

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Request for Comments Regarding)
Rates, Accounting and Financial) Docket No. AD10-13-000
Reporting for New Electric Storage)
Technologies)

COMMENTS OF THE ELECTRIC POWER SUPPLY ASSOCIATION

The Electric Power Supply Association (EPSA)¹ appreciates the opportunity to submit these comments on the Federal Energy Regulatory Commission’s (“the Commission” or “FERC”) June 11, 2010 request for comments regarding rates, accounting and financial reporting for new electric storage technologies.² EPSA commends the Commission for asking the fundamental questions necessary to integrate emerging technologies into the existing grid. The questions in the staff inquiry speak to three key areas – cost recovery, competitive market issues, and accounting/reporting. While EPSA has comments on many aspects of the staff inquiry, these new technologies pose questions and concerns not previously deliberated. Certain views expressed below may change as these technologies evolve and are integrated into the markets. Regardless, no matter how new storage technologies are integrated into the market, the Commission’s core principles of comparability and fairness must remain the foundation of any policies aimed at the development and

¹ EPSA is the national trade association representing competitive power suppliers, including generators and marketers. These suppliers, who account for 40 percent of the installed generating capacity in the United States, provide reliable and competitively priced electricity from environmentally responsible facilities. EPSA seeks to bring the benefits of competition to all power customers. The comments contained in this filing represent the position of EPSA as an organization, but not necessarily the views of any particular member with respect to any issue.

² *Request for Comments Regarding Rates, Accounting and Financial Reporting for New Electric Storage Technologies*, Docket No. AD10-13-000 (June 11, 2010). (“Staff Inquiry”)

progress of competitive wholesale markets, including the integration of new storage technologies.

I. COMMUNICATIONS

All pleadings, correspondence and other communications concerning this proceeding should be directed to:

Nancy Bagot, Vice President of Regulatory Affairs
Electric Power Supply Association
1401 New York Avenue, N.W., 11th Floor
Washington, D.C. 20005
(202) 628-8200
NancyB@epsa.org

II. COMMENTS

A. The Identity of Electric Storage

It is important that the Commission not enumerate the potential benefits of new storage technologies without specific products or projects in mind. That may lead to heightened or static expectations of particular technologies or overcompensation/subsidization of one technology over the other before experience elucidates possible and achievable benefits. The market should decide which storage technologies are most viable. The staff inquiry correctly asks several fundamental questions about the function of electric storage and how to classify its value to the grid and the market. It is difficult to quantify the costs associated with and the benefits of storage without first seeking clear definitions of what exactly it is. Electric storage is not just one clear technology

or product, but a host of both. Thus, the costs and values associated with the varying technologies and market products also vary.³

While the uses of storage facilities may span generation, transmission and distribution functions, none of these functions is new to the grid, though different storage technologies may expose the need for improvement and enhancements to the competitive market design. Whether storage is functioning as generation or transmission, most of the services it provides to the market are already defined and compensation structures already exist.

At base, storage functions most like a generator (though there could be instances where storage also performs transmission functions). Generators ramp up and down (similar to a storage facility switching from charging to discharging and vice versa), they dispatch energy (similar to a storage facility discharging). Further, all generation serves some transmission purpose. Generators, aside from simply producing real power, also produce/absorb reactive power to support and control voltage, respond to transmission/generation contingencies with responsive reserve capabilities, and manage transmission flows through real time dispatch changes to generation levels. To say that generation and transmission function completely separately would be too simplistic and incorrect . The same could be said of storage. The same could be said of storage.

³ The California Public Utilities Commission (CPUC) is undergoing a similar preliminary inquiry into new storage technologies. This brief but enlightening paper gives quick descriptions of several different emerging storage technologies and identifies barriers to implementation. Available at: <http://www.cpuc.ca.gov/NR/rdonlyres/71859AF5-2D26-4262-BF52-62DE85C0E942/0/CPUCStorageWhitePaper7910.pdf>

In defining storage technologies, the Commission should recognize that the functions performed by new storage technologies currently exist, though their performance characteristics may differ. All generators support transmission operation and are used to control transmission flows (including as a response to transmission circuit contingencies); the key performance difference of a storage device is that it can consume energy for later use. Thus, most of the functions that a storage device will or can offer to the market are already separately defined under Commission-approved tariffs (including compensation schemes for those technologies); storage technologies will merely *perform* those functions differently than traditional generation would.

When the Commission is considering rate design and recovery options for storage technologies it is important to build on the clear foundation that the industry already has in place pertaining to the various functions storage can perform. If it is determined that existing opportunities for competitive market compensation are inadequate compensation for any of the functions that new storage technology devices can perform, the compensation insufficiency may be true of all generating resources and may not be limited to new storage technologies. If compensation needs to reflect additional levels and types of performance, that change should be incorporated into the market-wide compensation structure and available to all resources capable of meeting specified performance parameters. If there are situations where storage acts purely as transmission and is incapable of providing any competitive market services, then rate-based treatment should be considered.

One step that the Commission could take to incent new storage technology use is to examine the current state of the ancillary service markets. In order to incent storage, the market revenues must provide a recovery of fixed costs and the opportunity for profit. The ancillary services markets as they are currently structured may be inadequate to provide the necessary returns. Reform of these markets will not only incent new storage technologies, but it will also encourage generators to provide the ancillary services that transmission operators need to integrate renewable resources and achieve other public policy goals.

B. Rate Recovery and Compensation Issues

The staff inquiry asks several questions concerning rate recovery and compensation. Commission staff notes that:

Given that storage facilities can be physically capable of providing multiple services, it may be reasonable to contemplate some appropriate sharing of the total cost of facilities between Commission jurisdictional and/or retail rates.⁴

There are a couple of issues contained in the above statement. First, the tension between wholesale and retail rates concerning storage and, second, the more fundamental issue of rate recovery for electric storage devices. On the first issue, EPSA believes that this proceeding should appropriately focus on wholesale rate structures, as retail rate structures are the purview of state regulators. Each project brought before the Commission will be different in purpose and structure. Any consideration of commingling wholesale and retail rates should be considered on a case-by-case basis with the full participation and

⁴ Staff Inquiry, p. 6.

cooperation of the state(s) involved and should take great caution not to interfere with FERC jurisdictional market service rates.⁵

The second issue is whether storage should receive full or partial rate recovery. The staff inquiry correctly notes that “recovery transmission rates could be conditioned on a demonstration that the intended use of the storage asset is for transmission purposes.”⁶ If the storage device (either directly or indirectly) is to perform other functions, as a generator would, it will be compensated under competitive wholesale market tariff provisions.⁷ As noted above, generation is a supply resource that fulfills certain transmission functions due to the nature of the grid. Unless such a function is separately defined and compensated as an ancillary service, these transmission functions do not re-classify the generation resource or require additional transmission rate recovery compensation.⁸

Among the wholesale rate options, transmission cost recovery should be limited to devices used and designated only as transmission. However, careful analysis may be necessary to ensure that facilities receiving such cost recovery do not otherwise unduly interfere with competitive market operation by providing undue advantage to the rate-based resource and precluding the market price from reflecting the price of that resource in the competitive market. The

⁵ One of the key issues being litigated in ER10-787-000 and EL10-50-000 is whether retail rate subsidies to certain resources in the New England FCM have or can be used to suppress capacity market prices thereby depriving investors relying on market-based rates of a reasonable opportunity to recover investment.

⁶ Staff inquiry, pp. 6-7.

⁷ If a storage device were operated by the ISO/RTO or other transmission entity, whether or not there was any market bid price attached the energy withdrawals or injections, the related energy market charging/dispatch would alter competitive market prices for energy, reserves and possibly regulation.

⁸ Note that there are specific ancillary services for which generators are able to seek cost recovery on a portion of their capital costs such as reactive capability. The same should be true for any storage facility seeking to provide that ancillary service.

Commission's policy here should neither over-compensate storage resources nor skew competitive market signals. Because there are a number of new emerging storage technologies, regulators should strive to maintain a level and competitive playing field and to support a more sustainable grid; regulators should not choose winners and losers in order to do so.

Storage devices that are performing generation functions and could receive compensation through competitive wholesale markets should not receive transmission cost recovery. There may be exceptional cases where the specific capital equipment or a portion thereof is solely used for a non-market service (see footnote 8 concerning reactive capability for example). If the same capital equipment provides both services that are compensated through the wholesale market and those that are not currently compensated in the market, the solution is to better define the market services to address the issue.⁹ Storage facilities that will receive transmission rate-based recovery in the unique situation described above should be decided on a case-by-case basis.

C. Competitive Market Issues

Distinguishing the functionality of storage devices also raises several competitive market issues. Storage providers should be fully capable of interacting in ISOs/RTOs, as those markets may be where they are able to provide the most value. On page 7 of the staff inquiry, staff asks whether a commitment not to participate in wholesale energy markets, in order to receive

⁹ There are several underpaid and undefined services in competitive markets; this continues to be a problem for flexible generating resources which support the heavy morning ramp up and intrahour ramping without explicit value, and indeed, sometimes penalized for such flexibility. As mentioned above, ancillary service market reform could be key to incenting new storage technology development.

full cost recovery through transmission rates, is the answer to competitive and cross-subsidization concerns. Keeping storage facilities out of ISO/RTO markets will not resolve the stated concerns. Though ISO/RTO markets may provide challenges, there are workable solutions. As mentioned above, most of the functions that storage performs are already compensated in ISO/RTO tariffs. All devices that provide services that can be compensated through competitive electric market mechanisms should be required to participate on the same basis as other resources capable of providing similar services.

The staff inquiry brings up the question of operational control. As a practical matter, ISOs/RTOs have operational control over all resources connected to the grid; an ISO/RTO directs the operation of the whole system and all the components connected to it. Operational control should not be confused with market participation. Market participation for storage would consist of deciding the price to buy the energy from generators for storage injection and deciding the price at which it is later discharged (sold). There are several models that the Commission and markets can explore that do not involve the ISO/RTO taking ownership or price control of the electricity. The value of electricity storage should be reflected through existing or new market mechanisms where all resources capable of the same or similar service can compete for such compensation, whether the storage owner has title to the electricity or a generator has title to the electricity through a contract with the storage provider. Generators work with ISOs/RTOs and LSEs to schedule ramping up and dispatching energy in an effective manner without the ISO/RTO having title or

physical control of the generating unit or its power. EPSA sees no reason why similar provisions couldn't be developed regarding storage.

D. The Stand-Alone Storage Model

Finally, the staff inquiry asks whether the natural gas model for contract storage is appropriate or if any new model for electric storage should be developed. The staff inquiry describes the natural gas storage model as permitting the use of the storage solely by and to the benefit of only those entities which contract for that storage under a Commission-approved cost of service rate or other negotiated rate. The apparent key to this model is that the value of the service cannot be obtained without contracting for the service and the owner's ability to negotiate the rate for the service with specific buyers. Several EPSA members like the idea of a stand-alone storage model as the basis for the electric side and there are key ingredients to that model that should be maintained. However, there may be elements that need to be changed in order for the model to be successful in competitive wholesale electric markets.

i. Positive Aspects of the Stand-Alone Storage Model

There are three main positive aspects of the stand-alone gas storage model that EPSA members endorse including in an electric storage model: (1) market participation based on price; (2) retaining benefits through specified contracts; and (3) incentives for forward purchases. Note that some of these aspects extend to general market principles that can be improved for all resources in electric markets, not just storage.

A fundamental principle of the gas storage model is the ability of the owner to elect to provide the service or not if the rate offered by the potential buyer is insufficient. While existing gas market rules generally allow a storage owner to self-direct the scheduling of storage injections and withdrawals through self-schedule requests, under electric tariffs, the system operator generally requires the ability to modify or supplement schedules to meet system needs beyond the contract storage customer. As a result, unless the competitive market provides explicit compensation for the resource specific values, the resource owner has no opportunity to require the buyer(s) to negotiate a fair price, they are simply required to provide the service. This shortfall is true of all resources and not unique to new storage technologies, particularly in dealing with injections to the grid as necessary to meet regional or local reliability needs, as well as run the generator (including in dry spin or synchronous condenser mode) to maintain voltage (analog to line pressure on pipeline), whether or not the access to such services has been purchased through the competitive market.

Another positive aspect of the gas storage model is that the buyer contracting for the service has the sole right to use that portion of the storage and obtain the benefit of the increase in injections at that point to satisfy the supplier's obligations. However, in the electric market, all net energy market buyers benefit from the reduction in peak prices delivered by moving the off-peak generation to on-peak periods. Absent that on-peak generation, prices to all loads would be higher. This effect occurs for all storage resources and is not unique to new technologies. In some electric capacity markets, the fact that resources not

purchased as capacity are not required to offer that service does provide some incentive for loads to contract for the injection service. However, unlike the gas storage model, electric generating capacity, including storage, is precluded from not selling the service at prices well below its full cost to provide the service. In addition, as identified above, the premium value of intra-hour increases in injections is not fully received by the contract buyer or resource owner. The resource owner only receives the weighted average energy price for the hour.¹⁰ There would be a clear incentive to build new storage technologies if storage owners were allowed to inject power when prices were lower, sell it back to the grid during peak times and actually receive the higher value allotted to electricity during the higher priced intervals or for currently un/under-valued services when they are provided.¹¹

Finally, while the gas storage model provides incentives for forward purchase of the desired services by disincentivizing unauthorized use of the service (penalties), the electric markets require services to be submitted for ISO/RTO scheduling when the ISO deems use of the storage capacity more economic on a marginal cost basis than other competing services. Even if current storage units are permitted not to sell their services (i.e., where not sold as capacity), if they do elect to sell service at any point in the day, they are generally required to sell for the entire or remainder of the day. This is also true

¹⁰ While the shortfall between weighted average hourly prices and partial hour operation at higher energy bid prices are generally made up through bid price guarantees, those existing energy bid price guarantees are often ineffective for flexible resources as the guarantee is limited to assuring the total daily as bid costs are recovered. A shortfall in one hour is first funded by the resource owner from energy margin earned in other hours in that day.

¹¹ As the CPUC recommends, correct price signals are also key to fully realizing the benefits of electric storage. See CPUC staff white paper (link in fn 3), p. 8.

of generators not purchased as capacity. EPSCA understands an ISO/RTO's need for reliability scheduling. However, if storage devices face competitive market outcomes which under-value capacity, generation, ramping, or contingency protection services, the same is true of generators providing similar service. Regulatory rules to ensure full market participant status and improvements to competitive market designs may be the most important thing the Commission can do to incent investment in these new technologies.

ii. Necessary Changes to the Stand-Alone Storage Model

In the stand-alone storage model, there are certain aspects that should be changed or adapted for a workable electric storage model. For instance, in the gas model, facility operation decisions are limited to local control. While the gas transmission system coordinates the operation of the component storage facilities, pipelines and compressor stations through coordinated tariffs, the ISO/RTO model requires centralized system operation control. Whether merchant or contracted, all resources are subject to ISO/RTO direction to increase or decrease output or otherwise provide reliability services to facilitate safe and reliable transmission system operation. Gas storage facilities are physically different from electric storage technologies, thus the issue of control (as discussed in the competitive markets issues section above) requires a centrally dispatchable approach.

Another necessary divergence from the gas model comes from how the two types of resources participate in their respective markets. While the gas model relies on bilateral transactions and associated scheduling to conduct the

gas market, the electric market relies heavily on energy bid price submittals and ISO day ahead and real time generation scheduling cleared at a location-specific, but otherwise uniform, clearing price. Given this clearing price design, Commission policy requires mitigation of the exercise of market power in the electric energy market to prevent any entity from attempting to increase clearing prices above competitive levels. This is typically implemented through resource-specific bid caps (i.e., market monitoring reference prices), which require the resource owner (or contracting party) to offer what is essentially a zero premium energy call option at a strike price close to the resource's variable cost of operation. There is no opportunity to require energy buyers to pay for any fixed costs associated with the supply of that option.¹² This provides a disincentive for contracting at rates reflecting the value of the call option as the gas model does (because it would be cheaper to wait for the shared savings through a lower LMP received when the resource is forced to sell the service at marginal cost). Once again if the storage facility is acting as a true market participant and responding to prices in this way, it would be inappropriate for the Commission itself to artificially increase prices by giving new storage technologies an out-of-market forward hedge through transmission rate treatment. As the gas model does not offer this type of dynamic price responsiveness, the electric model will need to be altered to reflect the needs of an electric storage provider as a true market participant.

¹² Using New England as an example, any existing capability must be offered into the capacity market at prices below a specified level, or be subject to mitigation to their Going Forward Cost (no recovery of fixed costs permitted) in the capacity market. In the energy market, whether sold as capacity or not, the energy bid can be mitigated down to the variable operating costs of the facility.

III. CONCLUSION

Wherefore, EPSA respectfully asks that the Commission consider the comments herein. Electric storage providers can and should be integrated into wholesale competitive markets as market participants. The Commission should promote sound market principles as the basis for this integration and ensure that storage providers are treated comparably with other market participants providing the same services. The regulatory assurance that a storage provider will be able to respond to price signals, injecting energy at off-peak times and selling it back to the grid on peak, will be a clear investment incentive for storage developers. Further, the Commission should be careful not to “pick winners and losers” of the emerging storage technologies, but rather allow the market to decide which technology has the most long-term viability.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "N. Bagot", is written over a horizontal line.

Nancy Bagot, Vice President of Regulatory Affairs
Tara Ormond, Director of Regulatory Affairs
Electric Power Supply Association
1401 New York Ave, NW
11th Floor
Washington, D.C. 20005

August 9, 2010

CERTIFICATE OF SERVICE

I hereby certify that I have served a copy of the comments via email upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, D.C. August 9, 2010.



Nancy Bagot, VP of Regulatory Affairs