

# Storage as a Transmission Asset

## *Issue Paper*

Dated: March 30, 2018  
Comments Submitted: April 20, 2018

---

### **Summary:**

Calpine shares the CAISO's concern over the quandaries exposed when attempting to implement the directives of the FERC Policy Statement on the Market Utilization of Energy Storage Resources (Docket PL17-2-000). While the Issue Paper identifies some of the concerns, the concepts and structures suggested therein are not unique to storage resource matters and have been long-debated as part of the RMR process. We urge the CAISO to not reinvent the wheel and certainly to not inadvertently create structures that bestow preference to storage resources in the competitive markets.

In the following we offer comments on a variety of matters discussed during the call on April 6.

### **Pressing Need**

Apparently, there is a pressing need for contractual compensation for two battery projects approved as part of the recent TPP. Calpine encourages the ISO to contract for those resources with existing RMR mechanisms – as it did with the Huntington Beach Synchronous Condenser project.

Calpine also suggests a more deliberative process is necessary for a long-term solution to the incorporation of storage resources in transmission rates. The decisions made in this proceeding will, incontrovertibly, affect wholesale market competition and rates. The CAISO should carefully craft contractual provisions (if in fact a new proforma agreement is required) in order to best-preserve just and reasonable competitive terms and rates. While conspicuously absent in Issue Paper, the CAISO's RMR agreement addresses virtually all of the identified issues – why re-invent the wheel?

## **Applicability**

Calpine suggests that the ISO clarify the scope of the projects that will qualify for the rate treatment suggested in the Issue Paper. We understand the reluctance to modify the TPP structure and process through this initiative. However, the next version of the Issue Paper should describe how the ISO will make findings that a “resource is needed to address a reliability need as determined in the ISO’s TPP”. The ISO should clarify whether the targeted storage project is the only, or exclusive solution to the reliability need or whether it could be the result of an economic test/comparison.

When asked, for instance, whether reduction of LCR in a local area would meet that definition of “reliability need”, the ISO was uncertain. We find this striking when in this most recent TPP the ISO has approved transmission investments (in combination with other investments) in both Moorpark and South Bay/Moss Landing specifically targeting reductions in LCR (implying that LCR reduction is in fact a reliability need).

This raises the question of whether all storage projects, new EE investments and new DR program costs in MoorPark should qualify for recovery as transmission assets in that they substantially reduce LCR. In fact, while not specifically approved in the TPP, all of those investments are critical to local reliability and were “counted” in the TPP assessment of what incremental upgrades were required.

## **Interconnection**

The CAISO suggests that a storage project sanctioned in TPP would not have to go through the Section 25, Generation Interconnection Process, but rather, it would be approved as part of the TPP (Section 24 of the tariff.) Calpine disagrees with this assertion but nonetheless asks how Section 24 would be modified to ensure, for instance, the following:

- That the resource could be safely interconnected to the grid;
- That injections beyond the point of interconnection would be deliverable to the location of the reliability need, however defined;
- That the local grid is sufficiently robust to allow the resource to be charged/pumped sufficiently to meet the reliability need;
- That any network upgrades required for either charging or discharging are funded and operational; and
- That other generation in the interconnection queue is not adversely affected by the interconnection of the storage resource.

## **Term/Contractual Provisions**

The life of most transmission investments is 50 years, or longer. While standard depreciation rates for storage projects may be shorter, there is no doubt that these are long-lived investments. The selection of a storage project, therefore, is likely to encumber the CAISO/PTO for 20 years or more.

It would be very helpful for the CAISO – in the next draft of this initiative – to describe the contractual relationship envisioned between the storage resource owner, and /or the PTO and the CAISO. Included in that description should be the rights of each party – specifically, the rights to dispatch.

## **Option A and Option B**

The Issue Paper addresses the possibility (as suggested by the FERC Policy Statement) that a resource that meets a reliability need could also participate in markets. In order to avoid “double recovery” the ISO posits two cost-recovery options. Option A would allow for full Cost-of-Service recovery and a crediting offset of all net market revenues. Option B would allow partial Cost-of-Service recovery and allow the owner to retain all market revenues.

The current RMR pro-forma agreement contains the exact provisions suggested in Options A and B of the Issue Paper.

As with RMR, Calpine supports the development/retention of options to retain revenues (while accepting market risk) or to reject market risk/revenues and merely collect the full cost of service.

While conceptually straight-forward, the most difficult provision of RMR Condition 1 (the equivalent of Option B) is to determine the proportion of the cost-of-service that should be collected in the presence of market revenues. Should it be 25 percent, 75 percent, 95 percent? Should it be based on estimates of net market revenues over the term of the contract (which in this case could be 30 or more years?) Should the owner be allowed to toggle between Option A and Option B? Due to these difficulties, these matters have never (to our knowledge) been decided by FERC – in fact, we believe that black box settlements in RMR proceedings, not clear precedent or principle, have resolved these matters in all instances.

The CAISO may seek the guidance of other ISO/RTOs in implementing the market-based options of the FERC Policy Statement.

### **Cost of Service**

The Cost-of-Service should be the all-in, long run costs. This would include all cost of operations and maintenance (both fixed and variable) as well as capital costs (a return of, and on, invested capital). While always controversial, there are long-tested rules and mechanisms for determining a revenue requirement that can be found in any regulatory economics text book. However, the RMR agreement already contains a formulaic structure for determining cost-of-service in its Schedule F. Again, the ISO should not re-create the wheel.

In addition, the resource is likely to need incremental capital over its 20+ year life. For example, battery storage will require constant replacement in order to maintain capacity targets. The contract should identify the provisions for approval of the incremental capital needs and incorporation of those costs into rates.

### **Bid Rules**

The CAISO must establish bid rules for procured SATAs regardless of whether or not the unit participates and benefits from market transactions. FERC's Policy Statement identifies potential market distortions as a result of SATA bidding as a market resource, but offers very little guidance.

It is trivial to conclude that SATAs that recover fixed costs outside the market should not be allowed to bid lower than their marginal costs. It is not trivial to discover, however the level of their costs. The cost of charging or pumping can occur at any time and the cost of that charging may or may not occur during optimal conditions. Nonetheless, there is a non-zero cost to charging energy, as well as associated ancillary charges (e.g., variable O&M, load-allocated costs) and turn-around efficiency estimates that must all be considered.

In addition to the level of the bids, the CAISO should also determine the frequency of bidding. A resource that has chosen to depend on market revenues should have self-interest in continuously bidding. As such, a continuous must-offer-obligation would be unnecessary, but not offensive either. However, a unit that recovers all of its costs (fixed and variable) under option A, should not be required, and in order to reduce market distortions, prohibited from bidding when it is not needed or reliability.

Thanks