

Comments of the Green Power Institute on the 2009 IEPR – Renewable Energy Feed-in Tariffs for Renewable Energy Projects over 20 MW

CEC Docket Nos. 09-IEP-1G, and 03-RPS-1078.

Joint IEPR and Renewables Committee Workshop ‘Exploring Feed-in Tariffs for Renewable Energy Projects over 20 MW’

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The Green Power Institute (GPI) respectfully submits these *Comments of the Green Power Institute on the 2009 IEPR – Renewable energy Feed-in Tariffs for Renewable Energy Projects over 20 MW*, in Docket numbers 09-IEP-1G, and 03-RPS-1078, in connection with the 2009 IEPR Workshop Exploring Feed-in Tariffs for Renewable Energy Projects over 20 MW. We offer comments on the topics of problems with the existing RPS program, efficacy of feed-in tariffs (FIT), ramping down FIT tariff rates, and FITs and state biomass policy.

The RPS Program is not Working

California’s renewables-portfolio-standard program (RPS) was enacted in 2002, and has been in operation since 2004. When the program started up, the three large California IOUs had a combined 14-percent renewable content in their energy-supply mix. The RPS program requires a minimum one-percent annual increase in the renewables content

for all retail sellers, with all retail sellers required to reach 20 percent in 2010. In fact, in 2008 the three large IOUs had a combined 13-percent renewable content, which is less than what they had when the RPS program began. Moreover, as shown in Figure 1, the IOUs are projecting, in their March 2009 *RPS Compliance Reports* to the CPUC, that they will reach 15½-percent renewables in 2010, far from the statutorily-required 20 percent. To make matters worse, in our view the utility projections are overly optimistically. But even if they are right, the IOUs’ combined RPS-procurement projections, which run through 2011, do not provide any reason for confidence that they will reach the 20-percent benchmark in 2013, as many now expect them to do.

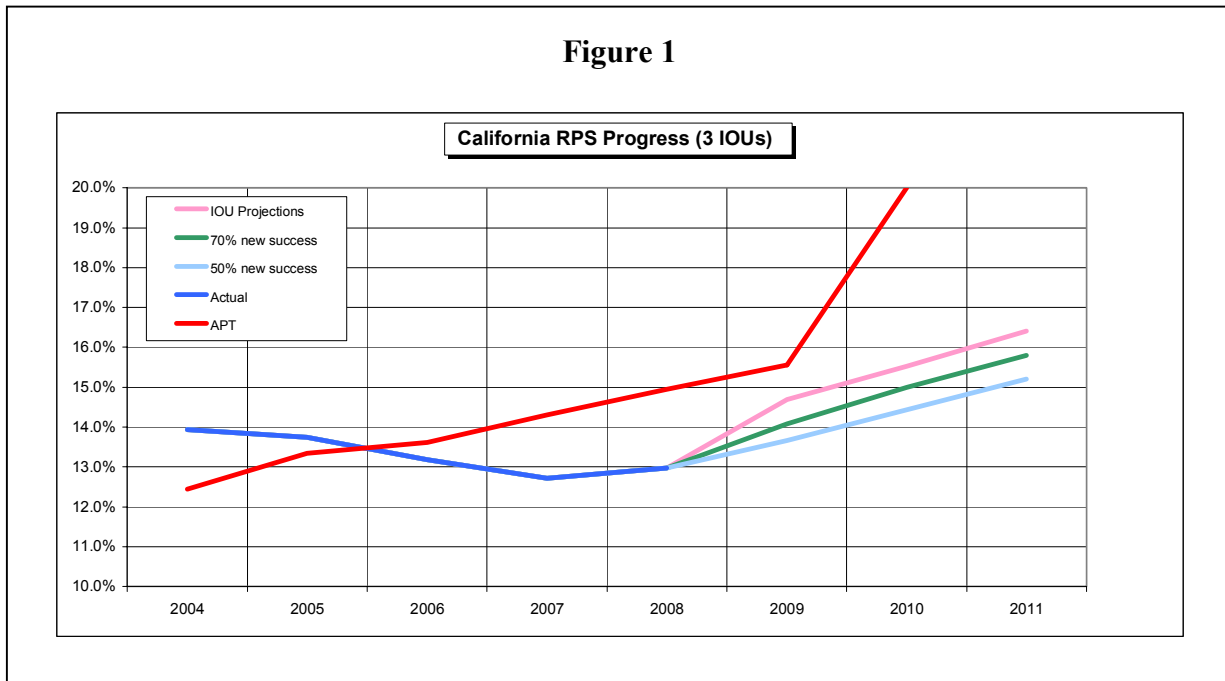


Figure 1 shows the collective progress that the three large IOUs have made on their RPS-program obligations since the inception of the program. Their collective annual procurement targets (APT) are shown in red, and their collective procurement performance is shown in blue (2004 – 2008). The reality is that in aggregate the three large IOUs have lost ground every year that the RPS program has been in effect. There are a variety of reasons why this has happened, some of which, such as transmission

constraints and permitting issues, are not directly connected to tariff levels or power-purchase agreements (PPA). However, there are indirect connections between a project's power-sales price and all other aspects of project development, in the sense that projects that have a selling price that includes an adequate contingency margin will be better able to overcome unexpected development hurdles than a project with a PPA that has no provision for contingencies.

Figure 1 shows three projections for future (2009 – 2011) IOU-aggregate renewables procurement in California. The first projection (pink) is based on the projections made by the IOUs in their 2009 *RPS Compliance Reports*. The other two projections (green and light blue), which were made by the GPI, are based on discounting the IOUs' projections of the amounts of new renewables that will be brought online in their portfolios over the next three years. We show the discounted projections because in the past, projections of future renewables procurement as reported in the annual *RPS Compliance Reports* by the IOUs have consistently and systematically overestimated the amounts of new renewables that would actually be procured, and we have every reason to believe that the 2009 IOU projections, like past IOU projections, will prove to be too optimistic.

The existing RPS program run by the CPUC for jurisdictional retailer sellers is based primarily on competitive solicitations for the awarding of RPS PPAs. This program has produced a large portfolio of PPAs, but the success rate for these PPAs, as measured by new operating infrastructure on the ground, so far has been very poor, well below the level of 70 – 80 percent that has been observed for renewables projects in the past (see, for example, Kema, Inc., *Building a "Margin of Safety" in Renewable Energy Procurements: A Review of Experience with Contract Failure*, consultant report to CEC, report no. CEC-300-2006-004, January, 2006). We believe that at least part of the problem is directly related to the RPS PPAs themselves, and the process that produces them. Developers need a quicker, simpler, and more transparent process that culminates in financable PPAs.

The RPS procurement performance of the three large IOUs over the past five years is troubling. However, even more troubling, from the perspective of achieving the objectives of the RPS program on a statewide basis, is the fact that the IOUs are closer to the 20-percent benchmark than are the other major classes of retail providers in the state, notably the publicly-owned utilities, and direct-access providers. That is why the GPI has concluded that the existing RPS program, in all of its facets, is not working very well, and the outlook for the achievement of the state's long-term renewables objectives is not promising unless the program is reformed and streamlined. Thirty-three-percent renewables content in the state's electricity supply can be achieved by 2020 in California, but it is not likely to be achieved under the status quo. Feed-in tariffs for projects larger than 20 MW, if appropriately designed, can be a significant part of the solution.

The Market for Renewable Energy in California is Not Competitive

One of the fundamental design elements of California's RPS program is based on an underlying assumption that the use of the competitive marketplace for the allocation of PPAs for new renewable-energy projects will allow the program to be implemented at the lowest-possible cost to ratepayers. What has actually happened is that renewables growth, which by statute is required to increase annually at a rate that is at least one-percent greater than the rate of growth in retail sales, has not even kept up with the growth in retail sales in any of the past five years during which the RPS program has been in effect. Two fundamental problems have become apparent with the current approach. The first problem is that the practice of employing a market-price referent (MPR) in the RPS-solicitation process, which is statutorily based, has had the unintended consequence, according to the IOUs and many other observers, of discouraging competition in the RPS solicitations by providing a target price for bidders to shoot at.

The second problem with basing RPS-program cost control on market competition is more structural in nature. With retail providers in California currently experiencing serious renewables-procurement deficits, there is a serious imbalance in the demand for renewable energy in the California marketplace in comparison with its supply. At the

same time, entities across the WECC, as well as nationally and internationally, are increasingly emphasizing renewables, including enacting their own ambitious programs and mandates. This is relevant because the marketplace for many of the kinds of equipment needed for renewable-energy generation is global.

There is every reason to believe that there will be a serious excess of demand in comparison with the supply of renewable energy for the foreseeable future, at the state, regional, national, and international levels. This means that the market for renewable energy in California is **not** going to be competitive, in the economists' sense of the term, for some time to come, quite possibly not within the timeframe that has been set for the state to achieve the RPS stretch goal of 33-percent renewables, and compliance with AB 32 (2020). Under these circumstances, the GPI believes that it important for the state to redesign its RPS program to function in a marketplace that, from a structural perspective, is not operating competitively. Feed-in tariffs for all renewable-energy projects, if appropriately designed, can be an important part of the solution.

A Feed-In Tariff Can Contribute to an Improved RPS Program for California

In the opinion of the GPI, properly structured feed-in tariffs can be an effective contracting option for both the maintenance of existing renewable generating capacity (many existing generators will see their current PPAs expire over the next several years), and for the development of new renewable generating capacity in California. The standard-offer contracts of the 1980s had their flaws, but it is a fact that they were very successful in spawning the development of most of the existing fleet of renewable-generating facilities in the state. We believe that the state's RPS program would benefit if effective feed-in-tariff contracts were made readily available to project developers in both the size ranges of 1.5 – 20 MW, and greater than 20 MW.

At the present time sanctioned FIT contracts are only available for projects that are up to 1.5 MW in size. The CPUC is considering extending the FIT program to projects up to 20 MW in size, although their current draft proposal is to limit the program to projects up to 10 MW. The CEC, meanwhile, is considering extending the FIT program to facilities

of 20 MW and up. This fractured jurisdiction does not help matters. There is no compelling rationale for limiting the FIT program to generators of 10 MW or to 20 MW capacity, or of any capacity, for that matter. If they are RPS-qualified generators, then the state should be doing everything it can to facilitate their development, and one promising option is the FIT program.

Some have argued that generators larger than 20 MW are more complicated, because they are required to obtain Participating Generator agreements with the CAISO. However, CAISO requirements pertain regardless of the type of PPA that a project holds (e.g. FIT vs. competitive RPS), and all generators that participate in the FIT program will have to comply with all applicable rules and regulations, so there is no reason to exclude generators larger than 20 MW from a FIT program. A FIT program provides much greater simplicity and transparency in the contracting process than is possible with the existing competitive-solicitation process.

The key to the ultimate success of these contracts in the marketplace, of course, is the price that is offered as the feed-in tariff rate. The tendency so far in California has been to use the MPR as the feed-in tariff price for the limited FIT programs that have already been approved. The market response to FITs based on the MPR has been anemic, to say the least. The MPR, by definition, represents the market price of energy for brown (conventional) power. Renewables often need above-conventional-energy-market prices in order to be viable, a premium that can be justified by the environmental and other non-market benefits provided by renewable energy, such as rural economic-development opportunities, and greenhouse-gas reductions associated with biomass-energy production (see, e.g., Morris, G., *Bioenergy and Greenhouse Gases*, Report of the Pacific Institute, May 15, 2008.). These extra-market benefits are conveyed to the purchasing utilities by RPS PPAs, along with the energy, in the form of the RECs. If the RECs are not paid for, then basic economic theory tells us that they will be undersupplied in the marketplace.

The feed-in tariffs that have been successful in Europe have offered a healthy renewable premium. The MPR includes a modest greenhouse-gas adder to account for the future

cost of generation by a proxy CCGT in a carbon-constrained world, but the adder at its present level is insufficient to make feed-in tariffs based on the MPR an effective RPS contracting alternative. The proof that the MPR is inadequate is that offerings in California based on the MPR have generated few contracts, and even less energy. It is a basic tenet of economics that the higher the price in a feed-in tariff offering, the greater the magnitude of the response. Of course, the price offered for renewable electricity has to be balanced against the consumer-cost impact. The CPUC's job is to determine what is a just-and-reasonable rate, and they know how to do this. If the tariff price for FITs in California is to be MPR-based, a generous renewables adder needs to be employed. A better option, in our opinion, is to base the tariff rate on the cost of renewable energy generation, with resource-specific rates, in which case a renewables adder is not needed.

California is well endowed with renewable resources, but it is a challenging place indeed in which to develop renewable-energy-generating projects. FITs can be a valuable tool to use in streamlining the RPS contracting process, and in producing PPAs for renewable-generating projects that can be successfully financed, built, and operated. FITs can even be made generous enough to allow developers an adequate margin to absorb some amount of unexpected costs in responding to routine project-development challenges. One of the attractive features of FITs is that they can help to prevent some of the gaming of the system that currently plagues the competitive-solicitation process, such as developers under-bidding their projects in order to get on the short list, while intending to later obtain contract amendments needed to make their projects viable.

By producing simpler and stronger PPAs, FITs could certainly contribute to a more functional RPS program in California, but they cannot correct everything that is wrong with the program. It is important for the state to deal with a host of barriers that are hindering the expansion of California's renewable-energy-generating infrastructure, including the lack of adequate transmission capacity, and permitting processes that are virtually impenetrable.

Opponents of FITs sometimes predict that a FIT with a workable tariff will engender too much interest on the part of developers. It is difficult to imagine that the risk of oversubscription of a feed-in tariff offering for renewable energy is a serious threat. The state needs to both sustain the existing fleet of renewable generating capacity in the state, and add thousands of MW of new renewable generating capacity over the coming decade. It might make sense to impose some maximum subscription levels on new and expanded renewables feed-in tariff offerings, but any such limits should anticipate a reasonable level of project development failure, and allow for significant growth in the state's renewable generating infrastructure.

Ramping Down FIT Tariff Rates

One of the features that have been incorporated into some FIT programs is a scheduled ramp-down over time in the tariff rate. Indeed, California has used an equivalent mechanism in the CSI program, ramping-down the buy-down amount provided by the program (\$ per W) as certain pre-defined program targets (kW installed) are met. Ramp-down schedules have their theoretical underpinnings in the learning curves that characterize the development of technology. Relatively new (e.g. emerging) technologies can be expected to have steep learning curves (rapid advances in efficiency and cost), while mature technologies can be expected to have relatively flatter learning curves.

The renewable-energy universe includes a mixture of emerging and mature technologies. Ramp-down schedules for FIT tariff rates might make sense for the emerging renewable-energy technologies, but may not be appropriate for some of the more mature renewable energy technologies. For example, biomass conversion to electricity via the conventional steam cycle has been in use for 100 years. For this technology the learning curve appears to be flatter than the increasing requirements for emissions controls, and real system costs for new biomass generators are no longer decreasing over time.

Using Feed-In Tariffs to Implement Ex. Order S-06-06 on Biomass

The latest rounds of RPS solicitations in California indicate that an increasing number of projects are being offered in each solicitation cycle. However, biomass and biogas projects are becoming increasingly under-represented in the mix of new projects, which means that their future proportional contribution to the state's renewable electricity supply will inevitably decline from the present level. To make matters worse, the funding in the CEC tier 1 account for biomass generators for 2009 is running out already as a result of the depression in SRAC that has been a component of the current recession, which means that many of the existing biomass facilities will not be able to operate profitably when the winter season arrives, and some may choose to curtail or cease operations. This is exactly the situation that the Governor's Executive Order on biomass, S-06-06, seeks to prevent.

SCE, undertaking a voluntary initiative in 2006 in response to the Executive Order on biomass, created a feed-in-tariff offering for biomass and biogas systems up to 20 MW in size, an offering that remains open today (now extended to all renewables). However the SCE offering, which uses the MPR as the tariff price, has not been widely subscribed (the offering block is 250 MW, but after more than two years only a few small projects with a collective capacity of less than 20 MW are reported to be obtaining PPAs).

As part of the effort to implement Executive Order S-06-06, we believe that both the CEC and CPUC should consider creating special statewide feed-in-tariff offerings exclusively for biomass and biogas facilities. The SCE biomass feed-in tariff offering, whose tariff is set at the level of the MPR, has not attracted very much interest. Our guess is that an offer that includes a tariff that is sufficient to make the development of new biomass projects viable will attract a good deal of interest. In addition, it would be desirable to develop a feed-in tariff for existing generating facilities that seek new contracts when their current contracts expire, or sooner, if it is determined that the current contracts are not viable in the absence of TIER 1 funding. For solid-fuel biomass facilities, which are unique among renewables in having a significant fraction of their total cost of electricity production in the category of variable operating cost (mostly fuel

cost), it might be possible to develop feed-in tariff contracts that have elements of load following that would increase their value to the utility at little or no cost to the biomass generator.

Conclusion

The Commission should support the extension of the feed-in tariff program to renewable power projects larger than 20 MW in size. Tariff rates should be based on the cost of renewable energy generation, segmented by resource type, and possible by other factors such as facility size, location, and whether it is new vs. existing. In particular, the Commission should develop special feed-in-tariff offerings for biomass and biogas generators, in order to help implement the electricity-sector provisions of Executive Order S-06-06.