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**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE**

**STATE OF CALIFORNIA**

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

# PRE-WORKSHOP COMMENTS OF THE CITY AND COUNTY OF SAN FRANCISCO IN RESPONSE TO THE OCTOBER 10, 2014 ADMINISTRATIVE LAW JUDGE RULING ISSUING THE ENERGY DIVISION PROPOSAL ON THE RENEWABLES PORTFOLIO STANDARD CALCULATOR


DENNIS J. HERRERA
City Attorney
THERESA L. MUELLER
Chief Energy and Telecommunications Deputy
THERESA CHO
Deputy City Attorney
City Hall Room 234
1 Dr. Carlton B. Goodlett Place
San Francisco, California 94102-4682
Telephone: (415) 554-6549
Facsimile: (415) 554-4763
E-Mail: theresa.cho@sfgov.org

Attorneys for
CITY AND COUNTY OF SAN FRANCISCO

## I. Introduction

The City and County of San Francisco (CCSF or City) respectfully submits these pre-workshop comments in response to the October 10, 2014 Administrative Law Judge ruling seeking comment on the Energy Division proposal to revise components of the Renewables Portfolio Standard (RPS) Calculator (ALJ Ruling). The ALJ Ruling seeks responses to 42 questions in the Energy Division proposal and comments on the following topics:

- Renewable integration costs, including consideration of the impact of renewable procurement on operational flexibility need;
- Updated transmission costs after new CAISO input;
- Treatment of energy-only and partially-deliverable options;
- Treatment of smaller-scale renewable generation, and;
- Methodology for considering secondary impacts.

The City supports the CPUC and CAISO's efforts to ensure that the RPS goal is met through procurement and transmission planning processes that accurately reflect system needs, realistic valuation of the economic costs and benefits of transmission investments, and the long-term impact on rates. The High Voltage (HV) portion of the CAISO Transmission Access Charge (TAC) increased by more than 400% since 2001 and is projected to increase nearly 50% by 2020.[1] This projected increase includes approximately $8 billion in renewables-related transmission upgrades identified in the CAISO Transmission Plans through 2013-2014. As the state moves beyond a 33% RPS, it is critical that the CPUC take a hard look at the ever-expanding universe of transmission costs in order to ensure that the RPS program is economically rational and sustainable over the long-run. The City believes that revisions to the RPS Calculator is an important step in maintaining an economically viable RPS program.

These Comments respond to a limited number of questions in the Energy Division Proposal that focus on the capacity value of RPS projects, including the current assumption of full deliverability for RPS resources and adoption of the ELCC methodology. These questions are:

[1] The HV TAC was $1.40/MWh in 2001. The CAISO projected a HV TAC of $12.66 by 2020.

Q3: 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?

Q16. 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?

Q19. Is it appropriate to use ELCC values instead of NQC for planning purposes in the RPS Calculator?

Q22. 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)

## II. Responses

### A. ALJ Ruling Topic: Treatment of Energy-Only and Partially Deliverable Options.

The current treatment of capacity from RPS projects can lead to significant, uneconomic investments in transmission. For example, significant transmission upgrades are triggered to accommodate the full deliverability of renewables interconnecting in the Kramer and the Riverside-East Super Competitive Renewable Energy Zones (CREZs). Although the RPS calculator assumes that all RPS projects will be fully deliverable, California has a surplus of system resource adequacy (RA) capacity with projected planning reserve margins of 120% in 2020 and 115% in 2034 as modeled in the RPS Calculator (Version 6.0, "System_Capacity" tab).[2] These projections take into account the closure of once-through-cooling plants and the San Onofre nuclear plant, but does not take into account the procurement of additional local and flexible capacity resources, which are needed to balance increasing amounts of variable resources on the grid. The March 26, 2014 Assigned Commissioner Ruling in this proceeding acknowledged the system RA surplus and asked parties to comment on whether there is any justification to include a positive value for system RA capacity in the RPS procurement process.

In most cases, full deliverability requires very costly transmission upgrades, which are recovered from ratepayers if the transmission upgrade is deemed to be Policy Driven by the CAISO.

[2] According to the "Capacity Valuation," powerpoint presentation accompanying the ALJ Ruling, these projections are consistent with the current load-resource balance assumed in the 2014 LTPP proceeding.

If there is sufficient interest from a generator requesting full deliverability, an area deliverability network upgrade (ADNU) can be approved as a Policy Driven project and included in the CAISO's approved transmission plan with no cost-benefit analysis by either the CAISO or the CPUC. This can lead to an extremely costly self-fulfilling prophecy where ADNUs are presumed to be needed for the RPS goal. There is no state or CPUC requirement or policy to obtain RA from renewable resources, and no need for additional system RA until at least 2034. As San Diego Gas & Electric (SDG&E) stated in its comments on the CAISO's July 2, 2014 Imperial County Transmission Consultation Draft Discussion Paper, "'Deliverability at Any Cost' is Not a Public Policy Objective."[3]

The assumption of full deliverability in the RPS calculator distorts the resource selection process, leading to suboptimal outcomes for ratepayers and the RPS program. Project A may have a lower resource cost than Project B and present other non-cost advantages, but it may be assigned a higher total cost than Project B due to more expensive ADNUs. Project A may also have a shorter construction schedule, but a longer transmission upgrade schedule. In short, there is little economic or policy rationale for continuing to ignore the possibility that energy-only or partially deliverable RPS projects will provide better value to ratepayers and enable the state to reach the RPS goal at lower cost, with less environmental impacts, and in a shorter time frame.

To the extent that the utilities need any additional system RA, ratepayers are better off if the utilities purchase RA capacity credits at current low market rates rather than being forced to buy excessive amounts from RPS projects that require costly, environmentally damaging, and ultimately unnecessary transmission upgrades. This is the equivalent of buying acres of land and planting an orchard in order to eat a single apple, while that same apple is available now for a dollar at the corner store.

Pacific Gas and Electric (PG&E) stated in its July 2014 comments to the CAISO, that energy-only power purchase agreements are viable and, particularly in areas where significant upgrades are necessary, it is reasonable to assume that RPS procurement will include energy-only contracts.[4]

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[3] SDG&E's Comments on the CAISO's July 2, 2014 Imperial County Transmission Consultation Draft Discussion Paper, p. 2.

[4] Comments of Pacific Gas & Electric Company, July 28, 2014, 2014-2015 Transmission Planning Process: Imperial County Transmission Consultation Draft Discussion Paper, p. 2.

SDG&E and PG&E both supported a re-assessment of whether full deliverability should be assumed for RPS planning assumptions used by the CAISO and the CPUC. The RPS Calculator should be modified to provide comparisons of similar resources on an energy-only and fully-deliverable basis.

B. Energy Division Proposal Questions:

1. Renewable Net Short Methodology

**Q3**: 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?

**Response:** No. Projects that trigger the need for a major new transmission project should not be included in the CAISO TPP portfolio absent additional analysis of economic viability.

Version 6.0 of the RPS Calculator discontinues use of the Discounted Core and instead uses a risk assessment methodology. All projects with a CPUC-approved power purchase agreement (PPA) are included in the RPS portfolio and the generation volume represented by the portfolio is adjusted by a project failure rate. The purpose of this change is to refrain from "singling out" projects by excluding them from the portfolio submitted to the CAISO for its TPP. However, the Discounted Core analysis included important criteria for assessing the viability and value of a project that will not be included in Version 6.0. In previous versions of the RPS Calculator, new transmission is included in the RPS scenarios only if Discounted Core projects would use at least 67 percent of the capacity of the transmission upgrade. If the 67 percent threshold is not met, the project that triggered the need for the upgrade is removed from the Discounted Core.

The inclusion of a RPS resource that triggers a large transmission project in the RPS portfolio without any cost/benefit analysis does not sufficiently protect rate-payers from unnecessary transmission costs. In the Version 6.0 "active portfolio" of renewable resources, large transmission projects are triggered by small amounts of new RPS capacity.[5] For example, a 50 MW PPA in the

[5] RPS Calculator Version 6.0, dated October 13, 2014, "Active Portfolio" Tab.

Kramer Super CREZ triggers a $436 million transmission upgrade to accommodate full delivery. However, it is likely that 50 MW can be accommodated on existing transmission on an energy-only basis. Similarly, 88 MW of capacity in the San Bernardino - Lucerne Super CREZ would trigger a $732 million transmission upgrade. If these transmission upgrades are approved by the CAISO as Policy Driven transmission projects, the costs would be included in the TAC and socialized across all ratepayers. The CPUC may eventually evaluate the costs and benefits of the project in a CPCN proceeding, however, this analysis will occur many years after the transmission project is baked into the approved RPS portfolios and the CAISO TPP, and interconnection agreements, PPAs, and financing deals are executed.

CCSF recommends that Version 6.0 retain a method for screening uneconomic transmission projects and use the economic screening criterion for all resources discussed in response to Question 16 below. The proposed screening criterion would not reject a RPS resource solely on the ground that it triggers an expensive ADNU. It is a more nuanced approach that reviews the costs and benefits of the resources and would retain the RPS resource in the portfolio if the associated transmission is economically justified.

2. Treatment of Transmission Costs in Version 6.0

**Q16.** 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?

**Response:** The RPS Calculator should be modified to evaluate energy-only projects. From a transmission cost perspective, this is the most important change that the CPUC can make to benefit rate-payers.

As explained above, CCSF is in full agreement with SDG&E's proposition that full deliverability at any cost is not a policy objective. To this, CCSF adds that "full deliverability at any cost" is not economically rational, it harms rate-payers, and it hinders the state's goal of moving beyond 33 percent. CCSF was unable to find any Commission statement of policy or economic

rationale underlying the current assumption of full capacity deliverability status in the RPS Calculator. In addition, the assumption is inconsistent with reality; the IOUs have executed energy-only PPAs and in D.14-11-042 the Commission authorized PG&E to use a different set of Time-of-Delivery (TOD) factors for energy-only contracts. CCSF believes that evaluation of energy-only PPAs is the single most important change that can be made to the RPS Calculator.

An initial analysis of the RA value of renewable resources shows the stark contrast between the costs and benefits of full capacity PPAs. Table 1 compares the annual RA value in three CREZs with the annualized cost of the transmission upgrades needed to obtain full capacity deliverability status.

**Table 1**

| Transmission Facility | Est. Capital Cost (M$)* | Delivering Renewables from Zone* | Total (MW)** | NQC (MW)*** | Annual RA Value (M$)**** | Annualized Transmission Cost (M$)***** |
|---|---|---|---|---|---|---|
| Colo. River-Valley 500kV, Red Bluff 500/220 kV Substation and West of Devers | $1,980 | Riverside East | 3,800 | 1,001 | $30 | $248 |
| Coolwater - Lugo 230 kV | $840 | Kramer | 642 | 214 | $6 | $105 |
| Eldorado - Ivanpah 230kV | $446 | Mountain Pass | 658 | 208 | $6 | $56 |
| * Using the CAISO HV TAC Estimating Model (2013-14 Transmission Plan), Dated May 25, 2014. | | | | | | |
| ** Based upon Data in the CPUC 33% RPS Calculator for the 2014-15 TPP Base (33% 2024 Mid-AAEE) Resource Portfolio. | | | | | | |
| *** Based on ELCC values used in the CPUC ED Proposed Revised Calculator Version 6.0 | | | | | | |
| **** Assuming $30/kW-Yr RA capacity price used in the CPUC ED Proposed Revised Calculator Version 6.0 | | | | | | |
| ***** Assuming approx. 12.5% carrying rate | | | | | | |

As discussed in response to Question 3, 50 MW of capacity in the Kramer Super CREZ triggers a $436 million transmission upgrade and 88 MW of capacity in the San Bernardino - Lucerne Super CREZ triggers a $732 million transmission upgrade with annualized costs of approximately $63

million and $106 million per year respectively.[6] However, the RA value of the incremental renewable PPA resources is less than $1 million per year in each of the Super CREZs.[7]

CCSF recommends that the Commission revise the RPS Calculator to include an analysis of candidate energy-only and full capacity resources in the following manner:

- For every candidate resource, the RPS calculator will calculate its energy-only net resource cost (NRC) using Levelized Cost of Energy (LCOE), Energy Value and Integration cost (upon its implementation). The resources will be ranked based on their NRCs.
- The potential RA value of each resource is compared to the expected cost of the ADNUs.
- If the RA value associated with that resource exceeds the cost of the ADNUs it might trigger, it should be considered a full capacity resource. Otherwise, that resource should continue to be considered as an energy-only resource.

CCSF believes that this mechanism can be implemented in Version 6.0 with minimal effort because it does not require changes to the existing framework of the RPS Calculator.

3. Capacity Valuation Calculations

**Q19**. Is it appropriate to use ELCC values instead of NQC for planning purposes in the RPS Calculator?

**Response:** The CPUC should replace the NQC with ELCC values in the RPS Calculator because the ELCC is more accurate and will be used in the CPUC's RA programs.

Public Utilities Code Section 399.26(d) requires the CPUC to develop an effective load carrying capacity (ELCC) methodology for wind and solar resources and use these values in the RA program. The net qualifying capacity (NQC) methodology was developed by the CPUC in 2009[8] and is based primarily on the historical performance of wind and solar resources. In contrast, the ELCC methodology measures the contribution of resource types to meeting system reliability needs, as well as facility performance. As pointed out in the Energy Division Proposal, because the capacity value of a given resource declines with increased market penetration, the ELCC provides more accurate

[6] Based on RPS Calculator Version 6.0 and assuming a 12.5% carrying rate.

[7] Based on RPS Calculator Version 6.0 Net Qualifying Capacity (NQC) values of the RPS resources at the RA market capacity price of $30/kW-Yr.

[8] Adopted in D.09-06-028, Appendix C.

representation of actual capacity values than the NQC methodology. Clearly, if a more accurate methodology is available to the CPUC, there is no justification for continuing to use NQC values. The CPUC is required by statute to use ELCC for RA purposes and it makes little sense to use different methodologies to measure a single concept. The ELCC methodology developed in the RA proceeding R.11-10-023, should be incorporated into the RPS Calculator immediately after Commission approval.

**Q22.** 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)

**Response:**

In D.14-11-042, the CPUC declined to adopt a zero value for system RA in the IOUs' procurement plans but noted that the surplus of system RA should be reflected in low RA values. The CPUC ordered the IOUs to report their RA price curve forecasts to their procurement review groups to ensure that the assigned values are consistent with current market prices.[9] CCSF does not object to utilizing the current average RA contract price as modeled in the Revised RPS Calculator. The average RA contract price should be updated regularly to reflect market conditions consistent with the direction in D.14-11-042. In addition, if new flexible capacity resources are added, the RPS calculator should be adjusted to reflect the new RA capacity and if warranted, defer procurement of new capacity to meet the system planning reserve margin.

## III. Conclusion

CCSF strongly supports revisions to the RPS Calculator that allow for energy-only RPS resources and consideration of the costs and benefits of transmission upgrades necessary for full capacity delivery status and incorporation of the ELCC. CCSF believes that these changes will strengthen the RPS program by rationally managing the costs of transmission upgrades.

[9] D.14-11-042, OP 22.

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Respectfully submitted,

DENNIS J. HERRERA
City Attorney
THERESA L. MUELLER
Chief Energy and Telecommunications Deputy
THERESA CHO
Deputy City Attorney
City Hall Room 234
1 Dr. Carlton B. Goodlett Place
San Francisco, California 94102-4682
Telephone: (415) 554-6549
Facsimile: (415) 554-4763
E-Mail: theresa.cho@sfgov.org

By:_____/S/_____
THERESA CHO
Attorneys for
CITY AND COUNTY OF SAN FRANCISCO