UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

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

COMMENTS OF THE NATIONAL ALLIANCE FOR ADVANCED TECHNOLOGY BATTERIES

Pursuant to the Federal Energy Regulatory Commission (FERC or Commission) Staff's June 11, 2010, Request for Comments Regarding Rates, Accounting and Financial Reporting for New Electric Storage Technologies (Request for Comments),[1] the National Alliance for Advanced Technology Batteries submits the following comments.

I. INTEREST OF NAATBatt

The National Alliance for Advanced Technology Batteries (NAATBatt) is a not-for-profit trade association of more than 40 battery producers and related supply chain companies dedicated to growing the market for advanced energy storage technology in North America. A list of NAATBatt member firms may be found at www.naatbatt.org/members/. Advanced energy storage is essential to reducing American dependence on petroleum and to increasing deployment of clean, renewable energy on the electricity grid. NAATBatt focuses on large format batteries used in advanced automotive and grid-level storage applications (as distinguished from small format batteries more typically used in consumer product applications).

The principal goal of NAATBatt is to reduce the cost of large format advanced batteries. High battery costs are the single greatest challenge to widespread vehicle electrification and to integrating clean, renewable and variable generation resources onto the grid. NAATBatt works

[1] Office of Energy Policy and Innovation; Request for Comments Regarding Rates, Accounting and Financial Report for New Electric Storage Technologies, 75 Fed. Reg. 36381 (June 25, 2010) (Request for Comments).

to reduce battery costs by promoting the development of new technologies, supporting technology road maps and standardization programs, and undertaking public policy initiatives designed to make advanced batteries more affordable to consumers and to electric utilities.

The views expressed in these comments reflect the views of NAATBatt and not those of any NAATBatt member company.

II. COMMUNITY ENERGY STORAGE

Community energy storage (CES) is a type of stationary storage application that involves multiple, relatively small (25-80 kWh) distributed stationary batteries networked together through a single CES hub so as to provide a multi-megawatt power resource to the grid. CES and other types of distributed energy storage systems (e.g., residential storage, vehicle-to-grid applications, etc.) are attracting increasing attention from utilities and regulators around the country. AEP, DTE and Southern California Edison have CES demonstration projects in progress. AEP is installing 2 MW (25-80 kWh Units) of CES in Columbus, Ohio. AEP's CES Functional Specification and some descriptive presentation materials are available at www.aeptechcenter.com/ces. Detroit Edison will install 20 CES units of 25 kW each, to be integrated with a 1 MW storage device in Michigan.[2]

Initial interest in CES centered on its benefits to electricity distribution. Those benefits include backup power to connected loads, flicker mitigation, convenient integration of locally generated renewable energy onto the grid, and elimination of costly reconfiguration of distribution systems during periodic upgrades. However, there is increasing recognition that CES facilities, when aggregated, can be operated to produce many of the same grid-level benefits produced by centralized bulk storage technologies. Those benefits include load leveling, VAR

[2] See Department of Energy Announcement at http://www.energy.gov/news2009/documents2009/SG_Demo_Project_List_11.24.09.pdf

support, and various ancillary services. The aggregated power of CES facilities can also provide transmission function benefits, resolving reliability concerns by, among other things, mitigating transmission overload, addressing transmission line trips, and reacting to voltage dips.

CES and other advanced distributed energy facilities can provide a greater diversity of values and have greater flexibility of function than the traditional distribution, generation and transmission assets they can supplement or replace. Advanced distributed energy storage is not yet widely used on the grid and it is still the subject of study. But it appears increasingly clear that storage assets become more flexible and more valuable the closer to the edge of the grid that they are located.

CES has the additional benefit of supporting the market for plug-in electric vehicles (PEVs). Reducing the high cost of PEV batteries is critical to promoting vehicle electrification in the United States. Because CES facilities can use the same types of batteries as PEVs, widespread deployment of CES on the grid would increase advanced battery production volumes, thereby reducing battery and PEV costs. CES can also provide a secondary use for retired PEV batteries. Retired batteries may be usable in a CES application even after they are no longer suitable for automotive use. Fostering a secondary market for retired PEV batteries could have a substantial impact on PEV prices, promote greater consumer acceptance of PEVs, and further the important national goal of diminishing reliance on imported petroleum. CES can also provide a targeted, quickly deployable and cost effective source of local backup power to support the recharging of PEVs, which will first be released into the mass market later this year.

III. COMMENTS

NAATBatt is grateful for the attention that FERC has been giving to storage-related issues. We agree that storage is a valuable technology for the power grid and that storage

technology has developed to the point where broad deployment of it would be beneficial to consumers. The current regulatory framework of the electric system, however, was not designed with storage in mind. While traditional generation, transmission and distribution are well understood, modern energy storage, particularly in distributed applications, can act as any and all of those functions. The regulatory framework for storage should recognize its unique capabilities, encourage its efficient use, and compensate it fairly for its values.

The development of advanced distributed energy storage technologies makes reexamining the regulatory framework for storage particularly timely. As the Request for Comments notes, older bulk storage technologies, such as pumped storage hydropower, were traditionally built by vertically integrated utilities, included in retail ratebase, and served a specific function.[3] That simple model, however, is no longer adequate to address and capture the full value the new functionalities and flexibility that advanced storage technologies can provide, particularly in distributed applications. Revolutions in electrochemical and communications technologies have enhanced the capabilities and cost-effectiveness of distributed energy storage. Today, a network of 25kW CES battery units installed at the edge of a distribution system can, though the power of their network, provide the same types of energy, ancillary service, and transmission support functions as bulk storage technologies (and at faster response times) in addition to the distribution functions for which they were originally designed. CES and other forms of distributed energy storage simply no longer fit in the regulatory box.

A. In setting rates for storage assets, regulators should accommodate and properly reward the fast response times, flexibility and efficiency of new distributed energy storage technologies.

The goal of rate setting in any regulated power market is to promote investment in a set of assets that provides safe and reliable power to consumers at the lowest possible cost. Power

[3] Request for Comments, 75 Fed. Reg. at 36381.

assets that provide multiple functions can make the grid more efficient and less costly to consumers by reducing the number of single purpose assets needed to provide reliable power.

The Request for Comments expresses concern about possible cross-subsidization, unfair competition and double recovery if storage assets receive revenues for multiple services. These are proper regulatory concerns. However, a simplistic solution that forces storage into a single category is not sound policy. If FERC were to limit storage revenues to only a single source – e.g., requiring storage to choose to be treated as either transmission infrastructure included in cost-of-service rates or as energy or ancillary service provider operating under market-based rates – there is serious risk that revenues earnable by multipurpose storage facilities will be seriously constrained. More sophisticated regulatory safeguards, such as crediting market revenues to captive customers for rate-based storage assets, or allocating shares of storage investment to cost-of-service and market-based purposes based on project function, are needed. In setting rates, FERC should make sure that multi-function, distributed energy storage assets are able to be compensated fully for all of the values they create. Restricting revenue streams unduly would discourage investment in advanced distributed energy storage technologies, which hold the promise of bringing much greater efficiency to the grid.

FERC must also better accommodate and reward the special capabilities that CES facilities and other electrochemical storage technologies can bring to the grid. Fairly compensating faster response times, reducing size and energy requirements thresholds, and accommodating long term contracts for ancillary services are all necessary in order to permit investment in new storage technologies. NAATBatt does not ask FERC to favor storage over other energy technologies; the market must ultimately decide which technologies will succeed.

But FERC must level the playing field and permit grid operators to recognize the value of the unique, positive characteristics of electrochemical energy storage.

B. FERC should permit a single storage facility to recover a separate revenue stream for each function it serves and accommodate multiple owner structures.

In order to capture all values created by a storage facility, the facility must be compensated for each of the functions it serves. FERC accounting and financial reporting rules should ensure that storage facilities can allocate their costs among those different functions. As a general rule, a storage facility serving different functions for multiple customers should recover its costs from those customers in proportion to the benefit each customer receives. The complexity lies in placing a relative value on each function. The cost of a CES facility that is operated solely (1) to provide load leveling for local retail loads, and (2) to provide reactive power in response to voltage dips on an ISO operated transmission line should theoretically obtain cost recovery from retail rate payers and from the ISO in proportion to the value of the services that the facility provides to each. Possible concerns about cross-subsidization of retail customers by transmission customers, and *vice versa*, simply beg the question of whether the allocation of cost responsibility has been fairly set.

A more complicated situation may arise when a CES facility is used in part to serve a distribution or transmission function, for which it is receiving cost-recovery through cost-of-service transmission or retail rates, while at the same time seeking to participate in competitive energy or ancillary service markets. The Request for Comments correctly points out that potential overcollection and cross-subsidization issues could arise if storage participates in competitive markets at the same time it is receiving full cost-recovery through transmission rates. But the cure to such concerns is not to force storage into a single "box" for ratemaking purposes,

but rather to create appropriate policies to match risk and reward in rates. These concerns can be addressed with appropriate regulatory approaches to revenue crediting and risk sharing.

As FERC develops its policy, it should recognize that one possible business structure is for multiple entities to invest in distributed storage facilities, with the storage allocated to one owner at certain times and to another at other times. For example, a CES facility might be jointly owned by a regulated and a non-regulated entity, with the regulated entity having access to the full power of the CES facility during peak times to provide support to a local distribution system and the non-regulated entity having the right to bid the aggregated power of the CES facility (less an allowance for backup power) into the wholesale market at all other times. FERC policy should accommodate such multiple-owner structures. NAATBatt believes that each different owner should be subject to rate regulation based upon the nature of the function it serves with its share of the storage. FERC has recognized in the context of exempt wholesale generators that different owners of the same facility may be treated differently for regulatory purposes.[4] In addition, FERC should permit owners of storage facilities to reclassify their assets from time to time as warranted.

C. Distributed energy storage facilities that perform transmission functions should have access to FERC incentive rate treatments.

FERC has properly sought to categorize and regulate storage facilities by reference to the functions which they serve rather than by reference to their physical characteristics.[5] FERC has used this functionality test to extend incentive rates to storage facilities that serve the same

[4] *See, e g., Duke Energy Vermillion LLC,* 106 FERC ¶ 61,153 (2004).
[5] *See, e.g., Western Grid Development, LLC,* 130 FERC ¶ 61,056 (2010); *Nevada Hydro Co.,* 117 FERC ¶ 61,204 (2006).

function as transmission facilities.[6] FERC should take this same approach in extending incentive transmission rates to CES facilities that serve transmission functions.

As previously explained, advances in electrochemical and telecommunications technologies now permit CES and other distributed storage facilities to be aggregated and operated to perform the same functions as centralized bulk storage facilities, such as the large scale sodium sulfur (NaS) battery facilities that FERC considered in *Western Grid Development, LLC*. CES facilities, however, interconnect to distribution systems. In assessing requests for incentive rates, FERC should use the same type of transmission function test, rather than a formalistic test based on the point of interconnection. If a network of CES facilities is operated to perform a transmission function, it should be treated as a jurisdictional transmission asset and eligible for incentive rates. Consistent with *Western Grid Development*, such treatment should be available only if and to the extent that the CES facility operates as a transmission asset by satisfying such criteria as FERC may specify, provides a minimum, aggregate amount of power in support of its transmission function, and receives the approval of all applicable transmission planning bodies.

Extending the opportunity to access FERC incentive transmission rates to CES and other distributed storage facilities is important in order to further the policy objectives behind *Western Grid Development*. Access to FERC incentive rates for transmission should turn on whether a transmission function is provided to the grid, not on the type of technology that provides it. Since the optimal place to locate grid-level storage may be at the edge of the grid, any regulatory discrimination against CES and other advanced distributed energy storage applications would discourage sound investment in the most effective storage technologies.

[6] *Western Grid Development, LLC, supra.*

D. FERC should convene a technical workshop to discuss the unique issues raised by advanced distributed energy storage technologies, such as CES, in order to develop a consistent and predictable approach to the issues discussed in these comments.

Advanced distributed energy storage, including CES, is still an early stage technology not widely deployed on the grid. While its advocates share many of the same concerns as advocates of older, bulk storage technologies, because of the extreme flexibility and the interconnection point of advanced distributed energy storage systems, its issues are in many ways unique. NAATBatt would urge FERC, as a first step, to convene a technical workshop on advanced distributed energy storage technology. Among the purposes of the workshop would be (1) better understanding business models and ownership structures (including multiple ownership structures) for distributed energy storage facilities, (2) identifying the criteria that distributed storage facilities must satisfy for their services to qualify as generation, transmission, distribution or demand response, as the case may be, and the methodologies by which different services provided by the same facility can be valued for purposes of regulated cost recovery, and (3) clarifying the jurisdictional boundaries of the entities regulating CES and other advanced distributed energy storage applications.

IV. CONCLUSION

CES and other distributed energy storage technologies are advancing rapidly and hold great promise, both for the grid and for other important national energy goals. The potential business models for advanced distributed energy storage are varied and market participants are still exploring how best to exploit these new technologies and capabilities. FERC should move promptly to address the current regulatory questions, but will need to stay alert to developments in the technologies and the business models that require evolution of the FERC policies.

NAATBatt and its member firms stand ready to share insights and provide assistance as FERC addresses these issues.

NAATBatt respectfully requests the Commission Staff to consider these comments as it formulates new policies regarding energy storage rate treatments and accounting requirements.

Sincerely,

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