CALSSA's Comments on the BUILD Program Preliminary Design Document

Additional submitted attachment is included below.

September 30, 2021

Subject: Docket 20-DECARB-01 – Comments on BUILD Program's Preliminary Program Design Document

California Energy Commissioners and staff:

Thank you for the opportunity to submit comments on the BUILD Program's Preliminary Program Design document. We look forward to the launch of the program to help low-income housing developers eliminate the burning of fossil fuels in buildings and reduce the fossil fuels needed to power those buildings. We applaud the Energy Commission's inclusion of PV and energy storage systems in the draft preliminary design of the BUILD program as those technologies, which are highlighted in Senate Bill 1477, are crucial to reducing emissions and energy bills in the housing stock. Our additional comments are below:

Solar Water Heating

The Energy Commission should add solar water heating (SWH) with electric back-up to the BUILD Calculator. The statute that directed the Energy Commission and the California Public Utilities Commission to create the BUILD Program, SB 1477 of 2018, explicitly included solar thermal systems in the list of eligible technologies under section 921(e)(2). SWH with electric back-up in new construction is cost effective and generates significantly less emissions than a gas water heater. (See Figures 1 and 2.)

Figure 1: Solar water heating is cost effective: Simple payback periods for water heating[1]

Climate Zone	Multifamily - Current Market				Multifamily - Mature Market			
	SWH + Gas Tank	SWH + Electric	HPWH	HPWH + PV	SWH + Gas Tank	SWH + Electric	HPWH	HPWH + PV
CZ01	12	20		19	8	13	44	16
CZ02	11	14		16	8	9	45	13
CZ03	11	13	43	15	7	8	34	12
CZ04	8	10	44	15	8	7	35	12
CZ05	11	18		21	11	12		18
CZ06	12	15		24	11	10		20
CZ07	9	8	15	16	9	6	12	13
CZ08	12	14		23	11	10		19
CZ09	13	18		24	12	12		20
CZ10	9	8	16	16	9	6	12	13
CZ11	12	14		15	8	7	39	12
CZ12	9	10	49	14	8	7	39	12
CZ13	13	28		19	13	20		16
CZ14	9	8	17	16	8	5	13	13
CZ15	14	15	44	17	13	10	34	14
CZ16	10	15		26	7	9		21

Note: The cost-effectiveness figures for solar water heating for new construction are likely closer to the figures under the "mature market" scenario due to supply chain optimization and economies of scale. Blank cells represent payback periods longer than 50 years.

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[1] Flagstaff Research, "Assessment of GHG Reduction Technologies for Water Heating Electrification in California," November 2020. (Attached hereto as Attachment A.)

Figure 2: Solar water heating generates significantly less emissions than gas water heating[2]
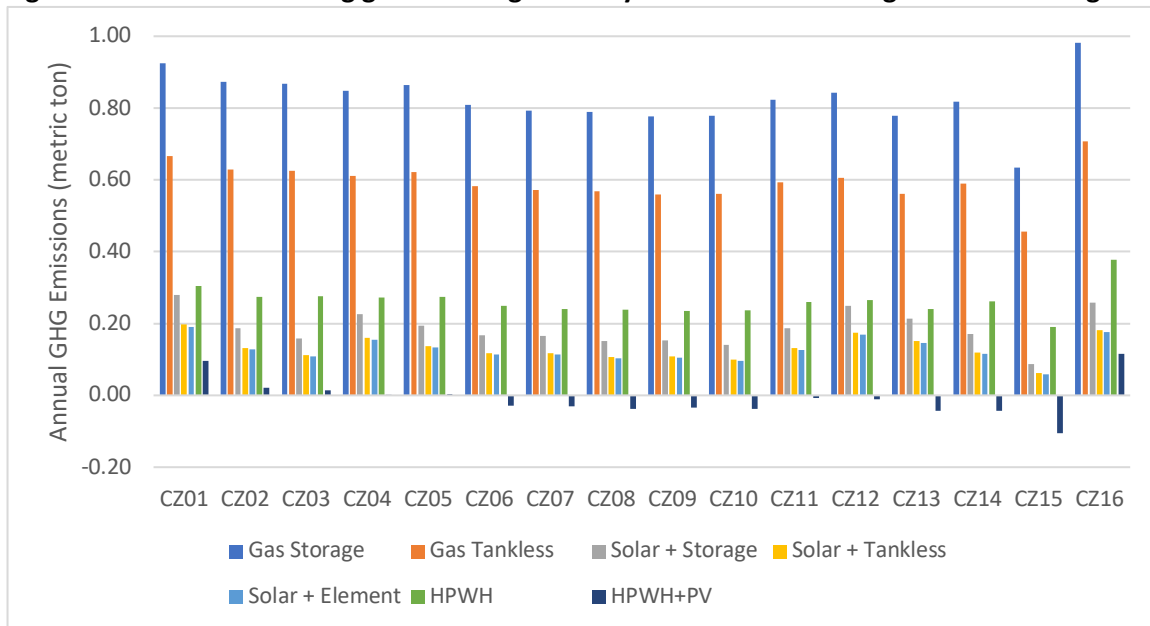
We are concerned that compelling builders to use the customer energy model pathway, which relies on the CEC to calculate the incentive, for SWH will result in fewer builders incorporating the technology into building designs compared to if it were included in the BUILD calculator. This is especially concerning because, while SWH provides residents with a higher return on investment compared with heat pumps, SWH systems carry higher price tags than heat pumps, and could benefit greatly from being an accessible option in the BUILD program.

Unitary solar water heaters with a minimum requirement of Solar Uniform Energy Factor (SUEF) ≥ 3.0 and central solar water heaters with a minimum requirement of EF ≥ 3.75 have similar performance to the heat pump water heaters required in Tables 5.1 and 5.2 of the preliminary program design document, and we encourage the CEC to add those technologies to the tables.

Additionally, the requirement that, "electricity shall be the fuel for all space heating and cooling, water heating, cooking, and clothes drying," should be amended to allow for water to be heated with thermal energy. (See page five of the preliminary program design document.)

General Comments

Modular homes: The preliminary program design document states that manufactured homes are "ineligible residential building types." (See page 5.) The CEC should clarify that modular homes, which make up an increasing portion of low-income housing, are not considered manufactured homes and

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[2] Flagstaff Research, "Assessment of GHG Reduction Technologies for Water Heating Electrification in California," November 2020. (Attached hereto as Attachment A.)

are eligible for incentives. An explanation of the difference between manufactured and modular homes can be found here: https://www.quickenloans.com/learn/modular-vs-manufactured-home.

PV benefits: The preliminary program design document requires "the PV to directly benefit the resident to the extent feasible." (See page 8.) We would appreciate if the CEC could clarify this requirement as "to the extent feasible" is subjective. Additionally, for many solar installations on multifamily properties, the benefits are shared between the tenants and the property owner or solar financier that is recouping the costs of the solar project. To encourage PV on properties that receive BUILD subsidies, the program should allow these financial arrangements that have become common in the market.

Utilities without VNEM: The preliminary program design document states that staff are exploring ways for the PV to benefit residents in utility service territories that do not allow virtual net energy metering. (See page 8.) There are solutions on the market that do not rely on VNEM to provide PV benefits to the tenants. One such solution is Electric Trees (www.electrictrees.com). CALSSA would be happy to work with the CEC to provide information on Electric Trees and other non-VEM solutions.

Building permits: The preliminary program design document states that "reservation applications must be submitted before the applicant applies for a building permit." (See page 10.) The CEC should clarify that applications can be changed after the applicant applies for the building permit because building departments often require developers to change PV plans during permitting. The CEC should also consider allowing applicants to submit the reservation application once they have applied for the building permit. Property developers are typically eager to submit permit applications at the earliest opportunity, and the BUILD Program should be cautious not to slow that down.

Application information: The CEC should consider requiring more information in the BUILD reservation application form to better ensure that projects with a high chance of being built receive the reservations. (See page 10.) The information required in the Solar on Multifamily Affordable Housing (SOMAH) application may provide a model.

Receiving incentive funding: The preliminary program design document requires that the PV system receive permission to operate (PTO) before the applicant can receive the incentive funding. (See page 12.) Because utilities can delay PTO for months while performing grid upgrades that are out of the control of the property owner, we suggest replacing this requirement with passing the building department inspection.

Liquidated damages: We support accountability in the BUILD program so that incentives are deployed quickly to projects that come to fruition. In the liquidated damages attestation section of the preliminary program design document, we suggest the CEC further define "good faith effort," given the regulatory, permitting and design obstacles that these projects can encounter and the contractual significance of liquidate damages. (See page 13.) We support having a mechanism to dissuade incomplete or inauthentic proposals from tying up rebate funds, and we would urge a further definition of this clause so that all parties can operate with more certainty.

PV incentive: According to the preliminary program design document, projects can receive incentives for the incremental costs of the additional PV to meet the statutory Modeled Residential Utility Costs requirement. (See page 16.) We believe projects should be able to receive incentives for the additional PV to cover the electrification loads even if the project already meets the Modeled Residential Utility Costs requirement. Section 921.1(a)(1) of SB 1477, which directs the BUILD program to provide incentives for "near-zero-emission building technologies to significantly reduce the emissions of greenhouse gases from those buildings," which includes PV and energy storage, does not tie the incentives to requirements related to cost-effectiveness.

Measuring watts: The document is not clear whether the PV incentives are calculated using Watts-DC or Watts-AC. (See page 17.) We suggest Watts-DC, which aligns with how the building standards calculate the PV requirement.

EV chargers: According to the preliminary program design document, electric vehicle supply equipment would receive a subsidy of $500/charger. (See page 17.) We ask the Commission to ensure that a "charger" is technology agnostic. Some inverters for energy storage systems include EV chargers, and we hope that developers that pay a premium for these products would be eligible for the EV charger kicker incentive.

Lottery: As not every applicant is required to use the technical assistance provider, we suggest the CEC create a lottery for the funds to ensure they are distributed among developers. (See page 24.) Without a lottery, all the funds could be reserved very soon after the program opens.

We look forward to working with the Energy Commission as the BUILD program is finalized. Additionally, we hope to be able to review alpha versions of the BUILD calculator and the Modeled Resident Utility Costs tool.

Sincerely,

Benjamin Davis
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California Solar & Storage Association