

UNITED STATES OF AMERICA  
BEFORE THE  
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  
Electricity Consumers Resource Council  
(ELCON)

The Electricity Consumers Resource Council (ELCON) appreciates the opportunity to submit comments to the Commission's Office of Energy Policy and Innovation (OEPI) in response to its June 11, 2010 *Request for Comments Regarding Rates, Accounting and Financial Reporting for New Electric Storage Technologies (Request for Comments)*. ELCON is the national association of large industrial consumers of electricity. ELCON members have an interest in the use and rate treatment of non-traditional technologies for ensuring an adequate, affordable and reliable supply of electricity for their manufacturing facilities.

A defining characteristic of the electric power industry is the absence of meaningful storage capability, and electric storage technologies that are cost-effectively scalable to grid application have long been the industry's "holy grail." The fervor of this quest has only increased as more and more variable energy resources (VERs) enter interconnection queues, and NERC and grid operators struggle to find new ways to balance load and resources.<sup>1</sup> The potential applications of electric storage are grid

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<sup>1</sup> See North American Electric Reliability Corporation, *Accommodating High Levels of Variable Generation, Reliability Issues White Paper*, April 2008, and *Reliability Impacts of Climate Change Initiatives: Technology Assessment and Scenario Development*, July 2010.

stabilization (*e.g.*, remedy rotor angle instability, voltage stability and frequency excursions); grid operational support (*i.e.*, ancillary services and black-start capability); power quality and reliability (*e.g.*, voltage sags); load shifting; and firming and shaping services for VERs.<sup>2</sup>

OEPI's concerns are driven by growing interest in developing commercial-scale electric storage facilities, and aligning the rate treatment of such technologies to regulatory practices and regulations originally intended for the traditional unbundled technologies: generation, transmission and distribution. OEPI's inquiry is thus timely and important.

As an overarching comment, ELCON strongly concurs with the recommendation already submitted to OEPI by Dr. Lawrence D. Kirsch that:

...the Commission accurately define the services that are provided by such technologies so that the providers of such technologies are fully and fairly compensated, so that the owners of certain generating technologies are not inadvertently subsidized through mispricing of storage technology services, and so consumers do not pay for vaguely defined services that they do not in fact receive.<sup>3</sup>

Dr. Kirsch further adds that "providers of electric storage technologies will be fully and fairly compensated if they are simply paid for services that have already been defined by the Commission as part of its mandated Open Access Transmission Tariffs (OATT)."<sup>4</sup> ELCON's comments below attempt to provide a workable framework for accomplishing Dr. Kirsch's recommendations.

#### **A. The Regulatory Treatment of Electric Storage Technologies Should Be Part of A Generic Commission Policy on Resource Neutrality.**

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<sup>2</sup> Rahul Walawalkar and Jay Apt, *Market Analysis of Emerging Electric Energy Storage Systems*, Final Report, DOE/NETL-2008/1330, July 30, 2008 at 5-7.

<sup>3</sup> Comments of Dr. Lawrence D. Kirsch (Christensen Associates Energy Consulting LLC), FERC Docket No. AD10-13-000 ("Rates, Accounting and Financial Reporting for New Electric Storage Technologies"), Dated July 7, 2010 at 1.

<sup>4</sup> Kirsch at 2.

Electric energy storage is another “non-traditional” resource that is vying for access to wholesale power markets dominated by “traditional” resources. Other non-traditional resources are demand response resources (DRR), combined heat and power (CHP) and VERs. Non-traditional resources (VERs and DRR) are two of the Commission’s top three priorities, and feature prominently at the FERC’s new web site.<sup>5</sup> The threshold issue before FERC is the need to retool resource eligibility standards and to adopt the tariff and market rule changes that will enable access to wholesale power markets by non-traditional resources. Dispatch software may also have to be revised to remove any bias in favor of traditional resources in the manner in which the grid is presumed to operate.

In response to the Commission’s Notice of Proposed Rulemaking on Variable Energy Resources (VERs), ELCON defined a regulatory policy on “source neutrality” that is relevant to electric storage facilities and other non-traditional resource as may emerge.<sup>6</sup> Our comments on that NOPR stated in part:

Without the adoption of a resource planning paradigm based on [*resource*] *neutrality*, almost any non-traditional resource may fall prey to undue discrimination with respect to transmission of electric energy and sales of electric energy for resale in interstate markets. Traditional utility resource planning is designed to accommodate traditional supply-side resources—and little else. Many non-traditional resources—such as combined heat & power (CHP), waste-to-energy technologies, demand response, and distributed energy—have encountered various regulatory barriers that interfere with cost-effective adoption of the technologies. Efforts by states (in the form of integrated resource planning or IRP) or by FERC (creation of ISOs and RTOs) have not satisfactorily removed these barriers.

In this inquiry, the Commission seeks to explore whether existing rules, regulations, tariffs, or industry practices within FERC’s jurisdiction may hinder the reliable and efficient integration of VERs, resulting in rates that are unjust and unreasonable and/or terms of service that unduly discriminate against certain types of resources. Given that VER is now the energy resource du jour, it joins the list of maligned resources.

In comments to the Commission in Dockets RM07-19-000 & AD07-7-000 (“Wholesale Competition in Regions with Organized Electric Markets”), ELCON

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<sup>5</sup> The other top priority is Smart Grid.

<sup>6</sup> We have since adopted the term “resource neutrality,” which we will use in these comments.

and other industrial trade groups introduced the concept of “[resource] neutrality” in the context of RTO procurement rules for ancillary services out of fear that the Commission’s proposed “comparability” standard might be interpreted to force demand response (DR) bids to be comparable to generator bids, *i.e.*, industrial providers of demand response in A/S markets must package their product to resemble generation. But the DR capabilities of many industrial loads can often provide grid operators with greater value compared to the typical generator. This value cannot be used in the A/S markets, and the improved market and operational efficiencies realized, if grid operators’ expectations are limited to generation-like resources. This is inefficient. Resource planning, business practices and OATT terms and conditions, and reliability standards need to be rewritten to ensure [resource] neutrality and not favor any particular type or class of technologies. *This is the only long-term solution for preventing rates that are unjust and unreasonable and/or terms of service that unduly discriminate against certain types of resources.* Impediments to open access transmission service for all resources need to be eliminated to facilitate the efficient, least-cost development of infrastructure and ensure that the reliability of the grid is adequately maintained—consistent with environmental law. [Emphasis added.]

The Commission’s on-going initiatives intended to remove entry barriers to non-traditional resources (VERs, demand response and electric storage) would greatly benefit from a clear enunciation of a generic policy on resource neutrality. This policy can be implemented by reviewing and modifying, as necessary, the technical qualifications of existing tariff services (including energy, capacity and ancillary services) to eliminate any bias in favor of traditional resources. In addition, technical qualifications or eligibility criteria that are no longer needed or unduly obstruct the deployment of non-traditional services should be eliminated. The overall objective should be to replace references in tariffs and market rules to specific types of resource technologies with descriptions of generic, resource-neutral operational needs—consistent with the spirit of source neutrality and with the goal of improving performance and lowering delivered costs. Each service should be reevaluated/-developed to determine optimal response times, optimal duration of service delivery, minimum energy deliverability requirements in a defined time period, frequency of service during a defined time period, etc. An example of a new or retooled service is “fast regulation.” The type of review that ELCON is recommending would ascertain

whether faster response time will increase performance at a lower delivered cost, and, if so, define this service.

A generic policy on resource neutrality will eliminate or reduce opportunities for regulatory arbitrage and minimize the need to determine an electric storage facility's "intended use and capabilities" by shifting the focus away from the technology supplying a resource to the service delivered. The policy will also eliminate the need to rewrite tariffs and market rules every time a new technology gets introduced.<sup>7</sup>

**B. The Commission Should Not Use Regulatory Policies to Pick Winning Storage Technologies; Instead, Resource Selection Should Be Based on Lowest Delivery Cost.**

A variety of electric storage technologies claim to be "grid ready" and developers are actively competing to enter the power market to demonstrate their technology's potential capabilities. They include compressed air, pumped hydro, flywheels, thermal energy storage, ultra-capacitors, and batteries (e.g., sodium sulfur, lithium ion, and flow batteries). FERC policies or regulations should not give preferential treatment to any specific storage technology. Nor should electric storage technologies, as a technology class, be given preferential treatment with respect to competing technologies capable of providing similar services (e.g., ancillary services). The services of any non-traditional or traditional resource should be procured based on its ability to offer the lowest delivered, out-of-pocket cost.

ELCON notes, for example, that in *Western Grid Development*, the Commission approved a package of rate incentives for certain energy storage projects that included: (1) 100% of construction work in progress (CWIP) in rate base; (2) combined rates of return on equity adders of as high as 195 basis points; (3) deferred cost recovery through creation of a regulatory asset for pre-commercial costs; and (4) a hypothetical

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<sup>7</sup> The Commission has initiated a series of rulemakings and inquiries specific to non-traditional resources (e.g., variable energy resources in Docket No. RM10-11-000), demand response resources in Docket No. RM10-17-000 and Order No. 719, and now, electric storage. In so doing, the Commission missed the opportunity to address entry barriers in a single generic rulemaking proceeding. .

capital structure of 50% equity and 50% debt.<sup>8</sup> This is an example of preferential treatment of a facility or class of facilities that unfairly disadvantages competing technologies such as demand response resources. At this stage in the development of electric storage technologies, such cost recovery policies will likely suppress further innovation by subsidizing relatively inferior technologies, over-compensating superior technologies, and insulating both from fair market tests. It is not a foregone conclusion that all existing types of electric storage technologies will succeed in producing grid scalable services at competitive rates or prices. Perhaps the biggest uncertainty associated with storage is the economics of the storage business model. Yet, it is important that the industry quickly determines which ones will work for sake of economic efficiency. Subsidies can delay or interfere with this determination by masking the underlying economics.

In ISOs and RTOs, electric storage technologies should not be shielded from wholesale price signals with respect to locational decisions (*e.g.*, siting and congestion relief) or the timing of its operation. The benefits and incurred costs of an electric storage facility will depend on the siting decision.<sup>9</sup> Electric storage facilities should not be allowed to escape any additional costs it imposes on the grid. Electric storage technologies must be required to respond to price signals, and face the full economic consequences of grid integration so as to incent further technological improvements, particularly related to scalability. Energy purchases and sales by non-traditional resources should be settled using wholesale prices on the same basis as traditional resources.

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<sup>8</sup> *Western Grid Development, LLC*, 130 FERC ¶ 61,056 (2010). The developer in this case—in a form of regulatory arbitrage—asked for and got FERC approval for treatment as “transmission facilities” so as to qualify for lucrative transmission and SmartGrid incentives. Western Grid intends to build Sodium Sulfur (NaS) batteries. The projects would support reliability on the CAISO system by addressing, among other things, voltage drop situations, emergency level thermal overload on transmission lines, and prevention of the loss of load to retail customers. Western Grid opted not to seek classification as a generator or load selling demand response.

<sup>9</sup> See Adam Pollock, *Energy Storage: Framework for Developing Regulation*, National Regulatory Research Institute, Undated Paper. At 3.

### **C. Rate Treatment Should Be Based on Cost Causation Principles.**

Federal regulatory policies should ensure that rate structures developed to price the services of electric storage facilities (or any traditional and non-traditional resource) are based on cost causation principles, *i.e.*, electric storage facilities should be assigned all costs that the technology imposes on the system. There must be a direct link in rates between the actions that cause costs to be incurred and the incentives provided by the allocation of such costs. The fact that electric storage resources may be deemed “new and promising” is no justification to depart from cost causation. From a consumer perspective the only legitimate benefit from “new and promising” technology is the potential for services at lower delivered cost.

The fundamental principles of rate design require that allocation of costs follow causation of such costs as closely as possible. This alignment of cost allocation with cost causation promotes economically efficient production, consumption and investment decisions by sending clear price signals.

Public policy considerations also argue in favor of cost causation because those who are allocated costs based on actual, demonstrable benefits they need are less likely to object than those who are allocated costs based on an assumption that they will receive some general, unquantifiable benefit. Cost causation is, therefore, more likely to reduce controversy and assure that the necessary infrastructure is built where the costs truly are justified.

### **D. Cost Recovery Should Not Be Enhanced By Allowing Costs to be Shifted Between Retail and Wholesale Rates, Nor Should the Resource Enjoy the Benefit of Guaranteed Cost Recovery.**

ELCON appreciates the concern expressed by OEPI staff regarding the potential for cross-subsidization in situations where the costs of energy storage facilities are shared between wholesale and retail rates. Specifically, the *Request for Comments* states:

Unlike traditional transmission assets, electric storage serving a transmission function and receiving cost-based transmission rates would also be physically capable of providing ancillary services or otherwise enhancing the value of generation in wholesale energy markets. Accordingly, potential cross-

subsidization, competition, and discrimination issues could arise if the storage participated in those markets at the same time it is receiving full cost-recovery through transmission rates. At 7.

Staff also adds:

There is some precedent in retail ratemaking for permitting guaranteed cost recovery (in bundled retail rates) while also permitting profit-seeking off-system sales in a competitive environment. *Id.*

ELCON believes that it is essential that safeguards are established to protect against cross-subsidization. Staff suggests one example of a safeguard in which the Commission approved a revenue-sharing ratemaking treatment for secondary uses of jurisdictional assets that is comparable to the practice of some retail regulators under similar circumstances. Some state PUCs have addressed this issue by requiring a utility making off-system sales from generation built at retail ratepayer expense to credit to retail rates at some portion of the revenues of such off-system sales.

#### **E. Electric Storage Facilities Should Not Be Allowed to Double-Recover Its Costs In FERC-Jurisdictional Markets.**

Electric storage facilities have hybrid characteristics, *i.e.*, they can be operated as a generator, as transmission, or as demand-side resources (*e.g.*, demand response). This certainly has the potential to enhance the value of storage assets, and that alone obviates any need for additional economic incentives. ELCON shares the concern of the American Public Power Association (APPA) that any ad hoc approaches to dealing with storage facilities not become an opportunity for double-recovery of costs, ostensibly by arbitraging unbundled services in organized wholesale markets.<sup>10</sup> APPA's comments add:

If an energy storage project chooses market-based rate treatment and the Commission approves it, market-based rates should be the sole method of recovery for project costs. If a project seeks and is given cost-based rate treatment, then the *reasonable costs* of the project should be recovered through the appropriate components of cost-based rates. Projects should not be able to recover their full costs of service through cost-based rates and then earn

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<sup>10</sup> Comments of the American Public Power Association, filed August 2, 2010, at 3.

additional revenues through sales in other markets that are pocketed by project participants. Id at 3.

ELCON strongly agrees. Our concern is only heightened by the recommendation in comments already filed in this docket by Riverbank Power Corporation, which is proposing that FERC “allow a storage project to receive compensation as transmission and also receive compensation for enhancing the value of merchant generation or providing ancillary services.”<sup>11</sup>

In conclusion, ELCON appreciates the timeliness of FERC staff’s inquiry and we look forward to working with staff and the Commission on all efforts necessary to enable non-traditional resources to be deployed in wholesale electric markets that enhance the performance of the grid and produce the lowest possible costs to consumers.

#### NOTICES AND COMMUNICATIONS

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Respectfully submitted,

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<sup>11</sup> Comments of Riverbank Power Corporation, filed July 23, 2010, at 4.