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SunPower Comments - Staff Review and Analysis of Benjamin Apartments Project

Additional submitted attachment is included below.

SUNPOWER®

March 5, 2024

California Energy Commission
715 P Street
Sacramento, CA 95814

RE: Docket 22-BSTD-04, 2022 Energy Code Photovoltaic and Battery Storage Cost Effectiveness Determinations, Staff Review and Analysis of Benjamin Apartments Project

Thank you for the opportunity to provide comments on the Staff Review and Analysis of the Benjamin Apartment Projects as a part of Docket 22-BSTD-04. SunPower is one the nation's leading providers of residential and multifamily solar, battery storage, and energy services. SunPower currently serves more than 550,000 residential customers in the U.S. We provide solar and battery storage directly to customers and work with home builders and multifamily developers to install solar and storage in new construction projects.

We appreciate the information provided by C Note Limited Partnership and the analysis completed by staff at the California Energy Commission (CEC). We understand and support the need for cost-effectiveness throughout the Building Energy Efficiency Standards and work to ensure that our projects are cost-effective and beneficial to the developers of multifamily buildings and their tenants.

We want to provide comments on several aspects of the Staff Review and Analysis of the Benjamin Apartment Project that we believe should be adjusted in the analysis or could be updated in project bids to achieve a lower cost project. There are several aspects of the staff analysis inputs that impact the cost-effectiveness of the project.

Potential Updates to Project Bids to Reduce Cost

The bids for the Benjamin Apartments Project were received between November 2022 and May 2023. At this time, the price of copper was at an all-time historical high. This rise in the price of copper, driven in part by supply chain constraints during the COVID 19 pandemic, would be impactful for a project like the Benjamin Apartments. Without Virtual Net Metering (VNEM) and without this authority having jurisdiction (AHJ) accepting the common practice of single disconnects or other interconnection means via a meter collar or breaker, each unit or common area will need to have a small solar system individually wired to its meter. The Benjamin Apartments Project bids would have been particularly impacted by the high material costs in late 2022 and early 2023 because of the additional wiring required to interconnect solar to each meter on the project. With materials prices declining in 2024, the Benjamin Apartments Project may see a decrease in the cost per watt of the solar installation, which would help improve the cost-effectiveness of the project.

The high price of copper would not have been the only upward price pressure on the bids provided for this project. The bids for the Benjamin Apartments Project were also developed during a period of high inflation and interest rates which would have contributed to a higher cost per watt. During the time period that these bids were developed, inflation was near its highest point in the last 20 years. Higher prices driven by high inflation would be reflected throughout the bids provided. Inflation has been closer to 3% since the end of December 2023, which could lead to lower bid prices if the bids were to be submitted today. The start of construction for the Benjamin Apartments Project is likely closer today than it was in November 2022 which would provide greater clarity on the price of materials and current inflation rates that would serve as inputs to bids.

Some utilities and AHJs allow solar on multifamily buildings to use the breaker or a single disconnect switch for the entire system rather than individual bladed disconnects for each point of interconnection. If the City of Lodi and Lodi Electric Utility (LEU) were to allow an option for disconnects other than individual bladed disconnect switches, the materials and installation cost of the solar would decrease. Understanding Lodi and LEU's openness to disconnect options other than individual bladed disconnect switches should be further explored.

Modifications to Inputs to the CEC Cost Effectiveness Analysis

There are several inputs to the CEC cost-effectiveness analysis that we believe should be updated to reflect more accurate operations and maintenance costs and utility rate escalation. First, the CEC analysis on cost effectiveness adds $0.78/W in O&M plus inverter cost based on data from NREL, which will often be duplicative to bids put forward by solar contractors and adds additional unnecessary cost to the analysis. Many solar contracts will have O&M including inverter replacement as a part of the warranty that is standard in the contract and reflected in the bid price. Many solar warranties cover nearly the entire 30-year period that the CEC cost-effectiveness analysis – solar warranties are commonly 25 years. CEC staff should ensure that any additional cost that is being added to account for O&M or inverter replacement is not duplicative to the solar developer's warranty thereby adding unnecessary double-counted cost in the in the cost-effectiveness analysis. In the cost-effectiveness analysis on Building C for the Benjamin Apartments, the benefits-to-cost-ratio (BCR) was between 0.93 and 0.95 and could easily be impacted by the $0.78/W that CEC staff added to the bids. Additionally, many developers such as SunPower offer full-service warranties on installed systems, which go beyond the manufacturer's warranty and offer more protection against any potential future O&M costs.

The CEC analysis of benefits includes an average utility escalation rate of 1.6%. While the Lodi City Council has approved only a few rates base electric rate increases in the last several years, the Energy Cost Adjustment (ECA) changes each month and contributes to increases in volumetric rates for customers. While the ECA can be applied as a credit to customer's bill, the number of months where the ECA is a credit to customers has decreased over the past decade. The ECA rate changes in response to changes in energy costs and power consumption. LEU doesn't anticipate an increase to the base electric rate until after 2030, but the ECA will continue to fluctuate in that time. Based on data from the Energy Information, since 2004, Lodi Electric Utility has had an average rate escalator around 3%.

Unique Elements of the Benjamin Apartments Project

There are several elements of the Benjamin Apartments Project that are unique and contribute to the cost of the project. This project should not be understood as representative of multifamily solar projects. C Note Limited Partnership selected a union-based electrical subcontractor for the Benjamin Project, which includes higher labor costs at local prevailing wage. The developer included information in the docket on their choice of electrical subcontractor, which was not driven by a requirement. A union-based electrical subcontractor was selected for the project because they had a large enough staff size to complete the project. This choice in subcontractor contributed to increased labor costs on the project.

The Benjamin Apartments uses a TPO roof which increases the costs of the solar project – this necessitates a costlier racking or ballast system, and TPO roofing penetrations are more costly to seal. Those costs would also have been driven by the roofing subcontractor, as it is typical in a new build for the roofer to require that they seal all penetrations in order to keep their roofing warranty intact.

High interconnection fees contribute to an increased project cost for the Benjamin Apartments. The Benjamin Apartments are on three-phase electric service, which includes a higher interconnection fee of $1,207 per point of interconnection – essentially adding a significant cost to each unit. Many utilities across California have interconnection fees significantly lower than Lodi, particularly for the smaller solar systems that are being interconnected to individual tenant meters in the Benjamin Apartments Project. For example, Sacramento Municipal Utility District (SMUD) has an interconnection fee of $475, Alameda Municipal Power has an interconnection fee of $660 for multifamily, and Merced Irrigation District has an interconnection fee of $600 – essentially half of the cost of the Lodi interconnection fees or lower. Lodi also requires additional production meters to be installed for all solar projects, which is included in their interconnection fee. The requirement for a separate production meter not only drives up the cost of the interconnection fees in Lodi – it requires additional wiring and labor to be installed. In Lodi, each point of interconnection would be required to have a consumption meter, a production meter, and an individual bladed disconnect. Many utilities across California do not require additional production meters, which are a very unique, unnecessary and onerous requirement of this particular AHJ.

The Benjamin Apartments Project has a particular set of circumstances – from the timing of the bids to the additional costs incurred based on requirements from the utility and local AHJ to additional labor costs based on the use of prevailing wage for a subcontractor – that are all contributing to a higher project cost. We do not believe that the Benjamin Apartments Project is representative of other multifamily solar projects across California, including those that require individual points of interconnection at each tenant meter.

CEC staff have added additional costs for O&M and inverters that could be duplicative to the warranty offered by contractors bidding on the project. The confluence of these factors is currently resulting in a BCR of less than 1. Updating the cost-effectiveness model to reflect project warranties and updating costs to reflect an easing of supply chain constraints and inflation could reduce the project bid to move the BCR to above 1. We believe that if new bids for the project were submitted in the first half of 2024, the project could benefit from cost savings. Additionally, we request that CEC staff remove duplicative costs

from the cost-effectiveness analysis and review the utility escalation rate that should be included in the model.

Thank you for the opportunity to provide comment on Docket 22-BSTD-04.

Sincerely,
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