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*Comment Received From: Charles Cormany*  
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**Written Comments from EFCA - De Carb IEPR**

*Additional submitted attachment is included below.*



To: The California Energy Commission

Date: 6/28/18

Re: 2018 IEPR – June 14<sup>th</sup> Workshop – Written comments

**Decarbonizing Buildings**

Docket # 18-IEPR-09

To all concerned,

We attended the IEPR workshop on June 14<sup>th</sup> via webex. We enjoyed the workshop and would like to thank you for involving stakeholders in this conversation.

The following are written comments in regards to this meeting.

*The technology exists*

Frequently major transformation efforts are heavily dependent on new or anticipated technologies. Much of California's decarbonization effort will be accomplished by utilizing heat pump technology. Heat pumps are a time tested, wide spread, and reliable technology. The refrigerator in your home relies on refrigerant to move heat as does your air conditioning system. Concerns have been presented regarding the use of heat pumps in low temperature space conditioning applications. Heat pump space heating has been used in a wide variety of locations, including Alaska, for over 30 years. Advances in technology have vastly improved low temperature performance of heat pumps and they are a reliable and cost-effective option for space heating. Not to mention that in almost every situation electric appliances are more efficient than their gas counterparts.

*Costs are on par with other solutions*

Using a heat pump to replace an existing gas furnace and air conditioning system is frequently a less costly option. In simplest terms, a heat pump is an air conditioner that can be reversed to provide heat. Using a heat pump for space conditioning requires less equipment than replacing a gas system with air conditioning. Heat pump water heaters are equal in cost or cheaper than tankless gas water heaters when installed. Heat pump space heaters and the heat pump water heaters are both more efficient than their gas counterparts, this translates into lower operating costs and savings for building operators.

*Include all benefits in cost considerations*

We have some concerns with using existing evaluation tools to compare costs. Creating widespread market adoption requires a heavy lift upfront. Once the technology is widely accepted economies of scale come into play and costs are reduced. Using existing cost evaluation tools, such as TRC (total resource cost), fail to include additional benefits such as the infrastructure savings from only bringing one energy source to a building. Other non-monetary considerations include the health benefits of eliminating combustion and combustion byproducts. Safety is another non-monetary cost that should always be part of the conversation. All electric buildings have no combustion devices, this means there is no risk of carbon monoxide poisoning. Fire risks are also reduced as there is no combustion (fire) in an electric appliance. Comfort matters, heat pumps can be better sized to the actual heating and cooling loads which improves comfort and reduces operational costs. We encourage you to consider these and other non-monetary costs in your evaluations.



#### Quality installation is critical

HVAC contractor's often favor gas furnaces as their primary offering, as they are very forgiving. Heat pumps used for space heating require tighter tolerances and good distribution systems. Simply removing a gas furnace and substituting a heat pump is not enough. If we are to encourage wide spread adoption of this technology we need to support education and training of the HVAC workforce. Advanced certifications and trainings will be required to achieve successful widespread adoption. Program designs should include metrics to verify that the units are installed properly and performing to their rated capacity. Third party verification and permit enforcement will play a crucial role in the success of this effort.

#### The real challenge is existing buildings

Much of this conversation has centered around new construction. We need to address the fact that the vast majority of building emissions in California are from existing buildings. Building codes can be effective at reducing emissions in new construction but do little or nothing to address the existing building inventory. Existing buildings are a much greater challenge than new construction. Addressing existing buildings needs to be a consideration if we are to meet our states aggressive greenhouse gas reduction goals.

#### Contractor involvement is crucial

We need to consider the contractors role in bringing this change to the market. Business models need to be reasonable and profitable or the workforce will not participate. We encourage you to recognize that contractors selling jobs and performing installations of low emissions technologies is crucial to meeting our emission reduction goals. Contractors are critical stakeholder and need to be a part of the conversation from the beginning.

#### Regulation without enforcement

Proposals should include funding to educate building departments and code enforcement officials. Lack of enforcement is a real concern. The current situation with permits for HVAC change-outs is a great example. Prior to the HERS requirement for duct testing most HVAC projects were done with a permit. After code changes required HERS compliance testing for ductwork the number of projects with permits plummeted. It's estimated that less than ten percent of furnace change-outs today are done with a permit. This is a failure of the system and code enforcement officials. It's possible to create new and innovative regulations, without enforcement they will have no impact. When considering new approaches, you must include funding for the education of building officials and provide resources to insure compliance in the future.

We are encouraged by the current trend to reduce emissions in California. We enjoy being part of the conversation and hope that you will consider the above points when making your final decisions.

Sincerely,

**Charles Cormany**  
Executive Director  
Efficiency First California