflects the Statewide CASE Team's comments on the Energy Commission's Draft Staff Report for gas-fired hearth products released on May 13, 2019.

## 2. Comments on the Energy Commission's Draft Staff Report

The Statewide CASE Team is supportive of the Energy Commission's efforts to set hearth product standards and believes that California is showing leadership by setting energy conservation standards for gas-fired hearth products. The following sections outline specific comments on information included in the Energy Commission's Draft Staff Report.

### 2.1 Pilot Lights

Standing pilot lights waste unneeded energy in their standby mode and have already been banned from numerous other appliances in California including: fan-type central furnaces, household cooking appliances,<sup>1</sup> pool heaters, and spa heaters (CEC 2015). At the time of the original CASE Report publication, standing pilot lights were banned in fireplaces, decorative gas appliances, and gas logs that are included in new construction, additions, and alterations of low-rise residential buildings under the California Building Energy Efficiency Standards (Title 24, Part 6) (CEC 2015). The 2019 Title 24, Part 6 Standards further updated the requirements to ban standing pilot lights in both indoor and outdoor fireplaces<sup>2</sup> (CEC 2018). Thus, it makes sense for a Title 20 standard to follow suit and ensure standing pilot lights are banned in all gas-fired hearth products.

Although the Energy Commission's hearth product prescriptive standard proposal differs slightly from the Statewide CASE Team's original proposal, the Statewide CASE Team is supportive of the changes. This includes requiring all products with an on-demand pilot light to include a maximum time limit of seven days for those on-demand pilots<sup>3</sup> (Lopez 2019).

### 2.2 Requirements for Decorative Fireplaces

The Energy Commission included specific proposed requirements for vented decorative gas fireplaces that the Statewide CASE Team did not originally propose. These requirements state that vented decorative gas appliances must have marking that explicitly states the appliance is not a

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<sup>1</sup> Excludes appliances without an electrical supply voltage connection and those in which each pilot consumes less than 150 British thermal units (Btu) per hour.

<sup>2</sup> A fireplace as defined in Title 24, Part 6 is a hearth and fire chamber, or similar prepared place, in which a fire may be made and which is built in conjunction with a flue or chimney, including but not limited to factory-built fireplaces, masonry fireplaces, and masonry heaters as further clarified in the 2016 California Building Code.

<sup>3</sup> The Statewide CASE Team comments at the Public Meeting incorrectly stated that the prescriptive standard required all products to have an on-demand pilot. This statement has been corrected here to note that the seven-day maximum time limit only applies to those products equipped with an on-demand pilot.

source of heat and must not include a thermostat. The Statewide CASE Team is supportive of these additional requirements. Statewide CASE Team research has found that the most definitive way to differentiate heating versus decorative gas fireplaces is the presence or absence of a thermostat.

### 2.3 Cost Effectiveness

The Statewide CASE Team reiterates that the Energy Commission's proposal is cost-effective for both the proposed design standard and the proposed efficiency standard. For different design standard compliance methods<sup>4</sup> among the different product categories, the cost effectiveness ranges between 1.1 and 19.8. For the proposed efficiency standard, the Energy Commission analyzed two different scenarios: one where the heating fireplace has both a noncompliant pilot type and fireplace efficiency (FE), and one where the heating fireplace has a compliant pilot type and noncompliant FE. Here, the cost effectiveness ranged from 1.2 to 6.1. Additionally, the Energy Commission's proposal saves over 150,000 million (MM) Btu in the first year alone. After stock turnover, the savings increase to over 2,200,000 MMBtu.

### 2.4 FE Level

The Energy Commission's Draft Staff Report proposed a 70 percent FE level for vented heating gas fireplaces as tested using the CAN/Canadian Standards Association (CSA) P.4.1-15 test procedure with modifications (see Section 2.7 for more information on these test procedure modifications). The Statewide CASE Team is supportive of an FE requirement for vented heating gas fireplaces and notes that the slightly higher 75 percent FE level set forth in the CASE Report is also cost-effective. Combined with the Statewide CASE Team's proposed prescriptive standard, it has a benefit-cost ratio of 4.35 (Statewide CASE Team 2019). Additionally, the Energy Commission's analysis showed that there are at least 59 unique, natural gas-fired hearth product models with an FE of 75 percent or greater (Lopez 2019).

### 2.5 Gas Logs and Outdoor Gas Hearth Products

The Statewide CASE Team is supportive of the Energy Commission's decision to include gas logs and outdoor gas hearth products within their scope. Banning standing pilot lights in these products helps realize additional savings that will help California achieve their statewide energy efficiency and climate goals. The Energy Commission's Draft Staff Report showed that a total of 52 percent of gas logs and 72 percent of outdoor gas fireplaces either had a compliant pilot light type or had a direct ignition<sup>5</sup> (Lopez 2019). This demonstrates that there are already various gas log and outdoor gas fireplace options in the market that meet the proposed standard.

During the public meeting on June 6, 2019 (Public Meeting), Barton Day from the Hearth, Patio, & Barbecue Association (HPBA) noted that the installation of continuous pilots in outdoor gas logs and fireplaces is near zero because often times, the open air would blow out the pilot light (CEC 2019). This supports the Statewide CASE Team's position in that it means it should not be difficult for the small segment of the market that currently has continuous pilots to meet the proposed prescriptive requirements.

The Statewide CASE Team would like to clarify a statement made during the Public Meeting about gas logs and outdoor gas hearth products. While the Statewide CASE Team supports inclusion of

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<sup>4</sup> Compliance methods depend on the type of pilot light used to comply. The options analyzed include intermittent pilot, on-demand pilot, and a pilot with dual intermittent and on-demand capabilities.

<sup>5</sup> Direct ignition pilots are not covered by this proposed standard, which means that they are technically compliant.

gas logs and outdoor gas hearth products into the Modernized Appliance Efficiency Database System (MAEDbS), the Statewide CASE Team did not intend to imply that manufacturers be required to report the FE level of these products. The Statewide CASE Team did not include this recommendation in either the CASE Report or the slides presented during the Public Meeting and leaves the decision of reporting FE for these products at the discretion of the Energy Commission.

## 2.6 Reporting Requirements

The Statewide CASE Team supports the Energy Commission's proposed reporting requirements for hearth product certification to the MAEDbS but suggests one modification. In the list of options for "vented gas hearth product type," the Statewide CASE Team recommends including an option for vented gas logs. This will ensure that vented gas log products will also be properly reflected in the MAEDbS.

## 2.7 Test Procedure Modifications

The Statewide CASE Team supports the Energy Commission's proposed CAN/CSA P.4.1-15 test procedure modifications to provide clarification and ensure consistency when testing. These modifications include defining additional multiplication factors to calculate pilot energy input rate ( $Q_p$ ) and correcting a discrepancy in the nomenclature of Section 6.14.2 of the test procedure. Ensuring that multiplication factors are defined for interrupted pilots and intermittent pilots with on-demand capability will ensure that products with these pilot light types are properly covered by this rulemaking and will ensure consistency across all products tested with CAN/CSA P.4.1-15. Correcting the nomenclature in Section 6.14.2 will ensure that the subscripts are correctly assigned to reduce confusion when referencing CAN/CSA P.4.1-15. The Statewide CASE Team supports all these modifications.

# 3. Comments on the June 6, 2019 Public Meeting

The following comments are in response to issues raised at the June 6, 2019 Public Meeting ("Public Meeting").

## 3.1 Decorative Product Designation

The Energy Commission asked for more information on how decorative products are distinguished from heating products (CEC 2019).

In response, the Statewide CASE Team conducted internet research and interviewed a hearth product distributor. The Statewide CASE Team found that generally, products that are meant for heating are more efficient, are sold with a direct vent,<sup>6</sup> and have an optional thermostat. Usually, products that have a B-vent<sup>7</sup> and do not have thermostat capabilities are meant for decorative purposes. The Statewide CASE Team did not find literature that explicitly stated this distinction – it seems to be common knowledge among fireplace manufacturers and distributors.

Additionally, the Statewide CASE Team found that even if a product is designed for heating, it can easily be converted to serve a decorative purpose. Many manufacturers and distributors sell heat

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<sup>6</sup> Direct vents include two parts, one for exhaust air and one for combustion air intake. The intake air is taken from the outside and the exhaust air is expelled back to the outside (Northline Express 2019).

<sup>7</sup> B-vents are also known as natural vents. They use room air for combustion air intake and exhaust the air to the outside (Northline Express 2019).

distribution kits,<sup>8</sup> which are optional accessories that can pipe the hot air outside rather than into the house to make the fireplace behave more like a decorative product. There is not currently an option that makes decorative products behave like heating products.

Based on discussions the Statewide CASE Team had with the distributor mentioned above and comments made by industry during the Public Meeting, there is clearly a grey area between decorative and heating hearth products. Factors such as unit capacity, control method, vent type, and desired FE all interact with one another in nuanced ways, and the impacts of the proposed regulations on decorative and heating hearth products are unclear to fully predict at this time. Because there is not publicly available data that distinguishes decorative and heating product shipments, the Statewide CASE Team reiterates the importance of the Energy Commission's requirement for manufacturers to report the FE of decorative products. This data will help inform the impacts of this proposed standard on the hearth product market.

### 3.2 Wood Burning Fireplaces

Jerry Scott from Robert H. Peterson Company noted that gas logs can replace wood burning fireplaces which benefits air quality at both an individual and regional level (CEC 2019). The Statewide CASE Team agrees that gas logs can help reduce particulate matter (PM) levels relative to wood burning fireplaces. This transition should not be interfered with as it provides benefits throughout the Air Quality Management Districts (AQMDs) and Air Pollution Control Districts (APCDs) in California.

The Statewide CASE Team would like to emphasize that any standard that may be eventually adopted by the Energy Commission must be cost-effective. This means that on a lifecycle basis, the benefits will outweigh the costs. Therefore, due to the additional lifecycle benefits, gas logs will become more financially attractive to consumers on a lifecycle basis than they are currently. Furthermore, energy conservation standards for hearth products will reduce unnecessary combustion of natural gas, which will reduce the PM emissions from hearth products relative to emissions levels of current equipment.

The Statewide CASE Team understands that though lifecycle benefits will improve for gas logs, up-front costs may increase because of a standard. Since wood is not regulated by the California Public Utilities Commission, the IOUs are unable to offer incentives to “fuel-switch” from wood to natural gas. However, throughout the state, local AQMDs and APCDs offer incentives for customers to switch from wood to cleaner alternatives.<sup>9</sup> The incentives reduce up-front costs and enable fuel switching from wood fireplaces to gas logs. When combined with the reduced lifecycle costs that will result from this proposed standard, gas logs will be well positioned to continue to replace wood fireplaces and improve air quality in California.

### 3.3 CAN/CSA P.4.1

Ryan Carroll from HPBA commented that as recently as June 4, 2019, a working group had convened to discuss addressing some permissible or necessary revisions to the CAN/CSA P.4.1-15

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<sup>8</sup> One example of a heat distribution kit is the Napoleon GA-566: <https://www.spotix.com/napoleon-ga-566-fireplace-hot-air-distribution-kit.html>.

<sup>9</sup> Bay Area AQMD: <http://www.baaqmd.gov/funding-and-incentives/residents/wood-smoke-rebate>; San Joaquin Valley APQD: <http://valleyair.org/grants/apps/burncleaner/Home>; South Coast AQMD: <http://www.aqmd.gov/home/programs/community/community-detail?title=wood-device-incentive-program>



test method. He noted that over the course of six to 12 months, the CSA had engaged a technical steering committee to revise the test method and that any updates to the test method could be problematic if the Energy Commission adhered to the current version for testing because of harmonization issues with a new Canadian standard (CEC 2019).

The Statewide CASE Team is not aware of steering committee activities meant to revise CAN/CSA P.4.1-15 but notes that Natural Resources Canada (NRCAN) published an amendment to revise gas fireplace standards on June 12, 2019, which referenced the CAN/CSA P.4.1-15 test method. Additionally, in an October 20, 2018 regulatory impact analysis statement discussing issues brought up around gas fireplaces, NRCAN noted that “one manufacturer and one association requested that the fireplace efficiency testing method CSA P.4.1-15 be fundamentally revised to better reflect real-life usage patterns.” However, NRCAN also noted that while in the last two revisions of this test procedure, they supported revisions to better reflect usage, they did not support updating the test method again until more data related to gas fireplace usage in Canada was available (Government of Canada 2018). The Statewide CASE Team encourages the Energy Commission to work with CSA’s committee to ensure any changes are accurately reflected in both the Canadian standards and the Title 20 Standards. The Statewide CASE Team is supportive of ensuring harmonization with the Canadian standards to avoid any unnecessary testing burden on manufacturers, as long as it does not delay the California standard.

### 3.4 Automatic Shut-Off Devices

The Energy Commission noted that they were including a requirement for decorative gas fireplaces to be equipped with an automatic shutoff device with a time limit no greater than 24 hours. This requirement was included to align with NRCAN’s standards (CEC 2019). The Statewide CASE Team is aware that the Energy Commission is planning to remove this requirement because the NRCAN regulations updated on June 12, 2019, removed the automatic shutoff device requirement (Government of Canada 2019). In a confidential report published by NRCAN, the consultant hired for the study was unable to conclusively determine which models had an automatic shut-off device as it was not easily ascertained from product literature (NRCAN 2018). The Statewide CASE Team faced this documentation issue when researching the availability of automatic shut-off devices in hearth products. Manufacturers interviewed in the NRCAN study indicated that incorporating this feature would be relatively straightforward for models with intermittent pilots and that products with intermittent or on-demand ignitions would need a simple firmware update that would add little to the cost of the gas valve (NRCAN 2018). The Statewide CASE Team notes that because there is a proposed design standard requiring intermittent pilots, this change would not likely be a large burden to manufacturers and may still bring additional gas savings. Thus, the Statewide CASE Team encourages the Energy Commission to reconsider the inclusion of this requirement.

### 3.5 Pilot Light Relighting Services

Concerns were raised about the cost and burden of relighting pilot lights. PG&E offers free appointments to its customers for gas service technicians to safely relight appliance pilot lights (PG&E 2019). SDG&E also offers no-cost appointments to inspect natural gas appliances, which includes pilot light relighting (SDG&E 2019).

### 3.6 Hearth Product Media

The Energy Commission requested any information about whether the type of media selected impacts the test procedure results. “Media” are the non-combustible elements (e.g., log sets,

decorative stones, glass beads) included in the hearth product near the flame to enhance the aesthetics of the fireplace. The Statewide CASE Team discussed this question with a test lab; the test lab said they did not expect the media to have any meaningful impact on the test procedure results. They noted that, depending how the media is arranged, there is potential for plane impingement on the natural gas outlets which could affect the amount of carbon monoxide produced. However, the lab did not expect this to meaningfully impact FE results.

## 4. Conclusion

The Statewide CASE Team is supportive of the proposed requirements laid out in the Energy Commission's Draft Staff Report. Specifically, the Statewide CASE Team would like to express explicit support of the inclusion of the gas logs and outdoor gas hearth products, and of modifications to the test procedure. The Statewide CASE Team does note that a 75 percent FE level for heating gas fireplace is still cost-effective and recommends one slight modification to the reporting requirements to include "vented gas hearth product type" as an option in MAEDbS.

After further research, the Statewide CASE Team notes that the key distinction between heating and decorative products seems to be efficiency, venting, and the option for a thermostat. Along with the proposed gas-fired hearth product standards, the Statewide CASE Team also supports the emissions benefits of a reduction in wood burning fireplaces. The Statewide CASE Team is not aware of any revisions to CAN/CSA P.4.1-15 and based on the amendments published June 12, 2019, it does not seem as though NRCAN has plans to update the test procedure in the near future. The Statewide CASE Team supports harmonization between California and Canadian standards as long as California standards are not delayed. The Statewide CASE Team notes that PG&E and SDG&E offer no-cost pilot light relighting services.

The Statewide CASE Team urges the Energy Commission to advance to a rulemaking for hearth products with a standard that is largely similar to that contained in the Draft Staff Report along with the minor adjustments noted above. Overall, a hearth products standard, as analyzed by the Energy Commission, would save over 1,200,000 MMBtu per year after stock turnover and would be cost-effective for consumers in California.

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