

DOCKETED

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CBIA Comments on HP Baseline, PV, and Battery Storage

Additional submitted attachment is included below.

August 9, 2023

Mr. Javier Perez, Project Manager
California Energy Commission
715 P Street,
Sacramento, California 95815

RE: **Docket 22-BSTD-01 2025 Energy Code Pre-Rulemaking: CBIA Comments**
2025 Energy Code Heat Pump Baselines and Solar Photovoltaic System Requirements

The California Building Industry Association (CBIA) is a statewide trade association representing over 3,000 member companies involved in residential and light commercial construction. CBIA member companies are responsible for over 85% of the new single-family homes built in California each year.

As with past CEC rulemakings regarding the update of Title 24, Parts 1 & 6, the building industry is always interested in the impact the proposed changes in their entirety will have on new residential construction. To do this, we must have access to the updated research version of the compliance software in order to perform numerous compliance runs in the CEC's 16 different climate zones.

On a very positive note, CEC Staff just provided our consultants (ConSol) with the **2025 research version of CBECC-Res**. CBIA/ConSol will now begin an ongoing series of impact analysis that should continue for several months as new information is provided by the CEC and the CASE Team. And, as always, CBIA and our consultants at ConSol will compare notes with the CEC Staff as the pre-rulemaking progresses.

Heat Pump Baseline:

As expected, the CEC is advancing the state's aggressive greenhouse gas emission reduction goals by assuming that electric heat pump technology is being used for **both** space conditioning and water heating in the prescriptive set of features used to determine minimum compliance in the base-case house. As with the 2022 Update, we will need ConSol to perform compliance analysis to determine the impact of this anticipated change on overall compliance. So, at this time, we are unable to provide detailed impact analysis, but will report back to Staff as soon as possible.

In the 2022 Update, the CEC made a key shift in policy by moving away from a "positive" incentive to use heat pump technology for at least one of the end-uses (space or water heating) and instead implemented a significant "negative" incentive for builders who chose to continue to use **both** gas space and water heating. This compliance penalty was so severe that the continued use of both gas space and water heating was effectively prohibited in some climate zones.

We fully expect this penalty to increase as part of the 2025 Update and this is where much of our analysis will focus as our members will be very interested in understanding the impacts on design and cost in constructing mixed-fuel homes and all-electric homes when the new standards take effect in 2026.

The use of penalties for continued gas use is also being actively used by the Public Utilities Commission as they have recently eliminated gas line extension allowances and are presently considering the elimination of electric line extension allowances for mixed fuel homes. Under this newer proposal, all-electric homes will continue to receive the electric line extension allowance from the utility.

All these measures from different agencies are sending a very strong economic signal to both the industry and to new homebuyers that the state is headed towards electrification and those who move slowly will pay a premium for staying with mixed-fuel homes. Just how much that premium is will be analyzed in the coming months.

Supply Chain Issues with Transformers and other Electric Grid Infrastructure:

While the CEC has little authority or ability to address the transformer supply chain crisis confronting the United States and especially California, we hope the CEC is aware of the magnitude this ongoing problem confronting industry as it will most certainly impact California's efforts to aggressively reduce greenhouse gas emissions.

However, it should be noted that the transformer supply chain crisis is about to get worse in California. At present, new residential projects are experiencing delays in transformer deliveries of 6-12 months and in some cases 18 months. As the state begins to incentivize the electrification of the existing residential and commercial building stock, new construction will now be in competition with existing construction for these critically needed electrical components. Also adding to this problem will be the electric utilities increased demand for these items as they move to upgrade, expand, and fire harden California's electrical grid. This will be especially evident in the older urban areas of the state where the existing grid is already at capacity and will need significant upgrade to stay ahead of the forthcoming increase in electrical demand associated with EV-charging and building electrification.

Solar Photovoltaic System Requirements:

As indicated in the Staff Workshop:

CEC has received data showing batteries infrequently discharge below 30%, so:

- *2025 proposal will assume 60% cycling, 40% reserve*
- *This means when a 10kWh energy storage system is modeled, 6kWh will be simulated as being available for load shifting.*

CBIA strongly opposes this assumption. New homes constructed under the 2025 Building Energy Efficiency Standards will continue to be built with the required amount of rooftop solar. However, the PUC has recently adopted an updated version of Net Energy Metering known as NEM-3 which took effect on July 1, 2023. It is highly likely that the field data collected by the CEC and their consultants were from homes which fell under either NEM 1 or NEM 2 rate structures (which provided robust value for excess solar energy sent into the grid) and installed a battery with no requirement or software update to ensure the battery is cycling.

Among other things, NEM 3 significantly **reduces** the value of excess solar sent into the grid. As such, new homeowners will want to use as much of that solar energy collected during the day on-site for use, and especially during peak loads. The installation of one or more batteries will provide, arguably for the first time, a tool that the homeowner can effectively use to drastically cut their utility bill in real-time. Over the many years, the CEC has had to make assumptions for how effectively the dwelling occupants will utilize the energy efficiency features of their home. But for the first time, the installation of solar+battery gives the homeowner the ability to maximize the economic benefit of these features and see a clear benefit in their monthly bill. We would argue that the homeowner is going to operate the battery in a way that achieves maximum financial benefit.

In addition, solar and storage companies will be providing easy-to-understand educational tools to their customers to help them understand the importance of cycling their battery to maximize their savings. To ensure this educational effort takes place, CBIA would like to work with the CEC and sponsor a code-change to HCD's Green Building Standards which adds this to the required material the builder must leave with the homebuyer (*CCR Title 24, Part 11, Section 4.410.1 Operation and Maintenance Manual*)

So, now that NEM 3 is in effect, there is no reason for the CEC to assume only a “60% cycling” of the battery. CBIA respectfully requests the CEC to revisit this proposal.

Energy Storage Compliance Credit:

Lastly, these economically minded homeowners will also be providing a huge benefit to the grid by maximizing usage of their energy storage system during peak load periods, which is right in line with the Administration's goals aimed at reducing greenhouse gas emissions while maintain a dependable electrical grid.

This is why CBIA would also respectfully request the CEC seriously consider increasing the compliance credit that would be allocated for energy storage installation at time of construction. The CEC provided a robust compliance incentive for rooftop PV (2017-2019) which significantly helped increase the market penetration of rooftop PV. A robust battery compliance incentive could do the same thing for market penetration of battery storage. We understand that a clear “backstop” would for certain envelope efficiency measures would need to accompany this to ensure the overall efficiency of the home is not compromised, but this is clearly doable. And it is desperately needed to help ensure grid reliability.