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3 **BEFORE THE PUBLIC UTILITIES COMMISSION**
4 **OF THE STATE OF CALIFORNIA**
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10 Order Instituting Rulemaking to Establish
11 Policies, Processes, and Rules to Ensure
12 Reliable Electric Service in California in the
13 Event of an Extreme Weather Event in 2021.
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Rulemaking R.20-11-003

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25 **PHASE 2 OPENING TESTIMONY OF THE GREEN POWER INSTITUTE**
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1 **PHASE 2 OPENING TESTIMONY OF THE GREEN POWER INSTITUTE**

2
3 The Green Power Institute (GPI) respectfully submits this opening testimony for Phase 2.
4

5 The Green Power Institute (GPI) is the renewable energy program of the Pacific Institute, a
6 non-profit environmental and social advocacy group. Under the direction of Dr. Gregory
7 Morris, the Green Power Institute performs research and provides advocacy on behalf of
8 renewable energy systems and the contribution they make to reducing the environmental
9 impacts of fossil-based energy systems. The Green Power Institute is located in Berkeley,
10 California.

11
12 **I. Summary**

- 13
- 14 • GPI limits our recommendations to supply-side solutions, responding to the
15 Governor’s emergency proclamation and direction from the Commission.
 - 16 • We urge the Commission to flesh out what it means by interconnection reforms in
17 this phase; GPI agrees that interconnection issues and interconnection reform are
18 extremely important aspects of emergency reliability, particularly for DERs and
19 microgrids
 - 20 • GPI reminds the Commission that there is significant supply-side biomass
21 generation capacity available at existing plants that could be contracted for
22 quickly
 - 23 • The Commission revived and modified both ReMAT and PURPA programs in the
24 last year and these programs could be further modified for the emergency
25 reliability context to ensure rapid acceptance of new contracts and expedited
26 development, with ReMAT at 3 MW and below, and PURPA at 3-20 MW size
27 limits
 - 28 • GPI also recommends that the Commission create a new RAM procurement
29 mandate, using the existing and successful RAM procurement mechanism, in
30 order to bring new renewable energy projects online over the next year two-three
31 years, with a size limit of 20-50 MW per project.

- 1 • These three revived/modified procurement programs for localized front-of-meter
2 renewable energy projects could go far toward significant mitigation of PSPS and
3 related events by 2023, while also helping to meet the state’s aggressive
4 renewable energy and climate mitigation goals.
- 5 • The costs of procurement under these new programs, even with increased pricing
6 in order to stimulate rapid uptake, would very likely be significantly lower than
7 the larger transmission-focused options that have been the standard response to
8 procurement needs. GPI also suggests that ratepayers (and ratepayer advocates)
9 would be willing to accept higher procurement costs for generation due to the
10 emergency circumstances, and due to the likelihood that by avoiding the long
11 years required for transmission-focused solutions.

12 13 **II. Testimony**

14
15 GPI focuses in this testimony on potential renewable energy supply-side solutions,
16 following on from our previous work in the previous phase of this proceeding and
17 responding to Governor Newsom’s emergency proclamation, as quoted by the amended
18 scoping memo (p. 2), which states that the Commission and other agencies “are
19 requested, to work with the State's load serving entities on accelerating plans for the
20 construction, procurement, and rapid deployment of new clean energy and storage
21 projects to mitigate the risk of capacity shortages and increase the availability of carbon-
22 free energy at all times of day.”

23 24 **a. Interconnection issues**

25
26 The scoping memo lists “interconnection” as an issue (p. 4) but other than this one word
27 heading offers no details. GPI agrees that interconnection are and remain a major hurdle
28 for any energy projects seeking to connect to the utility grid, but are a particularly
29 significant hurdle for front-of-meter and larger net-metering DERs because the costs are
30 relatively much higher and these projects will often have lower profit margins than larger
31 energy projects. GPI has been active on interconnection policy for a decade in various

1 proceedings and we urge the Commission to flesh out the specific interconnection issues
2 to be addressed in Phase 2.

3
4 **b. Proposal 1: Contract with existing biomass operators for excess**
5 **capacity**
6

7 GPI has highlighted (GPI Opening and Reply Briefs filed in Phase 1 of this proceeding)
8 the substantial biomass resources from already-contracted and operational biomass
9 facilities (we calculate about 200 MW) and also from currently mothballed plants that
10 could be brought online relatively quickly (another substantial amount, some of which
11 could probably brought online by next summer or sooner if contracts were negotiated
12 rapidly). So in this manner there are at least some supply-side resources that may
13 complement well the available demand-side resources for both 2022 and 2023 summers.
14

15 Surplus capacity at operating biomass plants is one of the lowest-hanging fruits for
16 supply-side emergency reliability procurement. Several of the biomass generators in
17 California are currently operating under PPAs that, for various reasons, contract for less
18 than the rated output of the physical equipment. These generators originally had power
19 contracts for their full rated capacity, and their equipment is fully capable of delivering
20 the full rated capacity, including their interconnection equipment, although for various
21 reasons their current contracts are for amounts that are less than their rated capacity.
22 CBEA's Testimony in this proceeding states that approximately 70 MW of capacity is
23 available in this category. In most or all cases the contracts these generators have do not
24 permit them to sell their uncontracted capacity to other buyers. And in most or all cases
25 the contracts are with one of the state's three large IOUs. This category of available
26 surplus biomass capacity can be treated as a pure capacity resource that will only be
27 operated during emergency conditions, and only for the duration of the emergency, but
28 unlike storage this capacity can be operated for the entire duration of an emergency.
29

30 The Commission should encourage the IOUs to negotiate riders to contracts with biomass
31 generators who have surplus, uncontracted capacity, in order to enable them to tap into

1 this readily available capacity resource whenever it is needed to support the operations
2 and stability of the California grid. There is a limited amount of capacity in this category,
3 but it is already online and ready to go at short notice, it can be turned off when the
4 emergency need has passed, it has a marginal cost that is almost surely below the market
5 value of energy during emergency conditions, and the relatively small capacity additions
6 that generators in this category can make available on short notice can, despite being
7 small, nevertheless make an enormous difference on the margin during grid emergencies.

8
9 For example, during the August 2020 weather emergency at least two California biomass
10 generators supplied their surplus capacity to the grid under quickly-agreed emergency
11 arrangements. Other generators with surplus capacity offered that capacity to their IOU
12 counterparty but were not accepted. In the opinion of the GPI, rather than relying on last
13 minute, *ad hoc* arrangements, it would be far preferable to make prearranged, orderly
14 arrangements for the delivery of this kind of energy – akin to normal Resource Adequacy
15 (RA) contracts. In this way the IOUs would know ahead of time what they have
16 available to call on, and the generators would know what and under what circumstances
17 they could be expected to deliver this surplus capacity. The simplest way to accomplish
18 this would be for the counterparties to negotiate an amendment to their existing contracts.
19 In cases where the purchasing IOU does not wish to take advantage of this surplus
20 capacity availability for emergency use, then provisions should be made for contract
21 amendments that would allow the generators with surplus capacity to offer this surplus
22 capacity to other buyers when there are emergency conditions on the grid.

23
24 A second, larger quantity of readily available biomass capacity should also be considered
25 in this phase of the proceeding – biomass facilities whose operating contracts are about to
26 expire, and facilities whose contracts have already expired and that have been removed
27 from service, in some cases quite recently. CBEA’s Testimony in phase 1 counted more
28 than 200 MW of capacity in this category. Keeping operating facilities in service beyond
29 the expiration of their contracts and putting idled facilities back into service is more
30 complicated and costly than amending contracts for facilities with surplus, uncontracted
31 capacity. In this case the procurement will have to be for a good deal more than just
32 emergency capacity. Generators in this category will probably need baseload energy

1 contracts of some sort in order to participate. However, the amount of capacity that is
2 available in this category is much greater than the amount of surplus capacity available at
3 under-contracted biomass generators, and in many cases these facilities can be put into
4 operation in time for potential emergency needs during the summer and fall of 2021.
5 Other idled facilities are available that can be put into service in time for use in 2022.
6
7 Facilities with already expired and about-to-expire contracts will probably need long-
8 term PPAs that provide for full or partial baseload operations. Biomass generators are
9 more expensive to operate than intermittent renewables, but unlike intermittent
10 generators biomass generators provide schedulable and highly reliable power. Biomass
11 generators also produce valuable ancillary services for California, such as reduced
12 landfilling of organic wastes, reduced open burning of agricultural and forestry residues,
13 and promotion of forest management operations that can substantially reduce wildfire
14 risks in the state’s forests. State policy clearly favors the production of biomass power in
15 order to obtain these services for the people of California (cite). The provision of highly
16 reliable capacity is yet another benefit to restarting and allowing for the continued
17 operation of generators in this category. Highly reliable renewable capacity that can
18 contribute to coping with extreme weather or other emergency conditions during 2021
19 and 2022 is exactly what this proceeding is intended to procure.
20

21 **c. Proposal 2: Modify PURPA and ReMAT to improve compensation**
22 **and reduce interconnection barriers**
23

24 The Commission has in the last year adopted revisions to both PURPA and ReMAT
25 programs that render these programs significantly more promising for project
26 development than the previous versions of these programs. GPI’s “A Modern Cinderella
27 Report,” written in 2019 and updated in 2020, reviews seven front-of-meter DER
28 programs over the last decade in California and found all but the RAM program
29 (Renewables Auction Mechanism, for projects 20 MW or under), were significantly
30 lacking in actual procurement and “steel in the ground” – including the former versions
31 of ReMAT and PURPA.

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The ReMAT program was recently reopened in the RPS proceeding (D.20-10-005). The newly reopened ReMAT program may be able to provide new local generation capacity in time for service in 2022 and with higher certainty in 2023. A major problem with the reopening is that current capacity allocations for the program are already heavily subscribed, and this is particularly the case for solar, which is the most likely resource, combined with energy storage, for being able to assist with emergency reliability needs. The Commission will need to significantly expand the capacity of the ReMAT program in order to have any impact on emergency reliability for 2022 or 2023 because the solar “buckets” of SCE¹ and SDG&E² are at or near zero and PG&E’s³ has only 39 MW left, all of which is very likely claimed already by existing queue holders. No new solar projects have come online since the program was revived in early 2021, but that is not surprising given the time it takes from contract award to complete the project.

Increasing the capacity allocations for ReMAT projects in this proceeding and directing that this new block of capacity is reserved for projects that can provide power during peak and net peak hours provides another cost-effective procurement option that should be considered at this time. Combined with expedited interconnection options (which currently don’t exist since even WDAT/WDT/Rule 21 Fast Track interconnection takes 9-12 months from start to signed Generator Interconnection Agreement), it may be possible for new ReMAT projects to come online at significant levels to help with the 2023 summer PSPS season.

¹ SCE has 1.5 MW left in this bucket but that is already claimed by the existing queue holders. Online at https://sceremat.accionpower.com/ReMAT/doccheck.asp?doc_link=ReMAT/docs/FIT/2013/documents/i.%20Capacity%20and%20Price%20Calculations/ReMAT%20Capacity%20Calculations%20Program%20Period%202025.pdf

² Online at <https://www.sdge.com/regulatory-filing/654/feed-tariffs-small-renewable-generation>

³ Online at <https://pge.accionpower.com/ReMAT/documents.asp?strFolder=g.%20Program%20Period%20Documents/&filedown=&HideFiles=True>.

1 The Commission may, under its inherent authority, expand the capacity of the ReMAT
2 program, as it has for similar programs like ReMAT’s predecessor, the AB 1969 program
3 (see D.07-07-027, p. 41, and D.08-09-033). GPI recommends that the Commission add
4 750 MW to the ReMAT program, effectively doubling the capacity provided for in SB
5 32. The Commission should also provide flexibility regarding the allocation of capacity
6 between the three buckets. The “as-available peaking” bucket, which is effectively solar,
7 has been largely subscribed already, as described above. The other two buckets, as
8 available non-peaking (wind power) and baseload (mostly small hydro and biomass),
9 have barely seen any projects in the first seven years of the program.

10
11 GPI fully supports wind, small hydro and biomass ReMAT projects, but we recognize
12 also that for emergency reliability purposes it is more likely that solar projects combined
13 with on-site battery storage will be the most prevalent project technology capable of
14 coming online relatively quickly for emergency reliability purposes (at least this is the
15 case for greenfield projects, as opposed to new contracts for existing projects, such as the
16 three new small hydro ReMAT contracts PG&E has awarded to existing small hydro
17 facilities in 2021 since the program was revived). Accordingly, we recommend that the
18 Commission allow parties or the IOUs to petition the Commission for a change to the
19 allocations of this new 750 MW capacity if it appears that any of the IOUs are running
20 low on PPA capacity for any of the three buckets.

21
22 In order to make this option work for emergency procurement, GPI strongly recommends
23 that the Commission revise the new ReMAT to allow co-located energy storage, an issue
24 that has been scoped and is pending Commission adjudication in R.18-07-003. Solar
25 without co-located energy storage is not a good fit for emergency reliability, but with
26 energy storage it can be very effective while also helping to meet the state’s renewable
27 energy and climate change mitigation policies. We believe that the authorization for co-
28 located storage can be made in the present proceeding in order to allow this resource to
29 contribute emergency capacity to the grid.

30
31 An alternative approach for the procurement of emergency energy from ReMAT-type
32 projects is to require the IOUs to issue an emergency reliability procurement solicitation

1 that uses the ReMAT feed-in tariff as its procurement mechanism. For example, SCE
2 could, under this approach, issue a tender for up to, say, 300 MW of onsite firmed
3 renewable energy capacity for projects up to a certain size, offering applicants the revised
4 ReMAT feed-in tariff power purchase agreement eligible offers. This approach would be
5 a more limited and targeted expansion of ReMAT, designed for highly localized
6 generation in high fire/PSPS-risk areas.

7
8 Similarly, the Commission modified and revived PURPA in 2020 (D.20-05-006), making
9 available standard contracts for 12 year-duration for new projects and 7 years for existing
10 projects. The Commission should consider improving the potential compensation and
11 contract duration in order to jump start PURPA procurement in a manner befitting the
12 needs at hand. California has shown going back as far as the 80s⁴ that PURPA can be a
13 very powerful tool for rapid procurement. Cost issues are always a concern but it is
14 equally the case that if the magnitude of the problem is sufficient increased costs to
15 ratepayers may be warranted. GPI sincerely doubts that a modestly above market PURPA
16 compensation program would be rejected but ratepayers if it would indeed go far in
17 mitigating PSPS and other similar events. PURPA projects may be up to 20 MW,
18 significantly larger than the 3 MW ReMAT limit (both of which could be changed by the
19 Commission in the present proceeding if deemed prudent), so combining the power of
20 small and medium-sized DERs for PSPS mitigation in the next two years could be a
21 powerful strategy, along with the other recommendations in this testimony.

22
23 **d. Proposal 4: Revive RAM program**
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25 Similar to the previous proposal, GPI suggests that the RAM procurement program could
26 be revived. The program is still available as a voluntary procurement tool by utilities,
27 with no size limit on new projects, but there is no mandate for any particular level of
28 procurement anymore. D.14-11-042 changed the program from mandatory to
29 discretionary procurement once the RAM 6 reverse auction was held.

30

⁴ Online at: <https://www.renewableenergyworld.com/baseload/an-embarrassment-of-riches/>.

1 Given the more localized nature and faster development times of small and medium-scale
2 front-of-meter renewables GPI recommends, as a complement to ReMAT and PURPA
3 revival discussed above, that a new RAM be brought forward for projects in the 20-50
4 MW size range.

5

6 **III. Conclusion**

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8 For the above reasons, we urge the Commission to adopt our recommendations.

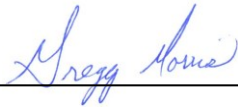
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10 This concludes our opening testimony.

11

12 Respectfully Submitted,

13



14

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22

1 **Witness qualifications for Gregory Morris**

2

3 Q. Was this material prepared by you or under your supervision?

4 A. Yes, it was.

5 Q. Insofar as this material is factual in nature, do you believe it to be correct?

6 A. Yes, I do.

7 Q. Insofar as this material is in the nature of opinion or judgment, does it represent your
8 best judgment?

9 A. Yes, it does.

10 Q. Do you adopt this testimony as your sworn testimony in this proceeding?

11 A. Yes, I do.

12