Bay Area Municipal Transmission Group's Comments on the CEC Staff's CEC Draft Renewable Power in California: Status and Issues

October 5, 2011

The Bay Area Municipal Transmission Group[1] (BAMx) appreciates the opportunity to comment on the California Energy Commission's (CEC) Draft Renewable Power in California: Status and Issues (Draft Report). [2] These comments are based on the CEC Draft report as well as the related CEC workshop conducted on September 14, 2011. We hope that our comments will be incorporated in the CEC staff's updated comprehensive strategic plan in mid-2012.

BAMx Appreciates the CEC's Efforts

We applaud the CEC's decision to serve as the focal point for developing a comprehensive assessments and forecasts of all aspects of electric industry supply including, production, transmission, distribution, demand, and prices. We found the CEC report to be most informative in several areas. We believe CEC is the proper agency in the State government to accept the role for establishing quantities of existing and future renewable generation needs for others to use in various studies, including important ones that determine future infrastructure needs. The CEC Staff should be congratulated for their initial efforts described in their draft paper and in their presentations at the Workshop.

In particular, we acknowledged the CEC staff efforts in developing and compiling the data in the following areas.

- In-State Existing Renewable Capacity and Generation;
- Development of Range of Renewable Net Short Estimates for 2020;
- Preliminary Regional Targets for 8,000 Megawatts of New Renewable Capacity by 2020;
- Reporting of Major In-State Transmission Projects for Interconnection and Deliverability of Renewable Generation in California; and
- Identification and reporting of the Renewable Integration Issues and Reporting of the Number of Efforts Underway to Address Them.

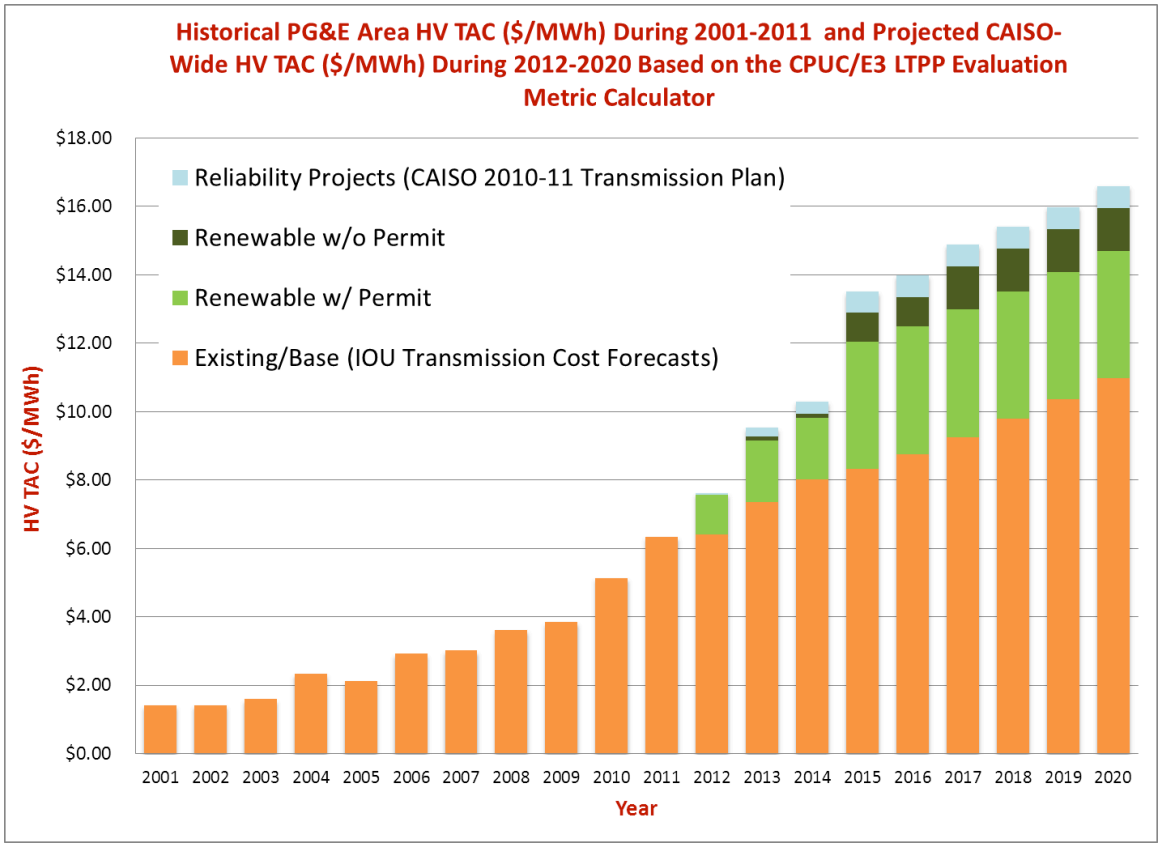
[1] BAMx consists of Alameda Municipal Power, City of Palo Alto Utilities, and the City of Santa Clara's Silicon Valley Power.

[2] CEC-150-2011-002 , August 2011.

Lack of Cost Assessment in Meeting 33% State RPS Goal

As noted in the CEC Draft report, when signing the 2011 RPS legislation, Governor Brown indicated that the 33 percent by 2020 RPS target should be considered a floor rather than a ceiling. BAMx appreciates that assessment, but believes that the coordinated efforts among the State Agencies are necessary to achieve the State 33% RPS goal by 2020 in a least cost and environmentally-friendly manner. As far as transmission infrastructure planning and permitting is concerned, we believe that the lack of coordination as well as lack of cost containment measures implemented by the concerned State Agencies will result in significantly high transmission cost to California ratepayers. As shown in Figure 1 below, the current High Voltage (HV) Transmission Access Charge (TAC) of little over $6/MWh is expected to go over $16/MWh if all the major transmission projects for interconnection and deliverability of renewable generation under the CAISO's 2010-11 transmission plan are constructed.[3]

Figure 1: Historical and Projected CAISO High Voltage Transmission Access Charge ($/MWh)



[3] These projects are consistent with the list of transmission projects included in *Table ES-5* of the Draft Report on page 10.

Frequently transmission costs are trivialized as only a fractional component of the overall combined cost of energy. However, as shown in Figure 1, the California ISO ratepayers are expected to pay "incrementally" in billions of dollars per year purely for transmission-related costs.[4]

The State has decided to address this issue of cost containment in SB 2 (1X), Section 16, p.18:

> "(4) The commission shall adopt, by rulemaking, all of the following:
> (A) A process that provides criteria for the rank ordering and selection of least-cost and best-fit eligible renewable energy resources to comply with the California Renewables Portfolio Standard Program obligations on a total cost basis. This process shall take into account all of the following:
> (i) Estimates of indirect costs associated with needed transmission investments and ongoing electrical corporation expenses resulting from integrating and operating eligible renewable energy resources."

Although the CPUC has the major responsibility to implement cost containment, the CEC needs to recognize its responsibility to assist in this effort. We are surprised how little cost containment is addressed in the current draft report.

As part of that effort, with rapidly declining prices for PV installations, we need to recognize the likely cost savings to ratepayers if we do not grossly exceed the 33% goal until after 2020. Rapidly dropping PV prices should mean that the extra cost imposed to meet higher (beyond 33%) renewable goals will be more manageable in the future.

With cost containment and reducing environmental damage as goals, we believe it is very important for the transmission planning processes for Balancing Areas to create correct incentives for renewable generators to locate projects in locations that minimize total cost to ratepayers. The current process requiring all load to pay for transmission network upgrades caused by the location of large utility scale renewable projects in remote areas requiring major network upgrades does not provide incentives to connect to the existing transmission system closer to urban load centers. The California ISO (CAISO) is the only Regional Transmission Organization in North America for which an Interconnecting Customers (IC) does not have to pay for the transmission network upgrades caused by its renewable generation project. Currently the CAISO generation interconnection queue has more than 75,000MW of generation in its queue[5], which is driving the unrealistic level of transmission network upgrades as determined by

[4] Given the CAISO-wide annual load of nearly 210TWh, the CAISO customers will incrementally pay more than $2 billion (210,000,000MWh times $10/MWh) per year towards HV TAC in 2020.

[5] "Briefing on Renewable Generation in the ISO Generator Interconnection Queue," A Memorandum to the ISO Board of Governors from Keith Casey, Vice President, Market & Infrastructure Development, July 6, 2011.

the CAISO's generation interconnection (also known as system impact or "cluster") studies. Under the CAISO's existing tariff, it is required to interconnect all the generation requesting interconnection- the transmission network upgrade cost of all these projects would have to be potentially paid for by the ratepayers. As mentioned on p. 97 of the Draft Report, the California ISO has proposed a new stakeholder initiative that integrates the Transmission Planning Process (TPP) and the Generator Interconnection Process (GIP). This initiative would implement an economic assessment that would require an IC to pay for the network upgrade that it causes, if the project is neither identified as economic nor policy-driven under the TPP.[6] If this initiative were not made effective to all the generation in the CAISO interconnection queue (which is the CAISO's current proposal), it would mean that the transmission cost could potentially go up significantly higher than those projected in Figure 1. Afterall, those projections were based upon building only enough renewables to meet the 33% goal.

BAMx believes that it is critical to consider not only the generation costs, but also other costs including transmission and integration costs in selecting renewable generating resource. In Attachment 1, we have included an example of cost allocation associated with distributed generation compared to remote large utility-scale renewable generation facility, which indicates that a DG resource could be more cost-effective relative to a utility-scale generation once you take into account the transmission and integration costs. This illustration suggests that appropriate pricing signals and cost allocation principles would be to allocate all transmission network expansion costs to the renewable generating resource, rather than to have all LSE loads pay for that network expansion.

BAMx urges the CEC to focus its attention on cost containment mechanisms in its updated comprehensive strategic plan.

Adequacy of Existing and Permitted Transmission to Accommodate 8,000MW of Utility Level or Central Station generation

From the Table ES-3 as well as Table, which shows the *Preliminary Regional Targets for 8,000 MW of New Renewable Capacity by 2020*, we can see that the existing and permitted[7] transmission with some truly minor upgrades,[8] can accommodate nearly 13,000MW of renewable generation. In other words, we already have more than adequate (60% excess) transmission infrastructure to accommodate the Governor Brown's goal of 8,000MW of utility-

[6] CAISO's Revised Straw Proposal on the *Integration of Transmission Planning and Generation Interconnection Procedures*, dated September 12, 2011.

[7] Permitted by the permitting agency- in these cases the CPUC under CPCN process.

[8] Excluding projects with large footprint and high capital costs such as West of Devers, Pisgah-Lugo and Coolwater-Lugo.

scale generation by 2020. This means that the State agency efforts need to be focused on achieving the Governor Brown's Clean Energy Jobs Plan goal of meeting the 12,000MW of Distributed Generation by 2020, not on building more, potentially stranded, transmission. The priority should therefore be on developing renewable DG resources. More than enough transmission has been built or is being built to accommodate additional utility-scale generation. A combination of utility-scale generation that can be accommodated on the existing/permitted transmission, In-State DG and out-of-State generation that can be delivered on existing transmission infrastructure provides a perfect recipe to achieve the 33% RPS goal by 2020. Therefore, we reject the thesis behind the following statement (p. 9-10) in the Draft report.

> "There are 13 major transmission projects critical to the interconnection and deliverability of renewable generation in California needed to meet the 33 percent by 2020 renewable mandate."

As stated earlier, we do not believe that some of the unpermitted transmission projects are needed to achieve the 33% RPS goal by 2020. We would be more than willing to further illustrate our understanding of why this statement is misleading.

Overreliance of In-State Renewable Resources

BAMx appreciates the objective of the Clean Energy Jobs Plan to create jobs within the State. Furthermore, we recognize that there needs to be more clarity about the amount of Tradable Renewable Energy Credits (TRECs) being used for RPS compliance. However, these two reasons should not lead to a conclusion that the entire 33% RPS goal needs to be met by only the In-State generation for the following reasons.[9] As indicated in the CEC Draft Report, nearly 25% of existing renewable generation for California is in the form of imports.[10] Moreover, as indicated in the Draft Report, a significant amount of Out-of-State (OOS) coal-fired generation is expected to retire (contract expiration) by 2020 and beyond.[11] As the Draft Report indicates, renewable generation will likely become a viable alternative to replace some of that generation. In summary, it is very reasonable to assume that a part of 33% RPS goal would be achieved most

[9] Letter from Michael Picker, Senior Advisor to the Governor for Renewable Energy Facilities, to Brad Nickell, Director, WECC Transmission Expansion Planning, August 3, 2011, "Reflecting Current California Trends and Policies in Regional Transmission Planning" suggests that 33 percent RPS goals can be met with in-state resources. Also, the CEC Report on p. 87 states
"California will rely largely on in-state resources to meet its 33 percent target for renewables."

[10] Table 5: Total Renewable Generation to Serve California Load in 2010 indicates that 9,781GWh of renewable imports relative to the total renewable generation for California of 39,796GWh.

[11] See *Table 8: Contracts for Coal-Fired Generation (GWhs)* on page 48 of the CEC Draft Report.

economically and with least environmental impact if OOS renewable resources, delivered over existing transmission, is allowed to freely compete with in State resources to meet our 33% goal.

Revise Need for Over-contracting

The Draft report suggests that utilities should be contracting approximately 30% more than the renewable net short to account for a contract failure rate of about 30%. During the September 14th CEC workshop, the IOUs (in particular, the PG&E representative) mentioned that the contract cancellations have dropped significantly in the recent past. The CEC should use the most updated data in their next update to provide accurate guidance to utilities. Moreover, the contract cancellations are caused not only due to failure on part of developers to secure adequate finances, but also due to lack of generation and transmission related regulatory, siting and other permitting approvals caused by the need to protect our environment. We believe that encouraging distributed generation and generation in resource areas with existing renewable generation and available transmission would lead to much lower future contract failure rates.

ARRA Funding as a Renewable Project Selection Criterion

We believe that the American Recovery and Reinvestment Act (ARRA) funding is a viable alternative financing vehicle for some renewable projects. It probably allows those projects that are approved by ARRA (DOE) to be more competitive. But we fail to understand why projects using one particular funding method should be a reason to favor generation projects, and/or their related transmission. ARRA funding should not be a primary criterion used in determining how the State reaches its renewable goals. BAMx believes that economic and environmental impact should be the selection criteria, not a financing method.

Renewable Net Short Applications

We encourage the CEC to continue their active involvement in the integrated renewable generation and transmission planning process. A development of renewable net short estimates effort should be a high priority activity for the CEC, as it will likely continue to be a major driver of large investments in infrastructure. BAMx believes that the CEC is best suited to develop a range of forecasts for " net short"[12] that cater to specific needs of the transmission planning entities such as the CAISO and the California Transmission Planning Group (CTPG). For instance, CTPG in their 2011 Work plan have collaborated with the CEC on using the updated net short estimates and underlying assumptions in their 2011 planning cycle. This is an important step in minimizing the risk of stranded or underutilized transmission infrastructure.

[12] See *Table 1: Range of Renewable Net Short Estimates for 2020* (p. 33) of the Draft Report.

Additional Comments

BAMx applauds the CEC for developing a wealth of information regarding the existing renewable generation and future targets. We urge the CEC to provide additional information on the following items in its updated comprehensive strategic plan.

1. Please identify the breakdown of the 12,000MW of DG goal in terms of wholesale-side versus customer-side DG.
2. Table ES-2 provides proposed Regional DG "soft" targets by 2020. Please provide such a breakdown for the existing DG.

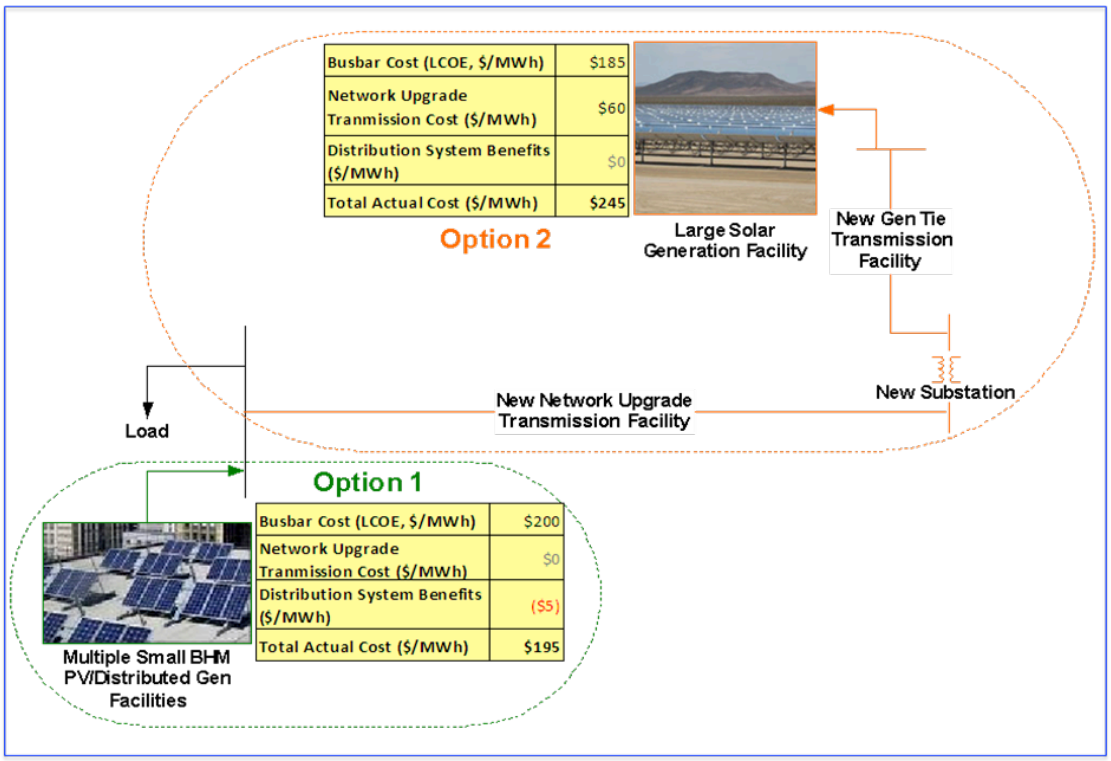
Thank you for the opportunity to comment and we look forward to continued public stakeholder participation.

If you have any questions concerning these comments, please contact Barry Flynn (888-634-7516 and brflynn@flynnrci.com) or Pushkar Waglé (888-634-3339 and pushkarwagle@flynnrci.com

Attachment 1: An Example of Cost Allocation Associated with Distributed Generation versus Remote Large In-State Renewable Generation Facility

In this simplified example, we consider two options to meet the 33% renewable energy. Option 1 considers building a combination of multiple behind-the-meter (BHM) consumer-side solar generators as well as small-scale distributed generation (DG) producer-side facilities interconnected to the distribution system close to the load center. As shown in Figure 1 below, the average Levelized Cost of Energy (LOCE) of the DG facilities is $200/MWh. Since there is no new network transmission required under this option, the transmission cost is assumed to be zero.

Figure 1: A Comparison of Renewable Generation/Transmission Options



Furthermore, Option 1 avoids the cost associated with transmission line losses relative to other generation requiring transmission. This benefit is assumed to be $5/MWh. Overall, the total actual cost of renewable energy under Option 1 is calculated to be $195/MWh.

Alternatively, Option 2 entails building a large-scale solar generation facility away from the load center. In order to access this renewable generation a new High-Voltage (HV) network upgrade transmission facilities including a HV transmission line and a new substation are required. Moreover, as shown in Figure 1, you would also need a Gen-tie facility to connect the generation facility to the new network transmission facilities. Although the cost of this Gen-tie is borne by the generator, the average Network Upgrade cost spread over the amount of renewable energy generated by this facility is nearly $60/MWh. The LCOE under this option is assumed to be $185, which is lower than the one assumed in Option 1.

Given that there are no distribution system benefits associated with Option 2, the total actual cost of the renewable energy adds up to $245/MWh, which is significantly higher than $195/MWh under Option 1. However, if the transmission cost associated with the network facilities is socialized and spread to all customers (including those who are not consuming the particular renewable energy under consideration), it would amount to a much lower amount in terms of $/MWh, say $6/MWh. This interpretation would make Option 2 (with total cost of $191/MWh) more attractive than Option 1. See Table 1 below. Such interpretation is misleading as the overall total cost comprising the generation, transmission and integration costs remains significantly higher under Option 2 relative to Option 1 as shown in this example that employs realistic cost-benefit estimates.[13]

Table 1: A Summary of Overall Renewable Generation Purchaser Cost ($/MWh) Under Three Options

Category	Option 1	Option 2	
		w/o Socialization of Transmission Cost	w/ Socialization of Transmission Cost
Overall Purchaser Cost ($/MWh)	$195	$245	$191

[13] The cost and benefit estimates used in this analysis are based on the data utilized in the latest E3 33% RPS calculator dated July 16, 2010 (http://www.cpuc.ca.gov/PUC/energy/Procurement/LTPP/ltpp_history.htm). The Option 1 utilizes the cost data for a representative "Distributed Solar" facility in the SCE area. The Option 2 cost data is based on the one associated with a large-scale solar generation facility that requires new network transmission upgrades.