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 Study initiative posted on February 4, 2016.

Please submit comments to regionalintegration@caiso.com by close of business February 19, 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 initiative proposal.

1. Do you think the proposed study framework meets the intent of the studies required by SB350? If no, what additional study areas do you believe need to be included and why?
Comment:

2. Five separate 50% renewable portfolios are being proposed for 2030 as plausible scenarios for the purpose of assessing the potential benefits of a regional market. Are these portfolios reasonable for that purpose, and if no, why?
Comment:
3. To develop the five renewable portfolios the RESOLVE model makes a number of assumptions resulting in a mix of renewable and integration resources for the scenario analysis (rooftop solar, storage, retirements, out of state resources etc.) Do you think the assumptions associated with developing the renewable portfolios are plausible? If no, why not?
Comment:
4. The renewable portfolio analysis assumes certain costs and locations for the various renewable technologies. Do you think the assumptions are reasonable? If no, why not?
Comment:
5. The renewable portfolio analysis makes assumptions about the availability and quantity of out-of-state renewable energy credits ("RECs") to California. Do you think the assumptions are plausible? If no, why not?
Comment:
6. The renewable portfolio analysis makes assumptions about the ability to export surplus generation out of California (i.e., net-export assumptions). Do you think these assumptions are reasonable? If no, why not?
Comment:

7. Does Brattle's approach for analysis of potential impact on California ratepayers omit any category of potential impact that should be included? If so, what else should be included?
Comment:
8. Are the methodology and assumptions to estimate the potential impact on California ratepayers reasonable? If not, please explain.
Comment:
9. The regional market benefits will be assessed based assuming a regional market footprint comprised of the U.S. portion of the Western Interconnection. Do you believe this is a reasonable assumption for the purpose of this study? If not, please explain.
Comment:
10. For the purpose of the production cost simulations, Brattle proposes to use CEC carbon price forecasts for California and TEPPC policy cases to reflect carbon policy implementation in rest of WECC. Is this a reasonable approach? If not, please explain.
Comment:
11. BEAR will be using existing economic data, and generation and transmission data from E3, the CAISO, and Brattle. These data are currently being developed. Are there specific topics that you want to be sure to be addressed regarding these data?
Comment:

12. The economic analysis will focus on the electricity, transportation, and technology sectors to develop the economic estimates of employment, gross state product, personal income, enterprise income, and state tax revenue. These results will be further disaggregated by sector, occupation, and household income decile. Do you think these sectors are the appropriate ones on which to focus the job and economic impact analysis? If no, why?
Comment:
13. Under the proposed study framework, both economic and environmental impacts of disadvantaged communities will be studied. Based on the study overview do you think this satisfies the requirements of SB350?
Comment:
14. The BEAR model will evaluate direct, indirect, and induced impacts to income and jobs, including those in disadvantaged communities. Do you think additional economic analysis is required? If yes, what additional analysis is needed and why?
Comment:
15. The environmental analysis will evaluate impacts to California and the west in five areas – air quality, GHG, land, biological, and water supply. Do you think additional environmental analysis is required? If yes, what additional analysis is needed and why?
Comment:
16. The environmental analysis presentation identified a number of potential indicators for the various impacts. Are the indicators sufficient? If no, what additional indicators would you suggest?
Comment:

17. Other

Comment:

CAISO BAU Policies and Curtailment

Presenters and commenters at the February 8 Stakeholder Meeting suggested that a driving factor for both the location of renewable resources and ultimate value of a RISO will derive from the effects on renewable resource curtailments. UCS has conducted its own earlier study ("Achieving 50 Percent Renewable Electricity in California: The Role of Non-Fossil Flexibility in a Cleaner Electricity Grid") finding that 80% of the renewable resource curtailments accrue from two assumptions made in CAISO analyses conducted in the long-term procurement proceeding for the California Public Utilities Commission study that would have a significant effect on the evaluation of RISO benefits.

The first of these two study assumptions is the requirement that at least 25% of generation in designated regional areas of the CAISO in each hour come from "conventional resources" (i.e., natural gas, hydropower, and combined heat and power). These "regional generation requirements" were ostensibly imposed in previous CAISO analyses for reliability purposes. However, services such as frequency control for which these resources are mandated could be provided by the renewable resources themselves, demand response, or storage. It is unclear whether CAISO intends to maintain these assumptions in the proposed study and UCS requests CAISO be clear on whether these, or other such assumptions having such a direct impact on renewable curtailments will be included.

The second requirement previously modeled was for down-regulation services to be provided by conventional resources. Large thermal plants are operated above their minimum generation level so that there is something to turn down should the renewables increase suddenly. Providing downward regulation is another service that renewable resources can provide. Selectively curtailing renewables at the sub hourly level will reduce total renewable energy curtailment and carbon emissions..

UCS believes that together the assumptions described above represent major drivers of curtailment and must be addressed whether or not the CAISO and PacifCorp proceed with a regional market. UCS believes that the CAISO should clearly explain how renewable and non-renewable resources are being utilized to provide grid reliability services, in order to understand how these assumptions may be driving renewable curtailment.

Day Ahead Market Participation

UCS believes a large portion of the benefits from a regional ISO will derive from coordinating resources across the WECC in the day ahead market. However, most resources today are self-scheduling generators that do not participate in setting the day ahead market clearing price.

The extent to which individual units are expected to bid into that market is a crucial assumption. This is a particularly important issue for variable energy Resources (VERs) such as wind and solar. Current CAISO market rules result in a very small fraction of California VERs bidding into the day ahead market, resulting in significant inefficiencies. It is unclear what assumption is proposed for the RISO study.

It seems that either the RISO study will assume participation by VERs in the day ahead market, and the necessary changes to market rules; or conversely that the market rules continue as they are and that VERs continue to be absent from the day ahead market. Whatever assumption is made needs to be clear at the outset, or a sensitivity run on both assumptions. It is likely that the choice of assumption will have a very large effect on the results. For example, if coal plants can be shut down for several days in anticipation of a large amount of VERs in a forecast, it has a very different effect than if VERs are entirely absent from the market and the coal plants are committed irrespective of expected VER generation. Similarly, purchases of natural gas fuel are currently done a day in advance—excluding VERs from day ahead processes will likely result in over-purchasing of gas and the potential and needlessly run gas plants and curtail VER generation to avoid over-packing gas pipelines.