

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

Order Instituting Rulemaking to Continue
Implementation and Administration, and
Consider Further Development, of California
Renewables Portfolio Standard Program.

Rulemaking 15-02-020
(Filed February 26, 2015)

**CLEAN COALITION COMMENTS ON THE RENEWABLE AUCTION
MECHANISM PROPOSAL**

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I. INTRODUCTION

Pursuant to the *Assigned Commissioner and Assigned Administrative Law Judge's Ruling Identifying Issues and Schedule of Review for 2017 Renewables Portfolio Standard Procurement Plans and Inviting Comments on Renewable Auction Mechanism Proposal* (Commissioner Ruling), dated May 26, 2017, the Clean Coalition respectfully submits these comments on the Renewable Auction Mechanism (RAM) Proposal. The Clean Coalition appreciates the opportunity to comment on this topic and the work done by the California Public Utilities Commission (Commission) staff on this topic to date. In summary, the Clean Coalition strongly supports the RAM Proposal to direct procurement for incremental resources at geographic locations with sub-optimal conditions. This proposal could increase opportunities for renewable resources to provide valuable energy services and may also lead to delay or deferral of costly grid upgrades.

II. DESCRIPTION OF THE PARTY

The Clean Coalition is a nonprofit organization whose mission is to accelerate the transition to renewable energy and a modern grid through technical, policy, and project development expertise. The Clean Coalition drives policy innovation to remove barriers to procurement and interconnection of distributed energy resources (DER)—such as local renewables, advanced inverters, demand response, and energy storage—and we establish market mechanisms that realize the full potential of integrating these solutions. The Clean

Coalition also collaborates with utilities and municipalities to create near-term deployment opportunities that prove the technical and financial viability of local renewables and other DER.

III. COMMENTS

The Clean Coalition supports the RAM Proposal as a means to procure distributed resources to address sub-optimal grid conditions and support California’s “effort to decarbonize the state’s electricity supply while maximizing the value of existing and potential renewable resources”,¹ demonstrating the value of renewable resources to sub-optimal grid conditions, as well as generally creating more opportunities for distribute energy resources (DER). We applaud the Commission’s proactive approach to addressing challenges from renewable curtailment and frequency regulation. The Reverse Auction Mechanism is designed specifically to simplify the procurement and contracting of resources in the 3-20 MW capacity range that otherwise face significant barriers to market participation. The Renewable Market Adjusting Tariff (ReMAT) also represents a means to meet these goals for distribution level resources less than 3 MW, and both procurement mechanisms should be utilized where the associated size resources are appropriate. We note however that the ReMAT program is in need of design refinement, and is currently scoped but not yet scheduled in this proceeding for review.

In addition to suggesting revisions to the ReMAT program to meet the same goals, the Clean Coalition offers general support for the RAM Proposal as well as the following specific responses to questions from the Commissioner Ruling.

1. Would there be benefits from this proposal? If no, please explain why or why not. If yes, please explain the benefits.

Yes, the RAM Proposal as described would generate a wide range of benefits. First, this proposal would produce incentives to develop and demonstrate innovate ways to avoid or delay costly curtailment and underutilization of renewable portfolio standard-eligible resources. By using renewable resources to address issues that accompany our current trajectory of energy

¹ *Assigned Commissioner and Assigned Administrative Law Judge’s Ruling Identifying Issues and Schedule of Review for 2017 Renewables Portfolio Standard Procurement Plans and Inviting Comments on Renewable Auction Mechanism Proposal*, dated May 26, 2017, pp. 21-22.

resources (namely, renewable curtailment), the RAM Proposal will generate designated opportunities for renewables to meet standard grid needs.

RAM can effectively be utilized for procurement of single or multi-technology portfolios to meet defined grid operational needs, including the use of Demand Response, repowering of existing small wind projects can significantly mitigate solar curtailment at the regional level, and combined solar and storage facilities that can address wider location specific issues while providing a broad range of services, including frequency and voltage regulation, in addition to energy production. Multiple states and cities have taken action to approach even higher RPS targets and are actively deploying projects that would enable high penetrations of renewables. For example, Tucson, Arizona² and Kauai, Hawaii³ have both demonstrated projects capable of meeting all required services. For example, the Commission recently approved 15 MW of 4-hour duration energy storage projects in Santa Paula, California, as part of Southern California Edison's 2014 energy storage solicitation, which represents an example of the scale and capabilities available from non-emitting local resources.

This proposal stands to create new opportunities for the streamlined procurement of these projects in areas identified by the investor-owned utilities. Over the long run, we expect this to result in significant ratepayers savings from reductions in the complexity and contract development risks and costs associated with bilateral contracting processes, while attracting increased market competition. Studies have found that planned projects that consider grid needs can be deployed far more cost-effectively than unplanned development of similar projects. The chart below compares the project costs for example projects in Southern California Edison (SCE) territory that do not consider distribution grid constraints ("Unguided Case") versus projects that specifically consider those constraints ("Guided Case").

² See "TEP to Power 21,000 Homes with New Solar Array for Historically Low Price" Press Release, *Tucson Electric Power* (May 22, 2017), available at <https://www.tep.com/news/tep-to-power-21000-homes-with-new-solar-array-for-historically-low-price/>.

³ See Bade, Gavin, "Hawaii co-op signs deal for solar+storage project at 11¢/kWh," *UtilityDive* (Jan. 10, 2017), available at: <http://www.utilitydive.com/news/hawaii-co-op-signs-deal-for-solarstorage-project-at-11kwh/433744/>.

Total Southern California Edison System Costs of LER Proposal

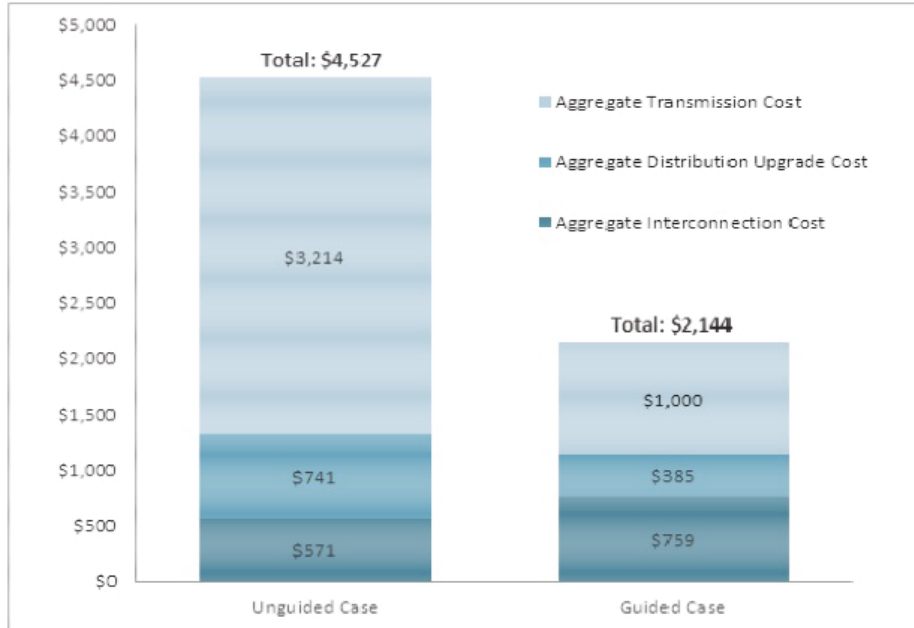
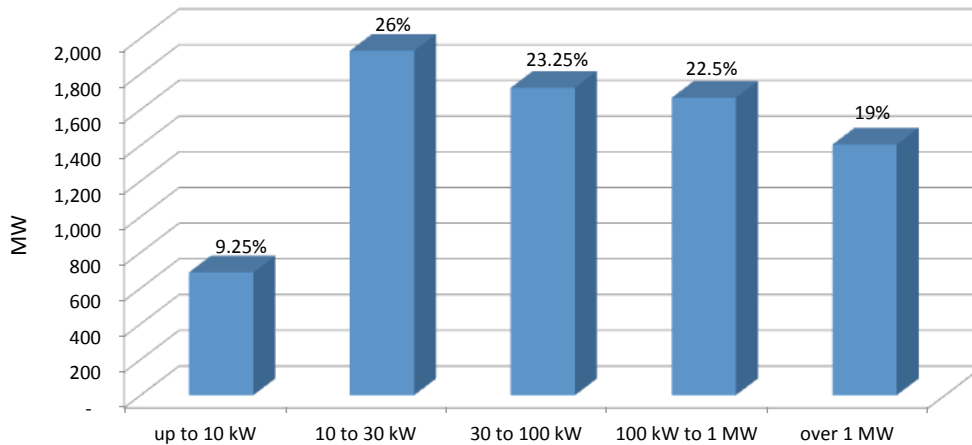


Figure 8: Total SCE System Costs of LER Proposal (Million USD)

This proposal also offers the opportunity to further streamline the bid submission and evaluation process for small projects. The wholesale distributed generation (WDG) market segment has proven particularly effective in Germany in advancing towards their renewable targets, as evident by the rapid and expansive deployment of small scale solar projects in Germany at costs that would be competitive in California. The chart below shows that Germany’s solar deployments are almost entirely projects smaller than 2MW on built-environments and interconnected to the distribution grid (not behind-the-meter projects).

German Solar Capacity Installed through 2012



Source: Paul Gipe, March 2011

Additionally, assuming a conversion rate of €1:\$1.07, considering tax incentives and the superior California solar resource, then rooftop solar installations in Germany would cost between 4 and 6 ¢/kWh to California ratepayers—a remarkably lower price than most current RPS contracts. See the chart below illustrating current prices for German rooftop solar installations converted to USD/kWh.

Project Size	Euros/kWh	USD/kWh	California Effective Rate \$/kWh
Under 10 kW	0.1270	0.1359	0.0628
10 kW to 40 kW	0.1236	0.1323	0.0611
40.1 kW to 750kW	0.1109	0.1187	0.0548
Over 750kW	0.0891	0.0953	0.0440

This proposal offers an opportunity to test and recognize the unique abilities of DER facilities and portfolios to meet the needs of the grid outside of pure energy production. The Clean Coalition recently submitted comments to the California Energy Commission supporting a proposal to consider alternatives to planned natural gas peaker plants (Puente Power Project) to meet local reliability needs.⁴ The Clean Coalition comments stated that distribute energy resources (DER) can meet those needs with zero emission generation, demand management, and energy storage.

An addition benefit of the designated proposal would be that utilities would designate an opportunity for renewables to manage grid conditions, which could prove a very useful and effective way to ensure that energy from renewables can be available outside of the standard solar production hours. Many projections for California’s energy production approximately follow the rooftop solar production curve, but this proposal could provide sufficient support to prompt renewable projects (such as solar coupled with energy storage and advanced inverters) capable of delivery zero emissions energy outside of normal solar production hours.

For all these reasons, the Clean Coalition generally supports the Proposal to utilize RAM for these purposes.

⁴ The full Clean Coalition comments in opposition to the construction of the Puente Power Plant are available at <http://www.clean-coalition.org/site/wp-content/uploads/2017/06/Clean-Coalition-Comments-in-opposition-to-the-approval-of-the-Puente-Power-Project.pdf>.

2. *Should there be a minimum and/or maximum project size? Why or why not? If yes, what should the size limits be?*

Yes, a minimum and maximum project size could simplify the procurement process while also ensuring a wide variety of projects in order to allow for innovative projects and the ability to compare and contrast projects after deployment. The Commission might consider setting a minimum project size at 0.5MW, or for DER aggregation projects a minimum project size of 1MW. This will ensure that winning projects are substantial enough to represent significant contributions to addressing sub-optimal grid conditions.

The Commission should also consider setting a maximum project size of 5MW or 10MW to ensure that multiple winning projects are selected. In particular, projects of this size represent the wholesale distributed resources market segment, which has proven highly effective in other countries.

3. *Should there be a single or multiple solicitations? If multiple, how many? Explain reasoning for response.*

Multiple solicitations would be preferable to a single solicitation because small scale projects are appropriate for addressing challenging conditions on the distribution grid. Generally, more solicitations would accommodate more projects and potentially increase the ability to innovate and cross-compare projects between solicitations. As these are potentially new products meeting newly defined grid needs, there will inevitably be a significant learning curve in the procurement process, and experience should be reflected in opportunities from refinement of the RFO process, including potential modifications to RAM and associated standard contract terms.

Additionally, challenges in balancing frequency tend to be local and unplanned challenges. Having resources close to load improves the ability to respond to these challenges with solutions. For this reason, utilities and customers may benefit more from having multiple RAM projects rather than a single large project designed to address these challenges. Additionally, because frequency variations are not predictable, planned events, including a number of projects may increase the likelihood that any one completed project will illustrate the desired energy services capabilities in the near future.

4. *What should the timeframe of the solicitation(s) be? Explain and provide justification for response?*

Due to the expiring Federal subsidies from facilities that may be procured under this program, early solicitation and development will secure ratepayer savings while advancing timely procurement experience in this new sector.

5. *Does the RAM process need to be modified to accommodate the proposal? If yes, how should it be modified and why?*

Clean Coalition suggests a number of revisions to further improve the RAM process and ensure that distributed energy projects can fairly compete for procurement contracts.

The procurement process should consider ratepayer value of location and other attributes (including the value of avoided transmission costs) in evaluating projects. We understand that locational factors will play a role in this proposal, as the IOUs will be selecting particular areas where sub-optimal grid conditions already pose locational challenges. However, the Clean Coalition further recommends that locational value be considered in comparing bids. The Distribution Resources Planning (DRP) working groups have made significant progress in developing the Locational Net Benefits Assessment, and any developments from that group should be applied to evaluate bids in any subsequent RAM procurement. This would not only ensure that projects are fairly compared—it would also increase the potential ratepayer benefits by evaluating a more complete picture of the competing projects. Where projects offer locational value that would not otherwise be recognized, ratepayers stand to benefit.

The Clean Coalition also recommends that any interconnection-based eligibility for projects be evaluated, in particular the requirement for completion of Phase II studies. The Clean Coalition made a similar proposal that was adopted in BioMAT, stating interconnection requirements in that program posed a significant hurdle for projects smaller than 10MW. The BioMAT program had originally required a project to be in the interconnection queue in order to be eligible for BioMAT. The justification for this requirement was to prohibit speculative projects from bidding that would only be cancelled due to sketchy interconnection plans, but this concern did not actualize in the BioMAT solicitations. We recommend that any similar interconnection-based eligibility requirements be similarly reviewed to ensure that small scale projects do not face a disproportionate hurdle to winning a contract.

The RAM Proposal might also incorporate recognition and compensation for the environmental value of developing commercial-scale WDG on built environments. These projects offer significant environmental value by enabling an increased value for projects that have no environmental footprint. WDG projects can often be sited on existing structures rather than on greenfields, representing a societal value that is otherwise overlooked. For this reason, we suggest that an adder be incorporated for any project that offers environmental values above and beyond having zero emissions, potentially in accord with the Social Cost Test proposal before currently the Commission.

Similarly, we recommend that the RAM Proposal incorporate a resilience value, as some renewable projects—particularly solar+storage projects—offer a significant societal value by providing indefinite renewables-driven backup power while avoiding the use of diesel generators. Weather-related power outages are extraordinarily expensive, costing the United States an inflation-adjusted annual average of \$18 billion to \$33 billion.⁵ Severe weather due to climate change will be an increasingly routine experience in coming decades, posing particular challenges to maintaining power for critical infrastructure. When resources are able to produce indefinite power during these circumstances, that resilience value should be incorporated into procurement decision-making. Over time, the continued investment in increasing California’s grid resilience will result in avoided costs due to power outages in extreme weather events. The continued operation of critical infrastructure should be prioritized, and one opportunity to do so would be to attach a resilience value to suitable projects.

The RAM Proposal might also benefit from considering avoided transmission investments caused by any distributed energy resource project. Distributed energy projects save money for ratepayers by avoiding long-distance transmission costs. By generating energy and/or energy services close to load, these resources free up capacity on existing transmission lines, which in turn delays or avoids the need to invest in additional transmission infrastructure. For example, utilities recently cancelled multiple transmission projects due to strong growth in distributed energy resources, saving ratepayers hundreds of millions of dollars in capital

⁵ *Economic Benefits of Increasing Electric Grid Resilience to Weather Outages*, Executive Office of the President (Aug. 2013) at 3, available at https://energy.gov/sites/prod/files/2013/08/f2/Grid%20Resiliency%20Report_FINAL.pdf.

investment.⁶ Transmission investments impose enormous costs on ratepayers, but resources that forestall the need for such investments currently receive no market recognition for this value.

The Clean Coalition is working to remedy this problem through its Transmission Access Charges (TAC) Campaign,⁷ and to ensure that energy from distributed generation projects is not subject to transmission access charges. This could most simply be accomplished by changing how the California Independent System Operator (CAISO) meters usage of the transmission system. Currently, the IOUs pay transmission access charges to CAISO based on the Customer Energy Downflow (the aggregated amount of all energy passing across a customer's meter, also referred to as the customer metered load), but municipal utilities generally pay TAC based on the Transmission Energy Downflow (the amount of energy crossing the transmission-distribution interface). The Transmission Energy Downflow approach generates an avoided transmission cost value for distributed generation in municipal utility territories, but no additional value for distributed generation in IOU service territories. Until CAISO changes its metering practice in order to incorporate a market signal for the avoided cost value of distributed generation projects, the Commission should consider including an avoided transmission cost value in evaluating projects under the new RAM Proposal.

IV. CONCLUSION

The Clean Coalition thanks Commission staff for their work on these issues to date and looks forward to further collaboration going forward.

Sincerely,
/s/Katie Ramsey
Katie Ramsey
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Clean Coalition

⁶ See Sheehan, Tim, "Solar growth puts Fresno high-voltage line on hold," *The Fresno Bee* (Dec. 20, 2016), available at <http://www.fresnobee.com/news/local/article122063189.html> (finding that growth in local solar puts plans for \$115 million transmission project on hold); see also Pyper Julia, "Californians just saved \$192 Million Thanks to Efficiency and Rooftop Solar," *GreenTech Media* (May 31, 2016), available at <https://www.greentechmedia.com/articles/read/Californians-Just-Saved-192-Million-Thanks-to-Efficiency-and-Rooftop-Solar> (PG&E cancels \$192 million in transmission projects due to energy efficiency and local solar).

⁷ For additional information, see www.clean-coalition.org/tac.