

Stakeholder Comments Template

Submitted by	Company	Date Submitted
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Please use this template to provide your written comments on the ESDER Phase 2 stakeholder initiative Third Revised Straw Proposal posted on April 17, 2017.

Submit comments to InitiativeComments@CAISO.com

Comments are due May 18, 2017 by 5:00pm

The Third Revised Straw Proposal posted on April 17, 2017 and the presentation discussed during the May 4, 2017 stakeholder conference call can be found on the [ESDER Phase 2](#) webpage.

Please use this template to provide your written comments on the Third Revised Straw Proposal topics listed below and any additional comments you wish to provide.

1. Alternative Baselines to Enhance Demand Response

Section 5.1.3 of the Third Revised Straw Proposal provides the alternative baselines proposal that was developed by the Baseline Analysis Working Group (“BAWG”). The CAISO requests that stakeholders provide comments on the proposal in the following areas:

- a) Do stakeholders support the BAWG’s recommended baselines for adoption by the CAISO?
- b) Does the BAWG’s proposal report, April 4, 2017 version, provide the necessary level of detail for demand response providers to implement the proposed baseline options?

Comments:

[N/A]

2. Distinguishing between Charging Energy and Station Power

Section 5.2.3 of the Third Revised Straw Proposal provides the station power proposal developed by the CAISO. The CAISO requests that stakeholders provide comments on the proposal in the following areas:

- a) Given that the California Public Utilities Commission (“CPUC”) has issued a Decision on its Track 2 storage issues, it is prudent for the CAISO to seek feedback from stakeholders on what changes should be made to the CAISO tariff in light of potential changes to retail tariffs.
- b) The CAISO believes that it also may be prudent to reduce the amount of verbiage in the CAISO’s station power definition. A simpler approach for the CAISO’s purposes could be to define station power simply as energy to serve load located on a generating unit site and jurisdictional to the local regulatory authority and settled pursuant to a retail tariff. The CAISO request stakeholder feedback on this subject.
- c) Based on the current CPUC Decision on its Track 2 storage issues, the CAISO’s principal concern is that there could be potential for storage resources to “commingle” their charging load and station power load. The CAISO requests stakeholder feedback on what CAISO tariff revisions will be necessary to ensure that this issue does not arise. One solution could be to require that all wholesale load and retail load be metered completely separately. The CAISO is interested in other potential solutions that would not require separate metering and clear electrical bifurcation of loads.

Comments:

The final decision from CPUC on Track 2 Energy Storage Issues under R.15-03-011 (D.17-04-039 dated May 8, 2017) defines the specific uses of charging energy and station power as quoted below:

- *“Wholesale: charging energy, resistive losses, pumps (flow batteries and pumped hydro), power conversion system, transformer, battery management system, thermal regulation, and vacuum (for flywheels)” (D.17-04-039, p. 37)*
- *“Electrical energy that is used for purposes other than for supporting a resale of energy back into wholesale markets is station power and inherently retail” (D.17-04-039, p. 64).*
- *“Station Power: Information technology and communications, lighting, ventilation, and safety. (D.17-04-039, p. 37)*

California Hydrogen Business Council (CHBC) would like to emphasize that in addition to electric batteries, flywheels and pumped hydro, Power-to-Gas (P2G) and Hydrogen Energy Storage (HES) should also be included in this description of storage technology functions that are eligible for wholesale rates. P2G has the unique feature of converting excess renewable electrical energy,

which is the “charging energy” (based on the definition from CPUC as quoted above) into chemical energy in the form of renewable hydrogen or renewable methane.

The energy required to convert electricity into renewable hydrogen via electrolysis is the “power conversion energy” (based on the definition from CPUC as quoted above). The charging energy and power conversion energy for P2G and back to usable forms of energy should be considered wholesale and therefore be subject to wholesale rates to keep it on par with other energy storage technologies.

CHBC acknowledges that the electrical energy used in the HES/P2G process other than for such purposes could be considered as station power and be subjected to retail rates. However, CHBC also shares CAISO’s concern that ratcheting demand charges associated with retail rates can become a fundamental barrier for energy storage adoption. CHBC suggests exploring tariff incentive mechanisms for station power as part of ESDER Phase 3 initiative to evaluate the impact of demand charges and to promote the adoption of emerging energy storage technologies including HES and P2G in California via strategic tariff incentives.

3. Net Benefits Test

Section 5.3.1 of the Third Revised Straw Proposal provides the net benefits test proposal developed by the CAISO. The CAISO requests that stakeholders provide comments on the proposal.

Comments:

[N/A]

4. Increase Load Consumption as Demand Response Enhancement

Section 6.1.4 of the Third Revised Straw Proposal provides an update on the status of work on this topic. The CAISO believes that there are several first priority policy issues that must be addressed before a wholesale load consumption product can be developed. The CAISO looks forward to collaborating with the CPUC and Load Consumption Working Group to help resolve these fundamental issues and develop a path forward for designing and implementing a bi-directional Proxy Demand Response product. The CAISO requests that stakeholders provide comments on the discussion in Section 6.1.4.

Comments:

CHBC commends CAISO’s efforts to actively engage the CPUC and Load Consumption Working Group (LCWG) to address several policy issues around retail rate interactions, demand charges, and the technical implementation issues to address billing settlements. CHBC agrees with CAISO’s concern that demand charges can be a fundamental barrier and must be addressed before implementing a Bi-Directional Proxy Demand Response (PDR) product.

Retail load consumption “program incentives” might be an alternative approach to address the high cost of demand charges or any applicable non-by passable charges associated with energy consumption during excess supply of electricity or for departing load. Retail rates coupled with above charges can impede cost competitiveness and hinder adoption of emerging energy storage technologies in California.

5. Non-Generating Resource Enhancements

Section 6.2.4 of the Third Revised Straw Proposal provides an update on the status of work on enhancements to the non-generating resource model. The CAISO requests that stakeholders provide comments on the discussion in Section 6.2.4.

Comments:

[N/A]

6. Multiple-Use Applications

Section 6.3.3 of the Third Revised Straw Proposal provides an update on the status of work on multiple-use applications. The CAISO requests that stakeholders provide comments on the discussion in Section 6.3.3.

Comments:

CHBC supports the continued and sustained collaboration with CPUC in Rulemaking R.15-03-011 to develop a framework for multiple-use applications. CHBC also commends CAISO’s effort to actively engage the stakeholders on multiple-use applications and looks forward to reviewing the upcoming joint report and providing comments.

CHBC would like to emphasize the importance of HES and P2G and their potential for multiple-use applications. Renewable hydrogen based storage technologies are similar in many respects to pumped hydro and compressed air, but, unlike those technologies, can return energy in a number of forms, can be scaled up even higher to the terawatt level by utilizing the vast storage capacity of the existing gas system, are much more modular and flexible in siting.

P2G/HES also offers potential solutions for managing renewable power intermittency and over-generation. Simply described, P2G/HES prevents curtailment of renewable over-generation by using it to power electrolysis that splits water into hydrogen and oxygen. The hydrogen can then be distributed or stored in the existing gas system via blending or further conversion to methane, transported by other means such as trucks, or used directly at the point of production as vehicle fuel for Fuel Cell Electric Vehicles (FCEVs). Hydrogen can also be used with fuel cells for Combined Heat and Power (CHP) applications.

Hydrogen thus offers significant potential for multiple - use applications with multiple revenue streams. CHBC looks forward to working with CAISO and CPUC to develop the framework, guidelines and rules for multiple-use applications and storage for hydrogen.

7. ESDER Phase 3

Section 7 of the Third Revised Straw Proposal provides a discussion about the topics that the CAISO currently anticipates will be within the scope of a third phase of the ESDER initiative. The CAISO requests stakeholder input on additional topics that could be included in the scope for ESDER phase 3.

Comments:

CHBC is looking forward to reviewing the results of the upcoming joint agency report on Multiple-Use Application and also the Phase 3 scoping paper expected to be released in September 2017.

CHBC would like to see a framework developed for tariff mechanisms for multiple-use applications that include HES/P2G when developing the scope for ESDER Phase 3.

Renewable hydrogen solutions represent a viable and potentially low-cost approach to large-scale energy storage, and electrolyzers can also serve other grid functions such as rapid demand or supply response, spinning reserve, and frequency and voltage regulation.

8. Other comments

Please provide any additional comments not associated with the topics above.

Comments:

[N/A]