



Solar-Thermal Energy Storage

A FERC staff perspective

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Disclaimer: The views expressed here are my own and do not necessarily represent the views of the Federal Energy Regulatory Commission, its Commissioners, or its staff.

FERC Role

(as relevant to this workshop)

- Ensure just, reasonable, and not unduly discriminatory rates, terms and conditions for wholesale sales of electricity and interstate transmission service

FERC Role vis-à-vis Renewable Integration

- Same as prior slide, but we have observed that many existing rules or practices, designed many years ago for conventional resources, sometimes may inadvertently result in undue discrimination against newer resources
- Our focus is therefore to revise such unduly discriminatory practices as they are identified, so that wholesale markets can provide appropriate price signals to market participants, on both the buying and selling sides, so that they may make appropriate operational and investment decisions
- Where appropriately designed wholesale markets exist, FERC may rely on the market to determine the best and most economic way to integrate renewables

Recent FERC Activities that may be relevant to Thermal Storage

- *Ancillary Services and Storage Accounting Notice of Proposed Rulemaking (RM11-24-000)*
 - Effort to foster the development of bilateral wholesale markets for ancillary service sales
 - Access to bilateral ancillary service markets may provide an opportunity for development of new resources outside of organized market areas, possibly including solar thermal generators, and may help to justify the incremental investment in thermal storage (but again, the market would ultimately decide)
 - For example, thermal storage could enable a solar thermal generator to achieve a higher capacity value in operating reserves markets than solar variability would otherwise allow

- Demand Response Compensation Rule (Order No. 745)
 - Part of effort to eliminate barriers to demand response participation in organized wholesale electric markets
 - Distributed thermal storage could be one enabling technology for demand response

- Frequency Regulation Compensation Rule (Order No. 755)
 - Requirement that organized markets properly price frequency regulation service so that speed and accuracy are appropriately compensated
 - quick-responding electric compressor-based technology of distributed thermal storage may benefit from this rule

Conclusions

- FERC is a technology-neutral regulator with respect to its jurisdictional markets.
- FERC-jurisdictional wholesale electricity markets represent only a subset of the full range of activities that ultimately become incorporated into the end-use retail electric market overseen by State PUCs.
- Because the retail market arguably encompasses all activities or investments that bring power to end-use retail customers, not just those that happen to be FERC-jurisdictional, thermal storage may prove cost competitive at a retail level sooner than it does at a wholesale level.
- Accordingly, I appreciate that the CEC and the State of California are taking a leadership role on this issue and I look forward to the panel discussion.



Thank You

[and please note that there is still time to file comments in RM11-24-000 if the topics it covers are relevant to you; comments are due September 7th]