



**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

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Order Instituting Rulemaking to Revisit
Net Energy Metering Tariffs Pursuant to
Decision 16-01-044, and to Address
Other Issues Related to Net Energy
Metering.

Rulemaking 20-08-020
(Filed August 27, 2020)

**COMMENTS OF IVY ENERGY ON THE PROPOSED DECISION ADDRESSING REMAINING
PROCEEDING ISSUES**

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Summary of Recommendations

1. *Include onsite netting in the final successor tariff for multi-unit buildings*
2. *Adopt a successor tariff that more strongly incentivizes energy storage and demand reduction and removes installation barriers at multi-unit properties*
3. *Alternatively, adopt a successor tariff for multi-unit properties with netting measured at the transformer level*

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I. Introduction

Pursuant to the California Public Utilities Commission (“Commission”) Rules of Practice and Procedure (“Rules”), Ivy Energy respectfully submits these comments on the Proposed Decision Addressing Remaining Proceeding Issues (“PD”). Ivy is an award-winning clean technology company whose mission is to expand access to onsite clean energy resources for those who do not own property to foster a win-win value proposition for multifamily building owners and tenants to share the benefits together.¹

Ivy is grateful for the opportunity to develop a detailed proposal for a virtual net metering (“VNEM”) successor tariff in this proceeding: the Shared DER Tariff for Multi-unit Buildings.² Ivy invested significant time and resources to develop the proposal and appreciate the Commission’s consideration of our proposal in the PD.³ However, Ivy is extremely disappointed with the PD’s preliminary findings, especially the “all or nothing” approach taken by the Commission with its adoption of the utilities’ successor tariff. The PD lacks any consensus-driven middle ground.

The PD commits numerous legal and factual errors that must be corrected in a revised PD or Alternate Decision. The PD raises grave concerns about property rights, due process, equal rights protection, and governmental takings. Chiefly, the Commission must rectify the PD’s inequitable, discriminatory treatment of renters and multi-unit buildings. *The final decision must include onsite netting*

¹ Ivy was a CalSEED grant recipient, California Energy Commission 2020 Visionary of the Year Award recipient, and 2023 Edison Awards Gold recipient for critical human infrastructure in grid optimization.

² See Appendix A for Shared DER Tariff Proposal in Ivy Energy Comments in Response to Ruling Questions at pg. 28-33

³ PD at pg. 35-38

to preserve the value of self-generation and energy storage for renters in multi-unit buildings first and foremost and ensure compliance with all federal and state laws.

II. The PD conflicts with numerous state policy goals and would hinder forward progress

Ivy is very disappointed in the PD and its clear lack of alignment with other existing state policies. California has set a target to decarbonize its economy and achieve 100% clean energy sales by 2045.⁴ The state has enacted some of the most aggressive building electrification codes in the U.S. with Title 24 mandating solar and energy storage to be installed on all new homes.⁵ Governor Newsom has ordered the creation of 2.5 million new housing units by 2030.⁶ Multi-unit real estate developers are already on the brink of focusing their investments in other markets outside of California and this PD would push them further in that direction. The Commission has an Environmental and Social Justice (“ESJ”) Action Plan that is meant to integrate equity considerations in Commission policy decision-making activities and serve as a commitment to focus on communities that have been traditionally underserved and face higher barriers to access clean, safe, and affordable energy.⁷

Unfortunately, the PD is antithetical to all these state policy objectives, and if adopted as written, will hinder California’s progress in meeting them. The PD would adopt an unviable VNEM successor tariff without any netting scheme that would eviscerate the economic value proposition for multifamily DERs, rendering all new projects infeasible and unfinanceable, and effectively result in a collapse of the multifamily solar market.

III. The importance of onsite netting in multi-unit buildings

The most essential component of the DER value proposition for single unit and multi-unit buildings alike is the ability to self-generate and directly consume electricity produced by the DER. Under the existing VNEM tariff, unlike single unit buildings, which utilize a single meter to measure both production and consumption of electricity, multi-unit buildings utilize multiple meters in a single VNEM arrangement where the generating account has a production meter measuring exports and the benefitting accounts have individual meters that only measure consumption. Multi-meter arrangements must include netting on some level to ensure that production can be netted against consumption in a given time interval to maintain the integrity of self-generation value. Onsite netting is the single most important attribute to be retained in the final construct of the successor tariff for multi-unit buildings and renters.

⁴ SB 100 (De Leon, 2018)

⁵ Title 24 Building Code

⁶ <https://www.gov.ca.gov/2022/11/04/governor-newsoms-newly-created-housing-accountability-unit-marks-first-year/#:~:text=Under%20Governor%20Newsom%2C%20for%20the,of%20which%20must%20be%20affordable.>

⁷ CPUC Environmental & Social Justice Action Plan

1. The elimination of onsite netting in the successor tariff results in inequitable, arbitrary and capricious discrimination against the multi-unit tenant customer class

Unfortunately, the PD would adopt the Joint Utilities’ proposal for multi-unit buildings, the Virtual Net Billing Tariff (“VNBT”), which would eliminate netting across units on the property, instead replacing it with an Avoided Cost Calculator (“ACC”) value which gives a credit for generated electricity equivalent to the wholesale rate. The PD would require that benefitting accounting holders under the VNBT be compensated at the ACC value, without regard to onsite consumption, resulting in all physical onsite consumption occurring during the same interval as generation to be charged to the ratepayer at the prevailing time of use (“TOU”) rate. The VNBT’s accounting of ACC value eliminates the practice of onsite netting at multi-unit properties entirely, even when a single generator or other DER can serve dozens or hundreds of customer loads before exporting any power to the grid, and thus eliminates the self-generation value that multi-unit customers derive from the shared DER. The VNBT effectively allows the utility to seize the electricity generated by a solar system at an ACC value and concurrently sell it back to the benefitting accounts at an elevated rate. This tariff regime would destroy the value of onsite solar generation, storage, and other DERs for shared real estate, resulting in radically reduced deployment, inequitable treatment of renters, reduced grid benefits from DERs, and would be antithetical to the stated policy goals of the State of California.

The PD would exacerbate inequities by adopting the VNBT as the successor tariff. Property owners (predominantly single-family homes) using the Net Billing Tariff (“NBT”) retain the full value of self-generation that they have consumed onsite, because they can net their consumption against generation. The difference in value between netting (at either the property or the transformer) and the ACC is dramatic—it takes money out of the pockets of ratepayers in multi-tenant properties, and it would make many projects (particularly those coupled with storage), economically infeasible. There is no technical barrier to accurately net onsite generation against onsite consumption during the corresponding intervals—and in fact that has been happening across California under the current VNEM structure. *The PD’s decision to now eliminate netting for shared real estate appears to be an arbitrary and capricious discrimination against multi-tenant customer classes, unfairly depriving them of a tariff structure available for single unit properties.*

2. Onsite netting is required to create an adequate customer price signal under the successor tariff in combination with the ACC

The PD will not properly incentivize multifamily properties with onsite shared DERs to provide electric system benefits if it adopts a successor tariff that solely relies on ACC export rates. Onsite netting enables the proper measurement and valuation of customer self-consumption of electricity generated at the property, functioning as an inherent price signal embedded within the tariff. Customers derive monetary

value from self-generation via electric bill savings attributed to reduced demand for imported electricity. This is a powerful financial incentive for customers that also benefits ratepayers and the grid. The ability to realize this demand reduction value is essential to maintain in the final successor tariff design. The ACC export rates alone will not achieve the desired outcomes, as the proposed ACC “price signals” are too small to properly incentivize load shifting that results in meaningful system benefits. Pennies are not price signals.

As discussed above, the strongest price signal that customers receive is based on the value derived from onsite self-consumption, not the ACC export rate, so eliminating onsite netting completely would actually conflict with the goals of the PD by diminishing the individual price signal that incentivizes customer behavior change at multi-unit properties.

3. Onsite netting combined with the ACC rates is required to incentivize energy storage adoption at multi-unit properties and encourage storage behavior that maximizes electric system benefits

The inclusion of onsite netting in the successor tariff coupled with ACC exports would ensure multi-unit buildings adequately respond to price signals in a manner that supports electric grid needs, resulting in more predictable load curves and greater electric system benefits.⁸ There are countless activities that will be a missed opportunity if given an ACC only price signal such as, incentivizing day time EV charging, scheduling controlled loads to reduce reliance on the grid, shifting behavioral energy usage to reduce reliance on the grid, or managing a battery in a way that reduces demand.

Under the PD, onsite consumption has zero impact on the value created by the solar and storage systems. As a result, VNEM-paired energy storage systems would have no incentive to work in tandem with demand response programs to reduce net load demand of the property and encourage more predictable demand curves. This is a missed opportunity to take advantage of assets on multi-unit properties to provide resiliency and other grid benefits, such as mitigating the duck curve and curbing demand of the property during peak hours. If, on the other hand, the VNEM successor tariff were adjusted to include onsite netting, that would create a pathway for the solar, storage, and demand response assets of a multi-unit property to respond cohesively to the needs of the grid, because the behavior of benefiting account holders would directly impact grid demand.

4. Netting could alternatively be measured at the transformer in multi-unit properties

The PD explains the counter-logic for not including netting in the successor tariff, arguing that because not all systems are on the same feeder or transformer, onsite consumption may not always be occurring.⁹ Yet, the PD eliminates onsite netting completely, despite the data showing the majority of

⁸ R.20-08-020 Ivy Energy Notice of Ex Parte Communication filed August 17, 2023; Ex Parte references the analysis conducted and published in blog post: “When Policy Contradicts Physics: Unpacking the VNEM PD with Data” <https://www.ivy-energy.com/blog/unpacking-the-vnem-pd-with-data>

⁹ PD at pg. 29

VNEM systems do share the same transformer. Ivy is disappointed that the PD simply adopts the Joint Utilities’ proposal without modification based on this loosely constructed counter argument. It fails to consider any intuitive middle ground solutions that would result in the adoption of a more balanced and reasonable final successor tariff. As an alternative, the Commission could consider maintaining netting for any multi-unit onsite DERs that are serving its benefitting accounts so long as the DER asset and tenant meters are sharing the same transformer.

IV. The PD commits numerous legal errors

1. The PD errs in its analysis of the contractual relationship between multifamily building owners and tenants in VNEM arrangements

VNEM has enabled multifamily building owners to install shared DER assets on their properties and provide electricity bill discounts to tenants by allocating a percentage of the VNEM credits accrued from the DER generator account to benefitting accounts. The PD erroneously states that “these tariff customers pay for the generation facility on the property” when that is not the case.¹⁰ The building owner pays for the DER asset and maintains ownership of the facilities installed on the property. Tenants do not pay for the VNEM generating facility, however, they may pay for a portion of the electricity generated by it.¹¹ Multifamily property owners are permitted by law to provide electricity service on their private property for their own use and the use of their tenants.¹² Property owners can pursue different contractual arrangements with their tenants to pay for various amenities and services provided by their properties, including but not limited to, renewable electricity service via onsite generation.

2. The PD errs in its description of Ivy Energy’s business model and makes inaccurate, unsubstantiated claims about Ivy’s compliance with existing tariff requirements

The PD erroneously states that “property owners, or third-party services like Ivy Energy, are directly charging tenants for variable monthly electrical bills, which may include their solar offsets and net export credits. This practice does not comply with VNEM tariff requirements.”¹³ The PD relies on flawed legal interpretations of the Public Utilities Code and baseless accusations from the utilities’ comments as the basis for making unsubstantiated claims that certain business practices are not in compliance with tariff requirements. The final decision must rectify these errors by removing all inaccurate descriptions of Ivy’s service and must strike from the record any claims against Ivy suggesting non-compliance with VNEM tariff requirements or other laws and regulations.

¹⁰ PD at pg. 47

¹¹ Public Utilities Code Section 2868 and 2869 see (f)(1-2)

https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=2869.&nodeTreePath=2.2.15.2&lawCode=PUC

¹² Public Utilities Code Section 218

https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=218.&lawCode=PUC

¹³ PD at pg. 27

Ivy is a solar billing software provider for multifamily building owners with onsite DERs to *manage* their shared value on an *opt-in basis* and accurately allocate it to the individual tenant subscribers. This model allows tenants to enter into an agreement with multifamily owners for onsite solar energy and associated credits and tenants provide authorization for third-party *management* of their electric bills. This aligns subscriber consumption incentives with grid benefits and enables tenants to visualize how solar reduces their all-in electric costs. This service also enables property owners to separately recover a split portion of the DER value and provide onsite renewable electricity service and benefits to their tenants – as expressly permitted by law – in a clear, transparent, user-friendly manner. Ivy is not “directly charging for” or reselling utility-provided power, nor are property owners profiting from utility-provided power by using Ivy service. The landlord is merely passing through the tenant’s utility billing costs 1:1 that are not offset by the solar energy credits, along with the charge for solar power into a single, easy to understand statement *at the tenant’s election* to provide a better customer experience for the tenants.

The PD continues, “if the tenant gives up their separately metered account for bill consolidation under the property owner, the customer is not in compliance with the VNEM tariff. Customer access... is dependent on the tenant retaining account ownership.”¹⁴ The PD references comments made by CALSSA about “permanently switching tenants’ electrical accounts to make the property owner the customer of record” to make an unsubstantiated claim suggesting that Ivy Energy is engaging in that practice and thus not complying with VNEM tariff requirements.¹⁵ Ivy emphasizes here for the record that it does not “permanently switch” or “take over” ownership of any tenant electrical accounts. Multifamily building owners that use Ivy’s service are not forcing tenants to give up their utility accounts. Tenants retain ownership of their accounts and full ability to access their electric bill and associated information. *Ivy and its multifamily customers are in full compliance with the law and all requirements of all tariffs.*

3. The PD errs in relying on inaccurate and misleading legal analyses to draw flawed conclusions about property owners’ rights to provide electricity service to tenants

Further, the PD errs by making references to a flawed legal interpretation made by the Joint IOUs stating that Section 218(b)(1) does not authorize the sale of generation to tenants, only “use.”¹⁶ Section 218 merely exempts from regulation as a public utility, the non-conventional energy produced on the premises that is used by the property owner and tenants. The “own use” exemption in Section 218 does not include a requirement that electricity service provided by onsite generation to tenants should be free of any charge. In fact, when Section 218(b)(1) is read together with Section 2869(f)(1-2), the law clearly and explicitly permits landlords to “charge each user of the [solar] electric service”, so long as the charges do not exceed

¹⁴ PD at pg 27

¹⁵ PD at pg. 27

¹⁶ PD at pg. 27

the electricity rates of the independent solar energy producer or the utility, and landlords comply with all other provisions of these laws. The Commission must correct these legal and factual errors in the PD and remove reference to the Joint Utilities' flawed analysis of Section 218.

4. *The PD appears to violate federal equal rights protections that are guaranteed under the 14th Amendment and enshrined in the Civil Rights Act*

The NBT continues to enable self-consumption of onsite generation and property owners retained this important DER value when their successor tariff was adopted. Multi-unit renters must also retain the ability to self-consume onsite generation and be afforded the same DER value proposition as property owners in their successor tariff. The PD's adoption of the VNBT without netting would promulgate systemic inequities by unduly discriminating against renters and decimate the financial value proposition for the multifamily market, leading to less renewable energy in densely populated areas and higher electricity grid and vehicle emissions that lead to horrific health impacts.¹⁷

The Commission cannot dismiss the obviously disproportionate impacts that this PD would have on millions of renting ratepayers, who are primarily low income and minority communities, who have not yet accessed the benefits of onsite clean energy due to not owning property. Given that a significantly higher percentage of minority residents in California are renters, the PD would adversely and disproportionately impact communities of color, raising grave concerns of equal rights protections under the 14th Amendment. More specifically, the PD would be violative of Title VIII of Civil Rights Act, commonly known as the Fair Housing Act,¹⁸ due to disparate impacts on communities of color.¹⁹ In order to protect the equal rights of all ratepayers, especially low income and minority ratepayers, the Commission must retain onsite netting to avoid discriminatory treatment of DER value between single NBT and multi-unit VNBT properties.

5. *The PD appears to violate federal property rights guaranteed under the 5th Amendment*

As it is currently designed, the VNBT would require all onsite generation physically occurring to be accounted for as exported energy, when that is not what is physically happening, and provide compensation for those falsely classified exports at ACC values. This enables utilities to "buy low and sell high" to the property owners who have invested in onsite DERs, as well as the renters who would benefit from such systems. As demonstrated below, during intervals of both onsite load and onsite generation, the generated electricity is, as a factual matter under universally accepted laws of physics, consumed onsite. *Yet the PD would allow utilities to force ratepayers to sell the electricity at a wholesale rate, and then*

¹⁷ Vohra, Karn, et al. "Global mortality from outdoor fine particle pollution generated by fossil fuel combustion: Results from GEOS-Chem." *Environmental research* 195 (2021): 110754.

¹⁸ Civil Rights Act of 1968, 7 CFR § 1901.203 *et seq.*

¹⁹ See, Department of Housing and Urban Development, Final Rule, *Reinstatement of HUD's Discriminatory Effects Standard*, 24 CFR Part 100, available at https://www.hud.gov/sites/dfiles/FHEO/documents/6251-F-02_Discriminatory_Effects_Final_Rule_3-17-23.pdf.

immediately sell it back to them at a full retail rate, even though it is consumed onsite during the same interval.

This “buy all sell all” utility accounting practice embedded in the VNBT tariff construct is unjust and discriminatory to renters and constitutes the seizing of property for dubious public benefit—and only benefiting the utilities. These forced sales and illegal profiteering of ratepayer generation by utilities would constitute an impermissible and ongoing “taking” of private property without due process in violation of 5th Amendment property rights²⁰ (i) without just compensation and (ii) which would result in manifest injustice to the ratepayers who are forced to buy back electricity generated onsite at an elevated rate.²¹ Critically, this taking is not reasonably necessary to effect a substantial public purpose.²² As explained in these comments, the PD is not only based on serious inaccuracies of fact, but the policy goals of the PD would be much more easily met via a netting tariff which allows onsite consumption

6. The PD fails to meet all the statutory requirements of Public Utilities Code 2827.1

The PD fails to comply with all the guiding principles and statutory requirements of PUC 2827.1 to ensure equity among customers, ensure sustainable market growth, and maximize the value of customer generation to all customers and the electrical system.²³ In particular, the PD does not adopt any specific alternatives designed for growth among residential customers in disadvantaged communities (“DACs”), as required by state law.²⁴ There is nothing in the PD that would specifically incentivize new clean energy developments or spur market growth these underserved communities. In fact, if approved as written, the PD would adopt a successor tariff that treats single-family property owners substantially better than renters and will halt the growth of onsite clean energy resources in DACs, further exacerbating inequities in the energy system. Ivy recommends the Commission encourage new DER development in DACs through the inclusion of onsite netting and expansion of energy storage in the final decision. Doing so would satisfy multiple statutory requirements and would specifically benefit historically underserved renting populations.

V. The PD commits numerous factual errors

1. The PD ignores quantitative data and information on the record

²⁰ See, e.g., *Pennsylvania Coal Co. v. Mahon* 260 U.S. 393, 451 (1922) (“The general rule at least is that while property may be regulated to a certain extent, if regulation goes too far it will be recognized as a taking.”). See, also, *Yee v. City of Escondido*, Cal., 503 U.S. 519, 522-523 (1992) (“where the government ... regulates the use of property, compensation is required ... if considerations such as the purpose of the regulation or the extent to which it deprives the owner of the economic use of the property suggest that **the regulation has unfairly singled out the property owner** to bear a burden that should be borne by the public as a whole.”) (emphasis added).

²¹ See, *United States v. Commodities Trading Corp.*, 339 U.S. 121, 123 (1950).

²² See, *Penn Cent. Transp. Co. v. City of New York*, 438 U.S. 104, 127 (1978) (“a use restriction on real property may constitute a “taking” if not reasonably necessary to the effectuation of a substantial public purpose”).

²³ See Public Utilities Code Section 2827.1 (b)(1) and D.21-02-007 Adopting Guiding Principles for the Development of a Successor Net Metering Tariff

²⁴ *Id.*

Ivy has performed multiple quantitative analyses based on the best available data to contribute meaningful evidence to the record and provided data-backed justification for its proposal. However, the PD ignores all the empirical evidence, data analysis, and modeling results that were included in the record. Ivy provided visual graphics and detailed technical explanations of electrical engineering principles and to demonstrate that the laws of physics can be applied to scientifically prove that electricity inevitably flows to serve onsite load in a multi-unit building with a VNEM system first because that is the path of least resistance –it is a physical law of electrical systems that energy generated during a time of onsite load will be consumed onsite, as opposed to being exported to the grid.²⁵

Ivy shared multiple examples of active multifamily solar projects and conducted a robust data analysis to quantify their grid benefits. The data proves that these projects reduce demand on the grid, demonstrating how VNEM systems provide to the electricity system today, and when modeled to include energy storage, these projects could achieve substantially more demand reduction value in the future. The data further demonstrates that the VNEM tariff sends accurate price signals, leading multi-unit buildings to consume their generation onsite because VNEM allows the onsite generation to serve multiple unique load profiles, rather than a single simplified load profile.²⁶

Ivy also conducted a thorough data analysis with a more granular examination of the purported VNEM “cost shift”, which identified critical flaws in the underlying assumptions and corrected those flaws in a transparent manner for the Commission with a step-by-step explanation of each data correction.²⁷ Ivy shared its quantitative analysis on the record with all the underlying data and formulas intact, in a fully transparent, open-source format for all parties to review. Despite all the quantitative data analyses and empirical evidence Ivy provided to the record, the PD disregards or misinterprets virtually all of Ivy’s contributions to the rulemaking in this respect.

2. The PD misinterprets scientifically proven facts and relies on inaccurate VNEM data to draw flawed conclusions about the physics of electricity behavior at multi-unit properties

VNEM enables multiple ratepayers in a multi-unit building to self-consume the generation produced onsite, which reduces the amount of electricity the property demands from the grid and what it exports to the grid, which reduces electricity costs for tenants and results in a reduction of system-wide costs. As discussed above, the value of self-generation is realized through the practice of netting where production is netted against consumption in a given time interval. Onsite consumption of self-generation in VNEM arrangements has been scientifically proven by the Laws of Physics and Kirchhoff’s Current Law, and these foundational electrical engineering principles as applicable to multi-unit buildings were explained

²⁵ See Appendix A of IVY-002 Ivy Energy Rebuttal Testimony at pg. 16-23

²⁶ See Appendix B and C of Ivy Energy Comments in Response to Ruling Questions at pg. 35-40

²⁷ See Appendix A for Cost Shifting Analysis in Ivy Energy Reply Comments on Ruling Questions at pg. 19-26

in great detail and thoroughly documented in the evidentiary record for the Commission.²⁸ Despite the vast body of empirical evidence on the record, the PD relies on incorrect data and flawed interpretations of scientific facts to draw erroneous conclusions about onsite consumption of self-generation. Critically, the PD errs by incorrectly citing that “about half (48%) of VNEM tariff generation and load share a transformer, which indicates that onsite consumption *can* occur” [emphasis added].²⁹ This is patently false and must be corrected in the final decision. The data actually shows that 77% of VNEM generation and load share the same transformer, and 98% share the same feeder.³⁰ It is important to note that netting could be bound to a physical transformer in the successor tariff, rendering this argument obsolete.

The PD ignores the fundamental electrical engineering principles and scientifically proven facts that govern the behavior and flow of electricity at multi-unit properties with shared DERs installed onsite. The PD states that “The Commission concludes that the design of the adopted successor VNEM tariff should not be based on a presumption of onsite self-consumption”.³¹ However, as explained previously, Kirchhoff’s Law has scientifically proven that electricity follows the path of least resistance, and it has been conclusively demonstrated that VNEM generation also follows the path of least resistance to serve onsite load in a multi-unit building first, rather than following a path of maximum resistance and be exported to the grid before serving onsite load.³²

The PD comes close to recognizing this in Finding of Fact #23, which states “When generation and customer meters share a physical connection to the grid, self-consumption *can* occur” [emphasis added].³³ However, Kirchoff’s Laws apply to solar systems just as any other electrical system, so it would be more accurate to say that self-consumption *does* occur—electrons clearly and inevitably flow to serve onsite load, and the record reflects a robust body of physical and scientific evidence as proof.³⁴ Rather than prove its assertion with any evidence to the contrary, the PD instead conveniently disregards the fact that onsite self-consumption results in a significant reduction in electricity demand from the grid³⁵ – a quantifiable benefit backed by empirical evidence that is in the record – to draw the fatally flawed conclusion that the costs and benefits of VNEM “are not remarkably different” from NEM.³⁶

²⁸ IVY-002 at pg. 16-23, Ivy Comments on VNEM Ruling, March 21, 2023 at pg. 6, 35-40

²⁹ PD at pg. 29

³⁰ See Appendix A for comparison of VNEM data and citations in the record. PG&E information shared in response to Ivy Energy and CALSSA data requests is conflicting.

³¹ PD at pg. 30

³² IVY-002 at pg. 16-23

³³ PD at pg. 174 (emphasis added)

³⁴ PD at pg. 30

³⁵ Ivy Comments on VNEM Ruling submitted March 21, 2023 shows VNEM properties reducing electric demand by 30-70% or more at pg. 6, 35-40

³⁶ PD at pg. 31

This unsound argument is then used as justification to solely rely on the findings from the NEM cost-effectiveness analysis to make the determination that the current VNEM tariff is not cost-effective.³⁷ This is despite the fact that this study exclusively analyzed NEM adoption by individual customers that own property – it did not conduct a separate analysis of multi-unit buildings or study the VNEM tariff *at all*. Even though no legitimate VNEM cost-effectiveness analysis was included in the evidentiary record, the PD draws the unsubstantiated conclusion that a transition away from VNEM is required and adopts the VNBT as the successor tariff. This failure to conduct even a basic analysis, particularly in light of all the countervailing evidence and data provided by Ivy and other parties, leaves the PD precariously unsupported.

3. *The PD fails to adequately consider economic impacts and other market implications*

Multifamily buildings represent a key market segment that has significant clean energy growth potential that is still mostly untapped. As written, however, the PD would halt all the progress made on multifamily clean energy market growth in California thus far. This would have cascading ripple effects in the housing and real estate markets and will negatively impact housing production and affordability. Compliance with Title 24 and other green building codes will become prohibitively expensive for home builders. Building electrification mandates must be coupled with a viable tariff that maintains a fair DER value proposition and stable monetization pathway for multifamily building owners making new investments in onsite solar and storage. Otherwise, builders will be forced to further increase home prices and rental rates to recoup the costs of new mandated solar and energy storage installations, resulting in longer payback periods due to a severely diminished DER value, and making far fewer projects economically viable. The added expense and financial risk associated with building code compliance could yield a slowdown of new housing production and may result in builders choosing to exit the California market all together.

4. *The PD fails to adequately incorporate equity and environmental justice considerations*

Ivy is disappointed by the disregard for equity and the glaring omission of ESJ considerations in the PD. The PD fails to meaningfully address the massive gap in adoption levels between property owners and multifamily renters, nor does it adequately consider the systemic barriers multifamily properties and renting populations have historically faced in adopting onsite clean energy resources. There are nearly 17 million renters in California, making up nearly half the state’s population, and overwhelmingly comprised of low-income communities of color.³⁸ Renters have thus far only benefitted from the installation of ~138 MW of VNEM generation at multi-unit buildings, far from a comparable level of adoption to property owners under the legacy NEM program.³⁹

³⁷ PD at pg. 31

³⁸ IVY-003

³⁹ PD at pg. 12

The PD would adopt a successor tariff that is economically unviable, inequitably stunting the maturity and growth potential of this market. To add insult to injury, the PD's tariff is not the product of any clear stakeholder consensus reached by parties earlier in this proceeding, nor had the proposal originated from the regulator itself, who has a duty to serve the public interest. The unviable successor tariff the PD would adopt was almost singularly developed by one party with an inherent conflict of interest: the privately held investor-owned utilities. Where is the public interest or environmental justice being served with that approach?

5. The PD inappropriately portrays a false choice between two parties' successor tariff proposals and fails to properly assess the viability of the adopted VNBT proposal

Ivy humbly suggests that this PD inappropriately portrays a false choice between two parties' successor tariff proposals: Ivy's own Shared DER Tariff and the Joint Utilities VNBT. The PD reads as though the Commission received these proposals from the two parties and was forced to make a black and white choice between them. Instead of fulfilling its role in this proceeding to develop a more robust synthesis of the proposals that incorporates factual evidence provided by other parties to arrive at a final successor tariff that achieves a reasonable middle ground, the PD seemingly sets up the stage for a two man show, dismisses Ivy's proposal and then proceeds to adopt the Joint Utilities' proposal with almost no changes, essentially choosing the last man standing. The PD does not undertake a fair side-by-side comparison of the proposals. It makes arguments against the Shared DER Tariff proposal that would equally apply to the VNBT, exposing the shortcomings of its unbalanced approach. The PD includes no honest assessment of the viability of the VNBT, nor any evidence that clearly demonstrates how the VNBT would successfully fulfill all the statutory requirements for the successor tariff if adopted.

6. The PD fails to adopt a balanced policy decision that adequately considers the full evidentiary record

The PD fails to adopt a balanced policy decision that more holistically considers the complete evidentiary record. Unfortunately, the PD glosses over much of the substantive quantitative *and* qualitative information in the record that would likely form the basis of a more holistic and even-handed evaluation of the VNEM program.⁴⁰ Ivy believes the Commission could reasonably conclude that the VNEM successor tariff should maintain a higher value DER proposition for multifamily buildings than what the PD currently offers. There is a clear evidentiary record for the Commission to legally rely on in support of this conclusion, as well as its authority to use more discretion to make equity policy choices by placing a greater emphasis on intentionally achieving its ESJ goals in the final decision.

⁴⁰ IVY-003, Ivy Comments on VNEM Ruling at pg. 7-11, 41

For example, the PD finds that “it is beneficial to continue the SOMAH tariff as-is to maximize bill benefits so that property owners have the proper incentive to participate and so that tenants continue to receive lower monthly electricity bills through the SOMAH credits. The Commission finds that these benefits justify any cost shift this program may cause.”⁴¹ Ivy finds it curious that the Commission found it reasonable to apply this line of reasoning selectively to SOMAH properties, but not to all other multifamily properties, even though this policy rationale so obviously applies to the entire multifamily housing market... the exact same arguments could be made in favor of VNEM!

SOMAH represents a small fraction of the multifamily housing stock and is only for deed-restricted “affordable” housing units. The Commission should take care not to conflate “affordable” with “low-income”, as the PD does.⁴² Millions of “low-income” renters reside in multifamily housing units not deemed “affordable”. The PD would maintain the VNEM tariff for the small fraction of multifamily customers that were fortunate enough to secure deed-restricted housing but take it away from all other multifamily customers, leaving behind most of California’s low-income renters in the process. This is a highly inequitable outcome for the renting populace and darkly ironic... By drastically slashing the shared DER value for all tenants ineligible for SOMAH, and effectively cutting off VNEM program benefits to a large swath of the multifamily renting population in such dramatic fashion, the Commission is essentially promulgating a type of subsidy cliff with this PD.⁴³ There are very few deed-restricted housing units in the state, relative to the rest of California’s housing stock, and securing residence in one can be difficult and competitive. Yet, as proposed in the PD, all multifamily renters not living one of these units will have their shared DER benefits cut off, *even if they are low-income*. The VNEM subsidy cliff that this PD would create is quite steep.

VI. Recommendations for improving the successor tariff and ensuring its long-term viability

1. Include onsite netting in the final successor tariff for multi-unit buildings

For all the reasons stated in these comments, onsite netting must be included in the final tariff to ensure compliance with all existing federal and state laws.

2. The Commission should adopt a successor tariff that more strongly incentivizes energy storage and demand reduction and removes installation barriers at multi-unit properties

To appropriately balance its equity policy choices with other considerations, the final tariff should ensure new multifamily DERs will provide more electric grid benefits and generate higher electricity system value for all ratepayers. This would represent a more balanced policy decision by the Commission,

⁴¹ PD at pg. 57 The Commission need only replace “SOMAH” with “VNEM” in that sentence.

⁴² PD at pg. 13 shows a table of VNEM participation statistics with a line item “Total – VNEM for Low Income” which it seems to be referring to MASH+SOMAH participation, and is not indicative of actual “low income” customer participation

⁴³ <https://www.ehealthinsurance.com/resources/individual-and-family/what-is-the-subsidy-cliff>

guided by a fair assessment of all the quantitative and qualitative evidence in the record, resulting in more equitable outcomes for all customers. Increasing energy storage adoption levels is the key to unlocking more electricity system and ratepayer value from DERs installed at multifamily buildings.

Along with the critical restoration of onsite netting, Ivy recommends the Commission take more specific, demonstrative action to strongly incentivize new energy storage installations at multi-unit buildings and remove all known existing regulatory barriers that are currently limiting new development.⁴⁴ The final tariff should explicitly allow the installation of energy storage anywhere on a multi-unit property so long as the battery is located behind the transformer. The Commission could also consider developing an energy storage adder in the successor tariff that provides additional incentives for multifamily buildings to install storage and unlock greater bill savings for tenants.

Ivy has demonstrated (with as much quantitative analysis and scientific information as possible) how onsite load is being served in a VNEM arrangement and how these systems reduce electricity demand to the benefit of the electric grid and all ratepayers. The evidentiary record clearly shows how VNEM provides quantifiable electric system benefits today, even without storage. While there is only one multi-unit project with storage installed across the 3 IOU service territories today⁴⁵, which is a compelling data point in itself, there is enough quantitative information in the record for the Commission to arrive at a reasonable conclusion that incentivizing more energy storage at multi-unit buildings will produce even more grid benefits and further improve the cost-effectiveness outlook for this market segment.

3. Alternatively, the Commission could adopt a successor tariff for multi-unit properties with onsite netting measured at the transformer level

With the data showing that 77% of VNEM tariff generation and load share a transformer, and 98% sharing the same feeder, it is a clear indication that onsite consumption occurs at multi-unit properties.³¹ Onsite netting is already occurring under the existing tariff for multi-unit buildings, yielding many benefits to customers and the electric grid, as explained above, so it is not reasonable to completely eliminate netting from the construct of the final successor tariff. As an alternative, the Commission could adopt onsite netting at the transformer-level. Netting at the transformer would enable the onsite generation to be netted against the downstream customer load, with any bill credits allocated to the corresponding benefiting accounts that are being served by that transformer. This would be the most concise manner of measuring self-generation and onsite consumption that is physically occurring at the property and it ensures the successor tariff maintains the value of DER self-consumption value for customers.

³¹ See Appendix A for comparison of VNEM data and citations in the record. PG&E information shared in response to Ivy Energy and CALSSA data requests is conflicting.

⁴⁴ CALSSA Comments on VNEM Ruling at pg. 15-17 articulating how Joint IOU Advice Letters on Storage are deficient

⁴⁵ Joint Utilities Comments on VNEM Ruling at pg. 5 and Ivy Energy Reply Comments on VNEM Ruling at pg. 9

VII. Conclusion

Ivy encourages the Commission to acknowledge the significant quantitative and qualitative benefits of VNEM in the evidentiary record and adopt a more balanced policy decision that prioritizes equity, ensures sustainable growth of the multifamily DER market in California, and complies with all state and federal laws. The Commission should adopt a VNEM successor tariff that includes onsite netting, maintains a fair DER value proposition for multi-unit buildings and renters, and removes the existing regulatory barriers to installing paired energy storage. Adopting a successor tariff that does otherwise is discriminatory, unjust, illegal and will slow progress towards many of California's goals.

Respectfully Submitted,

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Appendix A

PG&E response to Ivy Energy data request on VNEM:⁴⁶

Figure VI-11
Percent of PG&E Virtual NEM Benefiting Meters on Same Delivery Infrastructure as the Generating Meter

Virtual NEM Type	% of Benefiting Meters on Same Feeder, weighted by allocated generator size	% of Benefiting Meters on Same Transformer, weighted by allocated generator size
All Virtual NEM	80%	31%
NEMA	84%	31%
NEMV	94%	71%
NEMV-MASH/SOMAH	97%	50%

PG&E response to CALSSA data request on VNEM:⁴⁷

Virtual NEM Type	% Benefiting Meters on Same Feeder	% Benefiting Meters on Same Transformer
All Virtual NEM	92%	48%
NEMA	90%	48%
NEMV	98%	77%
NEMV-MASH/SOMAH	97%	41%

⁴⁶ R.20-08-020 Evidentiary Hearing Reporters' Transcript, Virtual Proceeding, July 30, 2021, Pages 737-905, Volume 5 <http://docs.epuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=398052751> pg. 807; also shown in Ivy Energy Opening Brief at pg. 6

⁴⁷ Prepared Rebuttal Testimony of Brad Heavner and Joshua Plaisted on Behalf of CALSSA; July 16, 2021 at pg. 71-73 and Attachment 8 at pg. 111; Also shown in CALSSA Comments on VNEM/NEMA Ruling at pg. 6

Appendix B

Recommended Changes to the Findings of Fact and Conclusions of Law

Ivy Energy disagrees with many of the Findings of Fact and Conclusions of Law in the PD, but the recommended changes below are limited primarily to those closely related to the issues covered in these Comments. Lack of edits in this Attachment to any Finding of Fact or Conclusion of Law does not signify assent. Ivy Energy reserves the right to recommend additional changes in its reply comments.

Findings of Fact

XX. Further study should be conducted on the VNEM tariff for multi-unit buildings to conclusively determine the number of residential customers it serves, the number of low-income customers it serves, and the number of customers it serves in disadvantaged communities.

XX. Because the Lookback Study did not analyze multifamily buildings or the VNEM sub-tariff, and no separate analysis was conducted on VNEM or this customer segment in this phase of the rulemaking, the record is incomplete.

XX. The Commission cannot determine the cost-effectiveness of the VNEM tariff for this distinct customer segment with sufficient accuracy.

XX. Further study should be conducted on VNEM and multi-unit buildings separately to determine the tariff's cost-effectiveness.

XX. Electricity demand reduction is a quantifiable benefit that could be included in a cost-effectiveness analysis.

XX. Ivy Energy conducted numerous quantitative data analyses on multi-unit VNEM systems to model their impacts on the grid and electricity system.

XX. Ivy presented its data modeling results and provided other empirical evidence to the record to demonstrate the quantifiable grid benefits of VNEM.

XX. Ivy's data analysis on VNEM systems conclusively demonstrated that multi-unit buildings using the VNEM tariff provide measurable reductions in electricity demanded from the grid.

XX. Data in the evidentiary record shows that VNEM systems, even without energy storage, can reduce the amount of electricity demanded from the grid by a multi-unit building anywhere from 30-70% or more.

XX. The Commission must consider both the quantitative and qualitative benefits of the VNEM tariff in its evaluation.

XX. Proper consideration of all VNEM benefits is required to ensure the development of a fair and equitable successor tariff.

XX. Further study should be conducted to analyze the utilities' cost of service for multi-unit buildings and examine the utilities' current billing and cost-recovery practices for this customer segment

XX. Per Finding of Fact # 15, the Commission should undertake an analysis to quantify exactly how much tenants are paying for electricity, in excess of their "fair share of grid costs".

XX. The VNEM tariff does not cause a "cost shift" because multi-unit renters taking service under it are already paying more than their fair share of grid costs and are concurrently reducing their demand on the grid to the benefit of the electricity system, which reduces costs for all ratepayers.

XX. Kirchoff's Current Law scientifically proves that electricity flows follow a path of least resistance and will flow to serve onsite load in a multi-unit building first, rather than following a path of maximum resistance and be exported to the grid before serving all available onsite load.

XX. Kirchoff's Law can be scientifically applied to multifamily properties with VNEM arrangements.

XX. All customers with onsite load behind a single transformer on the property will served by the generation first, any remaining generation will next flow to serve the onsite load of customers on the property using neighboring transformers sharing the same feeder, and any remaining generation will then flow to serve any other customer loads on the same feeder.

XX. The VNEM tariff maximizes onsite self-consumption, reduces electricity system demand, and minimizes exports to the benefit of the grid.

XX. Property netting allows utilities to treat each property as a single entity on the electric grid and streamline their administration of individual unit bill credits into a single pool of generation credits for the entire property

Conclusions of Law

XX. Completely eliminating onsite netting in the successor tariff would not comply with federal and state laws

XX. The Commission concludes that onsite netting is required to ensure equity between customers, ensure sustainable growth of the multifamily market, and maximize the electric system value of onsite DERs.

XX. The Commission should include onsite netting in the final successor tariff

XX. The Commission should provide stronger incentives for energy storage at multi-unit properties to reduce electricity demand and maximize electric system benefits and remove existing barriers to energy storage installation.

XX. The Commission concludes that energy storage can be installed anywhere on the property so long as it is located behind the transformer, which will provide more flexibility in the successor tariff and remove existing regulatory barriers to installing storage at multi-unit properties to maximize electric system benefits.

XX. The Commission finds that only when all customer loads on the same feeder have been served by the VNEM generation will any remaining power be exported beyond the feeder to the broader electric grid.

XX. With nearly all VNEM systems sharing the same feeder, the Commission concludes VNEM provides significant benefits to the electric grid by maximizing onsite and local consumption, and exports are largely de minimis.

XX. The Commission should conduct further study on multi-unit buildings separately to determine their actual cost of service and make an accurate determination of the tariff's cost-effectiveness.

Findings of Fact – other changes

4. It is possible that the mixed category of VNEM tariff enrollees contains multifamily properties or properties with residential accounts, but the record has no indication of the percentage this would represent.

5. Based on Utility data, the assertion that VNEM tariff enrollees are predominantly nonresidential customers is misleading.

6. There is no clear finding of whether the current VNEM tariff predominantly serves residential customers or nonresidential customers.

7. The VNEM tariff serves both residential and nonresidential customers.

~~8. No party presented quantifiable benefits of the VNEM tariff that can be measured in a cost-effectiveness analysis.~~

10. Generation Facilities on a VNEM tariff that serve residential customers provide **slightly** higher grid benefits than solar-only systems on the NEM 2.0

~~tariff. because the residential VNEM tariff Generation Facility serves multiple residential customers.~~

11. A multitenant property on a VNEM tariff has multiple loads served by the same Generation Facility.

~~B~~because the residential VNEM tariff Generation Facility serves multiple residential customers at a single property, the VNEM generation has many more opportunities to serve onsite customer load first, as compared to a NEM 2.0 system serving a single residential customer load, which results in more significant reductions in electricity demand by the property from the grid.

~~17. The current VNEM tariff provides slightly more quantifiable benefits as compared to the NEM 2.0 tariff.~~

9. There are several ~~unquantifiable~~ qualitative benefits of the VNEM tariff

12. Because the VNEM tariff provides renters and customers in disadvantaged communities improved access to customer generation, the tariff assists the Commission in meeting the objective of increasing equity, as required by Pub. Util. Code §2827.1.

~~13. Parties provided potential distinguishable VNEM tariff costs, as compared to the NEM 2.0 tariff, but few quantifiable cost differences.~~

14. Customers on the current VNEM tariff pay non-bypassable charges based on their consumption from the grid.

15. Tenants sharing a single delivery point of generation pay more than their fair share of grid costs.

16. The record does not contain the number of benefiting accounts that pay more than their fair share.

~~17. The current VNEM tariff provides slightly more quantifiable benefits as compared to the NEM 2.0 tariff.~~

~~18. The VNEM tariff for residential customers causes a significantly smaller cost shift per customer than the NEM 2.0 tariff.~~

~~19. The VNEM tariff for nonresidential customers concentrates benefits to comparatively few customers, on average.~~

~~20. It is a common practice for some multifamily property owners to permanently switch their tenants' electrical accounts to make the property~~

~~owner the customer of record which does not comply with the VNEM tariff requirements.~~

21. Customer access to their benefiting account is required to retain access to the VNEM tariff.

22. CALSSA's proposal to permit a customer's CARE account to be used by the property manager does not comply with the VNEM tariff.

23. When generation and customer meters share a physical connection to the grid, self-consumption ~~can~~ does occur.

24. In PG&E's territory, ~~forty-eight~~ seventy-seven percent of VNEM tariff generation and load share a transformer and ninety-eight percent of VNEM meters share the same feeder.

25. Complexity and cost of installing generation at multitenant properties led the Commission to establish the policy that shared renewable generation installed on multitenant properties can have all its bill credit value aggregated into single pool and be virtually credited to individual benefiting accounts ~~does not require onsite consumption.~~

~~26. Because the quantifiable costs and benefits of the VNEM tariff are not remarkably different from the quantifiable costs and benefits of the NEM 2.0 tariff, it is reasonable to rely on the cost effectiveness results of the NEM 2.0 tariff.~~

~~27. The current VNEM tariff is not cost-effective.~~

28. The DER Shared Tariff would make fair use of the Generation Facilities' imports and the customers' exports.

~~29. The DER Shared Tariff and property netting presents environmental, economic, equity, and legal conflicts or barriers.~~

~~30. Property netting would remove any price signal to individual benefiting account holders.~~

~~31. Compensating benefiting account holders at the residential rate, instead of the Avoided Cost Calculator value, does not send the proper price signal.~~

~~32. In the DER Shared Tariff, credits to benefiting account holders would vary based on actual energy consumption of the entire property, which would make it difficult to predict the cost of using energy during generation hours.~~

~~33. In the DER Shared Tariff, benefiting account holders would not know the best times to use energy or abstain from using energy.~~

~~34. The variability of the DER Shared Tariff would create a barrier to the Commission and California meeting their environmental objectives.~~

~~35. The DER Shared Tariff would lead to increased administrative costs.~~

~~36. The DER Shared Tariff could result in inequities for benefiting account holders.~~

37. Bill predictability and low bills are crucial to lower-income households, the predominant customers of residential multitenant properties.

~~38. A lack of predictability and ability to ensure low bills in the DER Shared Tariff would limit equity, which is a requirement of this tariff.~~

39. The DER Shared Tariff would ~~remove the price signal from customers and results in treating a property like a master-metered property~~ conduct netting at the property level, not the individual unit level, as is the practice under the current VNEM tariff

40. The property netting and distinct accounting of onsite consumption and exports ~~could result in all generation earning credits in value equal to the retail import rate~~ ensures tenants continue to realize the distinct value of onsite self-consumption

41. The DER Shared Tariff property netting proposal would ~~not~~ accurately reflect ~~each customer's usage~~ the electricity behavior that is physically occurring at these properties

~~42. The DER Shared Tariff would result in customers not being assessed for their fair share of transmission, distribution, generation, and non-bypassable charges.~~

~~43. The DER Shared Tariff would cause a cost shift similar to that of the VNEM tariff.~~

44. Combining onsite netting with Mirroring the use of the Avoided Cost Calculator values to set export compensation rates would send the correct price signals to benefiting account holders.

45. Sending correct price signals to benefiting account holders leads to the tariff customers providing greater benefits to the grid, which is one of the objectives of the successor tariff.

~~46. Nothing presented in the record of this proceeding leads the Commission to alter its prior determination to base retail export compensation rates on Avoided Cost Calculator values.~~

47. ~~Modification of the Utilities' proposal~~ Adopting onsite netting and more strongly incentivizing energy storage for multifamily buildings taking service under a virtual net billing tariff balances the competing requirements of the Guiding Principle and statute and presents the best option for a successor to the VNEM tariff.

48. In the net billing tariff, customers are compensated for net exports but in the Utilities' virtual net billing tariff customers would be compensated for their allocation of all exports, and would eliminate onsite ~~which leads to a fair distribution of export compensation value and negates the need for~~ netting.

52. In both Ivy Energy's proposal and the Utilities' proposed virtual net billing tariff, bill credits are divorced from the rate design on which a customer takes service, which is the practice of the current VNEM tariff.

~~54. In the successor VNEM tariff, the load from the Generating Facility will not be applied to benefiting accounts.~~

55. The purpose of the ACC Plus is to support the sustainable growth of distributed generation in California.

~~56. Adoption of the virtual net bill tariff will greatly decrease the per VNEM tariff customer cost shift but providing an ACC Plus adder to nonresidential customers would negate some of those savings.~~

57. The proposed ACC Plus adders combined with the adoption of onsite netting and energy storage incentives will assist in enabling sustainable growth in the industry while recognizing the general characteristics of residential customers participating in the current VNEM tariff, *i.e.*, lower-income households.

58. There are unique circumstances for customers participating in a virtual net energy or net billing tariff.

59. Residential multifamily tenants, and in particular renters participating in the VNEM tariff, are not the decisionmakers for adding Generation Facilities, do not set their credit allocation, and do not have control over the sale of the property but may pay for their share of electricity provided from the Generation Facility on the property.