DOCKETED	
Docket Number:	19-BSTD-03
Project Title:	2022 Energy Code Pre-Rulemaking
TN #:	236339
Document Title:	RE San Diego Gas & Electric Comments on Proposed 2022 Energy Code – Solar PV, Storage, and Heat Pump Baseline Proposals
Description:	N/A
Filer:	Cody Goldthrite
Organization:	SDG&E
Submitter Role:	Public
Submission Date:	1/15/2021 11:52:53 AM
Docketed Date:	1/15/2021

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January 12, 2021

California Energy Commission
Efficiency Division - Buildings Energy Efficiency Standards Program
1516 9th St
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RE: San Diego Gas & Electric Comments on Proposed 2022 Energy Code – Solar PV, Storage, and Heat Pump Baseline Proposals (Docket No 19-BSTD-03)

San Diego Gas & Electric (SDG&E) appreciates the opportunity to engage with the California Energy Commission (CEC) on the proposed changes to the 2022 California Energy Code. SDG&E commends the continued efforts of the CEC to advance cost-effective energy efficiency and other energy measures that contribute to reduction of greenhouse gases (GHG) in order to reach California's emission reduction and climate goals.

The CEC's proposed measures for multi-tenant and non-residential buildings include a requirement that in cases where a building is required to install photovoltaics (PV), battery energy storage must accompany that installation. SDG&E supports this requirement. Pairing energy storage with PV can provide more value to the grid than standalone PV, especially when the batteries are operated in a way that aligns with grid needs. In SDG&E's service territory, where 15% of residential customers have already adopted distributed PV, there is an overabundance of exports from standalone distributed solar generation. SDG&E expects these adoption trends to continue, as adoption throughout 2020 has not slowed significantly, despite COVID-19.[1] Additionally, the CEC's mandate that new and retrofitted single-family homes install distributed PV will ensure that adoption continues. These exports lead to curtailment of utility-scale solar resources. Pairing battery energy storage systems with PV could help to increase grid efficiencies and potentially provide more value to the system, as well as the participating customer.

SDG&E believes these distributed technologies can play a role in California's clean energy future and believes that the state should strive to meet its GHG reduction goals through a least-cost manner for all customers, not just a subset of customers who participate in a program. SDG&E has significant concerns regarding affordability for all its customers, especially those who are unable to or do not want to participate in certain programs, like Net Energy Metering (NEM) and Virtual Net Energy Metering (VNEM). While these distributed technologies, like PV and customer-sited energy storage systems have the capability to provide enhanced grid reliability, the cost savings accruing to participating customers should not be an incremental cost burden for those non-participants; as the rate rules work now, this is exactly what happens.

SDG&E would like to bring attention to several concerns with the proposed requirements. Some of these are procedural. Other suggestions are more substantive and relate to identifying the least cost and greatest benefit pathways to achieving the state's clean energy and climate goals.

1. **Requirements related to NEM and VNEM should be held until the next code cycle**

The California Public Utilities Commission (CPUC) recently opened Rulemaking (R.) 20-08-020 which is actively reviewing the existing NEM and Virtual Net Energy Metering (VNEM) programs. The outcome of this proceeding and the resulting tariffs will lead to changes in requirements and compensation structures for distributed energy resources (DERs), although exactly how the tariffs will change remains uncertain. The CPUC anticipates a ruling by the end of 2021, and a new tariff before the proposed code changes would go into effect in 2023. SDG&E believes that any building requirements such as mandating rooftop solar for non-residential buildings and high-rise residential buildings that would require customers take service under NEM are premature and should be reserved for after a decision has been reached in (R.) 20-08-020.

Additionally, the current VNEM tariff does not achieve the Title 24 Building Standard goal of reducing on-site load from a building. Most existing VNEM arrangements export all energy that is generated to the grid through a Net Generation Output Meter, and then negotiate the distribution of bill credits among the benefitting customers, independent of the utility; these systems act like wholesale solar PV generators but are compensated at the much more lucrative rate of retail. The CEC would need to make several assumptions about how these benefits are distributed in order to state with certainty that VNEM participation is increasing the energy efficiency of the building. For example, for a newly built apartment complex to comply with the proposed code requirements through VNEM, each tenant would need to agree to the program and the same system for delivering benefits. In each instance of a vacancy or new tenants, the amount of bill credits for other occupants would change. Cost effectiveness for participants would be based in large part on the individual arrangement and individual customer behavior, something that cannot be guaranteed by a tariff. Additionally, SGD&E supports a customer's ability to choose which billing structure is most beneficial to them. Should a tenant prefer an option other than VNEM, they should be able to choose a different tariff; many utilities offer green tariffs which customers can purchase RECs on a month by month basis. As a result of the various arrangements that need to be made and remade when adopting VNEM for multifamily housing, it is not practical to require a guarantee of cost effectiveness for shared solar under VNEM. The CEC should reconsider this requirement when more information about the forthcoming NEM tariff is available after the CPUC has reached a decision in (R.) 20-08-020.

2. **Consider expanding measures of cost effectiveness**

As these requirements are meant to accelerate goals in SB 100, which applies to the state as a whole, a complete understanding of their success should be evaluated in terms of their benefits to both participants and non-participants. It is well understood that the NEM program incentives and accruing benefits tied to a specific technology tend to be concentrated among wealthier customers who have the means to take advantage of them, with the less affluent subsidizing the benefits.[2] Requirements for new construction that deliver financial benefits to participants could lead to cost shifts to non-participants in older homes. While participant

measures of cost effectiveness are important, SDG&E recommends that the CEC consider incorporating additional measures, such as the Ratepayer Impact Measure and the Participant Cost Test found in the CPUC's Standard Practice Manual. SDG&E requests that the CEC consider the potential for cost shifts and rate increases that would result from these requirements and look to programs that have more widespread benefits such as green tariffs, which are also in scope in the ongoing NEM reform proceeding (R. 14-07-002). Additionally, utility or Community Choice Aggregation (CCA) offered community solar options have the ability to evolve and could offer more cost-effective options in the future as they are developed. SDG&E suggests that the CEC consider existing options such as the Green Tariff, and future options such as utility-developed community solar for compliance that reduce both costs and complexity for participating customers.

3. **Paired storage should require control capabilities**

SDG&E appreciates and supports the CEC's requirement that battery storage accompany new construction fitted with solar PV. Battery storage has the ability to reduce grid strain by allowing a greater portion of energy generated on-site to be consumed on-site. However, SDG&E would like to note that as a newer technology with much lower levels of adoption than rooftop solar, understanding of how customer batteries interact with the grid is still developing. Early SDG&E data suggests, unsurprisingly, that customers use batteries to maximize bill credits. While this is beneficial to the individual customer, this usage pattern is not necessarily in line with maximizing resiliency benefits of storage or reducing GHG emissions.

If the requirement for pairing battery energy storage with solar is intended to provide community resiliency and offer grid services, then external battery control would be necessary to ensure that the capacity these energy storage devices have the potential to provide is available at critical times, and that the battery is operated in a way that increases grid harmonization. SDG&E suggests that where storage is required, storage devices also be required to have the *capability* to be programmed in a way that provides grid services. . This will help ensure that these devices could provide grid benefits, should an appropriate compensation mechanism be adopted by the CPUC.

SDG&E continues to support the CEC's initiatives to meet California's GHG reduction and climate goals and looks forward to continued dialogue on this topic.

Sincerely,

/s/ Tim Carmichael

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