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NRDC Comments on the Preliminary Program Design for the BUILD Program

Additional submitted attachment is included below.

Comments of the Natural Resources Defense Council (NRDC) on the Preliminary Program Design for the Building Initiative for Low-Emissions Development (BUILD) Program

Docket Number 20-DECARB-01

Submitted: September 30, 2021

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On behalf of the Natural Resources Defense Council (NRDC) we respectfully submit the following comments on the proposed Building Initiative for Low-Emissions Development (BUILD) Program guidelines following the California Energy Commission’s (CEC) Staff Workshop on September 15, 2021.

I. Summary

To fulfill its role as a market transformation and greenhouse gas (GHG) reduction program, NRDC makes the following recommendations:

- To reach developers new to all-electric design, the CEC should reduce barriers to “newbie” participation in the BUILD program and appropriately reward them for the GHG reduction ripple effect that their adoption of all-electric building practices will have. We recommend a newbie incentive of \$5000 per bedroom or \$150,000 for the project, whichever is greater, for a developer’s first all-electric project of 10 units or more.
- To ensure early program uptake and better align the incentives with the challenges of transforming market practices, the CEC should increase the baseline incentive from \$150/MT to \$250/MT.
- To maximize the leverage of BUILD funds, the CEC should provide incentives closer to a project’s pre-development phase. We recommend providing \$50,000 or 10 percent (whichever is higher) of the total eligible incentive at Step 1 in the Participation Process, when a reservation application is approved, to help cover the developers’ early design costs. And remaining incentive funds should be dispersed within 30 days of Certificate of Occupancy and Recorded Deed Restriction.
- Allow already-permitted projects to qualify for BUILD funds if they switch from a mixed-fuel to all-electric design.

- Make adjustments to several kicker incentives, as described below, to improve their effectiveness.
- Ensure that energy costs are calculated with the appropriate rate assumptions.
- Include first-time developer experience with all-electric design as a metric of program success.
- Commit to incentivizing all-electric affordable housing development on tribal lands through BUILD.

II. BUILD Program Background and Purpose

The BUILD program, established by Senate Bill 1477 (2018), has the potential to transform California’s new building stock to equitably meet the state’s greenhouse gas (GHG) emissions reduction goals: ensuring that new affordable housing is built right from the start is core to providing healthy and climate-smart housing for low-income Californians. The program will deploy \$60 million in incentives, plus additional funds for technical assistance support, towards low-income housing developments, sowing the seeds for a transition to all-electric buildings in the communities most impacted by the health, safety, and climate risks associated with gas use.

The CEC has worked hard to address the needs of low-income and disadvantaged communities, as well as the developers who work in those communities, in their proposed design of the BUILD program. The early deployment of technical assistance will support low-income housing developers, especially those new to all-electric design, during the time when this assistance is most impactful. The solar PV and energy efficiency incentives effectively guarantee bill-savings for low-income occupants. And the kicker incentives will direct funds to technologies that are critical to California’s clean energy future.

However, there remain opportunities to shape the BUILD guidelines to better meet the program’s important goals. In these comments we outline modifications that would make the BUILD program more accessible to affordable housing developers who have never built all-electric, and better align the timing and incentive levels to meet the program’s goals.

III. Recommendations

- 1) **Increase the attractiveness and accessibility of BUILD funds for low-income housing developers who have not built all-electric.** The BUILD program is intended to spur fundamental transformation in the affordable housing market. Meeting program goals

requires influencing developers who are not familiar with all-electric construction. We encourage the CEC to adopt the following recommendations to maximize program uptake and impact:

- **Establish a clear and compelling “newbie” incentive for developers building their first all-electric project.**

For developers, the first time building all-electric seems intimidating and risky—especially for low-income housing developers, whose funding is contingent on strict, compact timelines. Barriers to building all-electric include not only the potentially higher upfront costs of electric appliances, but also the amount of additional time and effort that is required for first time learning. This can include educating staff, the need to work with new subcontractors, the risk of missing a deadline due to lack of familiarity with a new process or technology, and the potential for costly, first-time mistakes.

To truly transform the market for all-electric development, the BUILD program must offer incentives that overcome these barriers, in addition to covering any financial cost of switching from mixed fuel to all-electric appliances. At the same time, the incentive to new developers must be clear and marketable, and not require complex calculations or figuring out how to use an excel spreadsheet calculator to understand incentive levels. The amount they will receive by participating in the BUILD program should be immediately apparent to them, and it should overcome any hesitation about considering building all-electric.

If successful at motivating affordable housing developers to gain experience in all-electric design, this initial investment will pay off in a ripple effect through future projects, multiplying the GHG emissions impacts.

We recommend the BUILD “newbie” incentives be set at whichever is higher of the following two options for a first-time all-electric development with 10 bedrooms or more:

- **\$150,000 per project**, or
- **\$5,000 per bedroom** minimum (could be higher if justified by the CEC’s incentive calculation)

These first-time all-electric developers would still need to work with the technical assistance provider to meet all the program requirements, but they would know in advance the minimum incentive they would receive.

We suggest a minimum of \$150,000 even for smaller projects because pre-development work, including hiring new contractors and consultants, can run hundreds of thousands of dollars even for smaller projects and we want to encourage developers of smaller projects (who often do many small projects) to take the initial leap into all-electric design.

- **Change the participation requirement to at least one affordable housing project completed in California, rather than the current requirement of five years' affordable housing experience.**

It is important that BUILD applicants can navigate the affordable housing development process in California and have the experience needed to bring a project to completion, but beyond this minimum threshold, the program should encourage all interested participants. We see no particular justification for a requirement of five years' experience. Instead, experience completing at least one affordable housing project in California should be sufficient qualification to access BUILD funds.

2) Increase the base incentive to \$250/MT to ensure early program uptake and better align the incentives with the challenges of early market transforming.

The current incentive of \$150/MT comes from the California Public Utilities Commission's Integrated Resource Planning (IRP) process. It represents the marginal cost of GHG emissions abatement for the electric sector. But the BUILD program will drive emissions reductions from the gas sector and in a market segment that is not yet familiar with all-electric design. Therefore, the electric IRP value of \$150/MT is not an accurate evaluation of the marginal cost of abatement for BUILD projects, and it is almost certainly too low given that early-stage market transformation is always more costly compared to when technology adoption begins to accelerate.

In the absence of a model to estimate the GHG value specific to the gas sector and for this market, the CEC should adopt a higher value than \$150/MT. We recommend a value of \$250/MT to launch the program. This amount can be lowered over time if needed, after learning from the initial project applications.

Research on the social cost of carbon also supports increasing the incentive, with both a recent White House report and a publication in Nature Climate Change reporting that the United States greatly underestimates the value of GHG emissions reductions.¹

¹ Interagency Working Group on Social Cost of Greenhouse Gases, United States Government, [Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990](#) (2021); Katharine Ricke, Laurant Drouet, et al., Nature Climate Change, [Country-level social cost of carbon](#) (2018)

3) **Provide BUILD funds to developers earlier in their project timeline, when incentives have a greater potential for impact.** The current project design would deliver BUILD funds up to 90 days after a project’s completion. But BUILD incentives will have much greater leverage if they are distributed closer to a project’s pre-development phase, when appliance choices are made in the design plans. We encourage the CEC to adopt the following recommendations to improve the impact of BUILD incentives:

- **Provide \$50,000 or 10 percent (whichever is higher) of the total eligible incentive at Step 1 in the Participation Process, when a reservation application is approved. This funding will help cover the developers’ early design costs.**

Discussions with developers have made it clear that downstream incentives—delivered at the end of a project—must be much larger than upstream incentives to have the same attractiveness and impact. In addition, most of the key appliance and energy choices are made during the pre-development phase. This is because after a project’s pre-development phase, all the basic decisions about mechanical designs have been discussed and finalized, and it becomes much less likely and feasible for a developer to switch to an all-electric design.

To sway developers’ decision-making in this key pre-development phase and to cover some of these early costs, the CEC should provide \$50,000 or 10 percent (whichever is higher) of the total incentive at Step 1 of the Participation Process (see Figure 1), upon approval of a developer’s reservation application to the BUILD program. At this point in the process, a developer has worked with the technical assistance (TA) provider to develop an all-electric project and has invested time and resources into this design. At the same time, they have not yet secured outside funding, so the prospect of receiving \$50,000 of their BUILD incentive upfront can significantly influence their choice of mixed-fuel or all-electric construction.

The CEC would not be alone in delivering all-electric construction incentives earlier in the development process. Southern California Edison’s Affordable Housing Pilot intends to provide incentives to a developer upon application to CTCAC or CDLAC.

To avoid legal issues or needing to claw back the funds, the \$50,000 should go to the developer upon approval of the reservation application and should be non-revocable. At this point they have invested their time, energy, and resources into developing an all-electric project and have worked closely with the TA provider to submit an application. Going through this process on its own is extremely valuable, even if their first project is not completed, because they have engaged in the work and learning required to construct all-electric buildings. To limit the amount of funds going to projects that are not

ultimately built and to avoid incentivizing any applicants that are not serious about all-electric design, we recommend requiring “sign off” from the TA provider that the developer has engaged in the TA process and has developed the plans needed to build all-electric.

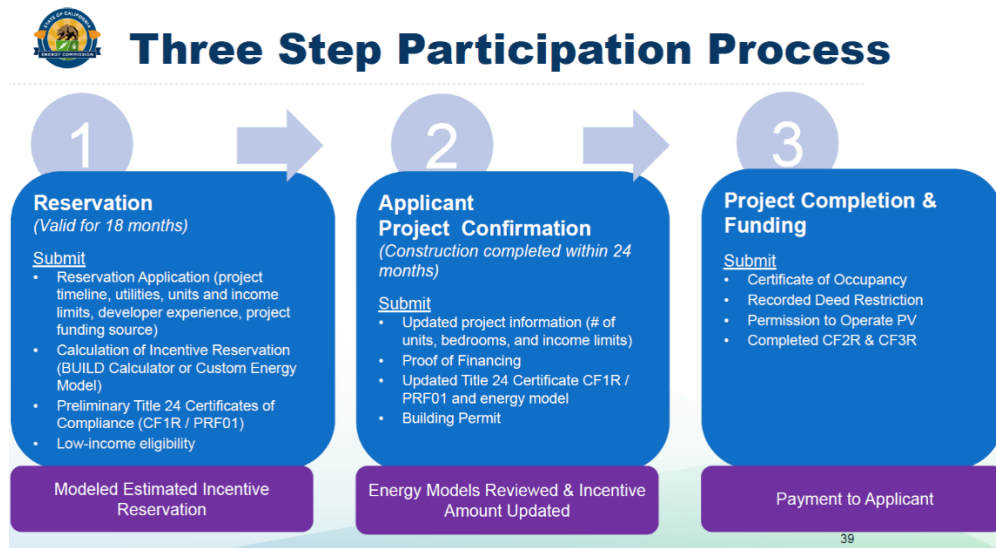


Figure 1: BUILD Stakeholder Workshop Presentation (Slide 39)

- **Provide an initial funding reservation letter at Step 1, and an updated letter at Step 2 that confirms the funding amount reserved for the project.** These guarantees of funding can be used by developers in setting up financing for the project.
 - **Provide remaining incentive funds within 30 days of Certificate of Occupancy and Recorded Deed Restriction.** The Preliminary Program Design document says that the “CEC will endeavor to cause payments to be made within about 90 days” (page 12). This is not fast enough to be valuable to these projects. In our conversations with developers, it has been repeatedly mentioned that to be valuable to a project, funds must come in before the interim construction financing is converted into the permanent loan, upon the project closing. This can happen as early as 30 days after the Certificate of Occupancy. Because the CEC and its TA provider have been following each project through its process, it should be possible to anticipate a project’s closing such that funding can be sent immediately upon receipt of Certificate of Occupancy.
- 4) **Allow already-permitted projects to qualify for BUILD funds if they switch from a mixed-fuel to all-electric design.** Currently, projects that are already funded or permitted are not eligible to reserve BUILD funds. This is a good limitation for projects that are already designed to be all-electric, for which BUILD incentives would not result in additional GHG

reductions. But for projects that have been permitted or funded with a mixed fuel design, BUILD funds could provide an incentive to switch to all-electric, potentially bringing in additional “newbie” developers. The CEC should clarify in the program guidelines (pages 9-10) that only projects that have already been funded or permitted as all-electric projects are ineligible for BUILD incentives.

5) Make adjustments to the following kicker incentives to improve their effectiveness:

- **Induction cooktop**

The kicker incentive for an induction cooktop is currently \$300/cooktop. The CEC should consider increasing the incentive to \$400/cooktop, with the additional \$100 allocated to low-income residents for the purchase of induction-compatible cookware.

- **HPWH CTA-2045 wi-fi module**

We strongly support the CTA-2045 standard and requirement, and incentives for grid-flexibility as a means to further reduce building emissions and develop the market for grid-flexibility technology. However, instead of requiring a CTA-2045 Wi-Fi module, the CEC should require CTA-2045 compliance—that is, a certified CTA-2045 port and protocol implementation. The port is essential to provide open access to the HPWH to customers, utilities, and third-party aggregators, but the module itself shouldn’t be required. The ability to connect to the HPWH is what matters.

Most utilities do not yet offer demand flexibility or load shifting services for HPWHs. While CEC’s Load Management Standards proceeding is developing the infrastructure that will enable and encourage these programs, and this is where California needs to head as soon as possible, we should not require modules that add unnecessary costs and aren’t necessary until such programs are widely available and adopted.

Instead, the incentive should require that HPWHs support the CTA-2045 standard (port and protocol) and the Joint Appendix (JA) 13 specification, and that they are set up in load shifting mode at installation (grid connected or time of use). JA 13 provides immediate grid and customer value through time-of-use load shifting, while also ensuring the HPWH is capable of being connected when a demand flexibility service becomes available locally.

In addition, the incentive structure is not sufficient to cover the costs of supporting CTA-2045 and JA 13. JA 13 requires a thermostatic mixing valve and additional controls that add around \$500 of costs for unitary HPWHs given current technology. These costs will go down with volume, but this technology is nascent and requires sufficient incentives to get traction in the market. In the CPUC’s SGIP (Self-Generation Incentive Program)

proceeding, NRDC, Earthjustice, the Building Decarbonization Coalition, and a working group of HPWH manufacturers proposed \$500 for a load shifting capability kicker for unitary HPHWs, and \$400 per kilowatt of total nominal compressor output capacity for central HPWHs. We recommend CEC adopt these incentive amounts to spur market development and adoption of HPHW demand flexibility.

- **Heat Pump Clothes Dryer**

We support providing an incentive for heat pump clothes dryers, but the proposed incentive is insufficient to encourage the adoption of heat pump dryers. The price difference between conventional electric and heat pump models is at least \$500. The incentive should match this price difference to spur market adoption. Clothes dryers are one of the largest energy users in homes after space and water heating and have very high power draws. Encouraging the adoption of heat pump clothes dryers is important for grid resilience as well as energy cost savings for residents.

- **GWP Refrigerants**

We support the kicker for refrigerants with global warming potential (GWP) less than 150. Achieving long-term climate goals will require very-low GWP refrigerants and it is important to set the stage for this future today by ensuring there is a diversity of heat pump technologies in the market, including sub-150 GWP refrigerants such as CO₂, propane, and HFOs. We therefore support the proposed sub-150 GWP kicker incentive, which encourages non-HFC technologies and will influence manufacturer long-term technology roadmaps and investments without slowing down short-term HPWH market development.

However, we do not support a sub-750 incentive. Federal law currently requires an aggressive HFC phasedown – 85 percent over 15 years – and California has regulations in development to restrict HFCs as well. As a result, the space conditioning industry, for example, is planning an all-out push to transition to climate-friendlier air conditioners and heat pumps by 2025 in the current business-as-usual. Deployment incentives must consider this high baseline pace of transition built into current regulations and product planning and should instead direct valuable dollars to a higher-impact area unless it can be clearly shown that additional expenditure will have a major additional impact.

- 6) **Ensure that energy costs are calculated with the appropriate rate assumptions.** As PV incentive amounts are determined by the amount of PV necessary to achieve the modeled resident utility costs requirements for the program, it is important that the cost modeling assumptions and rates used reflect costs that will be incurred when residents use rates designed for heat pump customers. Electric rate modeling should be done on an hourly basis, using the results of the compliance software modeling, rather than using an annual average

which doesn't capture the potential for heat pumps to save money on time-of-use rates. The model should use default TOU rates with a full all-electric baseline allowance for each utility territory. For territories where affordable single-family housing projects may be allowed, the model should also consider more highly differentiated TOU rates such as SCE's TOU-D-PRIME and PGE's forthcoming E-ELEC. These rates better conform to the higher usage of single-family homes. Gas cost modeling should account for Tier 2 usage and for avoiding gas fixed charges when going all-electric.

- 7) **Include first-time developer experience with all-electric design as a metric of program success.** In the BUILD Workshop, CEC staff solicited comments on how to evaluate program impact. There are several metrics required in statute. In addition to these, we recommend tracking the number of developers that build all-electric for the first time as a key measure of success, as developer experience with all-electric design is the foundation of market transformation.

- 8) **Commit to incentivizing all-electric affordable housing development on tribal lands through BUILD.** The NRDC supports the CEC's interest in making BUILD funds accessible to tribal lands, as expressed in the Staff Workshop on BUILD program guidelines. This may require a set aside of funds and targeted outreach and technical assistance, as well as additional funding for tribal lands that are outside of gas utility territories. We urge the CEC to work closely with tribes and tribal community organizations to distribute BUILD funds in a way that best meets tribal communities' needs.

Thank you for the opportunity to comment. We look forward to working with the CEC and stakeholders to deploy an effective and equitable BUILD program that helps put California on the path to safe, healthy, and decarbonized buildings.

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