



Stakeholder Comments
2016-2017 TPP Draft Study Plan

Submitted by	Company	Date Submitted
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CESA appreciates the opportunity to comment on the 2016-2017 Transmission Planning Process ("TPP") draft study plan. CESA supports the CAISO's initiatives to study energy storage, particularly large-scale energy storage, as part of the overall preferred resource umbrella in transmission planning to help address flexible capacity, renewables integration, and other system needs. CESA is encouraged to see that the CAISO "exploring opportunities" in its draft 2015-2016 Transmission Plan to identify areas where non-transmission alternatives can meet needs where there are reasonable timelines to allow for the development of preferred resources, such as energy storage.

Within the current TPP framework, CESA understands the difficulty in developing fair methodologies to allow resources such as energy storage to provide transmission services while also participating as a market resource. In these comments, CESA highlights a few key considerations to account for the diverse capabilities of energy storage systems and to continue dialogue with the CAISO on this topic.

Bulk Storage Study (Special Study)

CESA commends the CAISO for conducting a Bulk Energy Storage Resource Case Study ("Case Study") in the 2015-2016 TPP that aimed to explore the ability of a bulk storage resource to reduce production costs, emissions, renewable curtailments, and renewable overbuilds. The Case Study concludes that bulk storage brings benefits in all scenarios it ran, but is best utilized

in a solar-dominant renewable portfolio standard (“RPS”) given the midday hourly generation profile of solar resources.

The Case Study represents a preliminary step toward demonstrating the value of bulk storage resources in a high percentage renewables future. However, CESA requests that continued special studies be conducted on bulk storage systems and suggests the following additions and improvements to the 2016-2017 TPP Study Plan:

- **Expand the Case Study scope to other types of bulk storage resources:** The Case Study examined two 300-MW pumped storage resources, but there are a number of other bulk storage resource types, such as compressed-air energy storage and other longer duration energy storage resources, that should also be examined and considered in a special study.
- **Consider a 50% RPS Study:** The Case Study used a 40% RPS by 2024, but with the passage of Senate Bill 350 that instituted a 50% RPS by 2030, CESA believes this Case Study should be re-run with the new policy objective. For example, Eagle Crest Energy (ECE), a CESA member, submitted comments on the draft 2015-2016 Transmission Plan urging the CAISO to update the Case Study to reflect a 50% RPS in the 2015-2016 study cycle, and CESA is hopeful that the CAISO will accept that recommendation. In any case, a future study should incorporate a 50% RPS, since the RPS level will be at or above that level for the majority of the life of these storage facilities. While the TPP focuses on a 10-year planning horizon, these special studies are information only and the results and conclusions from these special studies will greatly inform future TPP cycles.
- **Quantify transmission impact of bulk storage resources:** The CAISO can build on the efforts of this Case Study by quantifying the transmission benefits and impact of bulk storage systems, which was not within its scope, especially in the geographic areas where the prior 50% RPS Study indicated potentially serious transmission congestion (under normal or contingency conditions). The Case Study instead focused on system-level renewables generation impacts, but did not consider congestion relief and other locational impacts. Quantifying the transmission impact (*e.g.*, transmission congestion relief, reduction of renewables curtailment from that mitigation) is important because it will reveal the value of non-wire alternatives such as bulk storage as a transmission resource. In doing so, the ISO will be able to better align cost recovery mechanisms with the transmission benefit portions attributable to energy storage systems.

50% Renewable Energy Goal for 2030 (Special Study)

The 50% Renewable Energy Goal for 2030 Special Study (“50% RPS Special Study”) plans to investigate the potential transmission needs to meet the 50% RPS by 2030 goal. In the process, CESA requests that the CAISO study how non-wire alternatives can cost-effectively meet these

transmission needs. Non-wire alternatives such as energy storage have the added benefit over traditional “wires” solutions of: reduced environmental impacts (*e.g.*, avoiding infrastructure siting concerns of traditional solutions); relatively quick design and construction for some technologies; flexibility to be developed incrementally and developed using existing infrastructure (*e.g.*, co-locating with existing electrical infrastructure); and providing reliability advantages by siting non-wires alternatives in diverse geographic locations.

A key challenge is that there is currently no consensus methodology to allocate costs and attribute specific benefits of non-wire alternatives such as energy storage that can function as both a transmission asset and a market resource. Part of the challenge of analyzing storage facilities is the broad array of benefits it can provide. Some of those benefits can be reflected through market revenues to a storage provider; however, others are not monetized in the market but nevertheless provide value to ratepayers and help meeting California’s carbon-reduction and clean-energy goals. The CAISO itself recognizes this problem in the draft 2015-2016 Transmission Plan, which states that “consideration should also be given to how the storage resource would be compensated for the benefits it brings to the system.”¹

Thus, CESA believes that it is time to consider how such compensation should be provided, and specifically whether some or all of these benefits should legitimately be included in the CAISO Transmission Access Charge (TAC). This recommended Special Study should at least begin to explore that important question.

CESA appreciates the CAISO’s consideration of CESA’s comments and looks forward to continued participation in the CAISO’s Transmission Planning Process.

¹ CAISO draft 2015-2016 Transmission Plan, p. 258.