

Bay Area Municipal Transmission Group's Comments on the CEC 2013 IEPR- Transmission Planning and Permitting Issues

May 21, 2013

The Bay Area Municipal Transmission Group¹ (BAMx) appreciates the opportunity to comment on the California Energy Commission's (CEC) 2013 IEPR- Transmission Planning and Permitting Issues workshop conducted on May 7, 2013.

The CPUC-CEC Recommended TPP Base Case Scenario Needs to Place Greater Weight on Environmental Impact

The current CAISO Transmission Planning process (TPP) Base Case, which is based upon the Commercial Interest resource portfolio places only 10% weight on environmental criteria. We are not aware of the reasons for selecting such a low weighting. It seems like a State like California would place a greater priority on protecting the environment. BAMx believes that the 2013 IEPR is an appropriate place to debate and adopt such weightings.

The CEC Scoring Methodology Needs to Take into Account Transmission Environmental Impact

CEC Staff's methodology of environmental scoring of the renewable projects is inadequate. Although the CEC's efforts to develop environmental scoring are both commendable and informative, one major environmental impact of renewable projects appears to be ignored. The CEC scoring methodology does not take into account the environmental impact of transmission triggered by the renewable projects. It is wrong to ignore this potentially major environmental impact. This omission probably represents the largest single problem with the otherwise appropriate modeling effort. We are particularly concerned about the improper signals that this sends to developers. During the May 7th workshop, the CAISO indicated that with the CAISO approved transmission projects, there will be adequate transmission to meet the State's 33% RPS goal² and SCE correctly pointed out that many of the projects envisioned to use this transmission would never be constructed³. These two key factors lead to a need for renewable resources that do not require new transmission. At a minimum, the analysis of projects should include the impacts of any required transmission additions.

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

² See the presentation titled, "Transmission Planning to Support 33% Renewables Portfolio Standard" at CEC IEPR Lead Commissioner Workshop California and Western States Transmission Planning and Permitting Issues by Neil Millar, Executive Director, Infrastructure Development, CAISO.

³ See the presentation titled, "DFA Suitability & Transmission Planning," by Kevin Richardson, Southern California Edison.

Building Transmission to provide RA for Intermittent Resources is Not a Cost-effective Mechanism to Procure Renewables.

Mr. Neil Millar’s (CAISO) presentation in the May 7th CEC workshop states the following.

“Most significant & costly interconnection upgrades are for resource adequacy deliverability.”

As shown in Table 1 below, billions of dollars are spent on new transmission to achieve deliverability for intermittent resources. In addition to the \$5.9 billion of transmission that is either constructed or permitted, the CAISO indicates the need for additional transmission with expected capital costs adding to \$2.4 billion to primarily obtain resource adequacy for intermittent interconnecting resources. The projects listed in Table 1 do not include additional transmission projects such as, the East County (ECO) substation project needed to interconnect intermittent resources. This demonstrates that \$7 billion amount often quoted as transmission capital cost to meet 33% RPS goal understates the actual potential transmission costs.

Table 1: Key New Transmission Facilities Driven by Deliverability of Renewables

Transmission Facility	Online	Est. Capital Cost (M\$)
Approved, Permitted and Under Construction		
Colorado Rover - Valley 500kV	2013	\$697
Tehachapi	2015	\$2,524
Sunrise Powerlink	2012	\$1,883
Eldorado - Ivanpah 230kV	2013	\$446
Red Bluff 500/220 kV Substation	2014	\$213
Carrizo - Midway	2013	\$100
Additional Transmission Identified as Needed in ISO as but not Permitted		
Coolwater - Lugo 230 kV	2018	\$542
Pisgah - Lugo 500kV	2017	\$644
West of Devers 230 kV Recond	2019	\$650
South of Contra Costa reconductoring	2015	\$40
Borden - Gregg 230 kV recond	2015	\$50
Policy-Driven Transmission Approved by ISO but not Permitted		
Mirage - Devers 230 kV recond (Path 42)	2015	\$40
Imperial Valley Area Collector Station	2015	\$25
Sycamore – Penasquitos 230kV Line	2017	\$221
Lugo – Eldorado 500 kV Line Re-route	2020	\$40
Lugo – Eldorado series cap and terminal equipment upgrade	2016	\$130
Warnerville-Bellota 230 kV line reconductoring	2017	\$28
Wilson-Le Grand 115 kV line reconductoring	2020	\$15

Based upon the underlying data in the CPUC's 33% RPS calculator, which is used to develop the resource portfolios used in the CAISO's 2013-14 Transmission Planning Process (TPP), we have performed a preliminary economic assessment comparing the annual Resource Adequacy (RA) value associated with renewables in the zones and the annualized transmission costs associated with the corresponding transmission that is needed to obtain RA deliverability for those renewable resources. Table 2 shows that for all zones, the annualized transmission cost is significantly higher than the RA value associated with the renewable resources. This exercise demonstrates that the CAISO's approved Delivery Network Upgrades (DNU) that are presumably needed to meet 33% RPS goal are not the cost effective mechanism to obtain RA from the underlying renewable resources.

Table 2: A Comparison of RA Value and Corresponding Transmission Delivery Network Upgrade Cost

Transmission Facility*	Est. Capital Cost (M\$)*	Delivering Renewables from Zone*	Total (MW)*	NQC (MW)*	Annual RA Value (M\$)**	Annualized Transmission Cost (M\$)***
West of Devers, Path 42 and IV Collector	\$715	Imperial	1,700	845	\$34	\$89
Colorado Rover - Valley 500kV and Red Bluff 500/220 kV Substation	\$910	Riverside East	964	602	\$24	\$114
Coolwater - Lugo 230 kV	\$542	Kramer	762	453	\$18	\$68
Eldorado - Ivanpah 230kV	\$446	Mountain Pass	645	394	\$16	\$56

* Based upon Data in the CPUC 33% RPS Calculator for the 2013-14 TPP "Commercial Interest" Resource Portfolio.

** Assuming \$40/kW-Yr RA capacity price

*** Assuming approx. 12.5% carrying rate

Per CPUC 2012 LTPP, the system RA needs in the State are much less than its availability.⁴ We have a situation in the State where existing fossil capacity (e.g., Calpine's Sutter power plant) cannot recover enough from market to maintain their status due to excess available supply, while

⁴ **Source:** 2012 LTPP, See Appendix B. Data shown is the Base Scenario from D. 12-12-010, Appendix C, and page C-1. Also, see the presentation by Edward Randolph, Director Energy Division, CPUC at CPUC-CAISO Long-Term RA Summit, February 26, 2013.

we are building and approving transmission in order to make the intermittent resources fully deliverable. Furthermore, the need for future flexible capacity requirements will likely lead to even greater oversupply of system RA. Even in the absence of existing excess capacity, it is unlikely that building new transmission to intermittent resources is the most cost effective mechanism to meet incremental needs.

Providing RA to Entire 33% RPS Resources is Not a State Policy

Currently, CAISO's TPP analysis determines policy-driven transmission based on the assumptions that it is a State policy to provide RA credits to all renewable resources needed to meet 33% RPS by 2020. CPUC/CEC provide renewable resource portfolios as an input to CAISO TPP. However, CAISO analysis considers the entire fleet of renewables to be fully deliverable, and then determines the needed transmission upgrades to provide RA deliverability to those portfolio resources. There is no State policy to obtain Resource Adequacy from renewable generation needed to meet the 33% RPS goal. Thus, it is incorrect to justify transmission elements as policy driven, based upon the application of the deliverability criteria to all RPS renewable projects within a portfolio. Finally, we believe that the State policy should not be set by the CAISO Board of Governors, let alone by the CAISO Staff. We believe in this case it is. The IEPR should indicate that it is not a State policy to acquire RA capacity from renewable projects if it increases costs to consumers.

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 Dr. Pushkar Waglé (888-634-3339 and pushkarwagle@flynnrci.com)