BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking To Continue Implementation and Administration of California Renewables Portfolio Standard Program.	R. 11-05-005 (Filed May 5, 2011)

COMMENTS OF THE NATURAL RESOURCES DEFENSE COUNCIL (NRDC) AND SIERRA CLUB CALIFORNIA ON ADMINISTRATIVE LAW JUDGE'S RULING REQUESTING COMMENTS ON THE RENEWABLE AUCTION MECHANISM

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I. INTRODUCTION

Pursuant to the December 31, 2013 Order Instituting Rulemaking, and pursuant to Rules 1.9 and 1.10 of the California Public Utilities Commission's (CPUC or Commission) Rules of Practice and Procedure, the Natural Resources Defense Council (NRDC) and Sierra Club California (Sierra Club) respectfully submits these comments on the possible extension of the Renewable Auction Mechanism (RAM) and related issues. We provide these comments in response to Attachment A of the Administrative Law Judge DeAngelis' Ruling, "Energy Division Summary & Questions on Future of RAM," which seeks responses on 1) whether the factors underlying the RAM program's original authorization continue to apply, 2) whether reauthorization is appropriate, and 3) potential changes to program elements, eligibility, viability, and contract terms and conditions.

NRDC is a non-profit membership organization with a long-standing interest in minimizing the societal costs of the reliable energy services that a healthy California economy requires. We have participated in numerous CPUC proceedings over the last three decades with a particular focus on representing our California members' interest in the utility industry's delivery of cost-effective energy efficiency programs, renewable energy resources, and other sustainable energy alternatives. In this proceeding, we focus on representing our nearly 80,000 California members' interest in receiving affordable

energy services and reducing the environmental impact of California's energy consumption.

Sierra Club California is a non-profit membership organization with over 150,000 members in California. Sierra Club's environmental concerns include implementation of the Renewables Portfolio Standard to further the reduction of greenhouse gas emissions and protection of our climate. Sierra Club has participated actively in CPUC proceedings to support strong incentives for renewable energy resources and to advance effective design of distributed generation programs such as the RAM and RE-MAT. Sierra Club believes procurement should occur thoughtfully and sustainably to enable greenhouse gas emission reductions and to protect natural resources.

These opening comments are provided in support of NRDC and Sierra Club's position that California electricity customers and the environment will be best served by an integrated portfolio of resources that includes all cost-effective energy efficiency savings and renewable generation to offset the need for more costly and polluting power plants and other infrastructure. In addition to these comments, NRDC and the Sierra Club worked with The Nature Conservancy and Defenders of Wildlife on comments focused on the opportunity for RAM to more effectively minimize environmental and land use impacts from distributed renewable generation. Those comments respond specifically to questions 2 (e)(i-iii) and 3(b)(i-ii). We incorporate and support those comments in full.

II. SUMMARY

We support the Commission's efforts to re-examine the justifications for the RAM program and how its current structure might be modified in order to achieve the Commission's objective of meeting customers' energy services needs at the lowest overall cost, risk, and environmental impact.[1] Our recommendations in response to the Energy Division's Questions on the Future of RAM are as follows:

[1] "The Legislature further finds and declares that in order to ensure that the citizens of this state continue to receive safe, reliable, affordable, and environmentally sustainable electric service, it is essential that prudent investments continue to be made in all of the following areas: . . . (4) To achieve a sustainable supply of renewable energy." Cal. Public Util. Code § 399(c).

- The initial RAM program need to provide "unique value to the RPS program because of [projects'] potential to be deployed quickly with a relatively smaller environmental footprint and minimal transmission need" [2] is still valid and would benefit from program modifications to ensure RAM projects are indeed low-conflict and provide system benefits
- We recommend the Commission also use the RAM program to help address local reliability needs
- To meet environmental, cost, timing, integration, and reliability needs, RAM should target resources with characteristics not currently being targeted through other procurement processes
- In order to better support local reliability needs, the Commission should consider reauthorization with the following criteria: targeting auctions to facilitate local reliability needs, ranking projects for their ability to be integrated at low cost, and supporting a diverse resource mix
- We recommend the Commission authorize the RAM program to continue indefinitely, subject to periodic refinements and evaluations
- We urge the Commission to reauthorize RAM in a way that reflects an assessment of the need, cost, and value of procuring a specific resource
- In order to provide cost, integration, environmental, and reliability benefits, we recommend RAM locational eligibility be expanded to the entire CAISO control area, provided that a sufficient portion of the capacity is focused on areas that provide value for local capacity needs
- We recommend the program continue to focus on distributed generation in order to ensure benefits to the distribution grid and reduced transmission costs. Projects that meet these criteria should be included
- Consolidating utilities' unsubscribed PV program capacity allocations into the RAM program enables these resources to be more strategically deployed via cost-effective competitive solicitations

[2] CPUC, *Decision Adopting the Renewable Auction Mechanism*, D. 10-12-048 in R. 08-08-009, p. 11, (December 17, 2010).

- We recommend that the product category distinctions continue to support a diverse resource mix to facilitate renewable integration needs over time
- We strongly urge the Commission to adopt congestion costs and other locational values in its bid ranking methodology
- Clear locational guidelines will also streamline IOU review
- "Subdivided" projects should be precluded for solar, but wind infill and repower and Geothermal expansions should be allowed
- Existing RAM program viability requirements are not sufficient and should be expanded to include land-use viability restrictions

III. DISCUSSION ON ATTACHMENT A: ENERGY DIVISION SUMMARY & QUESTIONS ON FUTURE OF RAM

1(a)(i). The initial RAM program need to provide "unique value to the RPS program because of [projects'] potential to be deployed quickly with a relatively smaller environmental footprint and minimal transmission need" [3] is still valid and would benefit from program modifications

The initial program need to create unique value to the RPS program through RAM's procurement design still exists. As the decision creating the RAM program describes, RAM projects "provide unique value to the RPS program because of their potential to be deployed quickly with a relatively smaller environmental footprint and minimal transmission need." [4] The ability of RAM projects to be deployed quickly has helped elicit low costs for bill-payers and reduced transaction costs for the market, utilities, and regulators. As the Summary Report in Attachment A describes, "RAM auctions have elicited prices lower or comparable to prices from RPS solicitations and pricing of winning projects has decreased with each subsequent auction."[5] Perhaps most impressively, the RAM procurement process is approximately three times faster than that

[3] CPUC, *Decision Adopting the Renewable Auction Mechanism*, D. 10-12-048 in R. 08-08-009, p. 11, (December 17, 2010).
[4] *Ibid*.
[5] CPUC, *Attachment A to Administrative Law Judge's Ruling Requesting Comments on the Renewable Auction Mechanism*, R. 11-05-005, p. 6, (December 31, 2013).

of the RPS solicitation process.[6] Getting projects on line faster provides certainty and momentum, reducing delays and failures which may occur at larger renewable projects.

Low costs are further promoted through tying project locations to areas of the grid requiring minimal transmission and distribution upgrades. A recent study prepared for the California Energy Commission showed that the location of distributed generation (DG) can greatly affect system costs.[7] For example, depending on where renewable DG is sited, the cost of DG interconnection and distribution upgrades for approximately 4,800 MW of DG on SCE's distribution system could range from a low of $0.9 billion to a high of $2 billion, depending on project size, location, and the amount of DG clustering on distribution feeders.[8] We acknowledge that the utilities, as required by the Commission, have provided some information on available capacity.[9] However we believe this information could be better formatted, updated more consistently, and incorporated into bid-ranking evaluation or project viability criteria as appropriate to ensure projects are located in areas with minimal costs. We elaborate on this potential change to the RAM program in section 2(e).

As also reflected in D. 10-12-048, RAM was created in part to help deploy projects with a relatively smaller environmental footprint. However, as currently enacted, it is not clear that RAM has fully met this objective. Twenty MW projects located in high conservation value lands in the desert, and on high voltage transmission lines, do not fit any definition of "distributed generation."

As California's Energy Action Plan II states, "our overarching goal is for California's energy to be adequately affordable, technologically advanced, and *environmentally-sound* (emphasis added).[10] The codification of the Renewable Portfolio Standard likewise reflects this need: "achieving the RPS provides unique benefits to

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[6] CPUC, *Attachment A to Administrative Law Judge's Ruling Requesting Comments on the Renewable Auction Mechanism*, R. 11-05-005, p. 11, (December 31, 2013).
[7] Navigant Consulting Inc., *Distributed Generation Integration Cost Study*, (November 2013), available at: http://www.energy.ca.gov/2013publications/CEC-200-2013-007/CEC-200-2013-007.pdf.
[8] *Id.* at 4.
[9] D. 10-12-048 directed IOUs to provide the "available capacity" at the substation and circuit level in map format, with updates at least once a month.
[10] CPUC/CEC, Energy Action Plan II, Implementation Roadmap for Energy Policies (October 2005). Available at: http://docs.cpuc.ca.gov/published/REPORT/51604.htm.

California, including several factors which independently justify the program."[11] One such factor is "implementing the state's transmission and land use planning activities related to development of eligible renewable energy resources."[12] California has expended a great deal of resources on its land use planning activities, particularly to identify renewable project locations/zones that are not only optimal from a resource perspective, but an environmental one as well.[13] We strongly support RAM's justification based on reducing land use conflicts from renewable energy. If RAM is extended, it could substantially reduce land use conflict and efforts required for future land use planning, but only if the Commission adopts clear viability criteria and locational requirements to ensure RAM projects have minimal environmental impacts.

As the Commission recognized in authorizing RAM, renewable energy projects with a smaller environmental footprint have unique value. Smaller renewable energy projects do not require large amounts of contiguous acreage and can thus avoid undisturbed locations which provide habitat for threatened and endangered plant and animal species. Renewable energy development in urban areas and on roof tops has minimal impact on our wild lands and waters, and the people and species that depend on them. We support increasing renewable energy development in these urban and disturbed environments, which is both beneficial and essential to meeting our renewable energy goals. Because these areas generally have lower habitat value, they are less likely to require wildlife take permits, enabling projects to come online within twenty-four months of Commission approval.[14] However, despite the value of developing smaller renewable energy projects in urban areas, much of the RAM development to date has centered on larger facilities far from load centers. We believe RAM can be refined to more accurately capture projects with a smaller environmental footprint by focusing procurement on projects in the built environment and on impaired or mechanically

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[11] Cal. Public Util. Code § 399.11(b).
[12] *Ibid.*
[13] Among these efforts are the BLM Solar Energy Program, the now-retired Renewable Energy Transmission Initiative (RETI)—which produced an environmental scoring methodology loosely incorporated into the Long Term Procurement Process (LTPP)—and the Desert Renewable Energy Conservation Plan (DRECP), prepared by a collaboration of state and federal agencies, utilities, scientists, and others.
[14] The 24 month window potentially weeds out projects which may require a wildlife take permit.

disturbed lands, and by applying viability criteria to exclude project sites with high land-use conflicts.

Our joint comments with The Nature Conservancy and Defenders of Wildlife further elaborate on these objectives and our recommendations.

1(a)(ii). We recommend the Commission also use the RAM program to help address local reliability needs

The RAM procurement mechanism should be used to meet local reliability requirements.

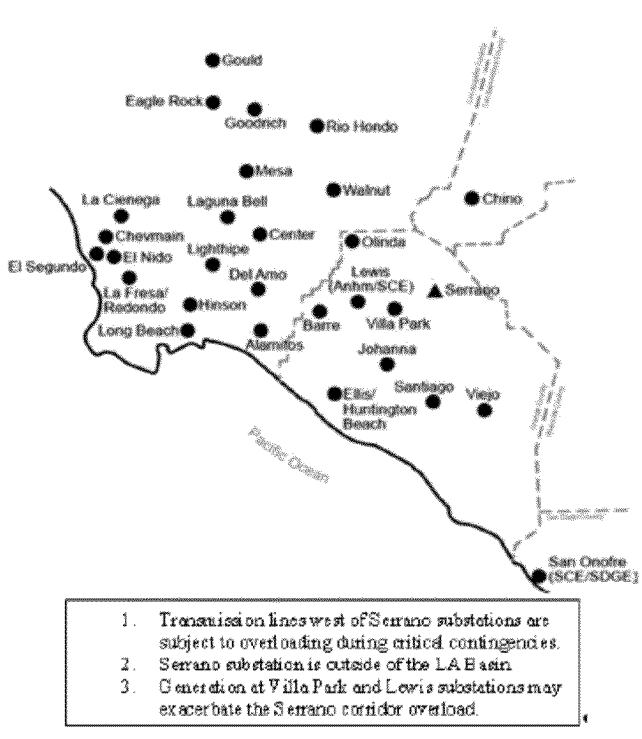
As the recent San Onofre Nuclear Generating Station (SONGS) outage has illustrated, having adequate capacity system-wide is not always sufficient in light of a significant facility unexpectedly going off-line. In situations such as these, procurement to fulfill local reliability needs becomes exceedingly relevant, and timing can be critical. RAM has several unique procurement attributes that would likely prove more effective in these situations than alternative mechanisms. First, as described under 1(a)(i), RAM is proving itself capable of getting resources online in a much timelier fashion than traditional methods. Second, RAM can be structured for intermediate levels of capacity, whereas traditional gas-fired generation often is sized for larger capacities. Third, local areas can often be constrained in terms of air pollution and the ability to procure additional permits under the Clean Air Act, making renewable generation a more appropriate resource. Finally, RAM presents a low-risk mechanism, in large part because projects are able to come online quickly. Planning in ten-year increments, as required for traditional gas-fired generation, often hosts a great degree of uncertainty, and the ability of RAM projects to come online within two years of approval could allow for shorter, more certain planning horizons or act as a backstop option in place of over-procurement risks.

We emphasize, however, that RAM will need to be more strategic about implementing locational requirements if it is used to meet local reliability needs. The utilities and CAISO already have access to this location-specific data, so it should not be difficult to incorporate into RAM, or vice-versa. This data should be utilized to develop more specific geographic procurement targets for RAM based on local capacity needs.

For instance, in Track 1 of the 2012 LTPP process, SCE worked with CAISO to identify locational effectiveness factors for non-generating substations for the identified limiting contingency, and provided this information in map format (see figure 1).[15]

Figure 1

Indicative Locational Effectiveness Factors
Based on Mitigation of the West of Serrano Substation Constraint



Name	Eff.
Villa Park	.56
Barre	.32
Lewis	.30
Alamitos	.23
Ellis/Huntington Beach	.22
Johanna	.20
Santiago	.17
Lighthipe	.16
Hinson	.16
Long Beach	.16
Del Amo	.16
La Fresa/Redondo	.15
La Cienega	.15
El Segundo	.15
El Nido	.15
Chevmain	.15
Center	.15
Laguna Bell	.13
Mesa	.11
Goodrich	.10
Rio Hondo	.10
Eagle Rock	.08
Walnut	.07
Gould	.07
Olinda	.07
SONGS	.06
Viejo	.02
Chino	-.03

[15] SCE, *Track 1 Procurement Plan of Southern California Edison Company Submitted to Energy Division Pursuant to D. 13-02-015*, (August 2013). Available at: https://www.sce.com/wps/wcm/connect/0a312536-5ba4-4153-a3bd-859e15badeb/TrackI_SCELCRProcurementPlanPursuanttoD1302015.pdf?MOD=AJPERES.

1(a)(iii). To meet environmental, cost, timing, integration, and reliability needs, RAM should continue to target resources with characteristics not currently being targeted through other procurement processes

We strongly support the reauthorization of RAM as a means to achieve environmental, cost, timing, and local reliability needs. RAM should be used to procure renewable resources in preferred locations where 1) capacity on the distribution line exists and minimal transmission or distribution upgrades are necessary, and 2) there are minimal environmental conflicts (additional details on both of these proposals is presented below). Further, in large part because of RAM's ability to get resources online quickly, it could also be used to target resources in areas necessary to meet local capacity needs. Finally, to serve integration needs, RAM should continue to procure a diverse mix of renewable resources.

These types of value-based renewable resources are not the focus of Renewable Portfolio Solicitations or the Long Term Procurement Plan proceedings, in part because: 1) data on transmission and distribution system costs and needs are not transparent, and 2) these procurement mechanisms are primarily based on price, with insufficient recognition of value and best-fit. Because of the small size of RAM projects, the mechanism provides greater potential to competitively solicit resources for value-based features, such as speed, potential to defer distribution and transmission upgrades, and ability to meet local reliability needs.

1(b). In order to better support integration and reliability needs the Commission should consider reauthorization with the following criteria: targeting auctions to facilitate local reliability needs, ranking projects for their ability to be integrated at low cost, and supporting a diverse resource mix

As we describe in section 1(a)(ii), RAM presents a an opportunity 1) to target resources to meet local reliability needs, 2) to locate distributed generation in areas with available capacity, and 3) to reduce environmental and land use conflicts. We will discuss what specific criteria we recommend the Commission adopt to address the latter two below. To address local reliability needs, we recommend the Commission consider using RAM as a means to target renewable resources to the most effective substations within

the most constrained local capacity areas. In light of the recent SONGS outage, resources with low environmental impact, low-risk, and an ability to come online quickly can play a major role in meeting capacity needs at least cost.

We note also that a recent National Renewable Energy Laboratory (NREL) report finds that distributed generation benefits accrue *if* photovoltaics are able to serve local loads, relieve capacity constraints, or defer transmission and distribution investments.[16] Savings depend on the location of PV on the grid and the coincidence of PV with peak demand.[17] Our recommendations on targeting resources to meet local reliability needs and other program changes described below are designed to ensure RAM projects are truly capturing DG benefits.

As regards whether future authorization of RAM should align with resource planning or the annual RPS procurement process, we suggest the answer be determined by the need RAM is aiming to fill and by whichever option is administratively most efficient. For example, with the recent SONGS outage, and the Commission's opening of an additional track in its LTPP process to address local reliability needs, it could be more efficient for the Commission to authorize a RAM auction specifically designed to fill that need based on time constraints decided in the LTPP proceeding.[18] Too address longer term local reliability needs RAM could also be administered on the RPS solicitation timeline.

1(c). We recommend the Commission authorize the RAM program to continue indefinitely, subject to periodic evaluation and refinements

We recommend the Commission reauthorize RAM at its existing pace (250MW every 6 Months) and add additional capacity based on determined local reliability needs, such as those identified as needed for SONGs replacement. The program should be evaluated and amended, as necessary every two years.

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[16] NREL/Regulatory Assistance Project, *Regulatory Considerations Associated with the Expanded Adoption of Distributed Solar*, (November 2013). Available at: http://www.nrel.gov/docs/fy14osti/60613.pdf.

[17] *Ibid*.

[18] CPUC, *Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans*, R. 12-03-014, (May 2013).

1(d). We urge the Commission to reauthorize RAM in a way that reflects an assessment of the need, cost, and value of procuring a specific resource

We support the reauthorization of RAM, and recommend the Commission do so with various program adjustments (which we describe in these comments) to better align the RAM program with its goals and the needs of the California electric system at large. We recommend the Commission authorize additional capacity based on need—whether that need be to fill local capacity requirements or otherwise. As regards the scenarios presented by Energy Division, we are neutral on the specific timing and alignment of solicitations with RPS or other processes, but recommend that the RAM continue regular solicitations and not be dependent on the annual RPS RFO, maintaining the ability to function separately from that process.

2(a)(i). In order to provide cost, integration, environmental, and reliability benefits, we recommend RAM locational eligibility be expanded to the entire CAISO control area, provided that a sufficient portion of the capacity is focused on areas that provide value for local capacity needs

Since the CAISO is responsible for dispatch for SCE, PG&E and SDG&E, limiting the area to CAISO's control is most likely to provide a clear nexus to potential system benefits for California IOU customers. We are not opposed to including projects in other balancing areas, including the Imperial Irrigation District, so long as the project has identified system benefits to California IOU customers. However, the program should be focused on procurement in areas known to provide unique benefits, as discussed above with regard to SONGs replacement. A geographic-specific procurement target or set aside for some portion of the capacity would achieve this goal.

2(b). We recommend the program continue to focus on distributed generation in order to ensure benefits to the distribution grid and reduced transmission costs. Projects that meet these criteria should be included

RAM should focus on Distributed Generation, but since no clear definition of DG exists, we recommend the Commission develop clear criteria for project location and generation profiles. Only projects that defer or eliminate the need for future transmission investments, provide system and integration benefits and can be sited without land use

conflicts should be included. Smaller renewable energy projects are more apt to have these characteristics, and there is a need for a program which focuses on smaller renewable energy projects.

We also note that the existing RE-MAT program began with limited capacity, much of which is already subscribed in the queue. The CPUC modified the RAM project size eligibility to exclude projects smaller than 3 MW to establish clarity in programs for wholesale distributed generation. However, the exhaustion of the RE-MAT capacity could result in projects with competitive value to the RPS Program and renewable distributed generation procurement goals not reaching the market. In the event that the RE-MAT capacity is exhausted with no expansion, projects smaller than 3 MW should become eligible for contracts through RAM.

2(c). Consolidating utilities' unsubscribed PV program capacity allocations into the RAM program enables these resources to be more strategically deployed via cost-effective competitive solicitations

We support further consolidation of utilities' unsubscribed PV program capacity allocations into RAM, but recommend that the Commission take into account our suggestions on environmental and congestion-based siting so that RAM truly is a low-cost procurement mechanism that benefits the renewable market, utilities, regulators, and ratepayers.

2(d). We recommend that the product category distinctions continue to support a diverse resource mix

Our understanding is that utilities currently have the ability to choose what portion of allocated RAM capacity they will solicit from various product categories based on their approved advice letters. We note also that solar PV has accounted for over 90% of offers in the first three RAM auctions and almost 80% of executed contracts. Meanwhile, a recent E3 report found that California will likely face renewable integration challenges beyond a 33% RPS, ***unless*** California works to procure a more diverse portfolio of renewable resources and implements solutions to reduce distribution system

impacts from distributed generation, among other methods.[19] The Commission should continue to support multiple product category distinctions, with the recognition that RAM alone is unlikely to solve all of these concerns. The Commission may also consider needs-based procurement targets that take into account product type to ensure procurement of a balanced portfolio.[20]

2(e). We strongly urge the Commission to adopt congestion costs and other locational values in its bid ranking methodology

Part of RAM's original purpose was to integrate renewables resources quickly, at low cost, and with minimal need for transmission upgrades. This need continues today, but the RAM program could do a better job at locating resources in places with maximum value. A recent study prepared for the California Energy Commission showed that the location of distributed generation can greatly affect system costs.[21] For example, depending on where renewable DG is sited, the cost of DG interconnection and distribution upgrades for approximately 4,800 MW of DG on Southern California Edison's distribution system could range from a low of $0.9 billion to a high of $2 billion, depending on project size, location, and the amount of DG clustering on distribution feeders.[22] The study also confirmed that integration impacts and costs are significantly lower when DG is installed in urban areas. However, at least in SCE's service territory, current applications are weighted towards rural areas.[23]

The original RAM decision ordered the utilities to provide "available capacity" at the substation and circuit level in map format, with updates at least once a month.[24] We

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[19] E3, Investigating a Higher Renewables Portfolio Standard in California, (January 2014), available at: http://www.ethree.com/documents/E3_Final_RPS_Report_2014_01_06_with_appendices.pdf.

[20] Public Utilities Code Section 399.16. See also Section 399.11(b)(6).

[21] Navigant Consulting Inc., *Distributed Generation Integration Cost Study*, (November 2013), available at: http://www.energy.ca.gov/2013publications/CEC-200-2013-007/CEC-200-2013-007.pdf.

[22] *Ibid.*

[23] SCE, *The Impact of Localized Energy Resources on Southern California Edison's Transmission and Distribution System*, p. 34 (May 2012). Available at: http://www.energy.ca.gov/2013_energypolicy/documents/2013-08-22_workshop/SCE_Local_Energy_Resources_Study.pdf.

[24] D. 10-12-048 directed IOUs to provide the "available capacity" at the substation and circuit level in map format, with updates at least once a month.

understand utilities have provided some of this information in map form, but urge the Commission and utilities to ensure the information is presented in a more accessible way, updated more consistently, and made searchable so developers are able to see areas they should target for development. Furthermore, the location of RAM bids should be public, so that the Commission and stakeholders can easily assess whether they are located in areas that are likely to reduce or defer transmission costs and have minimal land use conflicts.

AB 327, codified as Public Utilities Code Section 769, ordered utilities to submit to the Commission a distribution resources plan proposal to identify optimal locations for deployment of distributed resources. This would include an evaluation of "locational benefits and costs of distributed resources located on the distribution system . . . and shall be based on reductions or increases in local generation capacity needs, avoided or increased investments in distribution infrastructure, safety benefits, reliability benefits, and any other savings the distributed resources provides to the electric grid or costs to ratepayers of the electrical corporation." We urge the Commission to incorporate this information into future iterations of the RAM program as soon as it is finalized.

Utilities' reports will be completed in July 2015, and we recommend the Commission incorporate that information into future RAM solicitations when it becomes available.

2(f). IOU bid evaluation would also be made easier with clear project guidelines

The IOUs bid evaluation process could be simplified and streamlined if there were clear locational guidelines in place. Previous RAM solicitations brought in many times more offers than the IOUs could accept. While this is good evidence of a broad, competitive market, it also indicates that project developers were identifying hundreds of possible locations for projects without clear guidelines for where projects would be likely to defer transmission or fossil generation investments or minimize land use conflicts. With more clear guidelines there may be somewhat fewer bids, but those bids should reflect projects with better chances to provide system and environmental benefit, and

reduced risk of project failure. As such, bid evaluation could be further simplified, reducing program costs.

Such guidelines are far more useful than a price threshold for bid evaluation. A higher priced project may still be the best value, if it is located somewhere where it provides unique value to the grid or minimizes environmental conflict.

3(a)(i). "Subdivided" projects should be precluded for solar, but wind infill and repower and Geothermal expansions should be allowed

RAM was and should be intended to create a market for distributed generation: projects that are strategically located to minimize grid investments, land use conflicts and provide system and integration benefits. Developers carving up large projects located on the bulk transmission grid and submitting them as multiple 'DG' projects clearly cuts against the intended purpose of RAM. However, the Commission can minimize this problem by creating clear locational guidelines. Projects should be evaluated to ensure they meet these guidelines. To the extent we continue to see subdivided utility scale solar projects, we believe these should be precluded from RAM, but are agnostic on the mechanism to determine whether a project is subdivided.

Subdivision is problematic with solar projects, but not necessarily with other technologies. One of the key benefits of solar PV technology is that projects can be developed at virtually any size to fit the need and available space.

The situation is different with wind projects, where a 20 MW or smaller project may fit within a relatively small undeveloped portion of a largely developed area, like the Tehachapi. Such 'infill' projects have two key benefits: they utilize existing transmission and focus development on already heavily impacted areas. Similarly, use of RAM to repower a portion of an already developed site can provide both environmental and system benefits.

Geothermal projects should also be considered differently: recent technology improvements mean that some geothermal projects can be expanded at reasonable cost without significant new transmission requirements or land use conflicts, whereas a new development may not be economic. Geothermal is dispatchable and can have significant system benefits. Such capacity increases should be allowed to compete under RAM.

3(b). Existing RAM program viability requirements are not sufficient and should be expanded to include land-use viability restrictions

Please refer to our joint comment letter submitted by The Nature Conservancy, Sierra Club California, Defenders of Wildlife, and the Natural Resources Defense Council.

IV. CONCLUSION

NRDC and Sierra Club appreciate the opportunity to comment on the Energy Division's December 2013 Summary & Questions on the Future of RAM. We urge the Commission to adopt our recommendations to ensure that the RAM program design is structured to best achieve the state's climate goals over the long-term, thereby achieving the Commission's objective of meeting customers' energy services needs at the lowest overall cost, risk, and environmental impact.

Dated: January 30, 2014

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