

**DOCKETED**

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<b>Project Title:</b>	Building Initiative for Low-Emissions Development (BUILD) Program
<b>TN #:</b>	234267
<b>Document Title:</b>	Bronwyn Barry Comments - RE NAPHN Comments regarding CEC Building Initiative for Low-Emissions Development (BUILD) Program TN# 233466
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*Comment Received From: Bronwyn Barry  
Submitted On: 8/7/2020  
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**RE NAPHN Comments regarding CEC Building Initiative for Low-Emissions Development (BUILD) Program TN# 233466**

*Additional submitted attachment is included below.*



August 7, 2020

**RE: NAPHN Comments regarding CEC Building Initiative for Low-Emissions Development (BUILD) Program. TN# 233466**

Dear CEC staff,

On behalf of our regional and national Passive House community, we respectfully submit the following comments to the above BUILD comments review process for your review and consideration. We appreciate the opportunity to provide input on this important process designed to accelerate building transformation towards a low carbon future - a task enshrined in our own mission.

We'd structured our comments as bullet-point format to align directly with the powerpoint presentation you shared to solicit feedback:

**Application & Incentive Structure:**

- We'd advocate for incentive payments to be distributed in two payments: 20% at permit for projects that comply with all the parameters, then 80% at close of project once implementation of full compliance has been confirmed. This will allow more equitable support for more ambitious projects as the financial risks are reduced earlier in the process, but the bulk of the incentive to complete as planned remains.
- We wholeheartedly endorse the whole building approach proposed, but this **MUST** allow alternate energy models to be both allowed and actively supported.(See next comment.)

- incentives tied to modeled performance: in order to allow this to be realized, alternate energy models MUST be permitted. Our regional affiliate, Passive House California produced a study<sup>1</sup> that was subsequently vetted and confirmed by a CASE report<sup>2</sup> issued for the Passive House Low-Rise Multifamily Reach Code, confirmed that **CBECC-Res is unable to adequately model or credit integrated high performance building design elements**, including but not limited to:
  - improved air tightness beyond the assumed 7 ACH50
  - heat recovery ventilation tested using alternate to HVI testing protocols
  - accurate accounting for the impact on thermal losses created by thermal bridging
  - attic design penalty for building designs where ducts are inside the thermal envelope.Consequently, we have established that **CBECC-Res penalizes whole building energy designs, particularly those targeting Passive House**. Therefore, tying incentives for the BUILD program to the outputs from CBECC-Res will consequently eliminate the option for designers and developers to implement a high performance, integrated building design approaches, such as that utilized by Passive House designers.

We therefore recommend that the BUILD program **allow the use of any alternate energy models that have been ASHRAE 140 verified, and or vetted to produce results higher than those required to meet 2019 CBECC Res EDR margins.**

#### **Low-Income Residential Housing:**

- Bonus incentive for Combi HVAC units: We support the list of incentives currently proposed for this category of housing. We recommend adding a bonus category for any projects that utilize combined HVAC units eg. combine heat pumps with heat recovery ventilation, or integrated heat pump hot water heaters with space conditioning, etc. This will allow the industry to support innovative technology that combines efficiencies and further simplifies HVAC design. Combi units are commonly used by Passive House design practitioners in other global regions. By including this measure, the CEC can signal to the product supply market that these units will be credited in California and manufacturers of these units will then consider delivering them to this market. (This measure presupposes and further supports that our recommendation above to allow the use of alternate energy models be accepted in order to accurately credit the performance benefit of these Combi units.)

Combi HVAC units will be most effectively utilized in the low-income residential housing market where smaller residential units benefit the most from compact, combined technologies. The scale and larger size of these developments also align well with manufacturers' needs to justify

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<https://passivehousecal.org/news/reach-code-study-reveals-big-opportunities-improve-cas-multifamily-buildings>

<sup>2</sup> <https://passivehousecal.org/news/case-passive-house-low-rise-multifamily-reach-code-delivers-results>

a large enough market share to deliver to scale. Given that the affordable housing development market is known for already being more agile with energy efficiency, we believe that this market sector will be more willing and open to experiment with combi units and can serve as the launch pad for this technology for the rest of the building sector.

We further encourage the consideration for incentivizing Combi HVAC units elsewhere in the BUILD or TECH funding because we've seen these units also help with the retrofit market, where smaller, integrated units are extremely helpful within constrained spaces.

### **Evaluating New Technologies:**

- We support the option to develop a new process for evaluating new technology. Our experience with CBECC-REs points being tied to NFRC ratings for windows and HVI testing for ventilation systems has shown that both these evaluation frameworks inadvertently create barriers to innovation and high performance product adoption:
  - New, innovative products are delayed in reaching full market penetration because the testing process is costly and time-consuming, with no alternate 'pilot' pathways in place to support nascent tech from being included.
  - Higher performance products are often penalized as CBECC-Res requires they be given the default rating, which does not convey higher performance value.
  - Established testing protocols such as NFRC and HVI hide the more granular information required to accurately compare performance data eg. NFRC ratings for windows don't separate u-frame from u-glass to allow window heat loss to be accurately calculated, thus making their true energy balance impossible to assess using CBECC-Res. Similarly HVI's testing does not require evaluation of the temperature at the outflow to confirm core energy capture efficiency. This translates into inadequate inputs into the CBECC-Res model and penalizes ventilation units that have been tested in alternate protocols.

We therefore propose that alternate testing protocols for both window and energy recovery ventilation equipment be assessed and a pilot project be initiated to accept products certified via alternate, established and vetted certification protocols, eg. products certified using the Passive House Institute's criteria<sup>3</sup>.

### **Bill Savings Methodology:**

- NAPHN supports either monthly, quarterly or annually, but would prefer monthly in order to be able to track seasonal load and cost shifts.

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[https://passivehouse.com/03\\_certification/01\\_certification\\_components/02\\_certification\\_criteria/02\\_certification\\_criteria.htm](https://passivehouse.com/03_certification/01_certification_components/02_certification_criteria/02_certification_criteria.htm)

- 15 year analysis is ok. NAPHN prefers 30 years to account for developers with longer-term holdings.

**Baselines:**

- NAPHN supports the recommendation that the GHG baseline be measured at the unit level, rather than the bedroom level.

We look forward to providing additional input to this program in future and thank you for your consideration of these comments.

Respectfully yours,

A handwritten signature in black ink, appearing to read "Bronwyn Barry". The signature is fluid and cursive, with the first name being more prominent.

**Bronwyn Barry, RA, CPHD**  
NAPHN Board President

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