

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

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

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

**NET ENERGY METERING SUCCESSOR TARIFF PROPOSALS OF THE  
CALIFORNIA ENERGY STORAGE ALLIANCE**

Jin Noh  
Policy Director

Grace Pratt  
Policy Analyst

**CALIFORNIA ENERGY STORAGE ALLIANCE**  
2150 Allston Way, Suite 400  
Berkeley, California 94704  
Telephone: (510) 665-7811  
Email: [cesa\\_regulatory@storagealliance.org](mailto:cesa_regulatory@storagealliance.org)

March 15, 2021

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

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

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

**NET ENERGY METERING SUCCESSOR TARIFF PROPOSALS OF THE  
CALIFORNIA ENERGY STORAGE ALLIANCE**

In accordance with the Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”), the California Energy Storage Alliance (“CESA”) hereby submits this Net Energy Metering (“NEM”) successor tariff proposal as instructed in the *E-Mail Ruling Introducing White Paper, Noticing Workshop on White Paper, and Providing Instructions for Successor Proposals* (“Ruling”), issued by Administrative Law Judge (“ALJ”) Kelly A. Hymes on January 28, 2021.

As directed by ALJ Hymes in *E-Mail Ruling Providing March 23-24 Workshop Preparation Instructions*, issued on March 5, 2021, CESA designates Jin Noh, CESA’s Policy Director ([jnoh@storagealliance.org](mailto:jnoh@storagealliance.org)), as the presenter for the below proposals for the two-day workshop. Considering that the two proposals submitted by CESA are “secondary in nature” compared to the core successor tariff proposals and first require an examination of core successor tariff proposals, CESA requests that the ALJ defer our role in the workshop. Upon review of parties’ proposals and at a later time, CESA may be better positioned to revise our proposal with more concrete and specific details. The goal of these secondary proposals is to ensure that the Commission considers and incorporates these storage enhancement proposals to whichever successor tariff is adopted as part of this rulemaking.

**I. INTRODUCTION.**

CESA is generally supportive of the NEM tariff advancing customer adoption of renewable electric generation facilities to manage onsite customer energy needs and bills, avoid and/or reduce

certain system costs, and facilitate the state’s decarbonization goals. With declining technology costs, the transition to time-of-use (“TOU”) rates, and the growing need for customer resiliency solutions, energy storage will play a critical role in enhancing customer value of onsite renewable electric generation and in flexibly responding to evolving grid needs. In particular, regardless of the ultimate structure of the NEM successor tariff, energy storage paired with NEM-eligible generation can bring better alignment of the costs and benefits of the NEM tariff due to the ability of energy storage to adapt energy generation and deliveries to times of greatest need and value. With the prevalence of Public Safety Power Shut-off (“PSPS”) events, growing risks of extreme-weather events (*e.g.*, heatwaves, wildfires), and the continued need for clean generation capacity, energy storage is increasingly being pursued as an attachment to NEM generators to provide additional resiliency value. Beyond value and benefits specific to an onsite customer, NEM-paired storage resources have the potential to be used for additional grid benefit when aggregated into virtual power plants (“VPPs”) to System and Local Resource Adequacy (“RA”) for a broader set of customers.

Given this context, CESA submits a narrower proposal focused on energy storage enhancements that could potentially be overlaid on any NEM 3.0 successor tariff that is adopted as part of this proceeding. Depending on the resulting successor tariff, such enhancements can incrementally support the statutory and policy objectives for NEM and adhere to the guiding principles adopted in this proceeding. Since our proposed enhancements may hinge on the adopted successor tariff proposal, CESA understands that our proposals may be secondary in its consideration and implementation, but we submit them in order to ensure that they are additional features that can enhance any adopted successor tariff.

CESA does not have a core proposal to submit that comprehensively addresses each of the elements of a successor tariff, but we look forward to reviewing and assessing other proposals and may express our perspective and comments at that time.

## **II. SUMMARY OF SUCCESSOR TARIFF PROPOSALS.**

To advance the next evolution of the NEM tariff, CESA recommends that the Commission consider and adopt the following “storage enhancement” proposals:

- **Proposal 1:** Create contractual structures or tariff language that enable virtual pairing of energy storage resources that are contractually linked, based on the time-matched charging and generation profile of the separate solar and storage resource and attributed NEM export credits for the “offsite” energy storage exports.
- **Proposal 2:** Permanently remove the sizing limit for energy storage systems paired with NEM generators.

As explained further below, CESA believes that each of the two proposals above meet the relevant statutory criteria by virtue of serving as an enhancement to whichever successor tariff is adopted in this proceeding, which will require that they meet the relevant statutory criteria. These storage enhancements can flexibly be “layered” onto any core successor tariff, though Proposal 1 will require the development of contract structures as well as potential billing system upgrades. To this end, these proposals do not serve as alternatives to the White Paper proposal but rather as enhancements that will further the role of energy storage in any adopted tariff proposal in line with the state’s decarbonization and various other policy goals. In addition, these proposals are still conceptual in nature, where CESA plans to provide further refinement at the next opportunity upon review of parties’ core successor tariff proposals.

### **III. PROPOSAL 1: VIRTUAL ENERGY STORAGE PAIRING.**

CESA proposes that the Commission create contractual structures or tariff language that enables virtual pairing of energy storage resources that are contractually linked, and based on the time-matched charging and generation profile of the separate solar and storage resource, attributed NEM export credits for the “offsite” energy storage exports. For example, for NEM generation that is exported to the grid from 3-3:15 pm, a virtually-paired storage resource could charge during that same interval to absorb this NEM generation and be credited at the NEM export compensation rate at the time-differentiated rate or value when it exports at a later time (*e.g.*, evening hours at 7 pm). To advance the next evolution of the NEM tariff, CESA urges the Commission to not only limit the role of storage to physical co-location and integration but also to innovative new mechanisms that pair storage contractually for NEM-eligible export credits.

## A. Export compensation structure

Our Proposal 1 could be overlaid on any successor tariff. We examine how different structures may impact this proposal.

If retail rates are used to calculate the NEM export compensation rate, there will be complexities regarding how to credit resources, especially if the customer account with the generation is a different class of customer under a different rate schedule (*e.g.*, residential) as the customer account with the virtually-paired storage asset (*e.g.*, medium commercial). For a number of reasons, the rate schedules are differentiated to account for cost of service, policy objectives, customer sophistication, etc. Non-residential customers are also subject to demand charges, which residential customers are not. Even among non-residential customers, there could be a range of different rate schedules that apply. There are differences in rate schedules with low-income customers as well – *e.g.*, who are on CARE/FERA rates. Taken together, compensation based on retail rates would be complicated for this virtual pairing mechanism. If compensated at the time of NEM generation to the grid, the benefits of virtual pairing are lost since storage is intended to absorb and shift the generation to times of most value. By contrast, if compensated at the time of virtually-paired storage to the grid, likely in line with TOU rates, the storage exports would be compensated at different rates depending on the storage customer’s rate schedule. As a result, CESA may need to consider whether virtual pairing can only be permitted where customers are on the same type of rate structures. Some of these complexities are seemingly simplified where NEM exports or generation is valued at the same rate, regardless of customer rate schedule. With a common value of solar or feed-in tariff rate, there may be more potential to mix and match customers. Any such rate should be time differentiated to provide sufficient incentives for storage pairing, whether physically co-located (*status quo*) or virtually paired (*proposed*).

An additional consideration is whether locational value is incorporated into the adopted successor tariff,<sup>1</sup> which would likely require that the virtually-paired storage be

---

<sup>1</sup> Mims Frick, *et al.* “Locational Value of Distributed Energy Resources,” published by Lawrence Berkeley National Laboratory in February 2021.  
[https://eta-publications.lbl.gov/sites/default/files/lbnl\\_locational\\_value\\_der\\_2021\\_02\\_08.pdf](https://eta-publications.lbl.gov/sites/default/files/lbnl_locational_value_der_2021_02_08.pdf)

sited within a certain radius to claim the locational value. Since backfeed issues (*e.g.*, voltage stability) can be very localized in nature, there are also questions regarding what would happen if the NEM generation is curtailed or create reliability problems and associated costs that virtually-paired storage cannot resolve by charging at a different location. In addition, depending on how granular some of the avoided cost components are factored into the NEM successor tariff, there may be locational elements to avoided greenhouse gas (“GHG”) emissions, transmission and distribution capacity, etc. Considering these factors, any virtual pairing mechanism may need to consider locational bounds. The granularity of the time-matching of NEM generation and grid-charging of the virtually-paired storage will also factor into how to ensure NEM integrity. CESA assumes that the same level of granularity should apply for physically co-located NEM-paired storage. However, with grid charging allowed for the virtually-paired storage system, time matching will be critical to guarding against NEM export compensation for grid charging that are not reasonably linked to the time and amount of NEM generation.

Finally, rather than a single customer account, virtual pairing mechanisms require two customer accounts, such that rules may need to be established to fairly allocate NEM export-related compensation. In theory, customers may be able to enter contracts where they bilaterally decide the terms by which they would split up their credits (*e.g.*, 50/50), but such an approach may not be scalable. Alternatively, a standard allocation rule could be established to where compensation to each customer would be proportional to their load.

## **B. Description of methodology and inputs for calculating export compensation price(s)**

For the purposes of this proposal, CESA does not have a position on the specific methodology and inputs for calculating export compensation prices, but we look forward to reviewing other parties’ proposals in terms of how our Proposal 1 could be overlaid onto other structures.

## **C. Rate structures**

For the purposes of this proposal, CESA does not propose specific rate structures and how they would be incorporated in or impacted by the successor tariff. See our comments in Section III.A for further examination of how rate structures could impact this

virtual pairing proposal. Upon further review of parties' proposals, CESA will be better positioned to comment on how virtual pairing may be incorporated.

#### **D. Continued application of secondary customer benefits**

For the purposes of this proposal, CESA does not have a position on the specific secondary customer benefits. Whether exemptions from interconnection upgrade costs, standby charges, and departing load charges are adopted under any NEM successor tariff, CESA believes that virtually-paired storage will be subject to its own interconnection requirements and not benefit from the exemptions from interconnecting energy storage at the same site and within certain boundaries or limits of the NEM-eligible generation, such that it would directly "enhance" the NEM generator at the same point of interconnection ("POI").<sup>2</sup> Since two separate interconnection studies will be required and because they have different grid impacts, this may be a condition of virtually-paired storage systems, but we wish to explore this further upon reviewing successor tariff proposals.

#### **E. Terms of service and billing rules**

To establish specific terms of service and contractual obligations, CESA will first need to review parties' proposals to determine the implications of different billing rules (*e.g.*, annual true-up, 15-minute billing) and terms of service (*e.g.*, duration of service) under various structures. To enforce the legal and tariff requirements of coupling the time and amount of NEM generation with offsite grid-charged storage, the Commission should look to examples of such virtual storage pairing mechanisms via contracts or tariff requirements that are in place in other jurisdictions that can inform the Commission's policy development in this proceeding. The Massachusetts Department of Energy Resources ("DOER"), for example, adopted final regulations in March 2020 on the Clean Peak Energy Standard ("CPES") that seeks to ensure a certain and growing percentage of kWh sales in the seasonal peak load hours to come from certified clean resources. In addition to qualifying physically co-located energy storage systems to generate Clean Peak Energy Certificates, the CPES guidelines also enable storage systems that are "co-located" by contractual pairing with a qualified Renewable Portfolio Standard ("RPS") resource to

---

<sup>2</sup> See D.16-01-044 at Conclusion of Law ("COL") 3.

generate these certificates. Such energy storage systems must “demonstrate eligibility through an enforceable, legal tie to clean energy generation.” As a tariff, California’s NEM mechanism is not currently conducive to having such case-by-case demonstrations to be made, so the Commission would need to consider how measurement and enforcement schemes could be developed that allow for greater scalability of this virtual pairing model.

#### **F. Treatment for systems 1 MW or larger**

CESA understands that having separately cited generation and storage systems can create additional interconnection work for utilities. Since Public Utility Code Section 2871.1(b)(5) stipulates that NEM systems should have “no significant impact on the distribution grid”, it is likely reasonable to assess the interconnection impacts of the generation and storage facilities separately and maintain the current policy for interconnection fees and studies.<sup>3</sup>

#### **G. Impact on variations of the current NEM tariff**

CESA sees potential for virtual pairing to work with the virtual net energy metering (“VNEM”) tariff where feasible and where onsite pairing is not optimal. However, at this time, CESA recommends the Commission not prioritize the VNEM use case for virtual pairing given the complexities of crediting across multiple accounts and contracting across multiple parties. NEM Aggregations (“NEM-A”) may be more complex to incorporate for virtual pairing concepts since, as CESA understands it, NEM-A customers are not eligible for net exports. As such, CESA also recommends deferral of incorporating virtual pairing into NEM-A structures at this time. However, CESA looks forward to reviewing any VNEM and NEM-A proposals from other parties, upon which CESA may reassess the feasibility and possibilities for virtual pairing concepts.

---

<sup>3</sup> For generation and storage facilities less than 1 MW, each facility pays the applicable one-time additional fee for interconnection for its applicable utility (\$145 for PG&E, \$75 for SCE, and \$132 for SDG&E). For those facilities larger than 1 MW, applicable interconnection costs under Rule 21 should be paid by the customer. In the case that the storage facility is over 1 MW while the generation facility is less, or vice versa, interconnection costs should be applied according to the individual facilities size.



## **H. Smart inverter requirements**

Proposal 1 can leverage whatever smart inverter requirements that are adopted as a condition of the successor tariff. Whether physically or virtually paired, energy storage resources would be subject to the same smart inverter requirements pursuant to Rule 21 interconnection tariffs.

## **I. Integration of distributed energy resources**

Proposal 1 is specifically targeted to integrating energy storage resources, not just from stationary energy storage systems behind the customer meter but also in-front-of-the-meter (“IFOM”) community energy storage and mobile storage provided by vehicle-to-grid (“V2G”) resources. Taking into account possible locational factors that may impact whether solar generated offsite can be assumed to charge the storage unit at specific time-matched periods, CESA does not believe that any paired storage system needs to be physically co-located behind the same POI as the NEM generator. Instead, virtual pairing of storage could facilitate an efficient integration of rooftop solar in certain cases, allowing for more flexible siting of the storage system. In cases where the upfront investment to install both solar and storage onsite can be challenging to overcome, virtual pairing can support the development of community storage solutions that unlocks economies of scale and enable various NEM solar customers to claim “shares” in a community storage project to absorb the solar generation and deliver it to times of greatest grid value. Similarly, aggregations of standalone storage projects could function in a similar way. However, at this time, there is no methodology in place to value the export capability of standalone energy storage resources, leading many of these resources to be configured as non-exporting.

Furthermore, in D.20-12-029 that adopted vehicle-grid integration (“VGI”) strategies pursuant to SB 676, the Commission declined to adopt credit for V2G exports, instead suggesting that stakeholders take up this issue in R.20-08-020 where it “would be useful for such consideration to occur in a Commission proceeding that also considers credit for exports from other types of energy storage systems.”<sup>4</sup> V2G resources operate as

---

<sup>4</sup> D.20-12-029 at 31-32.

mobile batteries that leverage the embedded storage capability in EV batteries, with the ability to not only to serve onsite customer load but also export to the grid. However, absent a credit or valuation of these V2G exports in addition to the lack of eligibility of V2G resources as a directly integrated or physically connected storage resource to the NEM-eligible generation, the V2G export capabilities are stranded and not utilized.

Therefore, at present, extending NEM export credits to virtually-paired energy storage resources would greatly advance the integration of DERs and facilitate the role of both stationary and mobile storage in absorbing midday solar generation and shifting this to times of greatest grid value. This proposal is also in direct response to the Commission's direction in D.20-12-029, which pointed to R.20-08-020 to address these matters.

#### **J. Safety issues**

Proposal 1 does not address safety issues beyond those already required by the safe and reliable interconnection of NEM generators under the Rule 21 tariff.

#### **K. Legal issues**

Energy storage was determined by D.14-05-033 by the Commission to be eligible for NEM so long as they are paired with an eligible renewable generator that meets the Renewable Portfolio Standard ("RPS") Guidebook requirements for an "addition or enhancement." The RPS Guidebook specifically outlines two categories of energy storage to determine energy storage eligibility for the RPS, which was similarly applied for NEM purposes: (1) integrated storage resources are storage devices that are only capable of storing energy from the eligible renewable generator; and (2) directly connected storage resources are storage devices that are directly connected to the eligible renewable generator via an internal power line. Such concepts would require legal means to ensure "directly connected" or "integration" per RPS Eligibility Handbook, which does not allow standalone, community, and EV battery storage to receive export credits.

The Commission currently follows RPS guidelines since SB 489 required NEM-eligible generators to fall under the definition of renewable generators from Section 25741 of the Public Resources Code. While energy storage is not mentioned in Section 25741, the code leaves space for renewable generation facilities to have "additions or

enhancements”, including storage. The RPS guidebook currently defines how storage can be an addition or enhancement as described above. However, there is reason to believe that this definition can be expanded given that the purpose of the RPS guidebook definition is to ensure that energy storage is to ensure that energy storage charges from renewable energy. The Commission should thus explore whether and how contractual pairing could establish a legal basis for meeting the RPS eligibility definition of “connection” or “integration” with eligible generators, so long as energy storage charges in tandem with when the renewable generator is producing electricity, creating the same energy arbitrage benefits that are being encouraged by California regulators.

#### **L. Adherence to adopted guiding principles**

CESA assesses our Proposal 1 against each of the guiding principles adopted in D.21-02-007 below:

- **A successor to the NEM tariff should comply with the statutory requirements of Public Utilities Code Section 2827.1:** Yes, Proposal 2 would support sustainable growth of the successor tariff by facilitating greater and more flexible storage adoption in certain cases, which can support the integration of NEM generation. Furthermore, it can support investments in V2G resources, which will have incentives to charge with clean generation and provide incremental export energy where and when needed. Presumably, with the adopted successor tariff accounting for growth in equitable ways for low-income and disadvantaged customers, Proposal 1 would merely add onto a statutorily compliant tariff and allow customers to more flexibility to pair their NEM generation with a storage resource for grid benefit.
- **A successor to the NEM tariff should ensure equity among customers:** Virtual storage pairing mechanisms can support more optimal paired storage siting in certain cases, enable more cost-effective investments in customer-sited or community solar where such development may be challenging or uneconomic, and still ensure NEM integrity that only

provides NEM credits for NEM-eligible generation through contractual or tariff obligations and accounting/billing structures.

- **A successor to the NEM tariff should enhance consumer protection measures for customer-generators providing net energy metering services:** CESA does not foresee any consumer protection issues related to this proposal.
- **A successor to the NEM tariff should fairly consider all technologies that meet the definition of renewable electrical generation facility in Public Utilities Code Section 2827.1:** CESA focuses Proposal 1 on the pairing of standalone stationary or mobile storage primarily with NEM solar and do not have sufficient knowledge or expertise to speak to other eligible renewable generation facilities. Presumably, with the adopted successor tariff accounting for technology neutrality, Proposal 1 would merely add onto a successor tariff that adheres to this principle..
- **A successor to the NEM tariff should be coordinated with the Commission and California’s energy policies, including but not limited to, Senate Bill 100 (2018, DeLeon), the Integrated Resource Planning process, Title 24 Building Energy Efficiency Standards, and California Executive Order B-55-18:** More flexible pairing can support greater and potentially more cost-effective storage deployments, which may be sited at lower-cost or more effective locations, thus advancing the state’s decarbonization objectives.
- **A successor to the NEM tariff should be transparent and understandable to all customers and should be uniform, to the extent possible, across all utilities:** As an enhancement to any resulting tariff proposal, CESA believes that Proposal 1 will adhere to this principle.
- **A successor to the NEM tariff should maximize the value of customer-sited renewable generation to all customers and to the electrical system:** Whether due to physical constraints, project development costs, economies

of scale, and/or location-specific benefits, storage may in some cases be more effectively sited at locations separate from the NEM-eligible generation. With contractual or tariff requirements to coordinate NEM generation to be delivered at times of need in line with retail rate structures, CESA believes that this would more flexibly enable cost-effective outcomes in certain cases.

- **A successor to the NEM tariff should consider competitive neutrality amongst Load Serving Entities:** CESA does not foresee any competitive neutrality issues related to this proposal.

As demonstrated above, CESA's Proposal 1 meets each of the adopted guiding principles. Since the Commission would be adopting a NEM successor tariff that adheres to the same guiding principles above, CESA's proposed enhancements to whatever successor tariff is adopted should not impact this overall determination.

#### **M. Implementation plans and timelines**

CESA acknowledges that the implementation details of virtual pairing mechanisms can be complex and will require additional discussions. However, CESA believes that the existence of other NEM or NEM-related mechanisms in place suggest that virtual pairing is possible and feasible. For example, the Renewable Energy Self-Service Bill Credit Transfer ("RES-BCT") program includes options whereby government entities without the potential for renewable generation at their customer sites can nevertheless benefit from renewable energy generation projects at different locations and receive credits for excess energy exported and not consumed by the generating account to the electric grid. If similar billing and accounting structures can be adapted to virtual pairing of NEM generation and storage located at different sites, CESA believes that implementation of Proposal 1 is feasible, albeit relatively complex.

#### **N. Similarities and differences with White Paper proposal and elements**

CESA's Proposal 1 does not represent an alternative to the White Paper proposal but rather an enhancement to either the White Paper proposal or other proposals submitted by parties in this proceeding, whichever is adopted. If the Commission pursues the White

Paper proposal, the Commission will need to consider the base assumptions for the payback period used to calculate the incremental market transition credit (“MTC”). As CESA understands the White Paper proposal, the MTC would only apply to NEM solar and other NEM-eligible generation, not the payback for a combined NEM generation and storage system, though a strong case could be made for such “hybrid” resources to be used to calculate the MTC.

#### **IV. PROPOSAL 2: REMOVAL OF PAIRED STORAGE SIZING LIMITS.**

CESA proposes that the Commission permanently remove the sizing limit for energy storage systems paired with NEM generators, thus indefinitely extending the three-year temporary suspension of the sizing limit,<sup>5</sup> as adopted in D.20-06-017 in the Microgrids proceeding (R.19-09-009),<sup>6</sup> and extending the policy to all energy storage systems, not just those above 10 kW.

Given policy developments that highlight the need for solar and energy storage, CESA recommends permanently modernizing the NEM tariff to enable NEM should be enhanced to allow for paired storage oversizing beyond current limits while still adhering to NEM integrity. A temporary suspension of the sizing limit only creates uncertainty (*e.g.*, considering projects cannot merely resize their physically-installed systems after the temporary period) and does not recognize the incremental value that can be provided by these systems.

##### **A. Export compensation structure**

For the purposes of this proposal, CESA does not propose a specific export compensation structure. Rather, CESA’s Proposal 2 likely can be applied to any proposed and adopted successor tariff, where existing metering requirements and billing systems can ensure NEM integrity. By using firmware/software controls to prevent grid charging and/or through direct NGOM metering of the NEM-eligible generation, the IOUs should be able to account for NEM-eligible exports. Any concerns regarding excess exports attributable to the oversized storage can be accounted for in the same way that the IOUs currently true-up and compensate NEM credits for NEM-eligible generation.

---

<sup>5</sup> Currently, as implemented in the IOUs’ NEM tariffs, the suspension would be effective through August 2023.

<sup>6</sup> See D.20-06-017 at Conclusions of Law (“COL”) 22-23 and Ordering Paragraph (“OP”) 6.

## **B. Description of methodology and inputs for calculating export compensation price(s)**

For the purposes of this proposal, CESA does not have a position on the specific methodology and inputs for calculating export compensation prices, but we look forward to reviewing other parties' proposals in terms of how our Proposal 2 could be overlaid onto other structures.

## **C. Rate structures**

For the purposes of this proposal, CESA does not propose specific rate structures and how they would be incorporated in or impacted by the successor tariff. Most likely, rate structures will not impact paired storage systems that are oversized.

## **D. Continued application of secondary customer benefits**

For the purposes of this proposal, CESA does not have a position on the specific secondary customer benefits, though we understand that certain exemptions from interconnection upgrade costs, standby charges, and departing load charges under any core NEM proposal adopted will be included in the cost-benefit balance. The additional capacity could likely have costs associated with upgrades to the distribution system due to the oversizing of the storage system. However, until the cost responsibility of these upgrade costs is determined in any core NEM successor tariff, CESA is unprepared to comment on any secondary customer benefits or costs associated with Proposal 2, though we recognize that the distribution upgrade costs and cost responsibility factor into the overall cost-benefit assessment.

## **E. Terms of service and billing rules**

CESA's Proposal 2 would presumably work under the billing rules (*e.g.*, annual true-up, 15-minute billing) and terms of service (*e.g.*, duration of service) under various structures. At this time, CESA cannot comment on this element of our proposal until we evaluate core successor tariff proposals submitted by parties.

## **F. Treatment for systems 1 MW or larger**

CESA supports extending the oversizing allowance to system sized 1 MW or larger since such larger systems will likely have to pay for the costs related to upgrades triggered by current systems. At this time, CESA cannot comment further on this element of our proposal until we evaluate core successor tariff proposals submitted by parties.

## **G. Impact on variations of the current NEM tariff**

CESA has no position at this time on the impact of this proposal on the variations of the current NEM tariff.

## **H. Smart inverter requirements**

CESA's Proposal 2 can leverage whatever smart inverter requirements that are adopted as a part of or a condition of the successor tariff.

## **I. Integration of distributed energy resources**

CESA's Proposal 2 is specifically targeted to integrating paired energy storage systems.

## **J. Safety issues**

Our Proposal 1 does not address safety issues beyond those already required by the safe and reliable interconnection of NEM generators under the Rule 21 tariff and interconnection study process.

## **K. Legal issues**

CESA does not see any legal issues with this proposal as it builds upon a previous Commission decision. Upon deeming storage eligible for the NEM tariff as an addition or enhancement to the NEM generator, D.14-05-033 placed limitations on the size of these paired energy storage systems greater than 10 kW to have: (1) maximum output power no larger than 150% of the NEM generator's maximum output capacity; (2) discharge capacity not to exceed the NEM generator's maximum capacity; and (3) maximum energy discharged not to exceed 12.5 hours of storage per kW. To ensure NEM integrity, the Commission adopted metering requirements or, pursuant to D.19-01-030, alternatives



using firmware and software controls (*i.e.*, power-control-based options). While they were reasonably adopted at the time to ensure that energy storage resources are intended to be used to only store NEM-eligible generation and for NEM generation to support (typical) onsite customer load, CESA recommends that the Commission revisit these policies and rules in light of evolving grid conditions, technological capabilities, and emerging policy priorities.

In R.19-09-009, the Microgrids Track 1 Decision, D.20-06-017, the Commission “modernized” the NEM tariff to remove storage sizing limits to better position NEM-paired storage systems to support customer resiliency as a near-term strategy for the 2020 wildfire season. While adopted as a temporary solution, wildfire mitigation and resiliency needs do not appear likely to abate in coming years that the Commission may wish to revisit this storage sizing limitation at large and, at the same time, create accounting structures and billing mechanisms with the use of metering and/or inverter-based measurement systems to ensure NEM integrity, such that NEM credits are only attributed to NEM-eligible generation, not to any excess generation beyond customer load limits or to storage generation produced from grid charging.

Building off D.20-06-017, CESA also proposes to remove the sizing limit to energy storage systems regardless of size, whereas the decision set a 10-kW cut-off for eligibility to this policy. Given the need to encourage electrification in all sectors, the ability to oversize NEM-paired energy storage systems for residential customers will play a key role in supporting resiliency and VPP applications in addition to supporting greater levels of transportation electrification and integration of significant amounts of EV loads.

#### **L. Adherence to adopted guiding principles**

CESA assesses our Proposal 2 against each of the guiding principles adopted in D.21-02-007 below:

- **A successor to the NEM tariff should comply with the statutory requirements of Public Utilities Code Section 2827.1:** Yes, Proposal 2 would support sustainable growth of the successor tariff by positioning NEM systems with storage enhancements to provide additional value to the

customer through resiliency or incremental grid-service purposes. Presumably, with the adopted successor tariff accounting for growth in equitable ways for low-income and disadvantaged customers, Proposal 2 would merely add onto a statutorily compliant tariff and allow customers to seek revenue opportunities outside of the NEM tariff with more flexibility to size storage in optimal ways.

- **A successor to the NEM tariff should ensure equity among customers:** Presumably, with the adopted successor tariff accounting for growth in equitable ways for equity among customers, Proposal 2 would merely add onto a successor tariff that adheres to this principle and offers this optionality to all customers.
- **A successor to the NEM tariff should enhance consumer protection measures for customer-generators providing net energy metering services:** CESA does not foresee any consumer protection issues related to this proposal.
- **A successor to the NEM tariff should fairly consider all technologies that meet the definition of renewable electrical generation facility in Public Utilities Code Section 2827.1:** CESA focuses Proposal 2 on the pairing of energy storage primarily with NEM solar and do not have sufficient knowledge or expertise to speak to other eligible renewable generation facilities. Presumably, with the adopted successor tariff accounting for technology neutrality, Proposal 2 would merely add onto a successor tariff that adheres to this principle.
- **A successor to the NEM tariff should be coordinated with the Commission and California’s energy policies, including but not limited to, Senate Bill 100 (2018, DeLeon), the Integrated Resource Planning process, Title 24 Building Energy Efficiency Standards, and California Executive Order B-55-18:** CESA sees significant merit in enshrining this feature in any resulting NEM tariff. The Commission is increasingly prioritizing customer resiliency in the face of increasing risk of wildfires

and PSPS, as evidenced by the Commission adopting D.20-06-017 in the Microgrids proceeding (R.19-09-009) but also in adopting D.19-09-027 and D.20-01-021 for the Self-Generation Incentive Program (“SGIP”) (R.12-11-005) that created new SGIP budget categories and adders for resiliency-focused energy storage projects. As a result, sizing limitations based on inverter size for Equity Resiliency projects and general projects claiming the resiliency adder were removed to help with appropriate sizing to customer onsite needs.<sup>7</sup> Another reason to consider this issue is the Commission’s active consideration of exporting capacity for behind-the-meter (“BTM”) hybrid solar-plus-storage in the RA proceeding, R.19-11-009. In the RA Track 3A Scoping Memo, the Commission will consider the joint agency steps necessary to establish a net qualifying capacity (“NQC”) value for such resources. In D.20-06-017, the Commission expressed its interest “in the possibility of increasing value for BTM hybrid resources,”<sup>8</sup> which was stated in the RA context but could also be applied in the NEM context by creating the accounting structures and billing mechanisms to not only allow reasonable oversizing but also to enable incrementality assessments for NEM credits versus RA capacity compensation. Finally, in the Integrated Resource Planning (“IRP”) process, over 10 GW of energy storage is needed through 2030, such that supporting the multiple-use applications and incremental capacity provided from NEM-paired storage systems would advance these longer-term planning and decarbonization goals.

- **A successor to the NEM tariff should be transparent and understandable to all customers and should be uniform, to the extent possible, across all utilities:** Proposal 2 is already made uniform and transparent in the NEM schedules for each IOU on a temporary basis, so CESA merely seeks a permanent inclusion of this feature onto any resulting

---

<sup>7</sup> See D.20-01-021 at Findings of Fact (“FOF”) 57-58.

<sup>8</sup> See D.20-06-031 at 33.

NEM tariff. As such, CESA believes that Proposal 2 adheres to this principle.

- **A successor to the NEM tariff should maximize the value of customer-sited renewable generation to all customers and to the electrical system:** Yes, Proposal 2 would better position NEM generation paired with storage resources to provide incremental grid value, beyond those embedded in the NEM export compensation rate, whichever way it is adopted. With incremental storage capacity through oversizing to be eligible to provide broader grid services, this proposal would support multiple uses from these resources. Despite the value of resiliency not yet quantified as part of R.19-09-009, there may be some societal value or avoided cost that could be attributed to having customers invest in their own resiliency, given today's grid conditions.
- **A successor to the NEM tariff should consider competitive neutrality amongst Load Serving Entities:** CESA does not foresee any competitive neutrality issues related to this proposal.

As demonstrated above, CESA's Proposal 2 meets each of the adopted guiding principles. Since the Commission would be adopting a NEM successor tariff that adheres to the same guiding principles above, CESA's proposed enhancements to whatever successor tariff is adopted should not impact this overall determination.

#### **M. Implementation plans and timelines**

CESA does not believe that much additional implementation is required since the IOUs have already implemented this proposal on a temporary basis. Unless the IOUs have identified an issue with the current temporary suspension of storage sizing limits pursuant to D.20-06-017, this proposal could be immediately adopted via advice letter by removing language in their tariffs on the effective end date of the temporary suspension.

#### **N. Similarities and differences with White Paper proposal and elements**

CESA's Proposal 2 does not represent an alternative to the White Paper proposal but rather an enhancement to either the White Paper proposal or other proposals submitted

by parties in this proceeding, whichever is adopted. So long as metering requirements are adhered to, Proposal 2 can be overlaid to true-up compensation only for NEM-eligible generation. If the Commission pursues the White Paper proposal and if the MTC accounted for the payback period of a combined NEM generation and storage system, CESA believes it is reasonable to establish the MTC based on the base assumption of the NEM generation and storage system needed to support onsite customer needs only, whereas CESA's Proposal 2 would merely give customers the option to oversize their paired storage systems above and beyond their "normal" onsite customer needs in order to serve other purposes, such as customer resiliency and incremental grid services (*e.g.*, RA). To be clear, CESA is not recommending that the MTC be calculated based on any potential oversizing of the storage component by customers.

V. **CONCLUSION.**

CESA appreciates the opportunity to this NEM successor tariff proposal and looks forward to working with the Commission and other stakeholders in this proceeding.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Jin Noh', written in a cursive style.

Jin Noh  
Policy Director  
**CALIFORNIA ENERGY STORAGE ALLIANCE**

Date: March 15, 2021