

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

Order Instituting Rulemaking to Integrate
and Refine Procurement Policies and
Consider Long-Term Procurement Plans

Rulemaking R-12-03-014

**COMMENTS OF THE GREEN POWER INSTITUTE
ON THE PLANNING STANDARDS SRAW PROPOSAL**

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Introduction

Pursuant to the *Scoping Memo and Ruling of Assigned Commissioner and Administrative Law Judge*, dated May 17, 2012, the Green Power Institute (GPI) respectfully submits this *Comments of the Green Power Institute on the Planning Standards Straw Proposal*, in R.12-03-014, the **Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans**. We submit these *Comments* using the Comment Template provided by the Energy Division. Our *Comments* are focused on the renewables supply assumptions in the Straw Proposal.

1. Guiding Principles

The GPI endorses the guiding principles as articulated in the Straw Proposal. We are particularly pleased to see Guiding Principle E, which states that infrastructure portfolios should be substantially unique from each other in order to provide a broader perspective on the kinds of futures that are possible, consistent with California's overall policy objectives. In the opinion of the GPI, the portfolios developed for the 2010 LTPPs failed to provide the diversity of perspective needed to fully inform the decision-making process.

The scenarios for 2020 that were developed for the 2010 LTPPs were, by explicit assumption, frozen in the technology of 2010. In the opinion of the GPI, the failure to consider a variety of expected technological advances in areas such as smart-grid-enhanced operation of transmission and distribution systems, and energy storage, severely limited the usefulness of the integration analysis that was performed. We would like to see Guiding Principle B amended as follows:

B. Assumptions should reflect real-world possibilities, including **technological advancement**, and the stated positions or intentions of market participants.

20. Renewable Resources

- a. Establishing the 33% RPS infrastructure target via the LTPP, understanding that other requirements may also need a similar calculation within the RPS proceeding.**

The GPI believes that the determination of the state's renewable net short (RNS) position through 2020, which depends on both the expected supply of renewable energy from identified sources, and the level of retail sales on the system, needs to be done in a single venue. We support the proposal in the Straw Proposal for doing this as a combined effort between the LTPP Proceeding, R.12-03-014, and the RPS Proceeding, R.11-05-005. Separately determining the procurement targets in the LTPP, and the supply in the RPS without coordination could lead to inconsistent and non-comparable results.

Between SB 2 (1X), and Decision D.11-12-020 in the RPS Proceeding, the annual RPS procurement targets, expressed as a percentage of retail sales, have already been determined (note that compliance is determined on the basis of statutorily-defined multiyear compliance periods, not annually). Thus, determining the annual procurement quantities is simply a matter of applying these percentages to a projection of retail sales. The procurement requirement for a given compliance period is the sum of the required annual procurement quantities for each of the years in that multiyear compliance period.

- b. Establishing the RPS supply (i.e. the “highly likely resources”) in the RPS proceeding.**

During the April 11 – 12, 2012, workshop on LTPP scenario planning, GPI representative Gregg Morris discussed the concept of applying probability-of-success factors to the various projects in the RPS development pipeline in order to determine the expected amount of generating capacity that would result from the current portfolio of contracts, both signed and pending approval. This approach appeared to engender interest on the part of both staff and a number of the parties at the workshop.

Unfortunately, the Straw Proposal retreats to the 2010 LTPP approach of picking winners and losers from among the projects in the utilities' portfolios, rather than determining an

expected outcome based on probabilistic analysis. We urge the Commission to use the statistically-based approach to the determination of an expected renewables supply, rather than picking individual winners and losers.

In order to illustrate how our proposed methodology works, we apply it to the projects in the PUC's RPS-contract database in the table below. The first of the three data blocks in the table shows data that were extracted from the first three tabs of the RPS project status spreadsheet on the PUC's web site (RPS_Project_Status_Table_2012_April_Final, downloadable from <http://www.cpuc.ca.gov/PUC/energy/Renewables/>).

PUC RPS Contract Database -- GWh			
	<u>Operational</u>	<u>With PPA</u>	<u>PPA Pending</u>
Biomass	1,823	865	100
Biogas	467	304	
Geothermal	12,594	664	441
Sm. Hydro	542	8	
Solar	1,305	19,130	5,396
Wind	12,113	9,283	1,353
Total	28,844	30,254	7,290

Probability of 2020 Operation			
	<u>Operational</u>	<u>With PPA</u>	<u>PPA Pending</u>
Biomass	90%	70%	60%
Biogas	90%	70%	60%
Geothermal	90%	70%	60%
Sm. Hydro	90%	70%	60%
Solar	90%	60%	50%
Wind	90%	70%	60%

Expected 2020 GWh			
	<u>Operational</u>	<u>With PPA</u>	<u>PPA Pending</u>
Biomass	1,641	606	60
Biogas	420	213	0
Geothermal	11,335	465	265
Sm. Hydro	488	6	0
Solar	1,175	11,478	2,698
Wind	10,902	6,498	812
Total	25,960	19,265	3,834

We make the following assumptions about probabilities-of-project-success for this example application of the methodology: For currently-operational projects with RPS contracts, many of which were built during the 1980s, we assume a probability of operations in 2020 of 90%. For projects-in-development with approved PPAs, we assume a probability of operations in 2020 of 70% for non-solar projects, and for solar projects 60%, due to the fact that their technologies are less commercially mature than the other renewables. Finally, for projects with PPAs not yet approved, we impose a 10% deduction compared with comparable projects with approved PPAs. Applying these assumptions to the RPS contract database produces an expected supply in 2020 of 49,059 GWh (25,960 + 19,265 + 3,834), out of the total of 66,388 GWh (28,844 + 30,254 + 7,209) of annual capacity that is represented in the database.

between b & c. Renewable Portfolio Development

Following the section of the Straw Proposal on *Calculating the Renewable Energy Supply*, there is a section on *Renewable Portfolio Development*, which does not appear in the Comment Template. We believe that this section of the Straw Proposal deserves specific comment, which we provide here. The Straw Proposal asserts:

Preliminary calculations suggest that the residual net short from this calculation will be small. This implies that there is limited flexibility for significantly altering the 33% RPS procurement direction within a ten year forward timeframe, even accounting for contract failure. Therefore, in the ten year forward studies, staff proposes that only two portfolios should be developed.

Based on our own preliminary calculations, which we are prepared to present at the June 12, 2012, RPS workshop on the RNS, we believe that the preliminary calculations referred to in the Straw Proposal may be seriously underestimating the 2020 RNS. It is true that if all of the state's currently operating renewable-generating capacity continues to operate in 2020, and all of the projects-in-development in the PUC's RPS database (with PPAs, and with PPAs pending) were to come online, there would be a surplus of approximately 10,000 GWh of annual renewable generating capacity above the statutorily mandated standard of 33 percent. It is equally true that all of this capacity will **not** be

operating in 2020. Our own preliminary calculations show an expected RNS in 2020 in the range of 5,000 – 15,000 GWh for the Commission-jurisdictional LSEs. If the RNS is anywhere near the higher end of this range, we do not think that a characterization of limited flexibility is either correct, or useful.

In our opinion the proposed two renewables portfolios in the Straw Proposal (base and high-DG), augmented by the one specified sensitivity portfolio (environmental), can be more accurately described as three portfolios. We urge the Commission to consider adding a fourth portfolio, which would be based on filling the RNS with primarily baseload renewables (biomass, biogas, geothermal). We recommended that a baseload renewables scenario be included in the 2010 LTPP analysis (it wasn't), and we are recommending that it be included in the 2012 LTPP cycle.

Although solar power in 2011 provided less than four percent of the total RPS-qualifying renewable energy supply of the three large IOUs, and it is still in the early phases of commercialization in terms of the technology used in large-scale solar-thermal and PV generating facilities, it accounts for more than two-thirds of the utilities' portfolios of projects-in-development. In the opinion of the GPI this represents a large risk for the achievement of the 33-percent renewables standard, based primarily on the existing portfolio of projects. Our proposed baseload-renewables portfolio would include an assumed probability-of-success for solar projects in the utilities' portfolios that is well below fifty percent, thus creating a substantial RNS that would need to be filled, primarily with baseload renewables.

c. Base Portfolio

We believe that a cost-based Base Case Portfolio for satisfying the RNS is the correct approach.

d. High DG Portfolio

We agree with the proposed approach for developing a high-DG portfolio in the Straw Proposal.

e. Sensitivities

The GPI is in favor of constructing and studying an environmentally-preferred portfolio of RPS resources. However, we have expressed our concerns in the past round of the LTPPs about the environmental scoring methodology that has been developed for these purposes, and we continue to have concerns about the particular methodology being used (see relevant GPI filings in R.08-02-007 and R.10-05-006).

f. Long-term Target

We endorse the approach proposed in the Straw Proposal for extending the renewables portfolios out to 20 years. In performing the linear regressions to 40% RPS by 2030 in the case of the second scenario proposed in the Straw Proposal (bullet point no. 2), we suggest scaling up proportionately across all resource areas and types, as is proposed for maintaining the 33% portfolios, rather than modeling incremental resource additions selected by low cost for years 11 – 20.

21. Retirements

As in the case of estimating the expected supply that will be available in the future from the current portfolio of renewables projects-in-development, rather than trying to predict retirements on a project-by-project basis, based primarily on generator lifetime, we recommend using a probabilistic approach. In our opinion, the number of years of in-service operation for a generating asset is not a good predictor of when it will be retired. Retirement decisions are usually made based on economic factors, and on an owner's assessment of the physical condition of a particular facility. This is information that is simply not available to a public process like the LTPP. A statistical approach, as illustrated in the table above, is the most reasonable methodology to use in the kind of transparent analysis that is desired for the LTPPs.

28. What is a reasonable number of total scenarios + sensitivities to consider?

a. Briefly describe the scenarios and sensitivities that are most important to consider.

Our comments on the renewables assumptions above discuss the three renewables portfolios proposed in the Straw Proposal, plus a fourth portfolio that we propose that would be a baseload renewables portfolio. All of these portfolios are candidates for the 33 percent of the grid-electric supply in 2020 that is expected to be renewable. Extension of the 33-percent renewables analysis to 2030 is then proposed using two scenarios, one keeping renewables at 33 percent, the other increasing renewables to 40 percent. The complement to these two scenarios requires two non-renewables portfolios for 2030, one supplying 67 percent of the needed supply, and the other supplying 60 percent.

In addition to these two renewables scenarios, the LTPP analysis needs, at a minimum, three demand-based scenarios (high, medium, low), two scenarios for the OTC issue (full replacement, minimal replacement), two scenarios for the future-of-nuclear-power issue (continued use of existing nuclear capacity, full retirement of existing nuclear capacity), and two scenarios for the future of greenhouse-gas reduction efforts in the state (AB 32 targets for 2020 maintained through 2030, enhanced state efforts to control greenhouse gases post-2020, for example in accordance with state policy goals for a 90-percent reduction of emissions from 1990 levels by 2050).

Dated May 31, 2012, at Berkeley, California.
Respectfully Submitted,



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