Stakeholder Comments Template

Submitted by	Company	Date Submitted
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Please use this template to provide written comments on the Clean Energy and Pollution Reduction Act Senate Bill 350 (SB350) Study initiative posted on April 25, 2016.

Please submit comments to regionalintegration@caiso.com by close of business May 13, 2016

Materials related to this study are available on the ISO website at: http://www.caiso.com/informed/Pages/RegionalEnergyMarket/BenefitsofaRegionalEnergyMarket.aspx

Please use the following template to comment on the key topics addressed in the workshop.

1. Are any of the study results presented at the stakeholder workshop unclear, or in need of additional explanation in the study's final report?
Comment: Sierra Club notes that at this time it has not received access to the confidential information and data for the SB350 studies. As such, Sierra Club may supplement these comments if and when it has an opportunity to review the data. CAISO has provided two "hypothetical regional footprints" for 2020; one designated as "CAISO+PAC" and one as "Regional". The projected ratepayer benefits from these scenarios differs by almost a factor of five (p.106), and production cost savings differ by almost a factor of 10 (p.87). (Almost all of the ratepayer benefits from the CAISO+PAC scenario derive from reduced grid management charges, rather than from operational or procurement benefits.) However, CAISO has *only* evaluated the "Regional" scenario for 2030, despite the fact that the only expansion scenario currently under consideration is "CAISO+PAC". CAISO should explain its rational, with particular attention to the following: • If CAISO believes that the full WECC integration scenario is the primary source of benefits identified in the study, it should clearly state this in the report. • If CAISO believes that the smaller-scale integration is only a stepping-stone to full regional integration, it should clearly identify this assumption and provide analysis of the costs and benefits of such a "PacifiCorp-first" strategy, rather than proceeding directly to pursue full regional integration, for stakeholder and legislative consideration. In any case, the study would be stronger and more informative were it to also evaluate the CAISO+PAC footprint for 2030, so the dependence of the benefits on the scope of integration could be illuminated. Further in the presentation, portfolio and sensitivity analysis results are *only* shown for

the 2030 model year and the full regional integration scenario. Again, it is impossible to divine the extent to which these results are predicated on the larger regional footprint.

In the discussion of GHG emissions impacts, CAISO has only presented a single set of "integration" results for 2020, denoted "Regional", although apparently this is intended to represent CAISO+PAC. These results show no emissions benefit from regionalization in 2020 – to the contrary, they show a small *increase* in emissions, both in California and region-wide. This begs the question of whether any emissions benefits would accrue from this more limited integration over a longer timeframe, but the analysis is silent on this question. This is a crucial question because again, CAISO+PAC is the only integration scenario currently under consideration, and its proponents claim reduced emissions as one of the primary benefits.

In fact, the primary source of emissions benefits is the planned retirement of coal plants, which is projected to occur under any scenario; this benefit dwarfs any incremental projected emissions benefit associated with integration. However, were integration to somehow improve the economic outlook for certain aging coal plants such that their retirement is delayed, all of the emissions benefits of the integration scenario relative to current practice, and more, could be lost. For perspective, we note that annual emissions from the Jim Bridger plant alone is 14 million tons per year, far in excess of the projected 10 million tons incremental annual benefit estimated for integration. If the decision to retrofit one or more of the Jim Bridger units with SCR is affected by the economic impacts of integration, the emissions impact could equal or exceed the projected emissions benefits of integration. CAISO has not investigated the impact of a CAISO/PAC-only merger beyond 2020, nor has it allowed coal plant economics to be a factor in its analysis. Thus we have no analytical basis to anticipate the impact on the single most important factor with regard to emissions impact of the currently proposed merger.

Finally, the appendices report changes in dispatch by source type in different regions

labeled as California, Northwest, Rocky Mountain, etc. Defining these regions would be helpful to understand the regional impact to coal dispatch and other sources of dispatch.

2. Please organize comments on the study on the following topic areas:
- **a. The 50% renewable portfolios in 2030**
- **b. The assumed regional market footprint in 2020 and 2030**
- **c. The electricity system (production simulation) modeling**
- **d. The reliability benefits and integration of renewable energy resources**
- **e. The economic analysis**
- **f. The environmental and environmental justice analysis**

a. The 50% renewable portfolios in 2030

b. The assumed regional market footprint in 2020 and 2030

As noted above, CAISO has not articulated a basis or rationale for the "PacifiCorp First" expansion scenarios presented in the draft report. There is no current proposal to expand to a WECC-wide RTO, nor has CAISO explained why CAISO/PAC is a necessary first step to achieve the benefits of integration projected for the larger integration scenario.

It is very helpful to have analysis of the two alternative footprints in CAISO's report, to help the reader distinguish between benefits of the proposed CAISO/PAC merger and the hypothetical WECC-wide scenario. However, the analysis has shown that the benefits of the CAISO/PAC scenario are minimal compared to the WECC-wide scenario, leading to an *increase* in CO_2 emissions and minimal customer savings for Californians, derived primarily from a reduction in grid management charges for California. However, it begs the question of whether there would be any significant benefit from the limited integration scenario (CAISO/PAC) in 2030 or beyond.

c. The electricity system (production simulation) modeling

It seems (as expected) that a primary driver of production cost savings in the simulation of integration scenarios is the relaxation of hurdle rates and wheeling charges. However, CAISO has indicated that it may implement a GHG adder for fossil-

sourced power that is imported to California or other type of constraint. CAISO appears to favor a mechanism similar to the GHG adders established in the EIM market. This raises substantial concerns.

First, CAISO must better explain its current assumptions related to the dispatch of out-of-state generation. Brattle indicated during the presentation that the model assumed an existing hurdle rate that assign CO2 costs comparable to the current methods used to assign costs for undefined system imports (i.e. comparable to a natural gas plant.) It is not clear if the model assigned this cost to all power, only fossil power, or some other subset. The final report should more carefully state these assumptions related to out of state generation. Further, CAISO must develop a more articulated explanation of how these assigned costs for CO2 or other mechanisms like a GHG adder would change in a regional market, and how such changes would be implemented in a regional market. Unlike the current system, which is based on bilateral contracts, the regional market would presumably need to assign costs based on the actual dispatch within the expanded footprint. This type of mechanism requires careful analysis and design, particularly in light of recent court decisions such as *North Dakota v. Heydinger* (8th Cir.) and *Hughes v. Talen Energy Marketing*, 136 S. Ct. 1288, 1297 (2016), which call into question the extent a state's ability to impose differentiated prices on out-of-state wholesale electric transactions.

Second, CAISO should re-run the production cost model simulations after clear GHG rules have been developed. As Brattle noted during the presentation, this type of externally imposed policy solution is a far bigger driver of GHG reductions than any other factor in the model. It is therefore imperative that the impacts of the GHG rules or regulations be simulated in the production cost runs to quantify how they might impact the ultimate benefits of rate-de-pancaking. This would also be very helpful in clarifying what the nature and impact of the GHG adders would be in the integrated day-ahead dispatch.

d. The reliability benefits and integration of renewable energy

resources

e. **The economic analysis**
f. **The environmental and environmental justice analysis**

The GHG emissions results for 2020 confirm Sierra Club's greatest concern about the proposed integration: that it will actually increase greenhouse gas emissions by improving the economics of coal plants in the PacifiCorp region, increasing their dispatch and very possibly prolonging their service lives. This would run counter to both the desires of Californians for an increasingly clean energy mix, and to California laws that manifest that desire. We are skeptical that any fix like "GHG adders" would work to rectify this problem, because of the divergence between notional deliveries of resource-specific energy top California customers and actual, physical market operations.

In the absence of a specific proposal for how bid adders would be implemented in a combined CAISO/PacifiCorp balancing area, Sierra Club does not believe that this approach will work to limit the share of coal generation physically serving California load. If we assume that resources will somehow be deemed to serve load in California only to the extent that existing transfer capability is not spoken for, then those values could be zero or less, since bilateral transactions in centrally-dispatched LMP markets are financial hedges, unconstrained by physical transfer limits. Thus, as long as low-carbon resources are contractually tied to California load, PacifiCorp's coal would be unaffected by California's GHG limitations - but would still benefit from the higher LMPs associated with access to the California market, thus potentially extending their economic lives. This is a concern that exists both for the EIM market, which is under review, and to a much greater extent in the day-ahead market.

CAISO's modeling showed an increase in CO_2 emissions in 2020 in a CAISO/PAC scenario, relative to BAU, likely reflecting, at least in part, increased utilization of PacifiCorp's coal fleet. (Detailed results that could confirm this have not been made available to Sierra Club.) For the reasons outlined above, imposition of "bid-adders" is

unlikely to change this dynamic because such adders could be easily circumvented. The high-volume, centrally-dispatched LMP market envisioned for an integrated market is fundamentally different from the current integrated EIM overlain on a bilateral interregional market that is currently in place. To the extent that bid adders adequately address imported energy CO_2 emissions limitations in the EIM, The same solution seems unlikely to work here. Furthermore, the recent court cases cited above raise concerns about the legality of whether such mechanisms would be allowed.

3. Other

Comment: