

Electricity Analysis Office
Electricity Supply Analysis Division
California Energy Commission
Re: Docket No. 11-IEP-1D 1516

DOCKET	
11-IEP-1D	
DATE	MAR 18 2011
RECD.	MAR 18 2011

Clean Coalition comments on CEC Staff Paper: Proposed Method to Calculate the Amount of New Renewable Generation Required to Comply with Policy Goals

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March 18, 2011

I. Introduction

The Clean Coalition (formerly The FIT Coalition) is a California-based advocacy group focused on timely and cost-effective renewable energy policy, particularly in relation to feed-in tariffs and “wholesale distributed generation” (WDG), which is generation that connects to distribution lines close to demand centers. Our members are active in proceedings at the Public Utilities Commission, Air Resources Board, Energy Commission, California ISO, the California Legislature, Congress, the Federal Energy Regulatory Commission, and in various local governments.

II. Summary

- A Standardized Confidence Interval should be added to the Renewable Net Short (RNS) value range
- The RNS should always be expressed with reference to its level of certainty
- The RNS should always be applied as a value range
- Viability Risk Assessment should be performed on projected RPS project additions
- Additional information should be made available to CEC staff and public in order to assess RPS outcomes

III. Comments

We strongly support the CEC Staff in their efforts to establish a standard method for calculating the amount of new renewable generation needed to comply with California energy policy goals. Our experience with the difficulty in determining the accuracy and reliability of demand and compliance projections for California's Renewable Portfolio Standard (RPS) and Long Term Procurement Planning (LTPP) underscores the importance of establishing a standard method of developing projections, confidence intervals, and associated risks. A single method and coordinated approaches for choosing assumptions to promote consistency in California's various energy policy forums will lead to better policy development.

The Clean Coalition also supports and commends CEC staff in their recognition that it is vitally important not to underestimate the RPS Net Short (RNS) calculation since additional procurement entails long lead times. Lead times are typically in excess of five years for non-WDG projects, and 10 years where new major transmission is required. We would add that the incremental RPS targets will surely increase over time toward higher midcentury sustainability goals, in line with California's 2050 goals for greenhouse gas abatement, absorbing any risk of possible over-procurement.

Furthermore, the Clean Coalition has long argued that the RPS procurement minimum targets should not also be considered maximums. They are a floor, not a ceiling. The extensive environmental and economic benefits of renewable energy beyond merely the power provided should impel policymakers to err on the side of over-procurement of renewable energy rather than risk falling short of goals.

We particularly commend the staff for recognition that, due to uncertainties affecting the results of the renewable net short calculation, *"it is apparent that a narrow set of values or application of single point forecasts are not sufficient for addressing the infrastructure requirements for integrating renewable generation policy goals."* It is important to make clear that the RNS represents a mid-range value for the estimated additional generation required to meet the minimum RPS target levels on the last date for policy compliance. It is also important to emphasize that the actual amount required will be either higher or lower than the mid-range estimate.

The scale of the estimate range (the confidence interval) is as important as the estimate itself, and this should always be presented in order to determine the degree of risk associated with that range. If aiming for the mid-range value means adopting practices that have a 50% chance of failing to meet mandatory levels by the deadline, that information should be made clear, along with the degree of adjustment required to attain higher probabilities of success. In some cases the range is narrow, and a 1% higher estimate will result in a 90% confidence interval; in other cases the range is much greater, and such differences are highly significant.

Staff presentation of RNS value ranges in table 7 and the related discussion is extremely useful, especially in the identification of primary uncertainty factors and their relative contribution to RNS range variation. This information would be further improved with a standardized assessment of the range probability for each factor and the total RNS, as expressed in an adopted confidence interval.

Procurement and infrastructure planning can be adjusted over time as target dates approach and RNS estimates become both smaller and more accurate, although procurement opportunities are also reduced with shorter timescales. As such, it is appropriate to rely on RNS estimates with a Confidence Interval of at least 80%. This substantially reduces the risk of being unprepared with too little time to make corrections, while the risk of minor over-procurement is negligible in light of anticipated increased demand and more ambitious RPS goals.

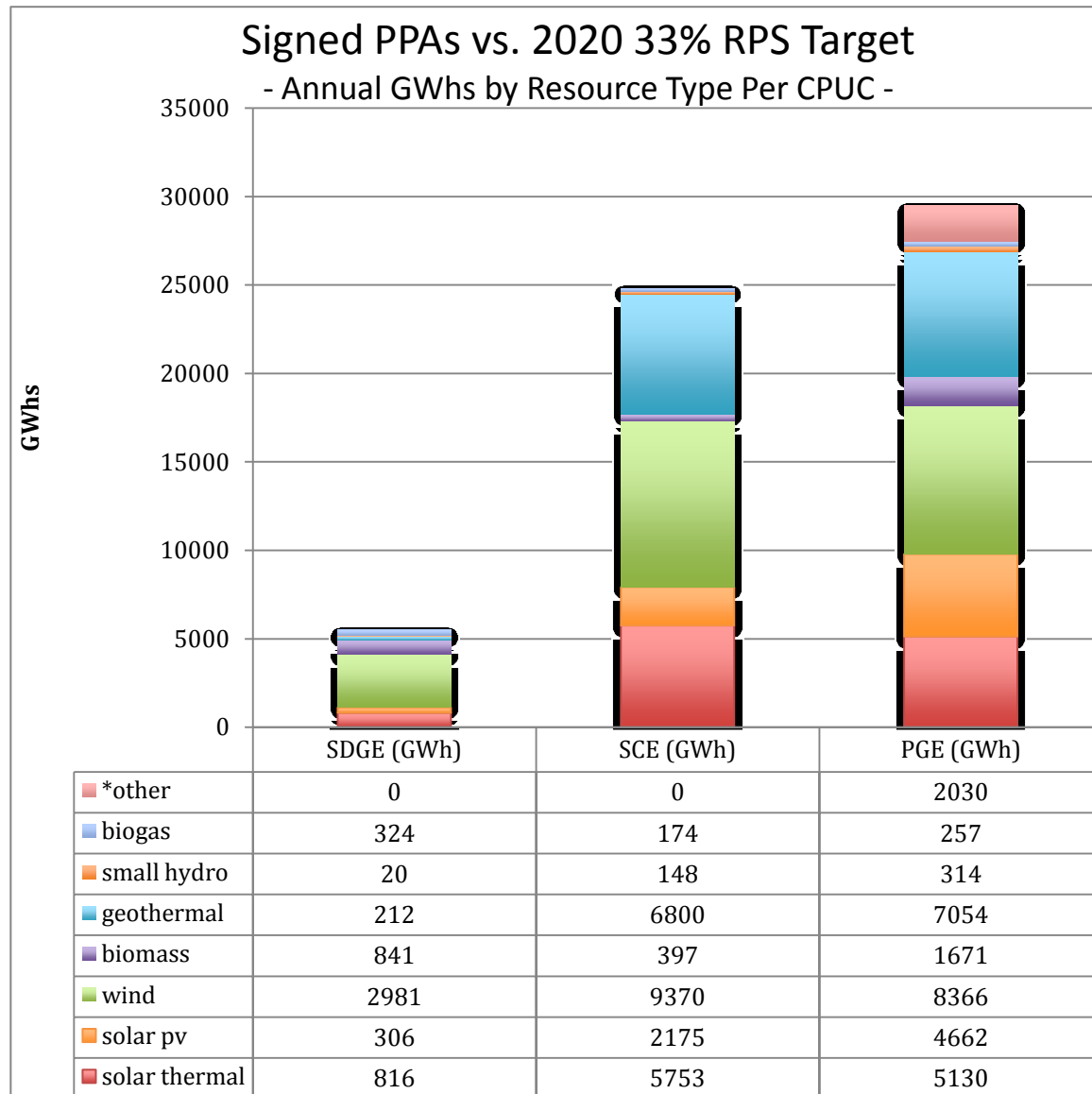
Finally, the Clean Coalition wishes to emphasize the need for the RNS methodology to include a standard method for assessing the overall project viability risk of the portfolio of RPS compliance contracts ("RPS Viability Risk"). The California Public Utilities Commission's Fourth Quarter 2010 RPS Report included an assessment of the RPS Viability Risk; however, the assessment was based solely on its project viability calculations for individual RPS compliance contracts at the time that such contracts were signed. Accordingly, we urge the Commission to adopt a standard method for realistically assessing RPS Viability Risk and to require that the data necessary for these assessments be made available to the public.

Based on the limited public data, our estimates indicate that up to two-thirds of RPS projects under contract are at risk of cancellation or significant delay. New large-scale projects, far from load, are the highest risk, as evidenced by the current lack of stable investment support, the recent reversal of Federal transmission corridor permitting authority, and siting authorization lawsuits by tribal authorities against six of the largest projects.

Solar thermal generation, in particular, faces significant risks, and plays a *large* role in IOUs plans to meet 33% RPS 2020 compliance. There are currently 5,067 MWs of permitted solar thermal generation projects with PPAs in development in California. Six of the major projects (representing 53% of capacity under contract) are located on federal land and are being sued regarding NEPA compliance.

The Clean Coalition requests that all data necessary to assess RPS Viability Risk be made available to Commission staff, and where possible, to the public. While some information is published regarding project development plans and schedules, the current CPUC RPS tables are an inadequate basis for assessment of RPS Viability Risk. Not only is project data difficult to compile, track, and compare, but the data itself often lacks meaningful accuracy – for example, until a project is withdrawn or has actually missed the COD deadline, it is listed as being "on schedule" regardless of actual project status. As a result, published RPS project viability estimates are highly unreliable and only measure relative probability of completion in any case. E3

conducted a risk assessment that discounted the RPS portfolio by 30%, a figure that, if accurate, has very large consequences for RNS estimates.



*Note: PG&E's total includes 1700GWh of space based solar, listed in graph in category "other". Source: CPUC RPS Approved Contracts Feb. 2011

Additional data needs to be made available to CEC staff, and where possible to stakeholders and the public, in order to determine contract viability risk and reasonably assess the potential for contracted projects to contribute to RPS compliance schedules.

In order to assess the likelihood of planned projects contributing to the RPS and their impact on the RNS, the Clean Coalition recommends that the CEC require:

1. RPS compliance project data in spreadsheet form that can be analyzed easily by the Commission and stakeholders
2. Identification of project dependence on critical path factors liable to impact schedule and viability, including:
 - Development milestone status
 - Transmission development
 - Interconnection status
 - Permit status
 - Pending legal challenges

IV. Questions for Stakeholder Input

Given a range of incremental uncommitted energy efficiency estimates, how should the Commission choose among the high, mid, and low values?

Given the known overstatement of savings projected or reported in relation to existing energy efficiency programs, the uncertainty with regard to uncommitted programs, and the long lead times required to avoid RNS, the Clean Coalition recommends adoption of the lower value.

As the 33% RPS is itself an interim level of renewable standards, with higher standards to come as California works to further reduce its greenhouse gas emissions, there is little or no risk of over-procurement with regard to reductions in RNS requirements.

As discussed in detail in our comments, the degree of risk associated with such uncertainty should be clearly assessed and its consequences clearly presented. While a single “best guess” is useful, the range of uncertainty is equally significant for policy decisions. As such, results should always be presented as a range, such that the risks and the benefits of risk avoidance can be incorporated in policy decisions.

Should the renewable net short estimate include small utilities (Less than 200 GWh) and non-RPS deliveries (CDWR, WAPA, MWD)?

Reasonable efforts should be made to include all electrical sales counted in the RPS, and any offsetting renewable contribution from a qualifying load serving entity should be included in the RNS calculation. However, where information is not readily available, the use of estimates is acceptable practice. The significance of

potential estimate error on final results may be small, but should not be ignored, and should be noted as a confidence interval percentage. Non-RPS deliveries are worth noting for reference and policy consideration, but should be excluded from the RNS calculation.

How should the Commission select from a range of incremental CHP values given the slow historical development juxtaposed with the recent CHP settlement at the CPUC?

The staff's proposed RNS contribution of CHP represents a reasonable interim balance of high levels of uncertainty that will be reviewed and updated annually as both regulatory and market factors become more clear. However, we should be prepared for the [relative?] likelihood that CHP will not reduce the RNS, and allow for the time frame within which greater certainty will be available. As noted above, RNS implications should be accompanied with a risk assessment.

How should the Governor's DG goals be reflected in a renewable net short estimate?

The nature of the impact of DG in the RNS calculation depends upon the proportion that is net-metered or contributes to wholesale generation for retail distribution. The Governor's DG goals represent primarily wholesale distributed generation (WDG), which will contribute toward the RPS, and should be defined as a distinct component of it, with defined targets and net short estimates within this target. This will not change the overall RPS net short assessment, but will make clear how these goals relate to each other and what types of procurement and procurement schedules are appropriate.

However, it is critical to note that the Governor's DG goals are not limited by the RPS targets. As the key feature of the Governor's Clean Energy Jobs Plan, the DG goals are meant for the economic benefit of California and not targeted at RPS compliance. Therefore, while DG procurement provides progress towards RPS targets, the achievement of RPS targets through non-DG procurement in no way reduces the imperative to reach the Governor's DG goals.

The staff's recommended attribution of load-reducing self-generation/net-metered generation is appropriate; however full program uptake should not be assumed and CSI projections should be incorporated.

How should the Commission choose among existing renewables methodologies given the variation in renewable generation inherent in using actual generation?

The Staff proposal to use historic generation plus capacity-based estimation of current year additions is reasonable and is shown to be substantially more accurate than under and over estimates based on the respective alternatives.

To what degree should renewable generation that is in some stage of construction be included in the renewable net short estimate?

The staff proposal to include facilities with PPAs that are under construction with a COD in the following year is reasonable and appropriate. However, the amount of generation attributed to them should be reduced in proportion to the historical record of comparable planned generation, both in terms of output relative to capacity, and more importantly, in relation to the likelihood of such facilities to meet their planned COD.

As discussed above, CPUC reporting of RPS projects as “on schedule” simply indicates those facilities that have not yet failed to meet planned COD and therefore does not include any consideration of their probability of coming on line on schedule or at all. If 30% of projects listed for on-line dates in prior years have failed to achieve these dates, current projects should be expected to perform at similar levels, and their RNS contribution should be adjusted accordingly.

The single year projection will limit the impact of project viability risk; however, as large projects increasingly enter this time frame, it is becoming a major source of potential error in RNS calculations.

What is the best way to handle short term and out of state renewables contracts that are likely to be redirected to other state’s renewable goals?

Staff’s proposal to exclude these contracts for years following their expiration is appropriate – there is no basis to assume that such supplies will be procured for use in California until there is contractual evidence. However, we see no foundation for the 2015 date limit applied by staff and believe that no out of state capacity should be counted toward a period for which no contract has been retained.

What developments are expected in the near future that may minimize the uncertainties associated with key renewable net short variables?

While the resolution of CHP export sales and CPUC-jurisdictional authority on pricing and program mandates will modestly reduce uncertainties arising from these proceedings, we anticipate little net impact as other issues will arise. To significantly reduce uncertainty, we need data from increased experience with prior year historic generation and access to the data necessary to assess viability risk of planned projects.

What types of proceedings or studies utilize a renewable net short estimate, and how should the Commission integrate these end uses into its choices of renewable net short methods?

While it is beyond the scope of our comments to fully address this question, procurement and RPS compliance projections are clearly of high order significance. As previously noted, LTPP and RPS procurement is critically dependent upon accurate project viability risk assessment, and risk-adjusted RNS estimates are vital to these proceedings and successful policy attainment.

Should the method and assumptions for a renewable net short estimate be allowed to vary depending on the type of study?

While there are legitimate reasons for variations in assumptions between approaches used for different studies, it is important for the results to be easily compared. As such, Clean Coalition recommends that a standard base reference study underlie all work for any given year, allowing for direct comparison of results. Where necessary, variances from this standard data set and assumptions can be employed, and the nature and rationale for adjustments clearly presented, with the results of such adjustment published beside the original results. The results of unadjusted methods and assumptions will allow direct comparison between studies, while the adjustments allow for best application of specific mandates.