

CAISO White Paper on Integration of Energy Storage Technology Comments Submitted by WPTF

Western Power Trading Forum (WPTF) is pleased to provide the following comments on the CAISO's Discussion Paper on Integration of Energy Storage Technology.

First, we note that the topic of energy storage is one part of the larger, wide-ranging initiative set forth in the CAISO's draft High Level Program Plan regarding Integration of Renewable Resources that was issued in late April. Storage should be addressed as one element of a more comprehensive stakeholder process that encompasses all elements of integrating renewable resources, rather than as an independent initiative. Storage is one of many resources that the CAISO may have at its disposal to deal with the operational impacts of uncertain customer load and renewable supply.

There are many different existing technologies that can provide the likely suite of services the CAISO will require in order to accommodate increasing amounts of renewable resources, and no doubt new ones will be developed. WPTF believes that the CAISO's efforts with respect to integrating renewable resources should refrain from discussing any particular technology at the present time. Instead, we recommend the CAISO's stakeholder process be directed toward the broader mission of defining what market products and services the CAISO needs, how to determine the amount of each product or services that's needed, and how to design the markets and products so they can be procured efficiently, cost-effectively and competitively. By defining reliability products and services without regard to the enabling technologies or their economic merits, the CAISO ensures that these services can be supplied by a variety of means (e.g. demand response, storage, fast-start generation), and that competition to provide them is robust.

WPTF also wishes to emphasize the importance of structuring product and service markets so that they provide meaningful prices and minimize regulatory intervention. To the extent prices accurately convey the relative values of the various services that are required to integrate renewable resources, the CAISO and customers will pay for what they need – no more and no less. Requiring service providers to obtain their compensation from market revenues provides a level playing field upon which a variety of supply- and demand-side technologies can compete, makes the cost of those services transparent to consumers, and provides the most economically efficient means to procure needed services. WPTF does not believe customers are best served through subsidies, mandates and other regulatory mechanisms. Accurate prices also provide an objective basis upon which policymakers, regulators and investors can assess the cost-effectiveness of various technologies and policy options.

As the renewable integration stakeholder process moves forward, we encourage the CAISO to aggressively leverage the extensive wind integration knowledge and experience that has been developed in other parts of the US, such as in ERCOT, and Europe. Wind penetration levels in Denmark and Germany already approach or exceed the year 2020 target levels in California, and system operators in those countries are already confronting many of the challenges California will only begin to face over the next few years. We also encourage the CAISO to coordinate the market and operational elements of this initiative with similar efforts already underway in adjacent Balancing Authorities so that policies and procedures work together seamlessly and harmoniously.

Finally, we wish to convey our desire to make meaningful contributions to IRRP work product as proposals are developed. Some of the work products set out in the CAISO's draft High Level Program Plan¹ have relatively short lead times. Others, especially those focused on market-based products that require stakeholder input and approval by the FERC, take longer to develop. We are prepared to contribute time and energy to these ongoing efforts. We also wish to work closely with the staff on an important effort that was not identified in the High Level Program Plan, which is to develop methods and tools for determining how much of each market product to procure.

In the next few weeks, WPTF will prepare and submit a straw proposal that describes a framework for developing the kinds of market products and services that will be required by this initiative. Our proposal should stimulate thought and discussion. It is not our intent to preempt any similar proposals the CAISO is preparing.

Finally, to the extent the CAISO still feels it must deal with storage sooner rather than later, WPTF suggests the CAISO focus any subsequent storage-specific discussion papers on the storage-related issues that are closely tied to its missions of providing non-discriminatory access and reliably operating the bulk power system by addressing the following topics:

- Review the on-going debate about whether storage is a supply resource, a transmission facility, or a hybrid. This section should include the CAISO's assessment of the issue and address the FERC's role in resolving the debate.
- Discuss the specific kinds of operational flexibility products the CAISO expects to require in order to balance the grid around uncertain demand and uncertain production from renewable resources.

¹ <http://www.caiso.com/1fac/1facbc35316e0.pdf>

- List any relevant technical issues the CAISO must address, including testing and verification procedures, telemetry requirements, and information exchanges.
- List any relevant regulatory issues the CAISO must address. This might include tariff provisions that prohibit storage from providing ancillary services or otherwise discriminate against storage technologies.

We would suggest that the economic merits of storage and any mention of economic incentives to encourage the deployment of storage be excluded from this paper to the extent they do not also apply to other supply and demand resources.

We appreciate this opportunity to share our thoughts on these topics and look forward to a productive dialogue with the CAISO staff and other stakeholders on how to accommodate increasing amounts of renewable resources while operating California's electric grid in a safe, reliable, secure, cost-effective fashion.

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