

DRAFT

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

ENERGY DIVISION

**ID #11178
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, adds a Buyer termination right to protect ratepayers from excessive increases in estimated transmission upgrade costs, 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 two additional changes proposed by Commission Staff to the Renewable Auction Mechanism. These changes will take effect prior to commencement of the second RAM solicitation, which is 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 after the IOUs hold their program forums, which will take place after contracts from the first RAM RFO are executed.¹

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 that alter the original RAM Program Rules that were established by D.10-12-048 and that alter the amended RAM Program Rules as adopted in 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 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,

¹ Contracts from the first RAM RFO are expected to be executed by Q2 2012.

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 provided staff broad authority to suggest modifications to 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.”²

This Resolution approves Pacific Gas & Electric Company’s (“PG&E”) AL 4000-E with modifications and addresses additional issues on Energy Division’s own motion. The purpose of this Resolution is to adopt programmatic changes to the Renewable Auction Mechanism based on evidence provided by the IOUs that these modifications are necessary to improve the RAM program before commencement of the second RAM solicitation, currently scheduled for May 31, 2012. The Commission will consider more comprehensive programmatic changes after the IOUs conduct their Program Forums. The Commission expects the IOUs to hold their Program Forums after executing contracts from the first auction.

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

² D.10-12-048, Section 12.1, page 74.

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 protested aspects of PG&E’s Advice Letter filing. The following discussion summarizes the protested issues and based on party comments, this resolution accepts PG&E’s request with modification. In addition, Energy Division staff is also proposing additional modifications 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

D.10-12-048 gave the utilities flexibility to allocate available megawatts in RAM across product categories (baseload, peaking as-available, non-peaking as-available) based on need and based on market response to the program. The Decision 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 San Diego Gas and Electric Company (“SDG&E”) solicit a minimum of 3 MW, and Southern California Edison Company (“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. The Commission deemed this allocation 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 RFO. 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 states that its modified product allocations are more consistent with the initial allocations proposed by SCE and SDG&E and reflect the market information PG&E received in its 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 that PG&E's proposed modifications are inconsistent with D.10-12-048.

In its reply, PG&E states that it has the ability to procure plus or minus 20 MW in each product category, thus giving PG&E the flexibility to purchase up to 30 MW of geothermal in the second auction should the offers prove to be competitive. PG&E also clarifies that Resolution E-4414 provided the utilities with flexibility to modify product allocations based on market conditions and experience, on the condition that this change is made through a Tier 2 advice letter if requested prior to the second auction.

While D.10-12-048 and Resolution E-4414 grant PG&E the authority to request a change to its product category allocations, the concerns of those protesting are also valid, that reducing the allocation available to the baseload category would discourage the participation of baseload developers. Because the IOUs have had only limited experience with the RAM Program and have only held one RFO, it would benefit developers of baseload and off-peak intermittent projects, which were underrepresented in the first RFO, to maintain the same product category allocations for the second RAM RFO. Additionally, 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 intermittent projects to attend the Bidders' Conference for its second RAM RFO.

PG&E followed the proper protocol by filing this request via Tier 2 advice letter, however, PG&E's request to reduce its RAM allocations for baseload and off-peak intermittent at this time is premature given the lack of industry experience to date with the RAM program.

Accordingly, the Commission denies PG&E's request to reallocate its available RAM capacity across product categories. PG&E, SCE, and SDG&E shall also specifically solicit the participation of baseload and off-peak intermittent project developers and their affiliates to attend its Bidders' Conference for its second RAM RFO.

General 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. The Commission also considers two additional issues that it recently addressed in Resolution E-4453, modifying SCE's Solar Photovoltaic Program (SPVP).³ Energy Division evaluated the necessity of these changes to the RAM program based on the following criteria:

- Consistency with 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.

³ Resolution E-4453 is available at:
http://docs.cpuc.ca.gov/PUBLISHED/FINAL_RESOLUTION/160046.htm

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>Termination; Excessive Upgrade Cost</i>	Not included.	Provides unilateral termination right for Buyer in the event that expected ratepayer reimbursed transmission system upgrade costs increase by more than 10% over estimates provided by Producer when it bid into the solicitation.	Southern California Edison Company's SPVP PPA (Resolution E-4453)
3	<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 Commission Decision 10-12-048 (“the RAM Decision”) addressed the issue of whether RAM should include strict time requirements for projects to achieve commercial operation to streamline program administration and attract higher viability projects. In that Decision, the Commission concluded that such limits should be imposed. Accordingly, the Decision requires that selected projects 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 (“The RAM Resolution”) 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’s”) cluster study 4 to come online. These time limits were in place for the first RAM RFO 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 challenges resulting from the CAISO’s cluster studies.

Moreover, SCE has indicated its preference for extending the amount of time permitted for a developer to achieve commercial operation. SCE has provided the CPUC with information reporting that approximately 50% of the bids that it received in its first RAM RFO had to be screened out because they were unable to demonstrate an ability to come online within 18 months of Commission approval. SCE estimated that more than half of the projects that were screened out for this reason could have participated in the solicitation if the commercial operation deadline had been extended another 3 months beyond 18 months.

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 outside of developers' control, such as permitting delays.

The Commission agrees with PG&E, SCE, and Silverado in finding that industry experience from the first RAM RFO leads to the conclusion that extending the deadline for producers to achieve commercial operation would improve the RAM program.

Accordingly, the Commission modifies Decision 10-12-048⁴ 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,⁵ with one 6-month extension for regulatory delays."

⁴ Underlined language reflects new words to be added while strike-through reflects words that were included that should be removed.

The Commission also modifies Resolution E-4414⁶ 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. Termination; 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 the RAM solicitation. At the time, the Commission found that the cost caps proposed by the IOUs were “arbitrary and could unnecessarily limit competition.”

Because of the continuing interest in protecting 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 an IOU from the RAM RFO partially on the basis of its low projected transmission upgrade costs, but that those costs could increase significantly after contract execution. To protect ratepayers in such a scenario, and to harmonize treatment of this issue in RAM with other similar programs, the Commission adopts a provision here similar to the approach recently adopted in Resolution E-4453, modifying SCE’s Solar Photovoltaic Program (SPVP) PPA. In that resolution, the Commission adopted SCE’s request to amend its PPA to include a unilateral termination right for the buyer in instances where transmission upgrade costs to ratepayers increase by more than 10% beyond the study estimates provided at the time of bid selection by the IOU.

⁵ Resolution E-4414 modified this order to change the termination right from contract execution to CPUC approval.

⁶ Underlined language reflects new words to be added while strike-through reflects words that were included that should be removed.

The Commission found in Resolution E-4453, and it so finds here, that creating a unilateral termination right for the IOU when transmission upgrade costs increase by more than 10% beyond study estimates provided during bid selection serves a dual purpose: it protects ratepayers from excessive, unaccounted for transmission network upgrade costs, and ensures that producers will not risk PPA termination if upgrade costs increase less than 10%.

Accordingly, the Commission modifies Resolution E-4414⁷ as follows:

Ordering Paragraph 11. ~~The investor owned utilities shall not use network upgrade cost caps. The investor owned utilities shall add the most recent estimated interconnection study costs of transmission network upgrades resulting from the project's interconnection study to bid prices for ranking purposes.~~ Each investor-owned utility may include in its RAM PPAs a unilateral termination right for Buyer in instances where the cost of ratepayer funded or reimbursed transmission upgrade costs increase by more than 10% over the study estimate provided at the time of the RAM RFO.

3. 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 in order to bid into a RAM RFO. In Resolution E-4414⁸, the Commission rejected this request, finding that the IOUs did not demonstrate a need for resource adequacy from small renewable generators. Moreover, the Commission found

⁷ Underlined language reflects new words to be added while strike-through reflects words that were included that should be removed.

⁸ Resolution E-4414, page 16.

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.

Therefore, the Commission concluded in Resolution E-4414 that requiring FCDS would be unreasonable to developers and would potentially impose unnecessary costs on ratepayers. Instead, the resolution permitted the IOUs to require producers to apply for a deliverability study. Additionally, the resolution stated that the IOUs could only require FCDS in instances where it could be provided at no additional cost.

In an effort to harmonize the Commission's treatment of this issue across similar programs, the Commission revisits here the issue of whether or not producers should achieve FCDS before bidding into an RFO. The Commission recently discussed this issue in Resolution E-4453, which modified SCE's 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 ordered producers to be permitted 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 allow producers to bid as either energy-only or with FCDS; to allow the achievement of FCDS to occur after COD, so long as producers provide the date by which they expect to attain FCDS; and to restrict the IOUs evaluation of the resource adequacy value to the years that it is actually provided.

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 RFO⁹.

As a result, the Commission modifies Resolution E-4414¹⁰ 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 an estimate to the Buyer 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.

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

⁹ The Commission requested that the each IOU submit a public qualitative description of its methodology for calculating the value of resource adequacy benefits. This 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 and they are published in Appendix A to this resolution.

¹⁰ Underlined language reflects new words to be added while strike-through reflects words that were included that should be removed.

(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.

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.

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. Pacific Gas and Electric Company's request to reduce its Renewable Auction Mechanism allocations for baseload and off-peak intermittent at this time is premature given the lack of industry experience to date with the RAM program.
5. Industry experience from the first Renewable Auction Mechanism RFO supports extending the deadline for producers to achieve commercial operation to improve the Renewable Auction Mechanism program.
6. 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.

7. Creating a unilateral termination right in the Renewable Auction Mechanism Power Purchase Agreement for the utility in instances when transmission upgrade costs increase by more than 10% beyond study estimates provided during bid selection serves a dual purpose: it protects ratepayers from excessive, unaccounted for transmission network upgrade costs, and ensures that producers will not risk Power Purchase Agreement termination if upgrade costs increase less than 10%.
8. It would be an improvement to the Renewable Auction Mechanism program to allow producers to bid as either energy-only or with full capacity deliverability status; to allow the achievement of full capacity deliverability status to occur after the commercial operation date, so long as producers provide the date by which they expect to attain full capacity deliverability status; and to restrict the utility evaluation of the resource adequacy value to the years that it is actually provided.
9. 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.
10. 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 for its second Renewable Auction Mechanism RFO is denied.
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. 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 Paragraph 3 of this Resolution.

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.
 - Add a unilateral termination right if ratepayer funded transmission system upgrade costs increase by more than 10% over the estimates provided at the time of the Renewable Auction Mechanism solicitation.
 - 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 an estimate to the Buyer 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 for Full Capacity Deliverability Status bids. The investor-owned utilities shall explain how they value resource adequacy in their Renewable Auction Mechanism bidding protocols.
6. 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:

PAUL CLANON
Executive Director

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	498.4 723.4	124.6 170.8 ¹¹
PG&E	420.9	105.2
SDG&E	80.7	20.2
TOTAL	1,000.0 761	250.0 190.25

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.

¹¹ 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.¹²
- **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.

¹² 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 18 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 participation¹³ 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

¹³ 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 Letter¹⁴: 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

¹⁴ These Advice Letters were filed by the IOUs on February 25, 2011 and were approved with modifications by the Commission in Resolution E-4414.