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

OPENING COMMENTS OF THE OFFICE OF RATEPAYER ADVOCATES ON THE ADMINISTRATIVE LAW JUDGE'S RULING (1) ISSUING AN ENERGY DIVISION PROPOSAL ON THE RENEWABLES PORTFOLIO STANDARDS CALCULATOR, (2) ENTERING THE PROPOSAL INTO THE RECORD, AND (3) SETTING A COMMENT AND WORKSHOP SCHEDULE

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I. INTRODUCTION

The Office of Ratepayer Advocates (ORA) respectfully provides these opening comments on the October 10, 2014 *Administrative Law Judge's Ruling (1) Issuing an Energy Division Proposal on the Renewable Portfolio Standards Calculator, (2) Entering the Proposal into the Record, and (3) Setting a Comment and Workshop Schedule (ALJ Ruling)*. The ALJ Ruling poses a number of questions, which ORA repeats below, followed by ORA's responses.

II. DISCUSSION

A. Renewable Net Short

1. Energy Division's proposal that projects with CPUC-approved PPAs be automatically included in the policy-preferred portfolio, which is used in the CAISO's TPP, is predicated on the assumption that projects with a CPUC-approved PPA are sufficiently viable for the purpose of long-term generation and transmission planning. If you do not agree with the above assumption, please identify the necessary changes to the RPS procurement process to make the above assumption true.

Decision (D.) 14-11-042 adopted uniform Standards of Review for all Renewables Portfolio Standard (RPS) transactions, including an assessment of project viability.[1] D.14-11-042 also requires that RPS project bids have "achieved the 'application deemed complete' (or equivalent) status under the land use entitlement process."[2] The RPS Calculator Versions 2.0 – 5.0 contain a similar requirement for a project to be included in the "Discounted Core" and subsequently in the policy-preferred portfolio.[3] Additionally, an Independent Evaluator reviews Power Purchase Agreements (PPA) to determine their compliance with all requirements, including environmental permitting and

[1] D.14-11-042 at 80-82.

[2] D.14-11-042 at 46.

[3] Energy Division's Staff Proposal on the RPS Calculator (Staff Proposal) at 11. The "Discounted Core" – a specified subset of projects that had a Commission-approved contract and met a minimum permitting threshold (permit application deemed complete).

interconnection requirements. Based on this comprehensive review process, ORA agrees with Energy Division Staff's (Staff) assumption that projects with CPUC-approved PPAs are sufficiently viable for long term generation and transmission planning and should be automatically be included in the California Independent System Operator's (CAISO) Transmission Planning Process' (TPP) policy-preferred portfolio.

2. Assuming a CPUC-approved PPA is not an appropriate indicator of project viability for purposes of long-term generation and transmission planning, how should the Energy Division staff determine which "commercial projects" to include in the policy-preferred portfolio that the CAISO studies in its TPP?

A CPUC-approved PPA is an appropriate indicator of project viability, as stated in response to Q1.

3. Should a project with a Commission-approved PPA be included in the policy preferred portfolio sent to the CAISO for TPP purposes even if it will trigger the need for a major new transmission project? Why or why not?

The RPS Calculator Version 6.0 develops policy-based portfolios to inform Rulemaking (R.) 13-12-010, the Commission's Long Term Procurement Plan (LTPP) proceeding, and the CAISO TPP.[4] To provide the Commission and the CAISO with the most complete picture of potential generation and transmission need, all CPUC-approved projects should be included in the policy-preferred portfolio. The Commission and the CAISO can decide whether or not to study individual projects.

[4] Administrative Law Judge's Ruling (1) Issuing and Energy Division Proposal on the Renewables Portfolio Standards Calculator, (2) Entering the Proposal into the Record, and (3) Setting a Comment and Workshop Schedule (ALJ Ruling) at 1.

4. Do you agree with the concept of risk-adjusting commercial projects in the RPS Calculator to derive a renewable net short consistent with RPS need authorization approved in the IOUs' annual RPS procurement plans?

The RPS Calculator Versions 2.0 – 5.0 selected projects to fill the Renewable Net Short (RNS) if they had a CPUC-approved PPA and met a minimum permitting threshold (the "Discounted Core" methodology). Some projects with CPUC-approved PPAs did not meet the specified minimum permitting threshold, and were not selected to fill the RNS. Version 6.0 of the RPS calculator selects *all* projects with CPUC-approved PPAs, but adjusts the contribution of all projects downward by assuming an 84% success rate across all projects.

ORA supports using the risk adjustment methodology proposed in Version 6.0 over the Discounted Core methodology used in previous versions of the calculator because the RPS calculator's selected portfolio should include *all* CPUC-approved projects, not only those that have also met a minimum permitting threshold. Staff proposes to analyze the historic and forecasted RPS project failure rates of CPUC-approved contracts to adjust risk.[5] ORA recommends that the risk-adjustment methodology be refined to reflect the likelihood of RPS project failure in various stages of development (e.g., the percentage of Commission-approved RPS projects that have failed due to lack of a completed Phase 2 interconnection study) and technology type (e.g., wind, solar PV, biomass, geothermal, etc.). These additional factors would provide a more accurate assessment of project risk.

5. Should the generation from generic projects be risk-adjusted to reflect their potential failure?

For the reasons stated in the answer to Q4, ORA supports the risk-adjustment of CPUC-approved and generic projects.

[5] Staff Proposal at 12.

6. Do you agree with the proposal that projects with expiring contracts in the RPS Calculator (Version 6.0) should be treated in the same manner used by the IOUs when developing long-term RPS procurement plans (See D.13-11-024)? If not, how should RPS facilities with expiring contracts be treated in the RPS Calculator? Explain why the same or different approach is preferred.

In Decision (D.) 13-11-024, the Commission "refrain[s] from requiring any additional [Least Cost Best Fit] LCBF value be applied to offers from existing facilities. . . because the value of existing facilities is now reflected in the various contract evaluation methodologies, including LCBF."[6] The California market for renewable generation has significantly improved since the development of the RPS calculator in 2009. Increased renewable generation has lowered costs and improved performance. Given this change in landscape, the RPS Calculator should compare renewable projects with expiring contracts to new potential renewable resources, to identify the most cost-effective resources. Therefore, ORA agrees with the Staff proposal that the RPS Calculator should not apply an additional LCBF value to existing facilities, and instead evaluate and compare expiring contracts to new potential renewable resources.

7. For the purposes of resource ranking and selection, existing RPS projects with expiring contracts are assigned 25% of the capital costs of a new project (assuming some additional capital expenditures would be needed to prolong the economic lifetime of the plant). Is this an appropriate assumption? If not, what methodology should be used to assign costs to RPS projects with expiring contracts in the resource ranking and selection process of the RPS Calculator?

Capital costs required to extend the economic life of expiring RPS contracts may depend on the particular renewable technology. For example, a geothermal facility may not require the same degree of capital upgrades that a solar plant may require. The capital

[6] D.13-11-024 at 15-18.

costs for replacing or upgrading renewable technology components for a specific renewable technology (i.e. solar, wind, biomass, etc.) also might vary. For example, solar panels installed in a solar PV facility may have a 30-year warranty but the balance of system[7] (BOS) components may be warrantied for a different time period. Given the diversity of renewable technologies and the costs to extend their lifespan, ORA recommends that Staff further analyze the assignment of capital costs for expiring contracts and consider data provided by renewable technology developers, manufacturers, and suppliers documenting cost variables.

8. Additional RPS procurement by publicly-owned utilities (POUs) identified in the RPS Calculator may trigger additional transmission upgrades in the CAISO balancing authority area. Currently, the Renewable Net Short methodology in the RPS Calculator does not account for generation associated with RPS projects under contract with, or owned by, POUs in CAISO's service territory. Because POU's are not regulated by the CPUC, generation data for POU projects in the CAISO control area will need to be collected. In addition, if the RPS Calculator will be developing greater than 33% RPS portfolios for the CAISO control area, future POU/RPS projects in the CAISO control area will need to be accounted for in the RPS Calculator's RNS. How should the RPS Calculator account for future generation in the CAISO balancing authority area that POUs may procure to meet current and future RPS requirements?

The informational materials for the RPS Calculator state that, "for public utilities in the CAISO that are not regulated by the CPUC, data on renewable procurement is

[7] The BOS typically consists of structures for mounting the PV arrays or modules and power-conditioning equipment that adjusts and converts the DC electricity to the proper form and magnitude required by an alternating-current (AC) load. The BOS can also include storage devices, such as batteries, so PV-generated electricity can be used during cloudy days or at night. (US Department of Energy: http://web.archive.org/web/20080504001534/http://www1.eere.energy.gov/solar/bos.html)

gathered through the POUs' energy supply plans."[8] But the data may be insufficient. Since the generation associated with RPS projects under contract with, or owned by, POUs in CAISO's service territory may affect the RPS Calculator's RNS, ORA recommends that Staff reach out to the POUs and enter into a Memorandum of Understanding on the exchange and treatment of data on current and future POU RPS projects.

B. Renewable Energy Resource Potential and Cost Update

1. Do you agree with the methodology taken to expand the original competitive renewable energy zones or CREZs? Is the methodology used for the renewable resource assessment reasonable for generation and transmission planning purposes?

Competitive Renewable Energy Zones (CREZ) are specific locations with associated transmission corridors where the quantity and quality of potential renewable resources might support development.[9] According to Black and Veatch's (B&V) "California Renewable Energy Resource Potential and Cost Update " (B&V Report), Super CREZs are created by incorporating existing CREZ and non-CREZ renewable resources with newly identified areas of renewable resource potential beyond the boundaries of original CREZs.[10] The Super CREZ methodology also considers transmission topology, geographic constraints, and county lines.[11] Given that updated capital costs, capacity factors and performance data have increased statewide renewable resource potential, ORA supports the use of Super CREZs and its underlying methodology to plan generation and transmission.

[8] RPS Calculator Guidebook_v6.0 at 5.

[9] Staff Proposal at 16.

[10] B&V, "California Renewable Energy Resource Potential and Cost Update" at Slide 100.

[11] Staff Proposal at 17

2. Has the methodology taken to expand the original CREZs failed to identify any RPS resources that should be included in the RPS Calculator?

The B&V Report explains that the original CREZs have been expanded to include resources that did not fall within a CREZ before, and previously unidentified areas of renewable resource potential.[12] ORA is not aware of any RPS resources included in the RPS Calculator that were not included in expanding the original CREZs. To verify this conclusion, ORA requests that B&V provide more complete references to the data used in its study.

3. Do you agree that the capital cost, operating costs, and performance assumptions are reasonable for this level of analysis? If not, please specify the inputs and assumptions that you believe need to be revised and provide a rationale.

B&V assessed the cost, performance and resource potential of renewable energy in California. B&V based its new cost and performance assumptions for the RPS Calculator on multiple sources.[13] ORA agrees that the capital cost, operating cost and performance assumptions reasonably reflect current statewide renewable resource potential. However, ORA recommends that these costs be monitored and modified in the RPS Calculator as stakeholders in the next Renewable Energy Transmission Initiative (RETI) identify and verify cost trends. .[14]

[12] B&V, "California Renewable Energy Resource Potential and Cost Update" at Slide 100.

[13] B&V, "California Renewable Energy Resource Potential and Cost Update" at Slide 27.

[14] The Renewable Energy Transmission Initiative (RETI) is a statewide initiative to help identify the transmission projects needed to accommodate renewable energy goals, support future energy policy, and facilitate transmission corridor designation and transmission and generation siting and permitting. RETI will be an open and transparent collaborative process in which all interested parties are encouraged to participate. (California Energy Commission's (CEC): http://www.energy.ca.gov/reti/).

C. Levelized Cost of Energy

1. Do you agree with each of the assumptions made in the LCOE calculations, including assumptions related to state and federal tax incentives and the cost of capital? What assumptions, if any, should be modified and on what basis? Recommended changes should be supported with publicly available information, to the greatest extent possible.

E3's Levelized Cost of Energy (LCOE) model includes variables to account for capital investment costs and available debt and equity financing; operating and maintenance costs; federal and state income taxes; tax benefits of accelerated depreciation; and federal tax credits for renewable resources.[15] ORA recommends that E3 conduct a sensitivity analysis to identify key input variables in the LCOE model. This targeted approach will determine which assumptions in the LCOE calculations need to be refined.

ORA notes that the LCOE model states that the Renewable Electricity Production Tax Credit (PTC) will expire at the end of 2016.[16] In fact, the PTC is set to expire at the end of 2014. ORA recommends that Staff review the current assumption regarding PTC expiration in the LCOE model and make appropriate revisions.

D. Treatment of Transmission Costs in Version 6.0

1. What information should be used to update transmission cost estimates associated with Super CREZs? Provide recommendations on how the Energy Division staff can improve upon its processes for updating the cost estimates for existing and new transmission included in the RPS Calculator.

The RPS Calculator Version 6.0 is designed to model transmission costs in Super CREZs, encompassing existing non-CREZ projects and generic projects. Including all available cost data will make the transmission cost estimates more accurate. Thus, ORA

[15] E3, "Levelized Cost of Energy" at Slide 6.

[16] E3, "Levelized Cost of Energy" at Slide 8.

recommends using cost data from CAISO's interconnection studies of non-CREZ projects. In addition, in its presentation on Transmission Costs, E3 notes that existing capital cost estimates for Out of State transmission may not be based on the most cost effective options.[17] If feasible, ORA recommends that Staff work with contractors and stakeholders to modify transmission capital cost estimates to reflect the most cost effective options.

2. Is the proposed iterative process between the CPUC and CAISO (outlined in seven steps in the above section, Development of Additional Transmission Costs for Version 6.1) for identifying major and minor transmission upgrade costs in areas where CAISO has not conducted many interconnection studies (e.g., the Sacramento River Valley Super CREZ) reasonable? If not, explain how these estimates should be developed and specify whether or not your proposal can meet the Track 1 and Track 2 schedules outlined in this Energy Division staff proposal.

The Staff Proposal outlines a seven step process to identify major and minor transmission costs in areas where CAISO has not conducted many interconnection studies.[18] ORA suggests that during step three of the proposed methodology, the CAISO

[17] E3, "Transmission Costs" Slide 25.

[18] Staff Proposal at 21-22.

1. The 2010 [transmission] cost estimates would be used as an initial starting point for the 6.0 Version of the Calculator.
2. The Calculator would be run with the initial estimates, and the most economical Super CREZs would be identified.
3. These Super CREZs would then be examined by the CAISO to update the major and minor transmission costs and transmission capacity estimates for each area.
4. The calculator would be re-run with the updated costs, and the most economical Super CREZs would be identified again.
5. If there are any changes in the list of most economical Super CREZs, these would be sent to the CAISO for re-study, returning to step 3.
6. This process would continue until the list of most economical Super CREZs does not change after updating the transmission cost and transmission capacity estimates. These costs would be incorporated into Version 6.1 of the RPS Calculator, which would then be vetted by stakeholders.

update the major and minor costs and transmission capacity for a designated upper percentile of economical Super CREZs (e.g., the upper 25% percentile of Super CREZs) prior to re-running the RPS Calculator in step four. Otherwise only the costs for upper 10% percentile of Super CREZs will be updated and the RPS Calculator may re-select Super CREZs that were identified as the most economical in step two.

3. The WECC Environmental Data Task Force (EDTF) has been collecting environmental data that may be useful for identifying potential new transmission routes. Should this information be considered when estimating costs for major upgrades not identified by the CAISO? If so, how can this be incorporated into the RPS Calculator's transmission cost assumptions?

Major transmission upgrades may incur costs related to environmental impacts or environmental permitting. These costs are not currently captured in the RPS Calculator. ORA recommends studying the environmental data already collected by the WECC Environmental Data Task Force to see if it can help identify costs related to environmental processes.

4. The RPS Calculator currently assumes that all new renewable generation must be made fully deliverable. Should the RPS Calculator be capable of evaluating energy only and/or partially deliverable projects? If so, how should the resource ranking and selection methodology be adjusted to reflect the impacts of such projects?

For energy only and partially deliverable projects the developer has chosen to forego transmission upgrades that would allow the project to deliver its full potential capacity. Thus, energy only renewable resources are not assigned a Resource Adequacy (RA) value. However, they may provide a capacity value that could impact net load. As Staff states, transmission costs to achieve full deliverability of RPS projects may be

7. This iterative process would be repeated on an annual basis.

relatively expensive compared to the benefits of avoided capacity procurement.[19] Given that renewable resources may provide capacity value while reducing costs, ORA recommends enabling the RPS Calculator to evaluate energy only and/or partially deliverable projects. These projects should be chosen when they are economically competitive with fully deliverable projects, to avoid building new transmission.

E. Energy Values

1. Is the approach described above to calculating Energy Value using a simplified generation "stack" model appropriate? Are there other methodologies that should be considered that would incorporate saturation effects, such as declining energy value and increased curtailment with higher penetration?

The "stack" model determines the net load (load minus renewable generation) for an average day within each month. The model shows that as renewables penetration increases, the net load shifts later in the day away from peak load. ORA agrees that this model appropriately captures saturation effects, such as declining Energy Value and increased curtailment with higher penetration.

2. Is the data used for the resource production profiles granular enough for the purposes of the RPS Calculator? If not, what additional information is needed?

Currently, the "stack" model in the RPS Calculator determines net load for an average day in each month, which it then uses to determine a resource's Energy Value. To more accurately estimate the Energy Value, ORA recommends that the simplified "stack" model of the generation supply curve be run for multiple days within a month. If this more granular approach does not result in a significant difference in RPS Calculator results, then ORA supports running the simplified "stack" model of the generation supply curve for an average day in each month to estimate Energy Value.

[19] ED Staff Proposal at 23.

F. Capacity Value

1. Is it appropriate to use ELCC values instead of NQC for planning purposes in the RPS Calculator?

Net qualifying capacity (NQC) reflects the degree of full deliverability of a generating resource to the aggregate CAISO load.[20] Effective load carrying capacity (ELCC) represents the capacity credit of generation resources, or the amount of capacity in megawatts (MWs) that a renewable resource contributes towards RA targets.[21] Since ELCC values reflect the ability of generation resources to address system reliability needs, whereas NQC measures full deliverability of resources but not necessarily their ability to provide RA benefits, ORA supports Staff's proposal to use ELCC values rather than NQC for planning purposes in the RPS calculator. ELCC more accurately represents a generation resource's contribution towards meeting system need. The RPS Calculator should use the same ELCC methodology being considered in the Resource Adequacy proceeding (R.14-10-010).

2. Is this set of seven resources listed above reasonable for capacity valuation within the context of long-term renewable resource planning?

The Staff proposal outlines seven categories to differentiate marginal ELCCs.[22] In D.14-10-045 the Commission authorized procurement of 1,325 MW of energy storage (ES) resources.[23] Also, ES resources will likely continue to be procured and provide RA benefits. Thus, ORA recommends that three additional categories be added to the list of seven general types of resources in the next or ensuing Versions of the RPS Calculator: distributed solar PV with storage, utility scale solar PV with storage, and wind with storage.

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[20] R.09-10-032 Appendix B, Qualifying Capacity Methodology Manual at 4.

[21] Staff Proposal at 26.

[22] Staff Proposal at 28. There are seven categories used to differentiate marginal ELCCs are 1) baseload, 2) distributed solar PV, 3) utility-scale solar PV, 4) solar thermal, 5) solar thermal with storage, 6) wind (inland), and 7) wind coastal.

[23] D.14-10-045 at 6.

3. When evaluating the capacity value of new out-of-state resources that require new transmission, the RPS Calculator assumes that new transmission lines contribute 60% of their rated capacity to the state's planning reserve margin. The 60% assumption is derived from the LTPP's load-resource balance calculation, where the assumed contribution of imports to the reserve margin is roughly 60% of the total physical impact capacity. Is this assumption reasonable? If not, what alternative assumption should be made?

ORA requests the Commission provide a reference for the assumption that imports contribute 60% of the total physical impact capacity to the reserve margin. Only then can parties evaluate the assumption and determine if it can be reasonably applied to new transmission lines.

4. Is the proposed approach used to forecast the avoided cost of system capacity appropriate for calculating capacity value? Please provide any recommendations for improving the methodology or alternative assumptions that should be used. (The methodology is explained in the RPS_CalcV6.0_CapacityValue.ppt)

As stated in its response to Q19, ORA supports Staff's proposed use of an ELCC methodology in lieu of NQC to forecast the avoided cost of system capacity. The RPS Calculator should use the same ELCC methodology being considered in R. 14-10-010, the Resource Adequacy proceeding to ensure consistent treatment of capacity value across regulatory programs.

5. As this methodology is based on the ability of renewable generation to provide system capacity, it does not currently account for additional value that a resource located in a capacity-constrained local area might provide. Should Energy Division staff consider updating the RPS Calculator to reflect incremental capacity value that resources located in areas with Local Capacity Requirements (LCR)? If so, what methodology should be used to determine this value? What capacity credit should be applied

to resources located in LCR areas? What avoided cost of capacity should be assumed?

Transmission and distribution upgrade costs can potentially be avoided, therefore, ORA recommends that the incremental capacity value of resources that meet Local Capacity Requirements[24] (LCR) should be reflected in updates to the RPS Calculator. One venue to determine the incremental capacity value for resources is the CPUC's RA proceeding which is considering the marginal value of distributed resources (DERs) to meet LCR. Another venue is the Distributed Resources Plan (DRP) proceeding (R.14-08-013), which will consider how DERs can satisfy LCR. In light of these efforts, ORA suggests that future valuation of incremental capacity provided by renewable resources to meet LCR should be coordinated with on-going CPUC proceedings to ensure consistent treatment of capacity value across regulatory programs.

6. Is the ELCC work initiated in the Commission's Resource Adequacy proceeding (R.11-10-023) and the subject of an Energy Division Staff Proposal, relevant for the purposes of the RPS Calculator? Why or why not?

The ELCC work initiated in R.11-10-023, and continued in R.14-10-010, will replace the current methodology for calculating the RA value for wind and solar resources. The RPS Calculator should use the same ELCC methodology being considered in the Resource Adequacy proceeding (R.14-10-010). As stated in Q22 and Q23 above, this process will ensure that capacity value is treated consistently across regulatory programs.

G. Renewable Integration Costs

1. In light of the potential for increased renewable penetration beyond 33%, is it important for the RPS Calculator to have an Integration Cost Adder?

The RPS Calculator is intended to develop policy-based portfolios to inform the Commission's LTPP and the CAISO's TPP. Increasing the renewable penetration beyond

[24] LCR is the minimum amount of capacity needed in a local area to maintain reliability.

33% will require additional flexible capacity and other measures to maintain grid reliability. An Integration Cost Adder would reflect the costs of the measures required to maintain grid reliability. In light of the potential for increased renewable penetration beyond 33%, ORA agrees that it is important for the RPS calculator to have an Integration Cost Adder in order to properly value resources.

2. Are the costs categories that are proposed to be included in the Integration Cost Adder methodology appropriate?

Staff acknowledges that integration costs vary among resource types. Its proposal outlines five cost categories[25] already included in the RPS calculator Version 6.0 and four proposed categories [26] for RPS calculator Version 6.1. ORA agrees that the proposed cost categories for the Integration Cost Adder Methodology are appropriate because they accurately reflect the range of costs potentially incurred to maintain grid reliability in light of increasing renewable penetration.

3. The discussion above in the Renewable Integration Costs section identifies a number of effects of renewable generation on system operations that could be included in a renewable integration cost adder, all of which result from limitations on the flexibility of the power system and the need to carry additional operating reserves. What methodology should Energy Division staff use to evaluate these costs?

ORA recommends that the costs be based on market data indicating the cost of contracting for the resources needed to maintain grid reliability including additional operating reserves and flexible ramping capacity. ORA recommends that the

[25] Staff Proposal at 30-31. The following cost categories are already included in Version 6.0 of the RPS calculator: 1) Energy Value reduction in fuel, O&M and emissions costs, 2) Capacity Value deferred or avoided investment in new generation capacity, 3) Energy Value Saturation Effects, 4) Capacity Value Saturation Effects, and 5) Curtailment due to Overgeneration.

[26] Staff Proposal on the RPS Calculator at 30-31. The following cost categories are proposed for Version 6.1 of the RPS calculator: 1) Operating Reserves, 2) Increased Maintenance, 3) Curtailment due to Inflexibility, and 4) Flexible Capacity Needs.

Commission schedule a workshop to further develop the methodology for the Integration Cost Adder. Stakeholders from the RPS, LTPP and RA proceedings should all be involved.

4. Can the operation flexibility work underway in LTPP phase 1A and 1B (R.13-12-010) inform the development of an Integration Cost Adder for the RPS Calculator? Explain why or why not.

The operation flexibility work underway in LTPP phase 1A and 1B is still in its early stages, and future flexible capacity needs associated with renewable integration have yet to be determined. Parties can determine whether the operation flexibility work is sufficient and can inform the Integration Cost Adder. Only after the operation flexibility work is complete, can parties determine whether or not those results should inform the Integration Cost Adder for the RPS Calculator.

5. Allowing for economic curtailment of renewable generation can provide additional operational flexibility on a system seeking to integrate high penetrations of renewable generation by providing operators with a tool to control "net load" (load minus renewable generation). Should the RPS Calculator consider using renewable curtailment as the "default" solution to power system flexibility limitations for the purpose of renewable resource planning? If not, explain why not and whether an alternative approach should be used?

ORA supports curtailment as one potential solution to power system flexibility limitations. The Commission recognizes the potential for curtailment in D.14-11-042, when it requires bidders to provide two variations of an offer with the variants offering different amounts of annual economic curtailment hours.[27] ORA also recommends that other least cost options, such as increased Energy Storage ES and other types of demand response (DR), also be considered.

[27] D.14-11-042 at 44.

ORA requests clarification on whether "default" curtailment would be unlimited or capped. If "capped", ORA recommends that the Commission come up with a realistic percentage of facilities that can be curtailed and by how much; actual contract curtailment provisions could be aggregated and then fed into the calculator as the curtailment "cap."

6. Are there any additional system costs imposed by higher penetrations of renewable resources that are not included in the table above?

As ORA stated in its July 30, 2014 Reply Comments,[28] ancillary services should be included as a cost imposed by higher penetrations of renewable resources. E3's presentation on Integration Cost indicates that ancillary services are included as a cost.[29] The Staff Proposal, however, does not address ancillary services in its discussion of integration costs.[30] ORA requests clarification that ancillary services will be included in the Integration Cost Adder.

H. Treatment of Small Utility-Scale Resources

1. Identified above are five categories of direct incremental value that small utility-scale renewable projects located close to load might provide (relative to large-scale renewable resources). Are there any additional ratepayer realized values that should be considered? If so, please describe how that value can be quantified in the RPS Calculator.

The Distributed Resources Plan (DRP) proceeding, R.14-08-013, is currently considering the benefits that distributed energy resources (DERs), including solar PV, biomass, and wind can provide. A November 17, 2014 ruling in this proceeding included

[28] ORA Reply Comments on the Ruling on the 2014 Renewables Portfolio Standard Procurement Plans and Energy Division's Questions to Guide Reply Comments at 7

[29] E3, "Integration Cost" at Slide 14.

[30] Staff Proposal at 30-32.

a draft guidance document for use in the development of utility DRPs.[31] The draft guidance document requires the utilities to perform an integration capacity analysis that specifies the net benefit of DERs in a given location. Given the need to maintain consistency between DRP and RPS programs, ORA recommends that DER-related ratepayer benefits developed in the DRP proceeding be reflected in future versions of the RPS Calculator.

2. Is it realistic to assume that each of these values might be realized by the small-scale projects that could theoretically provide them? If not, what barriers prevent the realization of those values? How can these barriers be overcome?

Although small-scale projects could theoretically provide ratepayer value in each of the five categories[32], this may not be true for all small-scale projects. For example, deferral /avoidance of investment in distribution infrastructure is based upon the location where a small-scale resource is interconnected. In addition, in some locations, other DERs, such as electric vehicles and ES devices, could provide value and diminish the marginal value provided by small-scale projects. As stated in ORA's response to Q31, these issues are currently being addressed in the DRP proceeding. ORA recommends that evaluating ratepayer benefits realized by small utility-scale resources should be coordinated between the RPS and DRP proceedings.

[31] Assigned Commissioner Ruling re: Draft Guidance for use in Utility AB 327 (2013) Section 769 DRPs issued on November 17th.

[32] Staff Proposal at 34. There are a number of direct benefits that small scale renewable projects located near loads may provide for ratepayers. These values include

- Reduced transmission system line losses;
- Avoided congestion costs;
- Avoided need for generation in capacity-constrained areas such as LCR areas;
- Deferral/avoidance of investments in transmission infrastructure; and
- Deferral/avoidance of investments in distribution infrastructure.

3. Locational value for small-scale resources may in many cases be site specific. For example, not every distribution feeder has a deferrable distribution investment, and many distribution feeders have peak loads that occur after sundown when PV resources are not producing. How, if at all, should the RPS Calculator incorporate location-specific values to ensure that small-scale projects are appropriately valued?

As stated in ORA's response to Q31 and Q32, these issues are currently being considered in the DRP proceeding. ORA recommends that location-specific values developed in the DRP proceeding should be reflected in future versions of the RPS Calculator.

4. Is there a need to perform a more comprehensive assessment of small utility-scale solar PV resources in urban areas? If so, what level of granularity is appropriate for generation and transmission resource planning?

ORA reserves the right to address Q34 in reply comments.

I. Aligning Generation and Transmission Planning with Renewable Procurement

1. What modifications, if any, are necessary to the generation and transmission planning and procurement processes to ensure that in-state and out-of-state renewable resources, and associated transmission, are selected in a manner that minimizes net costs of delivered renewable energy while ensuring system reliability? What role should the RPS Calculator have in this process, if any, or is another process needed?

ORA reserves the right to address Q35 in reply comments.

2. What implementation issues or challenges, if any, do you foresee in the use of Version 6.0 of the RPS Calculator to inform planning in the CPUC's LTPP and CAISO's TPP?

ORA reserves the right to address Q36 in reply comments.

3. Should the NMV methodology, as adopted in the IOUs' annual RPS procurement plans, be informed by the NMV used for generation and transmission planning in the RPS Calculator? If so, please explain how.

ORA reserves the right to address Q37 in reply comments.

J. Secondary Costs and Benefits

1. Is it appropriate to incorporate secondary values into the RPS Calculator, which develops RPS portfolios that will be used to inform the LTPP, the CAISO's TPP, and potentially, the RPS need authorization in the IOU's annual RPS procurement planning process? Explain why or why not.

ORA reserves the right to address Q38 in reply comments.

2. If yes, what secondary costs and benefits should be incorporated in the NMV calculation? Please explain how costs and benefits should be quantified and to what extent they are realized by ratepayers.

ORA reserves the right to address Q39 in reply comments.

3. What data sources should be used to develop quantitative secondary benefit metrics?

ORA reserves the right to address Q40 in reply comments.

4. How, methodologically, should secondary benefit metrics be incorporated into the RPS Calculator for RPS portfolio development?

ORA reserves the right to address Q41 in reply comments.

5. How much weight should the RPS Calculator put on secondary benefit metrics within, or relative to, the NMV calculation?

ORA reserves the right to address Q42 in reply comments.

III. CONCLUSION

ORA supports revising the RPS calculator for the purposes of developing policy-based portfolios to inform the LTPP proceeding and the CAISO's TPP. ORA respectfully requests the Commission consider the recommendations described above.

Respectfully submitted,

/s/ IRYNA A. KWASNY

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December 3, 2014

VERIFICATION

I, Iryna A. Kwasny, am counsel of record for the Office of Ratepayer Advocates in proceeding R.11-05-005, and am authorized to make this verification on the organization's behalf. I have read the

"OPENING COMMENTS OF THE OFFICE OF RATEPAYER ADVOCATES ON THE ADMINISTRATIVE LAW JUDGE'S RULING (1) ISSUING AN ENERGY DIVISION PROPOSAL ON THE RENEWABLES PORTFOLIO STANDARDS CALCULATOR, (2) ENTERING THE PROPOSAL INTO THE RECORD, AND (3) SETTING A COMMENT AND WORKSHOP SCHEDULE"

filed on December 3, 2014. I am informed and believe, and on that ground allege, that the matters stated in this document are true. I declare under penalty of perjury that the foregoing are true and correct.

Executed on December 3, 2014 at San Francisco, California.

/s/ IRYNA A. KWASNY

Staff Counsel