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JCEEP Comments on HVAC Compliance Workshop

Additional submitted attachment is included below.

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Via CEC Electronic Commenting System

California Energy Commission
Docket Unit, MS-4
Docket No. 2017-EBP-01
1516 Ninth Street
Sacramento, CA 95814

Re: JCEEP Comments on Improving Energy Compliance of Central Air-Conditioning and Heat Pump Systems; Docket 2017-EBP-01

Dear Commission Staff:

I am writing on behalf of the Joint Committee for Energy Efficiency and Policy ("JCEEP"). The JCEEP was formed by HVAC workers and contractors to advocate for increasing energy efficiency in HVAC installations through improved building standards, training and energy efficiency policies. JCEEP has participated in California Energy Commission proceedings to advocate for more energy efficiency installation standards for HVAC systems. However, merely adopting more stringent standards and developing new technological solutions will not be sufficient to meet SB 350's goal of doubling statewide energy efficiency savings by January 1, 2030. Permit compliance and workforce quality also needs to be addressed. Poor quality installation and widespread permit avoidance are undermining the state's energy efficiency goals. To address this issue, workforce standards need to be attached to energy efficiency subsidy programs and an HVAC sales registry needs to be developed to increase permit and code compliance.

JCEEP is an advocacy organization that represents the California sheet metal workers' local unions and over 25,000 technicians working for over 600 contractors throughout California. JCEEP's mission is to promote responsible environmental and indoor air quality and energy policy in California as it pertains to and impacts the HVAC industry. JCEEP's members have over 15 training facilities throughout the state and thousands of workers being trained daily in

HVAC specialties, such as testing, adjusting and balancing, commissioning, green building design, energy efficiency, and indoor air quality.

JCEEP was formed on the premise that air handling systems need to be designed, built and maintained not just to manage comfort levels of indoor air, but also to protect against health threats and to ensure energy efficiency. The sheet metal workers' unions have long advocated for and participated in the development of building standards and workforce training for the installation of mechanical systems in order to safeguard the public health, achieve energy efficiency and ensure performance and durability of systems. With this experience comes the perspective that energy efficiency standards must not be looked at in a vacuum. Without worker education and training to ensure quality installation, energy efficient HVAC systems will not provide the energy savings expected.

The efficiency of heating and air conditioning equipment is highly dependent on the quality of its installation. Studies show that poor quality installation of HVAC systems has been found to result in a 20-30 percent increase in energy use.[1] Moreover, poor quality installation is pervasive. The California Energy Commission found up to 85% of replacement HVAC systems are installed incorrectly.[2] It does no good to increase efficiency requirements for HVAC equipment if these systems are not being installed correctly. It also does no good to spend hundreds of millions of dollars on energy efficiency incentives for HVAC retrofits, if this equipment is not being installed correctly. The majority of HVAC installers, however, have little to no training, resulting in high failure rates on even routine tasks.[3] This lack of training is exacerbated by the widespread installation of HVAC units without permits. Without permits, there is no inspection, no Title 24 compliance documentation, and no Title 24 performance test compliance.

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[1] California Energy Commission, Strategic Plan to Reduce the Energy Impact of Air Conditioners (June 2008), CEC-400-2008-010 at p. 5 (poor quality installation of cooling systems results in a 20-30 percent increase in energy use).
[2] *Id.*
[3] SCE Energy Efficiency Business Plan 2018-2025 at p. 63; SDG&E Energy Efficiency Business Plan 2018-2025 at p. 216; PG&E Energy Efficiency Business Plan 2018-2025, Residential Appendix at p. 30.

If California is going to meet its aggressive SB 350 energy efficiency goals, then California needs to take concrete steps to improve permit compliance. It has been estimated that up to 90% of HVAC retrofit work does not comply with permit, inspection and Title 24 compliance documentation requirements. A 2008 Energy Commission report found that permits are obtained for residential HVAC replacements as little as 10% percent of the time, and that Title 24 quality installation requirements complied with by contractors as little as 15% of the time.[4] The report estimated that by correcting these problems, California peak energy demand each year could be decreased by 130 megawatts.[5]

The CPUC recently revisited the estimate of the rate of permitting and concluded that permits are obtained for less than 8% of residential HVAC replacements. The CPUC also found that the number of replacement projects is now about 1 million per year, which is nearly triple what the 2008 report estimated.[6] **This means there could be 400 megawatts in energy savings just from increasing HVAC compliance.**

Because of these potential savings, the 2016 Existing Building Energy Efficiency Action Plan Update states that "[a]ddressing the application, compliance and enforcement of building standards in existing buildings is a high priority" and calls for improving retrofit compliance with permitting and code requirements to 90% by 2020. To meet this compliance goal, the 2016 Existing Building Energy Efficiency Action Plan recommends development of an HVAC equipment sale registry that can be used to track HVAC sales to ensure that permit requirements are being followed for all HVAC installations. JCEEP strongly supports development of such a registry.

Contractors who are willing to do work without a permit can perform faulty work and underbid competitors. Contractors that perform unpermitted work are more likely to be unlicensed, use low wage, untrained workers, and to skip

[4] California Energy Commission, Strategic Plan to Reduce the Energy Impact of Air Conditioners (June 2008), CEC-400-2008-010 at p. 17, 31.
[5] California Energy Commission, Strategic Plan to Reduce the Energy Impact of Air Conditioners (June 2008), CEC-400-2008-010 at p. 31.
[6] See California Energy Commission, Request for Proposals: HVAC Equipment Installation Compliance Tracking System Business Needs and Functional Requirements, RFP-16-403 (Feb. 2017) at p. 10.

acceptance testing or commissioning of systems. If permits are not pulled, then local building departments can't enforce Title 24 Energy Code standards.

Permit compliance, however, is not sufficient on its own to ensure better installation outcomes. Even permitted jobs often fall well short of code compliance. Accordingly, permit compliance strategies need to be aligned with workforce standard and compliance documentation requirements to ensure that when permits are pulled, better code compliance and installation outcomes result. ***But without permit compliance, these other strategies cannot be enforced***. If a permit is not pulled, you can't enforce installation and acceptance testing requirements.

Up to 90% of HVAC retrofits are installed without any permit. The only viable way to address this issue is through an equipment registry system. Such a system will streamline enforcement and Title 24 compliance documentation. Moreover, its costs will be greatly outweighed by the hundreds of megawatts a year in energy savings that will result.

JCEEP thanks the Commission for the opportunity to submit these comments.

Sincerely,

Thomas A. Enslow
Counsel for JCEEP

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