

DOCKETED

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Description:	2019 ALTERNATIVE CALCULATION METHODS (ACM) WORKSHOP RESPONSE TO COMMENTS
Filer:	Larry Froess
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Memorandum

To: Docket Unit

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Telephone: (916) 654-4525

From: **Larry Froess**
California Energy Commission
1516 Ninth Street MS-37
Sacramento, CA 95814-5512

Subject: 2019 ALTERNATIVE CALCULATION METHODS (ACM) WORKSHOP RESPONSE LETTER

The ACM Workshops were held on February 13th and 14th where the Energy Commission received in-person comments and docketed items from stakeholders. The overwhelming majority of comments were requests to add an alternative all-electric baseline to the nonresidential ACM and the compliance software (CBECC-Com).

Staff appreciates the concerns of stakeholders who want to ensure that all-electric construction is a viable option under the 2019 Energy Code and compliance software. In 2016, the time dependent valuation (TDV) values were established and adopted by the Energy Commission which are used in the compliance software and cannot be changed. At the same time, the decision was made to align the ACM HVAC System Map closer to ASHRAE 90.1-2016 (Energy Standard for Buildings Except Low-Rise Residential Buildings) Appendix G (Performance Rating Method), which puts California's space heating baseline as gas-fired.

Staff performed several energy simulations using a Small Office prototype and a High-rise Residential model using Northwest Energy Efficiency Alliance (NEEA) rated hybrid heat pump water heaters and minimally efficient split heat-pumps for space heating to check the effect it would have on the use of electric equipment. Assuming neutral (i.e., minimally code compliant) envelope and lighting designs, the use of 14 SEER / 8.2 HSPF heat pumps and NEEA Rated 3.0 Energy Factor hybrid heat-pump water heaters are sufficient for the buildings to comply in all climate zones except Climate Zone 16 (which represents a climate zone that would be challenging for heat pump technology). Staff, therefore, determined that the need for an alternative nonresidential all-electric baseline is still unclear at this point. Initial modeling shows that a slight increase in equipment efficiencies may be sufficient to achieve compliance against the gas-fired space heating baseline in the prototypes examined, but further research is needed to better understand the performance of electric HVAC systems compared to the gas baseline in other prototypes.

The second most common request was for an ability to model electric central water heating systems for multifamily buildings, which does not exist in the current software. Staff is aware of the need for this feature, and is committed to working toward its inclusion. Studies are currently underway, supported by utility providers, to determine how to accurately model these and similar central shared water heating systems. Staff is working to have this feature implemented in the software before the end of the year.

Staff does recognize the importance of showing compliance with all-electric buildings and is committed to include new modeling features into future software releases to allow more advanced modeling of electric equipment in buildings.

Therefore, staff is proceeding to the May 15th Business Meeting to present the software and ACM versions that were proposed during the ACM Workshops for approval as certified 2019 compliance software. Also, the Variable Capacity Heat Pump (VCHP) features that were presented at the February 15th workshop will not be included in the May software release but are planned to be presented as a compliance option at a future date.