BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Continue Implementation and Administration of California Renewables Portfolio Standard Program.	Rulemaking R.11-05-005

COMMENTS OF THE GREEN POWER INSTITUTE ON THE STAFF PROPOSAL ON SB 1122 IMPLEMENTATION

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Pursuant to the November 19, 2013, *Administrative Law Judge's Ruling Seeking Comments on Staff Proposal on Implementation of Senate Bill 1122 and Accepting Consultant Report into the Record*, in Proceeding R-11-05-005, the **Order Instituting Rulemaking to Continue Implementation and Administration of California Renewables Portfolio Standard Program**, the Green Power Institute (GPI), a program of the Pacific Institute for Studies in Development, Environment, and Security, provides these *Comments of the Green Power Institute on the Staff Proposal on SB 1122 Implementation*. Our *Comments* are focused on the subset of the SB 1122 market that will use solid biomass fuels. We make general remarks about the small bioenergy market, and address selected questions posed in the *Ruling*.

General Observations on the Staff Proposal

As a preliminary matter, we wish to make the observation that in order to successfully implement SB 1122, the utilities will almost surely have to procure some very expensive power, particularly for projects using fuels in categories two (dairy and ag) and three (forest), as specified in the legislation. The consultant's report (Black & Veatch) on small bioenergy systems, which by the Nov. 19 Ruling is now a part of the record of this proceeding, projects costs of electricity production well north of $150 per kWh in categories two and three, which is nearly twice the cost of other FIT systems (mostly PV), 20 percent higher than the proposed starting ReMAT price in the Staff Proposal, and twice the cost of electricity production at existing large-scale bioenergy generating facilities, which use the same kind of fuels.

In addition to requiring the installation of generators whose cost of energy production is unimaginably high in today's marketplace, SB 1122 has a serious structural flaw that will further hinder its successful implementation. The legislation segments the SB 1122

bioenergy market into three categories based on the source of the resource – biogas from conventional sources (wastewater treatment, municipal waste diversion, food processing, codigestion), bioenergy from dairy and other agricultural sources (solid-biomass fuels), and bioenergy from sustainable forest management. A more useful way to segment the bioenergy market would be to base it primarily on the two distinct segments of the marketplace that have long been recognized in the RPS program: biogas, and biomass (solid-fuel). Lumping dissimilar and unrelated technologies like biogas from dairies and solid biomass from agricultural residues into the same category, while splitting biomass from agricultural sources and biomass from forest sources into different categories, could hinder the successful implementation of the legislation. We understand that the structural flaw we are describing is enshrined in the statute. Our purpose in discussing it is to help bring it to the attention of the Commission and the parties, so that we can collectively find ways to work around the limitations of the legislation, even as we struggle to implement SB 1122.

One of the ways that the poor categorization of bioenergy resources in the legislation could hinder the achievement of the goals of SB 1122 is by the fact that it has the potential to unnecessarily limit the access of generators to fuels that might become available in the marketplace. It is important to understand that a biomass facility does not depend on a specific source of fuel in the same way that a fossil-fuel facility does, such as a specific coal bed or gas pipeline. Biomass facilities, with the exception of facilities that have a dedicated source of fuel, procure their fuel from a constantly shifting mix of sources. A long record of experience in the California marketplace clearly demonstrates that the eventual fuel supply used by a biomass generator can vary substantially from the pre-construction projections for that facility, and indeed can change over the course of the lifetime of the facility as market conditions change. Denying a forest-fueled generator the right to use solid ag-residue fuels, or vice-versa, could hamper the operations of the very facilities that the legislation is intended to promote.

Bioenergy Categories

The reason for separating dairy biogas into a category distinct from other SB 1122-qualifying sources of biogas is evident, given the relative economics (see Table 1-2 in the Black and Veatch consultant's report). It is less clear that there is a compelling need for small biomass generators using qualifying forest fuels and qualifying agricultural-residue fuels to have to be considered in separate categories, as the technologies are identical, and once built, a generator in either category would be readily able to use fuels from the other category. The slightly higher average cost of producing and delivering forest fuels, as compared with agricultural-residue fuels, in the consultant's report is the only difference between the two categories of systems. The biggest problem with the categorization specified in the legislation is that there is no rational reason for putting dairy manure projects and solid-fuel ag-residue projects into the same category. Nevertheless the legislation has done all of these things, and it becomes the Commission's job to sort it out and craft a successful program.

In order to devise a workable system within the confines of the letter of the statute, we propose using the following four categories for SB 1122 projects:

Category 1	Biogas from listed sources
Category 2a	Biogas from dairy manure
Category 2b	Biomass from agricultural residues
Category 3	Biomass from forest residues

Categories 2a and 2b would share the 90 MW allocation for the statute's category 2 (dairy and other agricultural sources), but pricing would be separate.

Allocations Among Categories

The proposed overall allocation of the 250 MW of capacity mandated by SB 1122 among the three IOUs based on peak demand is straightforward and, in the opinion of the GPI, a reasonable approach. However, due to the RPS program's denomination in energy units rather than in capacity units, in our opinion it would be preferable to allocate the SB 1122

capacity among the IOUs based on retail sales, rather than peak demand. We suspect that the two approaches, peak-load based vs. retail-sales based, would yield very similar results.

While we are comfortable with either a demand-based or retail sales-based approach to the overall allocation of the 250 MW of SB 1122 capacity among the IOUs, we are not in agreement with the additional sub-allocation of each IOU's mandate among the three biomass categories. In our opinion, in view of the difficult economics faced by all of these systems, one of the things that the Commission can do to keep program costs at a minimum is to build maximum flexibility into the program. We note that the staff proposal prices systems in each fuel category on a statewide basis. In our opinion that is a step in the right direction (see below, Staff Proposal on Pricing). We would like to see a similar statewide approach taken in distributing the allocation of the 250 MW among the three bioenergy categories, as specified in the legislation. Rather than setting rigid allocations in each bioenergy category for each IOU, we would prefer to let project proponents determine the optimal statewide distribution of where projects in each category should be located, and impose only overall MW mandates on the utilities, to be filled-in by category as project proposals dictate.

In looking at the allocations that are proposed in the staff proposal, we are concerned in particular that too much of the 50 MW of category-3 projects (forest fuels) are allocated to PG&E. Although it is obvious that the majority of such projects are likely to fall within PG&E's service territory, allocating 94 percent of the 50 MW of forest-fuels projects to PG&E undervalues the contribution that these kinds of projects could make to reducing the risks of catastrophic wildfires in some of the state's highly-vulnerable southern forests. Moreover, the allocations of forest-fuel projects to SCE (2.5 MW), and especially SDG&E (0.5 MW), are smaller than the maximum size facility allowable under the program. As the consultant's report points out, solid-fuel biomass projects that are designed to qualify for SB 1122 are likely to be the full 3 MW allowed, in order to take advantage of scale economies to the maximum extent possible. In our opinion, if the Commission does adopt a sub-allocation for each IOU among fuel categories, at the very least SCE should be allocated two 3-MW forest-fuel facilities, and SDG&E should be allocated one.

Compliance with Bioenergy Category

In the opinion of the GPI, the Staff Proposal is overly punitive in its treatment of compliance requirements with respect to biomass category. This is equally true for generators that use biogas, and for generators that use biomass. In these Comments we argue the case for increased flexibility for biomass-fired generators, but equivalent arguments apply to biogas generators.

The approach in the staff proposal, as we understand it, is designed to permanently lock a facility into the bioenergy category that it claims in its original application. As we pointed out in our general remarks above, there can be absolutely legitimate reasons why even a well-planned facility would want to change its fuel mix over the course of time. We strongly urge the Commission to reframe this section of the proposal so that the objective is to treat fairly both the generator and the purchasing utility in the event that a facility, at some point during its operating lifetime, finds it necessary to procure more than 20 percent of its fuel from an out-of-category, SB 1122-qualifying source. One possible solution would be an adjustment to the project's tariff, based on the actual fuel mix used each year and the tariff rates that were in effect at the time that the contract was finalized for both the fuel category in which the project was bid, and the out-of-category fuel that is now being utilized.

We offer an example of how this could work. Assume that a facility obtains an SB 1122 contract in the forest-fuels category, and that the ReMAT rate in this category at the time of contract execution is $175 /MWh. Assume further that the tariff rate for the ag-fuels category at the time of contract execution is $150 /MWh. Finally, assume that five years into operations of the project a change in regulatory laws limits the access of the facility to some of the forest fuels it was expecting to use. At the same time the facility has the opportunity to obtain orchard prunings that would otherwise be open burned, and it uses this fuel source for half of its fuel needs, while continuing to obtain the other half in the form of forest fuels. Based on this fuel mix, their tariff, originally $175 /MWh based on forest fuels, is adjusted to $162.50 /MWh ([150+175]/2) based on the new 50/50 fuel mix.

Using this approach there is no need for penalties to be imposed for fuel switching. The facility operator would be free to procure whatever fuel is available in the marketplace, and the operator would know exactly how his tariff would be adjusted in the event that his fuel mix shifted to being more than 20 percent from out-of-category, but still SB 1122-qualifying, fuel sources.

The GPI supports annual fuel reporting by the generators, as proposed in the Staff Proposal. Larger biomass facilities in California are subject to annual fuel-reporting requirements, as well as emissions-reporting requirements. Consistent with the structure of the tariff, as dictated by statute, equivalent reporting requirements will be appropriate for these facilities. Due to the high intrinsic costs of operating these facilities it is incumbent on the Commission to keep the reporting requirements as simple as possible, consistent with supplying the information that is necessary to ensure compliance with the program rules and requirements.

Staff Proposal on Pricing

The GPI strongly supports the Staff Proposal's proposal to limit the ReMAT tariff differentiation into single, statewide prices for each statutorily-determined category of bioenergy. The most fundamental reason is that in order to function efficiently, the ReMAT mechanism needs multiple projects, and there is every reason to believe that in at least some of these categories if the Staff Proposal's opening tariff rate is used there will be at most a handful of projects, even on a statewide basis. Moreover, the numbers themselves tell the story. Consider the category of forest fuels, for which the statutory allocation is 50 MW statewide. At a project size of 3 MW the entire allocation can be satisfied by a total of 17 facilities. Assuming that the projects are staged over time, even statewide it will be difficult to get more than 5 into the queue at any single time, which is the minimum required for the ReMAT to adjust its price.

We disagree with the Staff Proposal that the initial ReMAT tariff in each of the three categories should be set at $124.66 /MWh. The Black and Veatch consultant's report,

which was commissioned for the express purpose of providing expert engineering analysis for use in carrying out the activities in the scoping memo for this track of the proceeding, shows the projected costs of electricity production in each of the relevant categories and subcategories in Table 1-2, on page 1-5 of the report. According to the results in the table, the very best of the solid-fuel biomass generators, ag or forest residue based, will have a cost of electricity production that is $138 /MWh, and the average biomass generator will have a cost of electricity production that is greater than $200 /MWh. Based on the information in the Black and Veatch report, it is highly questionable whether any real, viable solid-fuel biomass projects will apply to the program if the initial tariff level is set at $124.66 /MWh. For example, if the forest-fuels category begins at the Staff Proposal level of $124.66 /MWh, while according to Black and Veatch even the best projects need more than $150 /MWh in order to be able to operate viably, the it is likely that rate will never be able to be adjusted high enough to elicit much commercial interest using the ReMAT mechanism, at least not within the timeframe of the legislation, which requires 250 MW of qualifying bioenergy projects by 2020.

The proposed ReMAT starting price of $124.66 /MWh, as we understand it, is based on a small number of biogas project bids into previous, all-renewables ReMAT auctions. Based on the findings in the Black and Veatch report, which was conducted for the purpose of informing this proceeding, that price is simply not responsive to the needs of dairy digester projects, nor of small solid-fuel biomass generators. Our recommendation for setting opening prices in the various categories would be to use the information in the Black and Veatch report, specifically the information in Table 1-2. Our recommendation would be to split category two into two ReMAT subcategories, as detailed above (Bioenergy Categories), and to set the initial prices for each of the four categories at levels that are the average of the low and medium estimate for each category in the table. Applying this approach produces the following opening ReMAT prices:

Category 1 (biogas from listed sources)	$121.50 /MWh
Category 2a (biogas from dairy manure)	$253.00 /MWh
Category 2b (biomass from ag residues)	$171.00 /MWh
Category 3 (biomass from forest residues)	$183.50 /MWh

While we are concerned as to whether there will be a sufficient number of projects for the ReMAT mechanism to work efficiently for the bioenergy segment of the FIT marketplace, we believe that if realistic prices are offered as a starting point in each category, it has the best-possible opportunity to work. On the other hand, if unrealistically low starting prices are offered, it is unlikely that the ReMAT mechanism will be able to launch the market for small bioenergy systems in a timely manner, which is the overall objective of SB 1122.

Conclusion

The Nov. 19, 2013, Staff Proposal for the implementation of SB 1122 represents a big step forward, but in the opinion of the GPI there is a considerable amount of work to be done in order to produce a program that will work. The problem is that SB 1122-qualifying projects, particularly in statutory categories two and three, have costs of electricity production that are well above current market rates. The Commission needs to take all possible steps to keep the program as flexible and simple as possible for the generators, in order to avoid pushing project costs even higher due to imposing unnecessary compliance costs.

Dated December 20, 2013

Respectfully Submitted,

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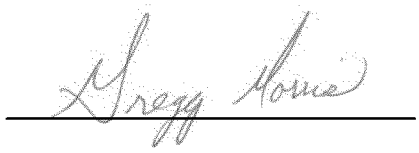
VERIFICATION

I, Gregory Morris, am Director of the Green Power Institute, and a Research Affiliate of the Pacific Institute for Studies in Development, Environment, and Security. 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 Green Power Institute on the Staff Proposal on SB 1122 Implementation*, filed in R.11-05-005, are true of my own knowledge, except as to matters which are therein stated on information or belief, and as to those matters I believe them to be true.

Executed on December 20, 2013, at Berkeley, California.



Gregory Morris