

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Continue
Implementation and Administration, and Consider
Further Development of, California Renewables
Portfolio Standard Program.

Rulemaking 15-02-020
(Filed February 26, 2015)

**COMMENTS OF THE
CALIFORNIA WIND ENERGY ASSOCIATION
ON ORDER INSTITUTING RULEMAKING
TO CONTINUE IMPLEMENTATION AND ADMINISTRATION, AND CONSIDER
FURTHER DEVELOPMENT, OF CALIFORNIA RENEWABLES PORTFOLIO
STANDARD PROGRAM**

March 26, 2015

Nancy Rader
Executive Director
California Wind Energy Association
2560 Ninth Street, Suite 213A
Berkeley, California 94710
Telephone: (510) 845-5077
Email: nrader@calwea.org

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I. INTRODUCTION

Pursuant to the instructions provided in the above-referenced Order Instituting Rulemaking (“OIR”) issued by the California Public Utilities Commission (“CPUC” or “Commission”) on March 6, 2015, the California Wind Energy Association (“CalWEA”) respectfully submits these comments on the OIR.

In summary, CalWEA encourages the Commission to prioritize the following issues in this proceeding:

- (1) Align renewables procurement with long-term resource and transmission planning activities to ensure that California’s renewable energy and reliability goals are together achieved as cost effectively as possible. This objective will require placing a priority on the development of the RPS Calculator and “least-cost, best-fit” values to inform the Commission’s 2016 Long-term Procurement Plan and the Commission’s submissions to the California Independent System Operator for its 2015-16 Transmission Planning Process; and
- (2) Consider raising the RPS requirement to at least 50% by 2030 and advancing the 33% RPS requirement to a date prior to 2020.

CalWEA sees no need to prioritize the integration of GHG-reduction goals and metrics into RPS procurement methods, given that increasing the share of renewable energy in the overall electric resource portfolio is the essential GHG-reduction tool, irrespective of the mix of renewable resources.

II. DISCUSSION OF PRIORITY ISSUES FOR THE RPS PROCEEDING

A. Better Align Renewables Procurement with Long-Term Resource and Transmission Planning

The Commission should place a priority on better coordinating and aligning renewable energy procurement through the RPS program with long-term resource and transmission planning. As renewable resources become an ever-larger fraction of the State's energy mix, it will become increasingly important to optimize the overall electricity resource portfolio and transmission assets to achieve California's renewable energy and reliability goals as cost effectively as possible. To accomplish this optimization, we need to accurately assess the indirect, grid-related costs and benefits of renewables in the procurement process and, for long-term planning purposes, we need to understand how different mixes of renewables will affect the potential need for system reliability resources and transmission investments. The accuracy of the values used to make these assessments must be improved and used consistently in both procurement and planning processes so that annual procurements will ultimately produce the desired long-term planning results.

Numerous recent studies have indicated that significant benefits will accrue from the careful development of a diverse mix of renewable energy resources.¹ The latest draft version of the RPS Calculator reflects significant improvements over previous versions, especially when it comes to capturing the overall cost of varying portfolios of renewable resources and, hence, will be a very useful tool for developing portfolios of renewable resources for long-term resource and transmission planning and policymaking purposes. The values used to develop these portfolios can and should be consistent with those used in the "least-cost, best-fit" ("LCBF") bid evaluation process for RPS procurements. As a result, it is critical for the Commission to support and expand on the RPS Calculator, and the values it relies upon, and to ensure that all necessary work is completed in time for the 2015 RPS procurement cycle, the 2016 Long-Term Planning and Procurement ("LTPP") cycle, and the California Independent System Operator's ("CAISO") 2015-16 Transmission Planning Process ("TPP"), as described below.

¹ For example, see Energy and Environmental Economics, Inc., [Investigating a Higher Renewables Portfolio Standard in California](#) (January 2014); CalWEA, [Investigating the Investigation of a Higher Renewables Portfolio Standard in California: A Review of the Five-Utility E3 Study](#), (April 2014); and several recent papers by LBNL, including [Integrating Solar PV in Utility System Operations](#), (March 2014).

1. Least-Cost, Best Fit Valuation

To ensure that prospective renewable resource procurement cost-effectively contributes to system reliability requirements, refinements to LCBF valuation methodologies and/or values adopted by the Commission and used by the Investor-Owned Utilities (“IOUs”) to value offers in their RPS solicitations are urgently needed. These methodologies or their resulting values should be consistent with those embedded in the RPS Calculator.

a. Integration costs

Integration of variable renewable resources requires increased need for ancillary services and operational flexibility. These costs are minor at low penetration but can become substantial at higher penetration. This is particularly true in portfolios that are heavily dependent on a single resource type. Since the RPS law was first adopted in 2002, the Commission has been required to adopt integration cost values for use in LCBF bid evaluations. More recently, AB 2363 put further emphasis on the need for timely consideration of integration costs by requiring a methodology to be adopted by December 2015. A recent Commission decision on the IOUs’ 2014 RPS procurement plans approved the use of interim, ad hoc, integration cost values for the 2014 RPS solicitations based on studies of systems outside California with significantly different characteristics and resulting values. More modeling will be necessary to develop durable integration cost and operational flexibility methodologies relevant to California and its current mix of available resources. Several parties have proposed using the current phase of the LTPP for such modeling. The new version of the RPS Calculator is also making major strides in calculating estimated integration costs of implementing various renewable resource portfolios. Regardless of where the modeling is done, it is important for the Commission to specify a venue and devote resources to complete such modeling in time for the 2015 RPS RFO cycle.

b. Capacity value

In addition to the benefits traditionally ascribed to renewable energy, renewable resources provide value to ratepayers in the form of deferred requirements for system capacity. However, capacity value can decline dramatically with increasing penetration of a given resource type. California currently bases its assessment of the contribution of renewable resource capacity to overall system capacity on a rule of thumb (the “exceedance” approach for determining Net Qualifying Capacity) that ignores how the contribution of such resources can change. In 2011, the RPS statute was amended to require the use of a rigorous methodology based on Loss of

Load Probability modeling to determine the “Effective Load Carrying Capability” (“ELCC”) of wind and solar resources.² Nearly four years later, Energy Division is still in the process of implementing the ELCC methodology to determine how wind and solar resources should count towards Resource Adequacy (RA) compliance. Despite this unfortunate delay, it is imperative that LCBF be revised to use a similar methodology to determine the capacity value of renewables in time for the 2015 RPS solicitations in order to ensure that procurement decisions reflect rigorous estimates of the incremental capacity value those resources would provide. The Commission could allow the IOUs to develop and use their own models to generate ELCC values that reflect all renewables procured to date (i.e., those expected to be operating on the CAISO system), and/or could direct the utilities to use ELCC values generated by the RPS Calculator (also reflecting all renewables procured to date). Regardless of exactly how ELCC is incorporated into LCBF, the IOUs’ next RPS Procurement Plans, to be filed this fall, must include an ELCC methodology to determine the capacity value of renewables.

c. Overgeneration Conditions

Initial results from the upgraded RPS Calculator discussed at the February workshop hosted by Energy Division showed that overgeneration can, under some scenarios, impose significant costs to ratepayers. In response, the Commission should first consider all of the contributors to potential overgeneration conditions and address those that may be easily eliminated by re-thinking existing operating practice (e.g., “must-run” gas generation that results from self-scheduled resources or thermal minimum load requirements imposed by the CAISO; these issues would be best explored in Phase 2 of the current LTPP proceeding). Once the contributors to overgeneration are correctly understood and those that can be remedied through operating practices have been addressed, the LCBF bid evaluation process should be amended to factor in the expected contribution of renewable energy bids to overgeneration conditions at various times throughout the year (e.g., as the CAISO’s infamous “duck chart” shows, certain times in the spring and winter).

Expected overgeneration could be valued in the LCBF process in a number of potential ways, such as by adjusting forward-price curves to lower prices used by the IOUs to value

² The PU Code requires the use of ELCC to determine how wind and solar count towards Resource Adequacy requirements. While the section of the PU Code addressing LCBF does not reference ELCC explicitly, it specifies that LCBF consider the RA/capacity value of renewable resources. The IOUs estimates of the RA/capacity value of renewables generally reflect current RA counting rules, so there is an implicit nexus between the two sections of the PU Code.

energy produced during expected overgeneration periods or amending the integration cost adder to incorporate expected incremental curtailment costs. Alternatively, TOD factors could be adjusted for time periods vulnerable to overgeneration conditions.

2. System Resource & Transmission Planning

CalWEA strongly encourages the Commission to devote the resources necessary to the RPS Calculator effort to support the development of a robust set of renewable energy portfolios that will support the next major rounds of resource and transmission planning, i.e., the 2016 LTPP and the 2015-16 TPP.

The Energy Division's February 2015 workshop on the RPS Calculator highlighted the need to develop 50% renewable energy scenarios for two important purposes: informing the 2016 Long-Term Planning and Procurement ("LTPP") studies to determine future flexible capacity needs, and developing a "least-regrets" transmission plan to support achievement of a 50% renewable energy target.

We would like to underscore the need for timely development of these portfolios for these purposes, and to particularly encourage the Commission to be proactive in working with the CAISO to plan for 50% renewables in its 2015-16 Transmission Plan. The "special transmission study" that was discussed at the workshop must be aimed at the development of an actual transmission plan – not another study to add to the shelf – to move the state forward in achieving its renewable energy and climate change goals. Without the Tehachapi and Sunrise transmission projects, California would not be on track to achieve its 33% RPS goals. If transmission planning does not start now, in earnest, the state will not be in a position to reach significantly higher renewable energy targets in the 2020-2030 timeframe.

Moreover, addressing foundational power grid needs for a 50% renewable energy future will foster competitive renewable energy markets by expanding opportunities for low-cost renewable interconnection and providing critical information to developers about these locations, while minimizing the risk of stranded investments and enabling the achievement of higher renewable energy goals.

One element of the updated RPS Calculator will be particularly helpful in developing a cost-effective transmission plan: the ability to consider energy-only contracts, which will allow the Commission to consider whether the utilities necessarily should obtain capacity to be used in the RA program through their renewables procurement. Past versions of the RPS Calculator

have assumed that renewables must be fully deliverable, thereby severely overstating the value of transmission necessary to develop certain renewable resources. Similarly, the IOUs generally have required the projects with which they contract to be fully “deliverable” in order to count them towards their RA requirements. In order to become deliverable, renewable resources must undergo transmission “deliverability” studies and often pay for very expensive Deliverability Network Upgrades. Not only does this burden eliminate market participants who offer very cost-effective renewable energy resources but, in many cases, it will be significantly more cost-effective for the IOUs to procure energy but not capacity from renewable resources that are not fully deliverable and to procure their RA capacity, if still necessary, through other avenues. Given the declining long-term capacity value of renewable resources as their grid-penetration increases, energy-only contracts with resources that are not fully deliverable may be a better value for California ratepayers going forward than contracts with resources that are fully deliverable.

At the same time, connecting significant quantities of new renewable resources without expanding the transmission system raises the possibility that transmission congestion could induce meaningful quantities of renewable energy curtailments. We support Energy Division’s plan to incorporate energy-only functionality into the next version of the RPS Calculator, however, it is equally important that the CAISO study the ability of the existing grid to accommodate energy-only renewable contracts, and to plan for cost-effective upgrades that would be needed to avoid significant curtailments of these resources.

We believe that the RPS Calculator can play an important role in supporting cost-effective transmission planning for the state’s renewable energy goals by modeling multiple plausible renewable energy scenarios around which transmission and operational flexibility plans can be developed. These scenarios can and should take into consideration different possible future policies – such as land-use planning decisions protecting natural resources or preferences for distributed energy – that may influence future market outcomes. At the same time, the RPS Calculator should inform policymakers of the costs associated with different policy choices. What is critical is that progress be made immediately in order to inform the 2016 LTPP and the 2015-16 TPP.

B. Increase the RPS Target, and Advance the Date for the 33% Requirement

The OIR invited comments on possible further development of the RPS program through exercise of the Commission's authority under Assembly Bill 327 (Perea), Stats 2013, ch. 611, to increase the percentage of RPS-eligible electricity sold to retail end-user customers. For the reasons below, CalWEA believes that the Commission should consider, in this proceeding, raising the RPS requirement to at least 50% by 2030. Further, we encourage the Commission to consider advancing the 33% RPS requirement to a date prior to 2020.

In "California PATHWAYS," a major new economy-wide study conducted for California's energy and environmental agencies (including this Commission) and the Office of Governor Brown, the research consulting firm E3 evaluated the feasibility and cost of a range of potential 2030 GHG targets in support of meeting the state's longer-term goal of reducing GHG emissions 80% below 1990 levels by 2050.³ The study's summary shows that achieving the economy-wide 2030 GHG goal will require increasing renewables in the electricity sector to 50-60%. The California PATHWAYS study shows that the overall 2030 GHG goal could be achieved at a cost of \$8/mo/household. Given the Administration's support for aggressively addressing climate change, and the Commission's SB 327 authority, there is no reason why the Commission should not proceed now to consider raising the RPS requirement consistent with the results of the California PATHWAYS study.

In addition, the Commission should expeditiously consider whether to advance the 33% RPS goal to a date prior to 2020 in order to sustain momentum and investments in the renewable energy market. The renewable energy market has slowed considerably due to utility procurement of renewable (largely solar) resources over the past few years in excess of that required to meet the RPS targets through 2020. Even assuming that the RPS targets are raised after 2020, market activity can be expected to remain relatively low over the next five years. Such a market lull will slow, if not stop, the momentum that has developed, stranding projects that have been many years in development. Moreover, many of California's foundational renewable energy projects built in the 1980s are operating under contracts that are now expiring, but the market that was anticipated has all but disappeared.

And, yet, we know from the California PATHWAYS study (and others) that a major increase in renewable resources will be needed to meet California's GHG-reduction goals. In the

³ See https://ethree.com/public_projects/energy_principals_study.php.

face of this need, it makes no sense to let existing resources languish. Without new long-term contracts, there can be no investment to replace the old technologies in these plants with modern, more grid-friendly technologies. The Commission can reinvigorate the market by creating a steadier trajectory of progress between now and the 2030 renewable energy goal that is widely anticipated to be needed. More than a sufficient supply of renewables is available to meet an advanced 33% target, with competition from new, repowered, and existing resources.

C. Forgo the Integration of GHG Reduction Goals and Metrics in RPS Procurement

Under “Tasks related to further development of RPS program,” the OIR listed “[consideration of] the integration of GHG reduction goals and metrics into RPS procurement methods (e.g., LCBF methodology).” As discussed above, the California PATHWAYS study shows that achieving 50-60% renewables by 2030 is itself an important means, among many other measures, of achieving the state’s overall GHG goals. This study, and similar studies before it, indicates that the composition of renewables within that 50-60% can have a significant impact on reliability and cost, but have not indicated that different mixes of renewables will have different effects on GHG emissions.

Moreover, major, rigorous studies have been conducted by the National Renewable Energy Laboratory (“NREL”) showing that little, if any, incremental emissions result from the use of fossil fuel resources to integrate intermittent resources (as is sometimes erroneously assumed). Specifically, Phase 2 of NREL’s Western Wind and Solar Integration Study (WWSIS-2) was conducted to determine the wear-and-tear costs and emissions impacts of cycling fossil fuel plants to integrate high penetrations of wind and solar resources on the Western grid. One key finding was that the impact of cycling on overall plant emissions is small, and “negligible” in the case of CO₂ emissions.⁴

Therefore, seeking to introduce GHG metrics into RPS procurement methods based on the operating characteristics of renewable generation resources would not be a productive use of the Commission’s limited resources, particularly in comparison to the much more significant issues discussed above. However, the Commission should consider whether the GHG costs associated with fossil-fuel generators are adequately considered in all-source procurement, to ensure that renewable and non-fossil-fuel resources are able to compete on equal footing to

⁴ The WWSIS-2 study results are summarized at <http://www.nrel.gov/electricity/transmission/western-wind-2.html>.

supply any resource needs that remain after RPS requirements are fulfilled.

Respectfully submitted,



Nancy Rader
Executive Director
California Wind Energy Association
2560 Ninth Street, Suite 213A
Berkeley, California 94710
Telephone: (510) 845-5077
Email: nrader@calwea.org

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VERIFICATION

I, Nancy Rader, am the Executive Director of the California Wind Energy Association. I am authorized to make this Verification on its behalf. I declare under penalty of perjury that the statements in the foregoing copy of *Comments of the California Wind Energy Association on Order Instituting Rulemaking to Continue Implementation and Administration, and Consider Further Development, of California Renewables Portfolio Standard Program* are true of my own knowledge, except as to the matters which are therein stated on information and belief, and as to those matters I believe them to be true.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on March 26, 2015, at Berkeley, California.



Nancy Rader
Executive Director, California Wind Energy Association