

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

ENERGY DIVISION

RESOLUTION E-4489

April 19, 2012

R E S O L U T I O N

Resolution E-4489. Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric.

PROPOSED OUTCOME: This Resolution approves changes to the Renewable Auction Mechanism for Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company. Specifically, this Resolution modifies Buyer's termination right related to commercial operation deadlines and creates an option for Producers to bid as either energy-only or with full capacity deliverability status.

ESTIMATED COST: There are no expected costs associated with the changes made herein.

This Resolution approves with modifications Pacific Gas and Electric Company's advice letter 4000-E filed February 1, 2012 and addresses additional issues on the Commission's own motion.

SUMMARY

This Resolution implements changes to the Renewable Auction Mechanism ("RAM") for the three investor-owned utilities ("IOUs"): Pacific Gas and Electric Company ("PG&E"), Southern California Edison Company ("SCE"), and San Diego Gas and Electric Company ("SDG&E"). In Decision (D.) 10-12-048 ("the Decision" or "RAM Decision"), the California Public Utilities Commission ("CPUC" or "Commission") adopted a two-year program with the purpose of lowering transaction costs and promoting the development of system-side renewable distributed generation ("DG"), which is defined as projects up to 20 megawatt ("MW") in size. The Commission approved Resolution E-4414 on

August 18, 2011 to adopt RAM program implementation details, bidding protocols, and a standard power purchase agreement for each IOU.

This Resolution approves with modifications PG&E's advice letter 4000-E and adopts one additional change proposed by Commission Staff to the Renewable Auction Mechanism. These changes will take effect prior to commencement of the second RAM auction (scheduled to close by May 31, 2012) with the purpose of improving the RAM program and harmonizing it with other Commission programs. Energy Division staff will consider more comprehensive program modifications based on stakeholder input from the IOUs' RAM program forums, scheduled for May 11, 2012 (SCE)¹; May 16, 2012 (PG&E)²; and, June 22, 2012 (SDG&E)³.

Within 7 days of the effective date of this resolution, PG&E, SCE, and SDG&E shall file a Tier 1 advice letter with the Energy Division demonstrating compliance with the changes made in this resolution.

The changes made herein altering the original RAM Program Rules (as established by D.10-12-048 and Resolution E-4414) are summarized in Appendix B of this resolution.

BACKGROUND

On December 18, 2010, the CPUC approved a new procurement mechanism called the Renewable Auction Mechanism ("RAM") in D.10-12-048. The Decision ordered the investor-owned utilities ("IOUs") to procure up to 1,000 megawatts ("MW") of system-side renewable distributed generation (for individual projects up to 20 MW in size) through a reverse auction using a standard contract. The Decision ordered the IOUs to hold four auctions over two years and directed the

¹ Page 8, SCE's AL 2712-E (<http://www.sce.com/NR/sc3/tm2/pdf/2712-E.pdf>).

² Page 9, PG&E's AL 4020-E (http://www.pge.com/notes/rates/tariffs/tm2/pdf/ELEC_4020-E.pdf).

³ Page 14, SDG&E's AL 2343-E (<http://regarchive.sdge.com/tm2/pdf/2343-E.pdf>).

IOUs to submit their bidding protocols and standard contracts through a Tier 3 advice letter to implement the Decision's requirements. On February 25, 2011, the IOUs submitted advice letters for approval of their bidding protocols and standard power purchase agreements. The Commission adopted Resolution E-4414 in August 2011, approving with modifications the RAM advice letters.

The Decision authorized Commission staff to exercise broad discretion to modify the RAM program based on experience. Specifically, Section 12.1 of the Decision states:

"We expect [Energy Division] and parties to continually monitor the RAM, and recommend modifications based on evidence, if and as necessary. [Energy Division] may act on its own motion to revise any aspect of the RAM program through resolutions proposed for Commission approval. Respondents and parties may seek modification by request to the Executive Director pursuant to Rule 16.4 of the Commission's Rules of Practice and Procedure. Any modifications proposed should be based on evidence that the modification is necessary to improve the RAM program."⁴

This resolution approves PG&E's AL 4000-E with modifications and addresses an additional issue on the Commission's own motion. The purpose of this resolution is to adopt programmatic changes to RAM based on evidence provided by the IOUs that these modifications are necessary to improve the program before commencement of the second RAM auction, currently scheduled to close on May 31, 2012. The Commission will consider more comprehensive programmatic changes after the IOUs hold their RAM Program Forums, referenced above.

NOTICE

Notice of PG&E's advice letter 4000-E was made by publication in the Commission's Daily Calendar. PG&E states that copies of advice letter 4000-E

⁴ D.10-12-048, Section 12.1, p. 74.

were mailed and distributed in accordance with Section IV of General Order 96-B.

PROTESTS

On February 21, 2012, the Commission received timely protests from The Geothermal Energy Association (“GEA”), Ormat Technologies (“Ormat”), and the Independent Energy Producers Association (“IEP”). The Commission received a timely response from Silverado Power LLC (“Silverado Power”) and a protest from the Center for Energy Efficiency and Renewable Technologies (“CEERT”) on February 22, 2012, one day after the 20-day comment period. PG&E replied to the protests on February 28, 2012.

DISCUSSION

Parties both supported and opposed aspects of PG&E’s Advice Letter filing. The following discussion summarizes the protested issues and, based on party input, this resolution approves PG&E’s request with modification. In addition, Commission staff is proposing an additional modification to RAM in this resolution that will further harmonize the program with other similar Commission initiatives.

PG&E’s Request to Re-Allocate Available Capacity

Pursuant to D.10-12-048, the utilities have the flexibility to allocate available capacity in RAM across three product categories (baseload, peaking as-available, non-peaking as-available) based on need and market response to the program. The Decision also instructed the utilities to request Commission approval of its product category allocations in its RAM implementation advice letters.

The Commission approved the RAM implementation advice letters with Resolution E-4414. In that resolution, the Commission approved PG&E’s request to allocate 35 MW to each product category, while requiring that SDG&E solicit a minimum of 3 MW, and SCE a minimum of 5 MW, in each product category. The Commission did not impose a minimum allocation requirement on PG&E because it voluntarily allocated substantial capacity to each category in its RAM implementation advice letter, which the Commission deemed reasonable. Resolution E-4414 also permitted each IOU to request a change in its initial allocation by filing a Tier 2 Advice Letter with the Commission.

In AL 4000-E, PG&E requests approval to modify its product allocations based on results from its first RAM auction. PG&E proposes changing its product allocations from 35 MW for each of the three product categories to 85 MW for the peaking as-available category; 10 MW for the non-peaking as-available category; and 10 MW for the baseload category. PG&E argues that its modified product allocations are more consistent with the initial allocations proposed by SCE (55 MW, 5 MW, and 5 MW, respectively) and SDG&E (10 MW, 5 MW, and 5 MW, respectively) and that they better reflect market response to PG&E's first RAM auction.

Ormat, GEA, and CEERT protested PG&E's proposed changes to the RAM product allocations. Ormat and GEA protested PG&E's modification to the baseload category, arguing that PG&E should be encouraging additional geothermal resources and that reducing the baseload allocation could potentially result in many geothermal resources being ineligible to participate. CEERT protested on procedural grounds, specifically, that PG&E's proposed modifications are inconsistent with D.10-12-048.

In its response to these protests, PG&E argued that the existing RAM program rules authorize the utility to procure plus or minus 20 MW in each product category, thus giving PG&E the flexibility to contract up to 30 MW (10 MW product allocation + flexibility to increase by 20 MW) of geothermal in the second auction should the offers prove to be competitive. PG&E also noted that Resolution E-4414 gives the utilities flexibility to modify product allocations based on market conditions and experience, on the condition that the utility make the request via a Tier 2 advice letter.

In comments on the draft resolution, PG&E expanded upon its justification for seeking to reallocate capacity across product types. Specifically, PG&E stated that it notified over 1,800 market participants (representing developers of technologies in each of the three product types) ahead of its first RAM auction. From that effort, it received 122 bids, only 5 of which were for baseload projects and only 3 of which were for non-peaking projects. In addition, PG&E presented

public information in Advice Letter 4020-E⁵, filed March 30, 2012, about its first RAM auction that confirms the numbers cited in its comments to the draft resolution.

Additionally, Recurrent Energy (Recurrent), the Solar Energy Industries Association (SEIA), BP Solar Energy North America (BP Solar), and SCE filed comments in support of PG&E's request to reallocate capacity across product types. Recurrent and SEIA argued that PG&E's request is justified based on the lack of RAM-eligible baseload projects currently registered in the California Independent System Operator's (CAISO) and Wholesale Distribution Access Tariff's (WDAT) interconnection queues. According to these comments, only 240 MW of baseload capacity is currently registered in these queues, compared to over 6,000 MW of solar photovoltaic capacity registered in the same queues. The result, according to Recurrent and SEIA, is significantly increased competition among RAM-eligible projects in the peaking category resulting in a greater supply of cost competitive RAM-eligible projects.

Recurrent also noted that the Commission expressly granted the IOUs the authority to make such reallocation requests, and that the Commission did not contemplate in either D.10-12-048 or in Resolution E-4414 that such reallocations would only be appropriate after the IOUs had gained a proscribed amount of market experience with RAM.

CEERT submitted comments reaffirming its protest to AL 4000-E and arguing that it would be premature for the Commission to grant PG&E's request.

The Commission reaffirms that D.10-12-048 and Resolution E-4414 granted PG&E the express authority to reallocate its RAM capacity across product types based on market response to the program and the utility's need. The Commission also agrees with PG&E, Recurrent, SEIA, and SCE that market conditions justify PG&E's request to reallocate program capacity.

⁵ http://www.pge.com/notes/rates/tariffs/tm2/pdf/ELEC_4020-E.pdf.

The Commission also finds that far fewer baseload and non-peaking projects participated in PG&E's first RAM auction than did peaking projects, despite the same availability of capacity for projects in each category.

It is also important to note that the existing RAM program rules grant PG&E the authority to procure up to 20 MW of additional capacity above the amount allocated to a particular category for a specific auction should market response warrant such additional procurement. That is, PG&E would have the authority to procure up to 30 MW (10 MW initial allocation + 20 MW based on market response) of baseload generation and up to 30 MW of non-peaking as-available generation from the second RAM auction if the market response justifies such an increase.

For these reasons, the Commission grants PG&E's request to reallocate RAM capacity, with 85 MW for peaking as-available, 10 MW for non-peaking as-available, and 10 MW for baseload.

That said, to encourage greater participation from developers of diverse resources in the second RAM auction, PG&E, SCE, and SDG&E shall specifically solicit the participation of baseload and non-peak as-available project developers and their affiliates to attend its Bidders' Conference for its second RAM auction.

Additional Changes to RAM

In addition to PG&E's request to reallocate its available RAM capacity across product categories, the Commission also evaluated PG&E's request to increase the contract extension due to regulatory delay from 6 months to 12 months. Commission staff also recommends an additional change based on a change recently addressed in Resolution E-4453, modifying SCE's Solar Photovoltaic Program (SPVP).⁶

⁶ Resolution E-4453 is available at:
http://docs.cpuc.ca.gov/PUBLISHED/FINAL_RESOLUTION/160046.htm.

Commission staff evaluated the necessity of these changes to the RAM program based on the following criteria:

- Consistency with RAM’s guiding principles set forth in Decision 10-12-048 establishing the RAM program
- Evidence that these changes will improve the RAM program
- Consistency with other recent Commission Decisions and Resolutions addressing similar renewable programs.

Table 1. Proposed Changes to the IOUs’ RAM Pro Forma PPAs

#	PPA Section	Original RAM Pro Forma PPAs	Revised RAM Pro Forma PPAs	Source of Change
1	<i>Termination; Commercial Operation Deadline</i>	IOU may terminate the agreement if the term does not commence within 18 months of Commission approval. One-time six-month extension due to regulatory delay permitted.	Extends deadline for commencement of commercial operation from the date of Commission approval from 18 months to 24 months. Six-month extension for regulatory delay unchanged.	PG&E’s AL 4000-E and SCE RAM data indicating a 40% increase in eligible bids
2	<i>Full Capacity Deliverability Status</i>	Producer is not required to attain FCDS if there is a cost to the producer, but producer must apply for a deliverability study.	Producer is still not required to attain FCDS, but will be given the option to bid project into RAM as either energy-only or with FCDS. Producer is not required to apply for deliverability study if the producer bids in as energy-only.	Southern California Edison Company’s SPVP PPA (Resolution E-4453)

1. Termination; Commercial Operation Deadline

Section 9.2.1.2 of D.10-12-048 addressed the issue of whether RAM should require projects to achieve commercial operation by a date certain to streamline program administration and to attract higher viability projects to the program. In that Decision, the Commission concluded that such a requirement should be imposed. Accordingly, the Decision requires that projects selected in RAM achieve commercial operation within eighteen (18) months after contract execution, subject to one six (6) month extension for regulatory delay. The Decision concluded that if a Producer failed to meet these requirements, the Buyer should terminate the agreement.

The Commission reconsidered these limits when it approved Resolution E-4414 on August 18, 2011. Parties submitted comments to Draft Resolution E-4414 arguing that the 18 month deadline be increased. Silverado Power suggested a commercial operation deadline of 24 months, while SunEdison suggested maintaining the 18 month deadline and doubling the regulatory delay period from 6 months to 12 months.

The Commission, in Resolution E-4414, ultimately adopted an eighteen month (18) deadline for commercial operation, as measured from the date of Commission approval (rather than contract execution), with the option for exercising a one-time six (6) month extension due to regulatory delays. It was expected at the time that this would provide sufficient time for projects in the California Independent System Operator's ("CAISO") cluster study 4 to come online. These time limits were in place for the first RAM auction that closed on November 15, 2011.

In Advice Letter 4000-E, filed February 1, 2012, PG&E suggested maintaining the 18 month commercial operation deadline, while providing an option for a 12 month extension instead of a 6 month extension for regulatory delays. PG&E contends that this extension is necessary for the second RAM solicitation to give small generators adequate time to come online given the existence of permitting and interconnection delays resulting from the CAISO's cluster studies.

IEP protested PG&E's AL 4000-E, arguing that PG&E did not provide sufficient evidence that extending this deadline was necessary. Silverado supported PG&E's request and stated that the current RAM project timeline leaves developers with too little flexibility to accommodate interconnection delays and other regulatory delays (e.g., permitting) outside of developers' control.

Moreover, SCE has also indicated its preference for extending the amount of time permitted for a developer to achieve commercial operation. SCE filed Advice Letter 2712-E⁷, seeking Commission approval of its RAM contracts from the first auction, on March 29, 2012. In that advice letter, SCE reported that 45 of the 92 bids it received could achieve commercial operation within 18 months, but that another 36 projects could achieve commercial operation if given 0 to 6 additional months⁸.

SEIA, Silverado, BP Solar, and the Interstate Renewable Energy Council (IREC) each submitted comments in response to the draft version of this resolution supporting an extension of the deadline for a project to reach commercial operation from 18 to 24 months. These parties argued that this change was necessary because of interconnection and permitting challenges faced by RAM-eligible projects.

The Commission agrees with PG&E, SCE, SEIA, Silverado, BP Solar, and IREC in finding that experience with the first RAM auction demonstrates a need for developers to have additional time to achieve commercial operation. Consequently, the Commission finds that extending the deadline for producers to achieve commercial operation from 18 months to 24 months would improve the RAM program.

⁷ <http://www.sce.com/NR/sc3/tm2/pdf/2712-E.pdf>.

⁸ *Id.* at 5.

Accordingly, the Commission modifies Decision 10-12-048⁹ as follows:

Appendix A, 4. RAM Standard Contract, Length of Time to COD:

From:

“Within 18 months of contract execution, with one 6-month extension for regulatory delays.”

To:

“Within ~~18~~ 24 months of ~~contract execution~~ CPUC approval,¹⁰ with one 6-month extension for regulatory delays.”

The Commission also modifies Resolution E-4414¹¹ as follows:

Ordering Paragraph 18. The investor-owned utilities shall change the renewable auction mechanism contracts to allow for the ~~18-month~~ 24-month online date to begin after CPUC approval, and not after contract execution.

2. Full Capacity Deliverability Status

In Decision 10-12-048, the Commission did not address the need for RAM projects to obtain full capacity deliverability status (“FCDS”). Rather, the Decision ordered the IOUs to select bids solely on the basis of price.

The IOUs then raised the issue of FCDS in their RAM implementation advice letter filings, requesting that the Commission require producers to achieve FCDS

⁹ Underlined language reflects new words to be added while strike-through reflects words that were included that should be removed.

¹⁰ Resolution E-4414 modified this order to change the termination right from contract execution to CPUC approval.

¹¹ Underlined language reflects new words to be added while strike-through reflects words that were included that should be removed.

in order to bid into a RAM auction. In Resolution E-4414¹², the Commission rejected this request, finding that the IOUs did not demonstrate a need for resource adequacy from small renewable generators. Instead, the resolution permitted the IOUs to require producers to apply for a deliverability study and to only require FCDS in instances where it could be provided at no additional cost.

Moreover, the Commission found that the IOUs did not compare the costs of procuring resource adequacy from a renewable generator to the costs of procuring resource adequacy from another non-renewable source. Because ratepayers bear the costs of deliverability network upgrades needed to qualify for resource adequacy, this type of economic analysis is an important factor in determining how to procure resource adequacy. In addition, achieving resource adequacy can be an expensive and time consuming burden for small renewable projects and could cause undue risk and uncertainty.

The Commission revisits here the issue of whether or not producers should achieve FCDS before bidding into a RAM auction. The Commission recently discussed this issue in Resolution E-4453, referenced above, which modified SCE's solar photovoltaic program (SPVP) PPA. Once again, the Commission affirmed that requiring FCDS would impose an unreasonable financial burden on either the small renewable projects or on ratepayers. On the other hand, the Commission also found that projects that can economically provide resource adequacy provide a greater value to ratepayers and thus should be recognized for that value in the bid evaluation process. To reconcile these two findings, the Commission authorized producers to bid projects into SCE's SPVP as either energy-only or with FCDS. The Commission also authorized IOUs, in turn, to recognize the value of resource adequacy benefits provided by a project that bids into SPVP with FCDS.

For these same reasons, the Commission finds that it would be an improvement to the RAM program to give producers the option to bid a project as energy-only

¹² Resolution E-4414, page 16.

or to bid a project with FCDS. Producers may also choose to bid a single project both ways, with two separate bids.

If a producer chooses the option to bid a project with FCDS, attainment of FCDS will not be a condition precedent to achieving commercial operation, but a producer bidding a project with FCDS will be obligated to attain such status by a date certain as established by the PPA.

As a result, the Commission modifies Resolution E-4414¹³ as follows:

Ordering Paragraph 12. The investor-owned utilities shall require the seller to apply for a deliverability study, unless the seller is bidding the project as energy-only.

Ordering Paragraph 13. ~~The investor-owned utilities shall not require sellers to achieve full capacity deliverability status unless the seller can obtain full capacity deliverability status with no additional costs to the seller.~~ Producers have two options, either to bid their projects as energy-only or to bid their projects with Full Capacity Deliverability Status. Producer is required to provide a date certain, for which the RAM PPA will create a contractual obligation, to the Buyer of when it will achieve full deliverability in the instances where Producer chooses to bid its project with Full Capacity Deliverability Status. Achieving full capacity deliverability status shall not be a condition precedent to commercial operation.

The Commission also finds that it would improve RAM to permit the IOUs to consider the benefits of a project providing resource adequacy when it evaluates bids from a RAM auction.

The Commission requested that the each IOU submit a qualitative description of its methodology for calculating the value of resource adequacy benefits. This

¹³ Underlined language reflects new words to be added while strike-through reflects words that were included that should be removed.

request was made because the Commission believes that it would be beneficial to producers in making an assessment of whether to bid energy-only or with FCDS. Each IOU provided such descriptions that are published in Appendix A to this resolution.

IREC, Recurrent, and SEIA each filed comments to the draft resolution arguing that the qualitative descriptions provided in Appendix A are insufficient. These parties contend that the IOUs should specify the source of the cost information that they will use to evaluate transmission adders and that they should generally provide greater transparency over how they quantitatively calculate resource adequacy benefits. These parties also argue that this type of clarity is necessary to allow developers to assess whether it is cost effective to pursue FCDS, or whether they should bid a project energy-only.

The Commission agrees that market participants need more information regarding how the IOUs calculate the value of resource adequacy benefits, but the Commission also acknowledges the IOUs' contention that these evaluation methods are confidential. Accordingly, the Commission orders PG&E, SCE, and SDG&E to include a public discussion of how to provide greater transparency to the market of its methods for valuing resource adequacy benefits on the agenda at its RAM program forum, referenced above.

Consequently, the Commission modifies Resolution E-4414¹⁴ as follows:

Ordering Paragraph 15. The investor-owned utilities may incorporate the value of resource adequacy benefits provided by a seller with full capacity deliverability status. Thus, the IOUs shall rank bids using the following formula: bid price + ratepayer funded transmission upgrade costs (network upgrade costs and deliverability upgrade costs) – resource adequacy benefits. The investor-owned utilities cannot use any additional criteria for the evaluation and selection of offers without CPUC approval.

¹⁴ Underlined language reflects new words to be added while strike-through reflects words that were included that should be removed.

Ratepayer Protection from Excessive Upgrade Costs

In Resolution E-4414, the Commission rejected proposals from SCE and SDG&E to impose transmission network upgrade cost caps on producers bidding into RAM auctions. At the time, the Commission found that the cost caps proposed by the IOUs were “arbitrary and could unnecessarily limit competition.”

Because of a continuing interest to protect ratepayers from excessive network upgrade costs, the Commission now revisits the issue of limiting these costs. Specifically, the Commission is concerned that a project may be selected by a utility from the RAM auction partially on the basis of its low projected transmission upgrade costs, but that those costs could increase significantly after contract execution. In the draft issuance of this resolution, the Commission contemplated authorizing the IOUs to include a unilateral termination right in its RAM PPAs to protect ratepayers from future exposure to these increased transmission network upgrade costs.

IREC, Recurrent, Clean Coalition, BP Solar, the Sierra Club, Silverado, and SEIA each filed comments to the draft resolution strongly opposing inclusion of this termination right without first allowing for greater stakeholder input. These parties argued that the mechanism proposed to trigger the termination right should be more lenient, should be more narrowly defined, and that sellers should have an express right to buydown any excessive upgrade costs to avoid termination.

The Commission recognizes the need to protect ratepayers from future exposure to increased transmission network upgrade costs, but the Commission also acknowledges the complexities of implementing a policy to effectuate such a protection measure.

Consequently, the Commission is not including in this resolution the authorization of a unilateral termination right, exercisable by the IOUs, for instances where ratepayer reimbursed transmission upgrade costs increase significantly beyond those estimated at the time a project was selected in a RAM auction.

The Commission is, however, ordering PG&E, SCE, and SDG&E to include a stakeholder discussion of a unilateral termination right to protect ratepayers from excessive network upgrade costs to their RAM program forum agendas, referenced above.

COMMENTS

Public Utilities Code Section 311(g)(1) provides that this Resolution must be served on all parties and subject to at least 30 days public review and comment prior to a vote of the Commission. Section 311(g)(2) provides that this 30-day period may be reduced or waived upon the stipulation of all parties in the proceeding.

The 30-day comment period for the draft of this resolution was neither waived nor reduced. Accordingly, this draft resolution was mailed to parties for comments on March 20, 2012.

The Commission received timely comments to draft resolution E-4489 on April 9, 2012 from PG&E; SCE; SDG&E; the Solar Energy Industries Association (SEIA); Silverado Power, LLC; Sierra Club; BP Solar Energy North America (BP Solar); Recurrent Energy; Clean Coalition; Center for Energy Efficiency and Renewable Technologies (CEERT); and the Interstate Renewable Energy Council (IREC).

The Commission received timely reply comments on April 16, 2012 from PG&E; SCE; SDG&E; Silverado Power, LLC; and the Independent Energy Producers Association (IEP).

This resolution has been modified to reflect comments from PG&E, SCE, Recurrent Energy, and SEIA that the Commission approve PG&E's request to reallocate its RAM program capacity across product types based on market experience from the first RAM auction and data from current interconnection queues.

This resolution has also been modified as a result of the arguments put forth by IREC, Recurrent Energy, IEP, and SEIA that the market would benefit from increased transparency around how the IOUs value resource adequacy benefits.

In response to these comments, the Commission is ordering the IOUs to address this issue at their RAM program forums.

This resolution has also been modified in response to comments from PG&E, SCE, and SDG&E requesting the authority to require a project that is selected for a RAM PPA on the basis of its promise to achieve FCDS to have a corresponding contractual obligation to actually attain FCDS.

Based on comments filed by SEIA, Silverado, Sierra Club, BP Solar, Recurrent Energy, Clean Coalition, IREC, and IEP, this resolution has also been modified to remove authorization of a unilateral termination right related to increases in ratepayer-funded transmission network upgrade costs.

This resolution also incorporates additional non-substantive changes suggested in party comments.

FINDINGS AND CONCLUSIONS

1. The modifications proposed by staff are consistent with the direction given in Section 12.1 of D.10-12-048.
2. The modifications suggested herein by Pacific Gas and Electric Company's AL 4000-E and on the Commission's own motion would improve the Renewable Auction Mechanism program.
3. Pacific Gas and Electric Company followed the proper protocol by filing its request to change its Renewable Auction Mechanism allocations via Tier 2 advice letter.
4. D.10-12-048 and Resolution E-4414 granted PG&E the express authority to reallocate its RAM capacity across product types based on market response to the program and the utility's need.
5. Far fewer baseload and non-peaking projects participated in PG&E's first RAM auction than did peaking projects, despite the same availability of capacity for projects in each category.
6. Pacific Gas and Electric Company's request to reallocate RAM capacity, with 85 MW for peaking as-available, 10 MW for non-peaking as-available, and 10 MW for baseload is reasonable.

7. Experience with the first RAM auction demonstrates a need for developers to have additional time to achieve commercial operation. Consequently, the Commission finds that extending the deadline for producers to achieve commercial operation from 18 months to 24 months would improve the RAM program.
8. Pacific Gas & Electric Company's request in AL 4000-E to extend the deadline for Renewable Auction Mechanism projects to come online is reasonable, subject to the modifications in this Resolution.
9. It would be an improvement to the Renewable Auction Mechanism program to give producers the option to bid a project as energy-only or to bid a project with FCDS. Producers may also choose to bid a single project both ways, with two separate bids.
10. If a producer chooses the option to bid a project with full capacity deliverability status, attainment of full capacity deliverability status will not be a condition precedent to achieving commercial operation, but a producer bidding a project with full capacity deliverability status will be obligated to attain such status by a date certain as established by the power purchase agreement.
11. It would improve the Renewable Auction Mechanism to permit the utilities to consider the benefits of a project providing resource adequacy when it evaluates bids with full capacity deliverability status from a Renewable Auction Mechanism RFO.
12. The Commission is not including in this resolution the authorization of a unilateral termination right, exercisable by the IOUs, for instances where ratepayer reimbursed transmission upgrade costs increase significantly beyond those estimated at the time a project was selected in a RAM auction.
13. Timely comments were submitted on April 9, 2012 by Pacific Gas and Electric Company; Southern California Edison Company; San Diego Gas and Electric Company; the Solar Energy Industries Association; Silverado Power, LLC; Sierra Club; BP Solar; Recurrent Energy; Clean Coalition; Center for Energy Efficiency and Renewable Technologies; and the Interstate Renewable Energy Council. Timely reply comments were submitted on April 16, 2012 by Pacific Gas and Electric Company; Southern California Edison Company; San Diego Gas and Electric Company; Silverado Power, LLC; and the Independent

Energy Producers Association. These comments and reply comments are disposed of in this resolution.

14. Advice Letter 4000-E should be approved with the modifications discussed herein.

THEREFORE IT IS ORDERED THAT:

1. Pacific Gas and Electric Company's Advice Letter 4000-E is approved with modifications.
2. Pacific Gas and Electric Company's request to reallocate available capacity across product categories (85 MW for peaking as-available, 10 MW for non-peaking as-available, and 10 MW for baseload) for its second Renewable Auction Mechanism RFO is approved.
3. Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company shall specifically solicit the participation of baseload and off-peak intermittent project developers to attend its Bidders' Conference for the second Renewable Auction Mechanism RFO.
4. Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company shall add the following two items to their Renewable Auction Mechanism program forum agendas:
 - How to provide greater transparency to the market over how the utility values resource adequacy benefits.
 - How to protect ratepayers from excessive increases in transmission network upgrade costs after a project has executed a Renewable Auction Mechanism power purchase agreement.
5. The following changes to the investor-owned utilities Renewable Auction Mechanism pro forma power purchase agreements are adopted. The investor-owned utilities shall:
 - Increase the deadline by which producers must bring their projects online from eighteen (18) months to twenty-four (24) months after the date of Commission approval.
 - Revise Full Capacity Deliverability Status. Producers have two options, either to bid their projects as energy-only or to bid their projects with

Full Capacity Deliverability Status. Producer is required to provide a date certain of when it will be able to achieve full deliverability in the instances where Producer chooses to bid its project with Full Capacity Deliverability Status. Achieving full capacity deliverability status shall not be a condition precedent to commercial operation.

- Consider resource adequacy benefits and the cost of deliverability upgrades when ranking for Full Capacity Deliverability Status bids using the following formula: bid price + ratepayer funded transmission upgrade costs (network upgrade costs and deliverability upgrade costs) – resource adequacy benefits. In addition, the investor-owned utilities shall explain how they value resource adequacy in their Renewable Auction Mechanism bidding protocols.
6. Within 7 days of the effective date of this resolution, Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company shall file a Tier 1 advice letter with the Energy Division demonstrating compliance with Ordering Paragraphs 4 and 5 of this resolution, and may include additional non-substantive changes to the RAM protocols and RAM power purchase agreements.
 7. The modifications to Commission Decision 10-12-048 and to Resolution E-4414 contained herein are adopted.

This Resolution is effective today.

I certify that the foregoing Resolution was duly introduced, passed and adopted at a conference of the Public Utilities Commission of the State of California held on April 19, 2012; the following Commissioners voting favorably thereon:

/s/ PAUL CLANON
PAUL CLANON
Executive Director

MICHAEL R. PEEVEY
President
TIMOTHY ALAN SIMON
MICHEL PETER FLORIO
CATHERINE J.K. SANDOVAL
MARK J. FERRON
Commissioners

Appendix A
**Summary of IOU Resource Adequacy
Methodologies**

The Commission recognizes that producers could benefit from a more comprehensive understanding of the methodologies used by IOUs to calculate resource adequacy value. Such information would likely benefit producers as they assess whether or not to pursue deliverability upgrades to achieve full capacity deliverability status, or whether to bid their project as energy-only.

Accordingly, the Commission requested that each IOU release a qualitative description of its methodology for calculating resource adequacy value. The following is a summary of how each IOU responded:

Pacific Gas & Electric:

PG&E submitted the following qualitative description to the Commission for publication in this Resolution:

PG&E calculates the RA value in RPS valuation by applying the Net Qualifying Capacity (NQC) methodology as per CPUC D.10.06.036 to PG&E's forecast of avoided capacity costs. PG&E's forecast of avoided capacity costs represents the marginal unit's going-forward fixed costs less its gross margin. The gross margin represents the expected net revenue from energy sales.

Southern California Edison Company:

SCE submitted the following qualitative description to Energy Division staff for publication in this Resolution:

The following describes how SCE evaluates the capacity benefits of a proposal:

Each proposal is assigned capacity benefits, if applicable, based on SCE's forecast of net capacity value and a peak capacity contribution factor.

Peak capacity contribution factors are calculated in a manner consistent with the Commission's Resource Adequacy accounting rules (D.09-06-028) utilizing a 70% exceedance factor methodology. Peak capacity contribution factors are both technology and location specific. Technological differentiation does not refer to the fuel source, but rather the method of converting other energy sources into electricity (e.g., solar trough, solar photovoltaic). For proposals with dispatchable capabilities at SCE's control, the peak capacity contribution factor was based on the availability of the proposed project. The amount of capacity that ultimately counts toward Resource Adequacy requirements is calculated for each facility

pursuant to the Qualifying Capacity Methodology Manual, which can be found at:

http://www.cpuc.ca.gov/PUC/energy/Procurement/RA/ra_compliance_materials.htm.

Thus, a bidder can take its generation profile, apply the QC methodology described in the Qualifying Capacity Methodology Manual, and determine the amount of RA the facility would provide in SCE's valuation.

Monthly capacity benefits include the product of SCE's net capacity value forecast, the total monthly proposed alternating current nameplate capacity of the project, SCE's relative loss-of-load probability factors, and the peak capacity contribution factor. The monthly capacity benefits are aggregated to annual capacity benefits. In order for a generating facility to receive capacity benefits, Seller's interconnection agreement must have reflected that the generating facility has selected Full Capacity Deliverability Status, as such term is defined in the California Independent System Operator ("CAISO") Tariff and/or SCE's Wholesale Distribution Access Tariff ("WDAT"). Capacity benefits are included as of the date the project obtains Full Capacity Deliverability Status, if achieved after commercial operation. Those generating facilities that interconnect to as Energy-Only projects do not receive any capacity benefit.

San Diego Gas & Electric:

SDG&E directed the Commission to refer to Attachment B of its 2011 RPS Shortlist Report (filed on November 7, 2011 in Advice Letter 2300-E). On page 5 of that attachment, SDG&E qualitatively described its "Deliverability Adder" that it uses to assess resource adequacy value:

The purpose of the Deliverability Adder is to illustrate the costs of building new generation to meet potential resource adequacy (RA) deficits in future years due to renewable projects being unable or unwilling to provide Full Deliverability under the CAISO tariff. Deliverability is a prerequisite for any resource to be counted towards the resource adequacy requirements of a load-serving entity ("LSE").

This calculation is based upon the PSPRs using the 2011 SDG&E MPR calculation and two different sets of TOD multipliers, the "All-In" TOD multipliers and the "Energy-Only" TOD multipliers as shown in SDG&E' RPS Plan. Total costs of the project deliveries based upon MPR prices are calculated

using the All-In multipliers, which incorporate costs of capacity; the same costs are then computed using the Energy-Only multipliers, which are based only on energy costs and do not incorporate capacity costs.

The Energy-Only costs are subtracted from the All-In costs for each TOD period; for periods where this results in a negative value (when Energy-Only costs exceed the All-In costs), this difference is adjusted to zero. These adjusted differences are then added and prorated over the project's lifetime deliveries to produce a "Maximum Deliverability Adder".

The Deliverability Adder (either the System Deliverability Adder or the Maximum Deliverability Adder as discussed below) is assessed whenever a project is expected to provide less than full local RA to SDG&E due to deliverability constraints known at the time of RFO issuance. These constraints are:

- Project is interconnected outside of SDG&E's current service territory*
- Project is located outside of the California ISO and subject to ISO import counting limits*
- Project has selected "energy-only" for its CAISO generation interconnection, or has not committed to performing Deliverability Studies*

For projects expecting to provide Full Deliverability that are within CAISO but are not interconnected within SDG&E's service territory, a System Deliverability Adder is assessed which is 40% of the Maximum Deliverability Adder. The System Deliverability Adder is also applied to projects which are interconnected to CAISO outside of CAISO's import ties, or to a California balancing authority other than CAISO, where CAISO import limits may result in a reduction of a project's RA value. Projects with energy-only interconnections, or without a first point of interconnection with a California balancing authority, cannot provide deliverability under the CAISO counting rules at present and are assessed the Maximum Deliverability Adder.

Appendix B

Summary of RAM Program Rules, Including Cumulative Changes to the Original Rules from Decision 10-12-048 and Resolution E-4414

APPENDIX B
SUMMARY OF RAM PROGRAM RULES

CPUC Decision 10-12-048 adopted the Renewable Auction Mechanism and established an original set of RAM Program Rules. CPUC Resolution E-4414 adopted these RAM Program Rules with modification. This attachment revises Appendix A of Decision 10-12-048 to reflect both the changes to the rules adopted in Resolution E-4414 and the new changes adopted herein in Resolution E-4489. Underlined language reflects additions while strike-through reflects deletions.

RENEWABLE AUCTION MECHANISM

1. Price Determination: Renewable Auction Mechanism (RAM)

- Projects submit price bids
- IOUs select projects in order of least-costly first, up to program capacity limit

2. Auction Design:

a. Program Procurement Requirement:

- i. 1,000 MW Capacity Limit
- ii. Adjustment to the Program Capacity Limit: May occur in any appropriate proceeding or through a Tier 3 advice letter/Resolution, or a Resolution on the Commission's own motion

iii. Capacity Allocation for total RAM program and per auction

UTILITY	TOTAL PROGRAM (MW)	PER AUCTION (MW)
SCE	498.4 <u>723.4</u>	124.6 <u>170.8</u> ¹⁵
PG&E	420.9	105.2
SDG&E	80.7	20.2
TOTAL	1,000.0 <u>1,225.0</u>	250.0 <u>296.2</u>

iv. **Number of Auctions per Year:** Two per year, every six months, held concurrently by all three IOUs; a project may bid into all three auctions.

v. **Amount per auction:** 25% of the total program allocation will be offered in the initial auction; unsubscribed capacity, or drop out capacity, is added to the next auction

vi. **Procurement Requirement:** Each IOU must enter into a standard contract with each winning bidder up to the capacity limits in each solicitation and total program capacity limits. IOUs select on the basis of least costly projects first until the IOU fully subscribes its allocated capacity for that auction. IOUs have the discretion to not enter into contracts if there is evidence of market manipulation or if the bids are not competitive compared to other renewable procurement opportunities. The IOU must submit an advice letter explaining its decision not to enter into contracts.

¹⁵ SCE has increased its RAM allocation for the second, third, and fourth RFOs. SCE allocated 65 MW for the first RAM RFO.

b. Products and Selection

- **Products:** Firm (baseload), non-firm peaking (peaking as-available), and non-firm non-peaking (non-peaking as-available) electricity
 - IOU shall specify the amount of each product for the initial four auctions in the first advice letter filed pursuant to this order. Utilities are required to solicit and procure capacity up to the capacity limit for each solicitation.
 - Project must submit eligibility information (e.g., generation profile, project characteristic information) corresponding to the product bid, as established by the IOU
- **Selection:** Products bid into RAM will be bid as either energy-only or with full capacity deliverability status (FCDS); each product is selected on the basis of price, least expensive first until the capacity limit in each solicitation is reached; IOU may normalize (adjust) bids to place bids on an equivalent basis before making least cost selection using method approved, if any, in the advice letter implementing RAM; IOUs should add the estimated transmission upgrade costs to the bids for ranking purposes.
- **Independent Evaluator:** Utilities will employ an Independent Evaluator to assess the competitiveness and integrity of each RAM auction and submit the IE's report with its Tier 2 advice letter requesting approval of contracts resulting from those auctions.

3. Eligibility:

- **Minimum Size:** Minimum contract size of 1 MW, but projects 500 kilowatts and greater can aggregate to meet the minimum contract size of 1 MW. Projects can aggregate as long as they interconnect to the same p-node and the contract size does not exceed 5 MW
- **Project Vintage:** New and existing projects are eligible for RAM
- **Location:** Combined IOU service territories (e.g. a project bidding into SCE's auction can be located in either PG&E or SDG&E's service territory).
- **Retail Customer/Third Party Ownership:** Seller need not be a retail customer and the facility need not be located on property owned or under the control of a retail customer

- **Utility Applicability:** Southern California Edison Company (SCE), Pacific Gas and Electric Company (PG&E), and San Diego Gas & Electric Company (SDG&E)
- **Project and Transaction Limit:** 20 megawatts (MW)
This is the maximum size for any project signing a full buy/sell or excess sales transaction through the RAM.¹⁶
- **Full Buy/Sell or Excess Sales:** Seller may elect either full buy/sell or excess sales
- **Counting Excess Sales:** Capacity associated with the transaction size is applied to the program cap.
- **Seller Concentration:** IOUs have the discretion to apply a seller concentration limit after the bids are received. PG&E is authorized to apply a seller concentration limit of 20 MW per seller per auction.

4. RAM Standard Contract:

- **Contract Language:** IOUs can use their individual contracts, but should start with a contract that is simple, streamlined, and has already been vetted by stakeholders through another CPUC program.
- **Negotiations:** Price, terms, and conditions are not negotiable.
- **Contract Terms and Conditions**
 - **Length of Contract:** 10, 15, or 20 years
 - **Length of Time to COD:** Within ~~18~~ 24 months of CPUC Approval ~~contract execution~~, with one 6-month extension for regulatory delays. Seller can request a contract extension by providing a 60-day notice prior to the guaranteed commercial operation date.

¹⁶ If a project elects to pursue excess sales, the total project size, including the capacity associated with the wholesale transaction under RAM as well as the capacity associated with onsite load, is counted as part of the project's capacity for purposes of project eligibility. However, only the capacity associated with the wholesale transaction will count against the capacity limit under RAM.

- **Development Deposit:** \$20/kW for projects 5 MW and smaller, and a \$60/\$90 per kW for intermittent and baseload resources, respectively, for projects greater than 5 MW and up to 20 MW in size, refundable upon achieving commercial operation or applied to the performance deposit; development deposit is due on the date of contract execution in the form of cash or letter of credit from a reputable U.S. bank; development deposit forfeited if project fails to come on line within 24 months or other 6-month extension granted by IOU.
- **Performance Deposit:**
 - For projects less than five MW: conversion of development deposit to performance deposit
 - For projects five MW and larger: 5% of expected total project revenues
- **Performance Obligation:**
 - Performance is required to be consistent with good utility (or prudent electrical) practices; project is obligated to have liability insurance against utility losses; the project is liable for an IOU's direct, actual losses; and project must perform consistent with generation profile or other characteristics for the product, to the extent stated in the Commission-adopted contract
 - Minimum deliveries of 140% of expected annual net energy production based on two years of rolling production
- **Damages for Failure to Perform:** Damages are limited to actual, direct damages; neither party is liable for consequential, incidental, punitive, exemplary or indirect damages, lost profits or other business interruption damages regardless of cause
- **Force Majeure and Events of Default:** Each RAM contract shall include a force majeure definition and provision
- **Insurance:** IOU discretion, submitted in implementation advice letter
- **Scheduling Coordinator:** Where possible, the contracting IOU shall be the scheduling coordinator for each project using the

RAM, and the IOU shall bear the risk of scheduling deviations if the generator provides the IOU with timely information on its availability; the IOU can decline scheduling coordinator responsibilities only upon a written, affirmative request from the seller that the IOU not be the scheduling coordinator, or if unable to perform these duties

5. Project Viability Requirements

Bidder must demonstrate the following items with its bid. An IOU shall reject a bid that fails to demonstrate the following items. Each IOU shall adopt reasonable definitions and lists, related to:

- **Site Control:** Bidder must show 100% site control through (a) direct ownership, (b) lease or (c) an option to lease or purchase that may be exercised upon award of the RAM contract
- **Development Experience:** Bidder must show that at least one member of the development team has (a) completed at least one project of similar technology and capacity or (b) begun construction of at least one other similar project
- **Commercialized Technology:** Bidder must show the project is based on commercialized technology (e.g., is neither experimental, research, demonstration, nor development)
- **Interconnection Application:** Bidder must show that it has filed its interconnection application. In addition, bidder must have completed a System-Impact Study, Cluster Study Phase 1, or have passed the Fast Track screens.

6. Market Elements

- a. **Preferred Locations:** The IOUs must provide the “available capacity” at the substation and circuit level, defined as the total capacity minus the allocated and queued capacity. The IOUs should provide this information in map format. If unable to initially provide this level of detail, each IOU must provide the data at the most detailed level feasible, and work to increase the precision of the information over time. This information is to be available in the advice letter implementing RAM and updated on a monthly basis.
 - i. Each IOU should examine DG interconnection screening tools currently used to screen DG interconnection applications. The IOUs

should evaluate how individual project studies could be automated to provide the requested data and a reasonable assessment of a DG project's impact on the distribution system.

- ii. The IOUs should work with parties and Commission staff through the Renewable Distributed Energy Collaborative (Re-DEC) or other forums in order to improve the data, usefulness of the maps, and to discuss other issues related to the interconnection of distributed resources.
- b. **Project Milestones:** Sellers shall submit a project development milestone timeline to the IOU upon RAM contract signing, and ~~quarterly~~ progress reports every six months. The only enforceable milestone is the commercial operation data (COD) (subject to a one 6-month extension for regulatory delays).
- c. **Relationship to Voluntary and Other Programs:** 1,000 MW capacity limit does not include capacity subscribed under the Existing FIT (up to 1.5 MW, subject to expansion to three MW under SB 32). SCE is permitted to draw down its capacity limit with the 21 contracts it selected in November 2010 from the RSC solicitation, if the CPUC approves these contracts
- d. **FERC Certification:** No FERC certification as a QF is required for a project to be eligible for RAM
- e. **Conveyance of RECs:** RECs transferred in relationship to the amount of the purchase (for full buy/sell, the IOU buys the RECs coincident with the entire output; for excess sales, the IOU buys the RECs coincident with the purchased excess energy)

7. Regulation and Commission Oversight

- a. **Program modifications:** The Commission can modify any element of the program at any time through a Commission resolution.
- b. **Advice Letter Review:** All executed RAM contracts from each auction are filed with the Commission in one Tier 2 advice letter.
- c. **Program Evaluation:** RAM to be monitored and evaluated annually, with each IOU filing a report each year. The report shall be filed with ED and posted on the IOU's website. ED shall include RAM program information in the Commission's reports to the legislature on the RPS program.

d. Data:

Each annual report shall include information and evaluation on all relevant items and characteristics including but not limited to:

- Competition and competitiveness
- Auction design
- Time necessary to complete projects
- Auction timing
- Project status
- Analysis comparing the price and value of contracts with and without resource adequacy.
- Anything else determined by ED to be necessary for a complete report

IOUs shall adopt a uniform report template with guidance from Energy Division

The first report shall include each IOU's proposal for a definition of a competitive market, proposed measurements of RPS markets generally, and proposed measurements of this RAM market specifically

As available over time, each report shall include data on:

- Measures of the requirements for a perfectly competitive market
- Measures of market power
- Seller concentration
- Data on each RAM results
- Information on the achievement of project development milestones for all executed RAM contracts
- Any other information necessary to present a complete report

e. Public release of aggregated Data:

i. IOUs and ED shall make the maximum amount of RAM data public, including the following:

- Names of participating companies and number of bids per company
- Number of bids received and shortlisted
- Project size
- Participating technologies

- Quantitative summary of how many projects passed each project viability screen
 - Location of bids by county provided in a map format
 - Information on the achievement of project development milestones for all executed RAM contracts (See Attachment B)
- f. **Cost Recovery:** RAM costs may be charged to bundled and departing customers consistent with current practice
- g. **Program Forum:**
- i. IOUs will hold a program forum once per year in order to meet with sellers and discuss seller experience participating in an auction. The IOUs are required to:
- Notice all stakeholders of the date, time, location and methods for participation¹⁷ for each program forum;
 - Issue a request for feedback from all stakeholders after the close of each solicitation in order to inform the agenda for the program forum;
 - Provide CPUC staff with a draft of the agenda at least 14 days prior to the program forum;
 - At the program forum, the IOUs shall provide sufficient time to address key issues identified in the request for feedback and the independent evaluator's report;
 - At the program forum, the IOUs shall provide sufficient time for stakeholders to discuss their experience with the solicitation, interconnection process, or the program in general; and
 - The independent evaluator should participate in the program forum.
 - To encourage broader participation of these underrepresented parties into the second RAM RFO, each IOU should specifically solicit the participation of known developers of baseload and off-peak

¹⁷ The IOUs should utilize telecom and web-based technologies to facilitate remote participation.

intermittent projects to attend the Bidders' Conference for its second RAM RFO.

8. Implementation Advice Letter¹⁸: PG&E, SCE, and SDG&E shall file Tier 3 advice letters within 60 days of the date this order. The implementation advice letters shall include:

- Procurement protocols
- RAM standard contract
- Program implementation details
- Timing of RAM auctions
- Specific amounts of capacity and type of resources in each auction over the next two years
- Explanation of any normalization procedures used for bid selection process
- Detailed description of the generation profiles and characteristics that correspond with each product bucket
- Description of how IOU-proposed product eligibility requirements will provide reasonable assurance that a bid for one product will, if selected, deliver energy in a manner that corresponds to the generation profile associated with that
- Identify seller concentration limit, if any
- Provide the preferred locations map and a description of how the maps were computed
- Provide a simple methodology to measure the status of project development milestones

¹⁸ These Advice Letters were filed by the IOUs on February 25, 2011 and were approved with modifications by the Commission in Resolution E-4414.