

Rulemaking No.:	<u>20-11-003</u>
Exhibit No.	<u>VOLT-01</u>
Witnesses	<u>Dana Guernsey</u>
Commissioner	<u>Marybel Batjer</u>
ALJ	<u>Brian Stevens</u>

**OPENING PREPARED TESTIMONY OF
VOLTUS, INC.**

Rulemaking 20-11-003
Extreme Weather Event Reliable Electric Service

September 1, 2021

*R. 20-11-003 (Extreme Weather)
Opening Prepared Testimony of Voltus*

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1 **I. Executive Summary**

2 Exhibit VOLT-01 is the opening prepared testimony of Voltus, Inc. (“Voltus”),
3 addressing the issues identified in the revised Scoping Memo issued on August 10, 2021 in the
4 Rulemaking 20-11-003 (Extreme Weather Event Reliable Electric Service (“Extreme
5 Weather”)). Voltus’s mission is to become the world’s leading distributed energy resource
6 supplier. Voltus is a demand response provider (“DRP”) in California for commercial and
7 industrial customers. Based in San Francisco and Boston, Voltus serves thousands of customers
8 across all nine North American energy markets and has secured over 2,000 MW of DERs to date.
9 Voltus leverages our commercial and industrial (“C&I”) customers’ operational flexibility to
10 deliver energy, capacity, and ancillary services to wholesale and retail markets through a
11 combination of flexible load, energy storage, energy efficiency, and distributed generation.
12 Voltus pays our customers a share of earned market revenues to incentivize their participation.

13 In a few short years of operation, Voltus has built a portfolio of 89 MWs of total flexible
14 load potential in California. During the Stage 3 system emergencies on August 14 and 15, 2020
15 Voltus helped reduce demand by ~50 MW through its deployed capacity in the CAISO market.
16 In August 2021, Voltus began providing Demand Response Operating Reserves in CAISO.

17 As an active market participant, Voltus hopes that in Phase 2 of this proceeding, the
18 CPUC will see both the value in demand response and that enlisting demand response requires
19 incentives and removing participation barriers. Regulatory complexity is a deterrent to
20 participation, not a guarantee of reliability. In Phase I of this proceeding, Voltus invested
21 significant time and energy in developing policy proposals that would help California enlist

1 demand to avoid electricity shortfalls. The result of that proceeding was an underwhelming
2 Emergency Load Reduction Program (“ELRP”) that resulted in minimal enrollment. ELRP has
3 not secured the necessary grid reliability, as Voltus predicted when the program was proposed.¹
4 Currently, the ELRP is not attracting customers,² while enrollment is stagnant or declining in the
5 other reliability demand response program (the base interruptible program (“BIP”)) because of
6 the persistent refusal to fix flaws in this program.

7 Voltus’s policy recommendations are guided by the principal that programs should be as
8 simple as possible to encourage both enrollment and performance. Drawing on its experience in
9 all nine North American markets, incentives and base payments provide more emergency
10 reliability, more cost-effectively, than do penalties and rate-payer funded administrative
11 oversight. While Voltus appreciates and supports many of the proposed changes to ELRP and
12 DRAM, they still demonstrate a preference for complexity and regulation than for making these
13 programs attractive for participants. Particularly when it comes to emergency programs like BIP
14 or ELRP, participants should not be required to jump through hoops to help in an emergency.

15 With this foundation, Voltus’s supports the following changes:

- 16 1. Holding a supplemental DRAM auction for 2022, and adopting three of the five
17 proposed DRAM modifications in the Energy Division Staff Concept Paper;

¹ See Voltus Comments on Proposed Decision, *Reliable Electric Service in Extreme Weather*, R. 20-11-003 (filed Mar. 15, 2021).

² See Joint Statement from the CPUC President Marybel Batjer, CEC Chair David Hochschild, and California ISO CEO Elliot Mainzer on decision to procure additional energy resources for summer, at 3, (July 1, 2021) <https://www.caiso.com/Documents/CapacityProcurementMechanismSignificantEvent-JointStatementandLetter.pdf> (“Current development of demand-side resources remains uncertain – Development of demand-side resources ordered in the CPUC’s March decision, D.21-03-056, are uncertain. While the CPUC and CEC are working to ensure full enrollment in new programs, it appears that savings from the program will be less than targeted in the decision.”)

- 1 2. Aligning BIP penalties for third-party resources to be comparable to utility penalties,
2 and enabling program unenrollment and nomination flexibility outside of the June 1
3 through October 31 timeframe;
- 4 3. Increasing compensation rates for ELRP to include either a capacity payment and a
5 performance payment, or a significantly higher performance payment, and adopting
6 most of the Energy Division Staff ELRP recommendations;
- 7 4. Adopting a financial assurance mechanism for resource adequacy awarded outside of
8 the LIP; and
- 9 5. Not imposing DRAM requirements on CCA or other non-DRAM resource adequacy
10 provided by demand response.

11 **I. Demand Response Auction Mechanism (“DRAM”)**

12 The DRAM process should be designed to maximize reliable resource procurements on
13 short order. Voltus therefore supports some of the proposed modifications as consistent with this
14 aim. Voltus opposes other proposed modifications, which add unnecessary administrative
15 complexity and erect undue barriers without increasing reliability.

16 Voltus **supports adding a partial year supplementary auction** for DR capacity to be
17 delivered June – December 2022. Voltus also **supports expanding the budget for 2023**

18 **DRAM.**

19 The Energy Division Staff made five recommendations for the supplementary 2022
20 DRAM auction and the 2023 DRAM auction. In general, these recommendations make what is
21 already a very complex and administratively onerous program even more so. It is not clear what

1 problem these proposals are trying to solve. More complexity is a deterrent to participation. That
2 said, **Voltus does not oppose proposed DRAM modifications ii,³ iii,⁴ and iv.⁵**

3 **Voltus opposes proposed DRAM modification i**, which would cause offered capacity
4 that is only able to participate in the CAISO Day-Ahead Market to be assigned a lower value in
5 the bid evaluation process than offered capacity that is able to participate in the CAISO Real
6 Time Market, unless the capacity commits to offering at or below \$500/MWh in the DAM at all
7 times. Voltus opposes setting an arbitrary price cap for one type of resource when there is an
8 underlying market design flaw that resources are not clearing in the DAM despite emergency
9 conditions. Voltus has overridden this flaw and voluntarily dispatched resources in this situation,
10 and not been paid for these resources. The CPUC should fix this underlying market flaw rather
11 than penalize resources that can only participate in the DAM.

12 **Voltus strongly opposes proposed DRAM modification v**, which would require
13 capacity awarded in the 2022 supplementary auction and 2023 DRAM to be counted toward the
14 Qualifying Capacity limit established for 2022 and 2023 through the 2021 and 2022 Load Impact
15 Protocol (“LIP”) processes. This is completely contrary to the current system, whereby DRPs
16 omit projected and current DRAM from the ex-ante projections, to avoid potential double-
17 counting. This proposal is also wholly unnecessary: DRAM already has a Qualifying Capacity
18 process that is separate from the LIP. Requiring a LIP award to participate in DRAM would
19 deter DRAM participation. In future years, Voltus would support streamlining DRAM and LIP

³ “Proxy Demand Resources (PDRs) participating in CAISO Real-Time Market (RTM) must bid at or below \$900/MWh to maintain some consistency with the triggering price for the reliability-based demand response programs, including the Base Interruptible Program (BIP), which are triggered at RTM price reaching \$950/MWh.”

⁴ “Once a PDR Resource Identification (ID) is introduced on a supply plan, it must be maintained on the supply plan until it is removed; the PDR cannot be reintroduced into the supply plan during the remaining months of the contract. This requirement is in addition to the existing prohibitions on the customer and Resource ID movement within and across the contract.”

⁵ “A shortfall in the DR capacity shown on the monthly supply plan relative to the contracted capacity is subject to a penalty based on the level of the capacity shortfall.”

1 awards into a single all-encompassing RA process, but such a design should only be for 2024
2 and beyond, given the urgent timeline for 2022 and 2023 DRAM and the considerable design
3 changes that would be required. Yet if this proposed modification were adopted for 2022, a DRP
4 would have every incentive to instead sell Qualifying Capacity in bilateral contracts, a process
5 which already has far fewer requirements than DRAM.

6 **II. Base Interruptible Program (“BIP”)**

7 A functional BIP program is essential to avoid using the emergency load reduction
8 programs, like CSEP and ELRP, that allow prohibited resources. Given the State’s preference to
9 prioritize the use of cleaner resources, BIP should be maximized to avoid reliance these
10 programs.

11 Yet after the summer of 2020, aggregators’ BIP portfolios have shriveled due to the
12 punitive penalties combined with the wildly unpredictable number of dispatches. Resources that
13 are ready and willing to provide emergency grid support are sidelined due to punitive penalty
14 structures, because failing to perform in a single event could—and has—erased all prior revenue.

15 To support the state’s overarching policy goals while maintaining a functional BIP
16 program by removing deterrents to participation, Voltus proposes the following.

17 **First, align penalties for third-party aggregator resources with utility penalties.**

18 When third-party BIP resources use energy above their FSL during a BIP curtailment event, they
19 are subject to a penalty of \$6,000 to \$8,400/MWh, which is higher than any other capacity-based
20 program in the country. Utilities, meanwhile, pay penalties equivalent to the Locational Marginal
21 Price (“LMP”). There is no justification for this distinction, and the onerous penalties are out of
22 step with other demand response programs. In Indiana where utility DR programs also
23 participate in the wholesale markets, third party DR providers that fail to meet their

1 commitments are charged the clearing price as a penalty and not a higher amount.⁶ BIP penalties
2 should be equivalent to LMP, like utility penalties.

3 **Second, the CPUC should retain firm program enrollment and nomination rules for**
4 **June 1 through October 31, but increase flexibility in the remaining months through**
5 **flexible unenrollment and varying firm service levels.** The CPUC wants to ensure that
6 resources are enrolled in the critical reliability months of June through October. Yet Voltus has
7 been unable to enroll resources due to the inflexible BIP rules, whether because the resource is
8 not available for some weeks of the year, or because its Firm Service Levels vary seasonally. The
9 CPUC’s policy goals can be reconciled with more flexible participation rules by making two
10 changes. First, resources should be able to unenroll at any time outside of the June 1 through
11 October 31 period. Yet to receive capacity payments, resources must commit to this entire
12 timeframe. Second, resources should be able to vary Firm Service Levels monthly or at least
13 seasonally, while having set Firm Service Levels from June through October. The June to
14 October FSLs could be required to be at least 50% of the FSL in other time periods.

15 **III. Emergency Load Reduction Program (“ELRP”)**

16 The CPUC must fortify the ELRP pilot. ELRP is one of the last defenses against emergency
17 load shed. Enlisting customers was already challenging due to the nominal compensation rate,
18 before the Governor instituted the California State Emergency Program (“CSEP”) which pays
19 twice as much but does not allow third-party aggregators to enlist customers. Given this, Voltus
20 supports several modifications to the ELRP proposed in the revised Scoping Memo. ELRP must
21 be simplified and provide better financial incentives, particularly to enlist “ELRP only” resources

⁶ See Indiana Michigan Power Company, Schedule Of Tarifs And Terms And Conditions Of Service Governing Sale Of Electricity In The State Of Indiana, Issued on March 11, 2020, https://www.indianamichiganpower.com/global/utilities/lib/docs/ratesandtariffs/Indiana/IM_IN_TB_18_06-29-2020.pdf.

1 that cannot be stacked with other demand response programs. ELRP is an emergency program that
2 should have as few participation requirements as possible to maximize enrollment.

3 First, **the ELRP compensation should be increased for all ELRP participants to**
4 **either (1) \$1/kW per month of registered capacity plus a \$2/kWh performance payment; or**
5 **(2) a performance payment of \$6/kWh.** The current \$1/kWh compensation rate is far too low,
6 evident from the low enrollment in ELRP at this rate and the \$2/kWh offered by CSEP. The
7 Commission spent several months and significant time and energy developing the ELRP
8 program, which is now completely undermined by CSEP. If the CPUC wants customers to
9 participate in ELRP rather than CSEP, it must increase ELRP compensation significantly.

10 Emergency load reduction programs always have a base payment. Even in ERCOT's
11 energy only market, the Emergency Response Service ("ERS") demand response program pays
12 an availability payment. In PJM, for the 22/23 Base Residential Auction, the base price for
13 capacity was \$18,250/MW-yr, with some zones clearing around \$35,000/MW-yr. Upon dispatch
14 resources are also paid the greater of the LMP or a strike price, which was capped at
15 \$1,849/MWh for the last five years, calculated as \$1,000 plus the Primary Reserve factor minus
16 \$1 for a 30-minute lead time resource. A base payment dramatically improves enrollment:
17 NYISO's Special Case Resource program—which provides a capacity payment—was projected
18 to procure 1,825 MWs while the Emergency Demand Response Program ("EDRP")—a
19 performance only program—procured 5 MW of capacity.⁷ To the best of Voltus's knowledge,
20 this 5 MW EDRP program is the only other emergency demand response program that does not
21 provide a base payment.

⁷ NYISO, *Gold Book: 2021 Load & Capacity Data*, at 57 (April 2021),
<https://www.nyiso.com/documents/20142/2226333/2021-Gold-Book-Final-Public.pdf/b08606d7-db88-c04b-b260-ab35c300ed64>.

1 Since every market (including California with BIP) recognizes that a base payment is
2 necessary to maximize enrollment of emergency resources, there should be a base payment to
3 cover the costs of enrolling customers and investing in the necessary infrastructure. Performance
4 payments ensure resources deliver. Therefore, Voltus recommends a base payment of \$1/kW per
5 month paired with a \$2/kWh performance for dispatches.

6 If the CPUC foregoes a base payment, then at a minimum performance payments must be
7 significantly higher for resources to both enlist and perform. Prospects and customers enrolled in
8 other DR programs are not interested in ELRP at this compensation level. Voltus has heard from
9 customers that \$1,000 per MWh does not compensate them for the trouble of a dispatch,
10 particularly if they are using backup engines, given the diesel fuel costs \$350/MWh. The value
11 of lost load for any customer class is also well above the \$1,000/MWh offered. A review of 10
12 jurisdictional studies found load-weighted averages for the value of lost load (“VOLL”) to be in
13 the \$30,000-\$40,000/MWh range, while even residential VOLLs in the US were in the \$1,000-
14 \$4,000 range.⁸ Since resources will only be triggered in a true emergency, they should be
15 compensated at rate commensurate with the value of lost load. In MISO, emergency demand
16 response resources can offer up to the \$3,500/MWh strike price, and be paid the same during a
17 dispatch.

18 Voltus proposes a performance payment of \$6/kWh. This is the minimum penalty
19 imposed on third-party BIP resources that do not perform, and therefore essentially a
20 representation of the minimum value of lost load. It would else help ensure that customers

⁸ London Economics, *Estimating the Value of Lost Load*, at 51 (June 17, 2013),
http://www.ercot.com/content/gridinfo/resource/2014/mktanalysis/ERCOT_ValueofLostLoad_LiteratureReviewandMacroeconomic.pdf#page=21&zoom=100,0,77.

1 eligible for both CSEP and ELRP opt for ELRP. These values are still well below the value of
2 lost load for C&I customers, who would be a major source of participation.

3 **Second, Voltus supports adopting the Group A enhancements.** The CPUC should
4 adopt the Group A enhancements to reduce the minimum size threshold and to eliminate the
5 compensation collar. The compensation collar is particularly unnecessary. There is no cap on the
6 program such that a 50%-200% collar is helpful to bound participation. Furthermore, in an
7 emergency situation, would a resource really be capped at 200% of its nominated quantity?

8 **Third, a Day-Of trigger in response to a CAISO warning or emergency declaration**
9 **should be adopted for Group B participants.** The Day Ahead Group B participants have not
10 been called, and therefore hundreds of megawatts have been sidelined. Adding a Day-Of trigger
11 will leverage resources, without any downside.

12 **However, Voltus opposes the proposed Group B enhancement to require ELRP**
13 **resources participating in the CAISO real-time market (“RTM”) to bid in at or below**
14 **\$900/MWh.** It is not clear whether this proposal would require that ELRP resources bid into the
15 RTM, or simply cap their offers at \$900/MWh if they do. If it’s the former, this proposal doesn’t
16 appreciate that there are ELRP-only customers, who don’t offer into the RTM. If it’s the latter,
17 it’s not clear why the CPUC would want to impose another limitation ELRP resources. These
18 limitations deter participation in what is supposed to be an emergency program of last resort.

19 **Finally, the dispatch order and performance measurement could be tweaked to**
20 **promote participation for customers that participate in both BIP and ELRP.** The ELRP
21 program should call this “BIP plus ELRP” subgroup first, and allow ELRP payments to
22 compensate any load reduction until BIP is also called. At that point, a resource should only be
23 paid ELRP compensation for incremental reductions. For example, if a 2 MW BIP + ELRP

1 resource with an FSL of 1 MW is dispatched for ELRP, and drops to .8 MW, it is currently only
2 paid for .2 MW, meaning it has little incentive to participate. Yet if it were paid ELRP
3 compensation rates for 1.2 MWs until BIP is called, and then be paid .2 MWs at ELRP
4 compensation rates, it would have greater incentive.

5 **IV. Miscellaneous for Summer 2022 Resources**

6 Voltus and many other parties have previously raised the issue of how the LIP process
7 creates a long lead time for incorporating demand response resources. Ideally resource adequacy
8 resources could be quickly integrated through a mechanism that gives the CPUC the quality
9 assurance the LIP process provides. **To balance these considerations, Voltus proposes that for**
10 **summer 2022 the CPUC pilot allowing aggregators to qualify new resources and post**
11 **financial assurance when non-LIP resources are awarded for resource adequacy for**
12 **summer 2022.** Voltus has already submitted its 2022 LIP, so this would be a test of a parallel
13 process that would allow critical megawatts to be brought to market while providing
14 performance assurance. Voltus proposes that the collateral commitment be \$2,500/MW and that
15 the collateral be forfeited if resources do not perform or otherwise cover their obligation to
16 provide Resource Adequacy. This is comparable to the \$2,400 financial assurance posted in
17 MISO for an untested load-modifying resource. This financial assurance is calculated as the
18 potential penalty risk for one dispatch assuming: $1 \text{ MW} * 4 \text{ hour duration} = 4 \text{ MWh} * \text{a real-time}$
19 $\text{energy price of } \$200/\text{MWh (a proxy for pricing under emergency conditions)} * 3 \text{ (since untested}$
20 $\text{resources face 3x penalty risk)} = \$2400/\text{MW}.$ ⁹

⁹ MISO Tariff, Module E-1, 69A.3.5, Demand Resources Eligibility, 40.0.0, Section j, (PDF pp. 62-64)
<https://www.misoenergy.org/legal/tariff/>.

1 Finally, **Voltus opposes applying DRAM requirements to CCAs.**¹⁰ The DRAM
2 requirements are onerous and CCAs should be able to dictate the terms of the demand response
3 they procure for resource adequacy purposes. CCAs could be helpful laboratories to explore
4 alternative constructs and models. Voltus believes that applying the DRAM requirements to
5 CCAs will harm reliability by adding barriers to demand response participation.

¹⁰ The Staff concept paper proposed, “Applying certain DRAM requirements to CCAs: requiring all third-party Demand Response (DR) resources contracted with Community Choice Aggregators (CCAs) to adhere to certain DRAM requirements, such as those related to market bid price caps, capacity counting and showing (including customer and Resource ID movement), and minimum dispatch activity.”

1 **V. Statement of Qualifications**

2 Dana Guernsey is the Chief Product Officer of Voltus, Inc. She leads the development of
3 Voltus’s technology-enabled Distributed Energy Resource (“DER”) platform, which connects
4 Voltus’s customers and technology partners to the value that they can extract from their local
5 energy markets, while contributing to a more resilient and decarbonized electric grid. At Voltus,
6 she oversees an Energy Markets team that manages resources in every North American
7 wholesale market.

8 Ms. Guernsey is a leading expert in global energy markets and brings more than a decade
9 of experience developing innovative, demand-side energy management products and programs
10 that have delivered billions of dollars in proven value to customers and ratepayers. Before
11 Voltus, Ms. Guernsey was Director of Product Marketing at FirstFuel, which offers cloud-based
12 engagement software to help utilities deepen relationships with their business customers and
13 increase energy efficiency. Prior to FirstFuel, she led corporate development and go-to-market
14 strategies at Ambri, an MIT spinout company commercializing batteries for large-scale energy
15 storage on the electric grid. Prior to that she was the Director of Energy Markets at EnerNOC,
16 where she led a team responsible for the profitable management of the company’s complex
17 portfolio of nearly 10,000 MWs of demand response assets, covering dozens of wholesale
18 electricity markets and regulated utilities across North America, Europe, Asia, and Australia.

19 Ms. Guernsey holds an M.S. in Engineering Management, B.S. in Engineering, and B.A.
20 from Dartmouth College. Ms. Guernsey was named a Massachusetts High Tech “Woman to
21 Watch” in 2014 for her groundbreaking work in the energy and technology industries.

Verification

I, Dana Guernsey, had the Opening Prepared Testimony of Voltus, Inc. in California Public Utilities Commission Docket RM 20-11-003 prepared under my supervision. Insofar as the material is factual in nature, I believe it to be correct. Insofar as this material is in the nature of opinion or judgment, it represents my best judgment. I adopt this testimony as my sworn testimony in this proceeding.

Dated: September 2, 2021



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