

PUBLIC UTILITIES COMMISSION  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



CALIFORNIA ENERGY COMMISSION  
1516 NINTH STREET  
SACRAMENTO, CA 95814-5512



February 27, 2014

Steve Berberich  
California Independent System Operator  
President and Chief Executive Officer  
P.O. Box 639014  
Folsom, CA 95763-9014  
*Transmitted electronically*

**Re: Base Case and Alternative Renewable Resource Portfolios for the CAISO 2014-2015 Transmission Planning Process**

Dear Mr. Berberich:

With the submission of this letter, the California Energy Commission (CEC) and the California Public Utilities Commission (CPUC) formally transmit to the California Independent System Operator (CAISO) the renewable resource portfolios that our agencies jointly recommend should be studied in the 2014-2015 Transmission Planning Process (TPP). This joint submittal fulfills our ongoing commitment under the May 2010 Memorandum of Understanding which called for transmission planning coordination of our respective Agencies. This year's renewable resource portfolios demonstrate the continued progress made towards meeting California's Renewable Portfolio Standard (RPS) mandate as well as a dedication to the use of preferred resources to achieve the state's climate goals.

The CPUC and CEC utilized a portfolio review process that allowed for robust stakeholder participation. Initial versions of the portfolios were subject to review and comment through the CPUC's Long Term Procurement Plan proceeding. The CPUC and CEC hosted a workshop on December 18, 2013 to present the portfolios to stakeholders, who subsequently had an opportunity to file opening and reply comments regarding the portfolios. Many stakeholders participated in the workshop and filed written comments. The final recommended portfolios reflect the careful consideration of these comments.

In addition to the updates based on new data from the August 2013 Project Development and Status Reports filed by the Investor-Owned Utilities with the CPUC, the portfolios reflect updates to: (1) the renewable net short calculation; (2) the energy demand forecast per the CEC's December 2013 Integrated Energy Policy Report (IEPR) forecast; (3) the cost of solar photovoltaic (PV) projects; (4) the available capacity on existing transmission; and (5) the environmental scores.

The CPUC and CEC recommend that the CAISO study the following four portfolios in the 2014-2015 TPP: (1) the 33% 2024 Mid Additional Achievable Energy Efficiency (AAEE), (2) the 33% 2024 LowMid AAEE, (3) the High Distributed Generation (DG) 33% 2024 Mid AAEE + Demand Side Management (DSM) and (4) the 33% 2024 Mid AAEE (sensitivity). All four portfolios give added weight to the "commercial interest" metric in the RPS Calculator, which essentially gives preference to projects that have an approved power purchase agreement and, at least, a "data adequate" status as it pertains to all major siting applications that are necessary for construction. The 33% 2024 Mid AAEE portfolio assumes a Mid level of additional achievable energy efficiency per the CEC's 2013 IEPR. We recommend that the CAISO study the 33% 2024 Mid AAEE portfolio as the base case since it represents a reasonable approximation of the current trajectory of renewable development.

We also recommend that the CAISO study two alternative portfolios in its 2014-2015 TPP: the 33% 2024 LowMid AAEE portfolio, which assumes LowMid levels of additional achievable energy efficiency; and the High DG 33% 2024 Mid AAEE + DSM, which is based on the "High DG" version of the RPS calculator and assumes a Mid level of additional achievable energy efficiency, high incremental amounts of behind-the-meter solar PV (i.e. beyond amounts embedded in the CEC's IEPR demand forecast) and low incremental amounts of behind-the-meter Combined Heat and Power (CHP) resources.

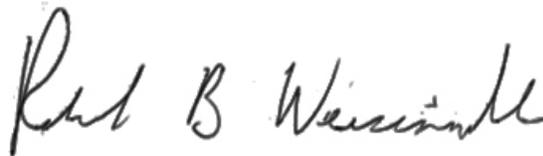
Moreover, we encourage the CAISO to study the 33% 2024 Mid AAEE (sensitivity) portfolio which considers the need of a new 1500 MW transmission line from the Imperial CREZ instead of the new 2400 MW transmission line from the Riverside East CREZ that the trajectory portfolio identifies as being needed. Significant renewable potential exists in the Imperial CREZ. However, transmission capacity updates incorporated into the RPS calculator for this TPP cycle and the RPS calculator's lack of accurate project information to increase transmission capacity in the Imperial CREZ limit our ability to forecast alternative portfolios. Therefore, we recommend that the CAISO consider transmission options to access this renewable potential by studying the 33% 2024 Mid AAEE (sensitivity) portfolio.

We appreciate the cooperative nature of the discussions regarding the 2014-2015 TPP and look forward to working collaboratively with CAISO staff in order to continue improving this process as we work toward implementing changes for the 2015-2016 TPP. If you have any questions about the details of the scenarios, please contact Carlos Velasquez at 415-703-1124 or [carlos.velasquez@cpuc.ca.gov](mailto:carlos.velasquez@cpuc.ca.gov) or Roger Johnson at 916-654-5100 or [roger.johnson@energy.ca.gov](mailto:roger.johnson@energy.ca.gov).

Sincerely,



Michael R. Peevey  
President, CPUC



Robert B. Weisenmiller  
Chair, CEC



Michel P. Florio  
Commissioner, CPUC

Cc. Paul Clanon, CPUC Executive Director  
Keith Casey, CAISO VP for Market and Infrastructure Development  
Karen Edson, CAISO VP for Policy and Client Services  
Robert Oglesby, Energy Commission Executive Director  
Brian Turner, CPUC Deputy Executive Director  
Edward Randolph, CPUC Energy Division Director  
Roger Johnson, Energy Commission's Siting, Transmission, and Environmental Protection Division Deputy Director

Enclosure

Breakout By Technology				
Scenario Name	33% 2024 Mid AAEE	33% 2024 LowMid AAEE	High DG 33% 2024 Mid AAEE + DSM	33% 2024 Mid AAEE (sensitivity)
Net Short (GWh)	30,551	33,287	26,562	26,562
	Portfolio Totals (MW)	Portfolio Totals (MW)	Portfolio Totals (MW)	Portfolio Totals (MW)
Discounted Core	9,109	9,112	11,440	9,063
Generic	3,311	4,414	0	2,223
Total	12,420	13,526	11,440	11,286
CREZ	MW	MW	MW	MW
Biogas	20	23	20	20
Biomass	103	103	103	103
Geothermal	235	235	171	777
Hydro	-	-	-	-
Large Scale Solar PV	7,411	7,911	3,595	5,969
Small Solar PV	2,074	2,099	5,745	2,057
Solar Thermal	1,350	1,350	827	1,208
Wind	1,227	1,806	979	1,153
Total	12,420	13,526	11,440	11,286
New Transmission Segments	Kramer - 1	Kramer - 1	Kramer - 1	Kramer - 1
	Riverside East - 1	Riverside East - 1		Imperial - 1

<b>Breakout By CREZ</b>				
Scenario Name	33% 2024 Mid AAEE	33% 2024 LowMid AAEE	High DG 33% 2024 Mid AAEE + DSM	33% 2024 Mid AAEE (sensitivity)
<b>Net Short (GWh)</b>	<b>30,551</b>	<b>33,287</b>	<b>26,562</b>	<b>26,562</b>
	Portfolio Totals (MW)	Portfolio Totals (MW)	Portfolio Totals (MW)	Portfolio Totals (MW)
Discounted Core	9,109	9,112	11,440	9,063
Generic	3,311	4,414	0	2,223
<b>Total</b>	<b>12,420</b>	<b>13,526</b>	<b>11,440</b>	<b>11,286</b>
<b>CREZ</b>	<b>MW</b>	<b>MW</b>	<b>MW</b>	<b>MW</b>
Alberta	300	300	300	300
Arizona	400	400	400	400
Baja	100	100	100	100
Carrizo South	900	900	300	900
Distributed Solar - PG&E	984	984	3,449	984
Distributed Solar - SCE	565	565	1,988	565
Distributed Solar - SDGE	143	143	157	143
Imperial	1,000	1,000	1,000	2,500
Kramer	642	642	62	642
Mountain Pass	658	658	165	658
Nevada C	516	516	266	516
NonCREZ	185	191	133	182
Riverside East	3,800	3,800	1,400	1,400
San Bernardino - Lucerne	87	87	42	42
San Diego South	-	384	-	-
Solano	-	200	-	-
Tehachapi	1,653	2,148	1,285	1,483
Westlands	484	505	389	469
Central Valley North	-	-	-	-
Merced	5	5	5	5
<b>Total</b>	<b>12,420</b>	<b>13,526</b>	<b>11,440</b>	<b>11,286</b>
New Transmission Segments	Kramer - 1	Kramer - 1	Kramer - 1	Kramer - 1
	Riverside East - 1	Riverside East - 1		Imperial - 1