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CalWEA Comments on RETI 2.0 Draft Plenary Report

Additional submitted attachment is included below.

January 10, 2017

California Energy Commission
Docket Unit, MS-4
1516 Ninth Street
Sacramento, CA 95814-5512

RE: **Docket No. 15-RETI-02** -- Comments of the California Wind Energy Association on the December 16, 2016, Renewable Energy Transmission Initiative 2.0 Draft Plenary Report

The California Wind Energy Association ("CalWEA") offers the following comments on the December 16, 2016, Renewable Energy Transmission Initiative 2.0 ("RETI 2.0") Draft Plenary Report ("Draft Report").

In summary, CalWEA finds the Draft Report to be a very comprehensive and valuable compendium of transmission issues and potential transmission options, both in California and the West, which are presented in an objective way. The cost information that this process has developed on transmission options should (after opportunities for public comment) be fed into the public planning tools so that they are better able to generate optimal resource portfolios to support system planning efforts. We request, however, that the final Plenary Report provide greater emphasis on the underutilization of the existing grid, and discuss in greater detail the ability of the existing transmission grid to transmit very significant additional quantities of renewable energy resources with few, if any, transmission upgrades. In addition, we offer feedback, as requested, on the three scenarios that are proposed for use in public planning processes, encouraging scenarios based on major uncertainties rather than speculative resource areas. Finally, we comment on one statement in the text which we believe requires correction.

1. <u>Greater Emphasis on Making Better Use of the Existing Transmission System Is Warranted</u>

The Draft Report provides very useful data in Table 2-3 (p. 38) about the costs and capabilities of various Western transmission projects that, after an opportunity for public comment, can be fed into the public planning tools (along with other information) to generate optimal resource

portfolios for planning purposes.[1] It also confirms (at p. 8) the potential of energy-only transmission service within California previously identified by the CPUC and CAISO that could enable over 23,000 MW of renewable energy capacity without added transmission. Still needed, however, is to fill out the range of transmission options with more-specific cost and availability information on firm transmission service in the WECC region as coal plants retire,[2] and the far greater potential to transmit power on existing infrastructure using conditional firm transmission service, advanced grid technologies and operating agreements between the CAISO and other balancing authorities inside and outside California to dynamically schedule Western resources into California particularly based on conditional firm transmission service.

We were pleased that these low-cost, low-lead-time options were identified in the Draft Report. However, we believe that they deserve greater discussion, emphasis and synthesis in the final Plenary Report. As RETI 2.0's Western States Outreach Project Report ("WSOP Report") states (at p. 76), considerations such as conditional firm transmission service "should be evaluated alongside and in parallel to major infrastructure investment decisions. Ultimately, products such as [these] will allow the existing and future transmission grid to provide the greatest benefit to customers." (Emphasis added.) In keeping with the WSOP Report, the final Plenary Report should underscore the importance of developing cost and capacity information on these existing infrastructure options so that they can be compared alongside of, and in conjunction with, the proposed transmission projects in Table 2-3.

The synergies between existing infrastructure options are especially important. In particular, even without coal plant retirements, the combination of dynamic scheduling and conditional firm transmission service in the WECC has enormous potential to facilitate direct deliveries of Western renewable resources (particularly wind resources) to California. There is even greater potential if advanced grid technologies and relatively inexpensive "feeder" lines connecting renewable resource areas to the WECC grid (some of which are listed in Table 2-3) are considered in conjunction with use of the existing grid.

[1] Estimated transmission costs generated by RETI or others would not be imported directly into the CAISO's Transmission Planning Process; rather, the TPP would use the optimum RPS portfolio(s) and develop its own cost estimates in its planning efforts to determine any transmission proposals.

[2] According to the WSOP Report (at p. 20), there are 3,000 MW of coal units coming offline in the West by 2019, and another 4,000 MW by 2025, creating the ability to "repurpose" a significant amount of transmission capacity previously used for coal, although it is not clear how much of that capability would be available for deliveries to California.

The final Plenary Report should emphasize this potential and underscore the importance of further efforts by California and Western regional planning initiatives to characterize the potential of these relatively low-cost, low-lead-time options, and to help to overcome associated barriers. For example, with regard to conditional firm transmission service, the WSOP report noted (at p. 9) that financiers of renewable generation projects have historically been disinclined to have a facility's output curtailed in instances when transmission service would not be available under conditional firm service. Overcoming this barrier is likely to be mainly an educational and contractual challenge, since the risk of curtailment under conditional firm service can be strictly limited and bounded in both amount and timing -- critical factors in project finance because it allows potential losses to be quantified. It is reasonable to expect very limited curtailment, if any, for a very significant amount (i.e., at least 5,000 MW) of renewable energy additions across the WECC footprint, given that little or no actual congestion has been shown to occur with such additions without any transmission upgrades in view of scheduled coal-plant retirements.[3] Conditional firm service could enable far more.

Making more efficient use of the existing transmission grid can, in addition to saving costs, buy considerable time in planning for transmission upgrades that may be needed over the longer term. If the final Plenary Report provides more specific information on the cost and capabilities of non-infrastructure options, the report will provide sufficient information to inform public planning processes in the near-term, such that the proposed "Request for Information" process can be a longer-term effort to refine and expand options for consideration in the future.

2. Scenarios Should Be Based on Major Uncertainties, Rather than Speculative Resource Areas

Consistent with our recommendation to the CPUC, CalWEA recommends that -- rather than building scenarios around certain resource areas, such as proposed "Desert Area Constraints Scenario" and "Out-of-State Transmission Configurations" – the planning scenarios be developed around major uncertainties, such as degree of electrification or the future technology costs , and let resource quality, transmission availability and costs speak for themselves in the models that will generate optimal resource portfolios for planning purposes. That is, the process should determine the most efficient portfolio of RPS resources from all resource areas, including the desert and out-of-state areas, for a specific set of assumptions.

[3] See WECC Reliability Study Requests, "PC-21: Coal Retirement," Slide 11, Presentation of Brian Woertz (October 2015). Available at: http://westernenergyboard.org/wp-content/uploads/2015/10/10-29-15_CREPC-SPSC-WIRAB_woertz_WECC_reliability_study_requests.pdf. See also CalWEA's April 28, 2016 Comments following the April 18, 2016, Renewable Energy Transmission Initiative 2.0 Plenary Group Meeting.

Hard-wiring speculative resource areas into planning scenarios would answer at the outset the question that the planning models are supposed to answer, and would not create the certainty needed to undergird major transmission investments.

Instead, the CPUC (with insights and information provided by RETI 2.0) should be preparing a range of plausible and distinct future resource portfolios based on uncertainties in assumptions and data that can have a significant impact on the results. Such an approach will enable true least-regrets planning -- i.e., the identification of efficient system and transmission investment needs that, because they are common to a wide range of plausible renewable energy futures, can be broadly supported by stakeholders and confidently acted upon by decision-makers. The CAISO obtained authority from FERC to adopt a policy-driven "least-regrets" transmission plan[4] that requires the CAISO to minimize the risk of stranded transmission investment by identifying a set of transmission elements that are common under the renewable scenarios most likely to occur."[5] Selecting resource areas in advance would be inconsistent with generating resource portfolios that prevail on the basis of cost, resource and transmission availability, and other characteristics in the context of uncontrollable factors such as load size and shape.

However, as discussed in section 1 above, information from the final Plenary Report can very usefully serve to inform CPUC and other planning models of the cost and availability of potential transmission upgrades as well as the capability of the existing grid to transmit more renewable energy. These inputs will greatly enhance the models' ability to generate the most cost-effective renewable resource portfolios that will, in turn, provide a basis for system planning.

3. Specific Comment on the Text

One statement in the text requires clarification or correction. Footnote 13 states: "A California ISO EO interconnection allows a generator to deliver energy when transmission is available, with no assurance that delivery of that resource will be dispatched. EO interconnection does not provide deliverability, and the generator cannot be counted in the CPUC's RA program. The EO resources are more likely to be curtailed if there is insufficient transmission capacity to allow these facilities to deliver energy to the grid."

The first sentence is misleading and the last is incorrect. The only benefit that a generator obtains from full capacity deliverability status is the ability for a portion of its capacity to be counted toward a utility's RA requirement, as noted in the middle sentence. FCDS status

[4] *California Independent System Operator Corp.,* 133 FERC ¶ 61,224 (2010).

[5] *Ibid* at pp. 191-92 (2010). Emphasis added.

confers no preferential dispatch treatment or other grid benefits over resources with EO status, as suggested in the first sentence. Because there is no difference in dispatch, EO resources are no more likely to be curtailed than FCDS resources; thus, the last sentence is incorrect. In most cases, there is no direct or predictable relationship between EO or FCDS status and curtailment risk.

To elaborate, CAISO's deliverability methodology is not aimed at determining and mitigating transmission congestion that could cause curtailments. Deliverability of generation from a proposed project, as currently determined by the CAISO, and whether the renewable generation will be curtailed due to transmission congestion, are not directly correlated. This is because the single scenario assuming double-contingency-based dispatch used for the CAISO's peak-load deliverability study has no resemblance to the actual commitment/dispatch conditions that are likely to occur in actual CAISO operations.[6] That is, the constraints found under deliverability studies do not necessarily represent the same constraints that would occur under more realistic operational conditions, which are not simulated by the deliverability study. Thus, except for radial or semi-radial sub-transmission lines,[7] deliverability status is not a forecast of potential curtailment (or lack thereof). As a result, renewable generation from an EO resource can have zero transmission-related congestion curtailments, while renewable generation from an FCDS resource might experience transmission-congestion-related curtailments. For that reason, financing companies generally require curtailment studies to be performed by developers before they provide project financing regardless of the deliverability status of a project.

Illustrating the point that energy-only status is not a predictor of curtailment is the CAISO's 2015 Special Study, which was prepared in response to a request by the CPUC. That study, which evaluated the ability of the CAISO's transmission system to absorb a portfolio of RPS resources with EO deliverability status, was based on the level of curtailment that would be seen under expected operating conditions. As the RETI 2.0 assessment confirmed (Draft Report at p. 8), the CAISO system has the potential to absorb over 23,000 MW of EO resources, widely dispersed across the state, without transmission-congestion-related curtailments. That potential represents far more than the roughly 4,500 MW to 8,700 MW of California renewable resources shown to be needed on the CAISO system in order to achieve 50% renewables in

[6] Specifically, resource dispatch is governed by the CAISO's Market Redesign and Technology Upgrade ("MRTU") algorithms.

[7] In the case of projects interconnecting at radial or semi-radial sub-transmission lines, EO status could result in curtailments; however, this problem is usually addressed in the course of addressing reliability issues.

2030 under a variety of scenarios.[8] Thus, there appears to be little transmission-related curtailment risk that could affect RPS compliance or cause significant financial risks for developers selecting EO status, at least in the 2030 timeframe.

Sincerely,

/s/	/s/
Nancy Rader	Dariush Shirmohammadi
Executive Director	Technical Director

[8] See Energy+Environmental Economics (E3), "Senate Bill 350 Study, Volume IV: Renewable Energy Portfolio Analysis" (July 8, 2016) at Table 23. Available at http://www.caiso.com/Documents/SB350Study-Volume4RenewableEnergyPortfolioAnalysis.pdf.