

**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

**MOTION TO INTERVENE AND COMMENTS OF THE  
CALIFORNIA ENERGY STORAGE ALLIANCE  
ON REQUEST FOR COMMENTS REGARDING RATES, ACCOUNTING  
AND FINANCIAL REPORTING FOR NEW ELECTRIC  
STORAGE TECHNOLOGIES**

The California Energy Storage Alliance (“CESA”)<sup>1</sup> hereby respectfully submits these comments in response to the *Request for Comments Regarding Rates, Accounting and Financial Reporting for New Electric Storage Technologies* issued in this docket on June 11, 2010 (“Request for Comments”) CESA appreciates the opportunity to participate in this important dialogue with the FERC’s staff and other stakeholders to keep pace with rapidly accelerating recognition of broad public policy challenges and very specific regulatory solutions needed for the key role energy storage technology will play in meeting the Nation’s electricity needs.<sup>2</sup> CESA applauds the FERC’s ongoing efforts to promote and improve reliability of the grid, including support for greater participation of energy storage.<sup>3</sup>

**I. BACKGROUND.**

CESA is a leading industry group advocating for the rapid expansion of use of energy storage, in all of its many forms, to promote growth of renewable energy and a clean, affordable,

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<sup>1</sup> CESA’s member companies are listed at Section 3 below. <http://www.storagealliance.org>.

<sup>2</sup> See e.g., Ethan Elkind, *The Power of Energy Storage: How to Increase Deployment in California to Reduce Greenhouse Gas Emissions*, White Paper, UC Berkeley/UCLA Schools of Law, July 2010.

<sup>3</sup> See, e.g., *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, Order No. 888, FERC STATS. & REGS. ¶ 31,036, 61 Fed. Reg. 21,540 (May 10, 1996), *order on reh’g*, Order No. 888-A, FERC STATS. & REGS. ¶ 31,048, 62 Fed. Reg. 12,274 (Mar. 14, 1997), *order on reh’g*, Order No. 888-B, 81 FERC ¶ 61,248 (1997), *order on reh’g*, Order No. 888-C, 82 FERC ¶ 61,046 (1998), *aff’d in part, remanded in part, Transmission Access Policy Study Group, v. FERC*, 225 F.3d 667 (D.C. Cir. 2000), *aff’d sub nom., New York v. FERC*, 535 U.S. 1 (2002).

and reliable and secure electric system. It is storage technology-neutral and supportive of all business models for deployment. CESA's member companies include a diverse range of advanced energy storage technology and manufacturing companies, systems integrators, and renewable energy developers.

For the purposes of these comments, all forms of energy storage should be considered, including mechanical, chemical, and thermal means of storing and using energy. A useful working description of "energy storage" to frame the context of these comments is contained in the FERC's *Smart Grid Policy*:

"For the purposes of this Policy Statement, electric storage refers to the storage of different forms of energy that may be beneficial to the bulk-power system. For example, while pumped hydroelectric storage refers to the potential energy stored in a reservoir of water, it is the conversion of that energy to electricity by a water turbine generator that makes it useful. Similarly, a flywheel stores kinetic energy to spin a generator, and batteries convert chemical energy directly into electricity. Moreover, there are useful applications for stored energy (for example, thermal energy) that is not converted into electricity, but can substitute for electrical power by providing an end use."<sup>4</sup>

CESA concurs that it is essential to bear firmly in mind the fact, as both the FERC's Smart Grid Policy and the Request for Comments clearly do, that energy storage, encompasses all forms of the use (or avoidance of use) of electricity at a time other than when it is generated. The United States Department of Energy<sup>5</sup> is on record as highlighting the well-understood (but often overlooked) fact that multiple value streams can be captured by the same energy storage system:

"The cost for certain advanced battery technologies has decreased by more than 50 percent, down to \$2,000/kW for a 7 to 8 hour battery, making it possible for these systems to provide an attractive return on investment when multiple value streams are monetized (e.g.,) shifting renewables from off-peak to on-peak, credit for capacity with use of a 7-hour battery, shaving daily peaks, increasing T&D asset utilization, etc.)." (p. 3).

In these comments CESA first calls for creation of a new asset class for energy storage, before responding to the specific questions posed by the Commission's staff in the Request for Comments. CESA's responses to the specific questions posed in the Request for Comments are intended to encompass the range of specific goals and strategies pursued by its members, from

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<sup>4</sup> *Smart Grid Policy Statement*, 128 FERC ¶61,060 (2009) (Footnote 108, at page 46).

<sup>5</sup> *Energy Storage-a Key Enabler of the Smart Grid*, Developed for the U.S. Department of Energy Office of Electricity Delivery and Energy Reliability by the National Energy Technology Laboratory, September 2009.

the fastest ancillary services, to the longest duration peak shifting, stand-alone applications, and the promise of distributed energy storage coupled with renewable generation. CESA then highlights and discusses several fundamental themes that cut across existing regulatory classification schemes and jurisdictional divides – the gap between the promise of the FERC’s enunciated policies and the limitations of energy storage management in practice, performance-based compensation, and inclusion on a comparable basis with generation in the transmission planning process.

The primary purpose of all energy storage is to shift the time period between when electricity is generated and when it is transmitted to end users, by storing it for some period of time ranging from seconds to hours. The FERC should therefore create a separate asset class for energy storage that recognizes the unique benefits of being able to store energy to improve the reliability, efficiency and cost effectiveness of operating the grid. At a minimum, defining storage as a separate asset class will enable energy storage providers to accurately describe its operational characteristics and costs to operate in required reports and filings with the FERC. Just as Regional Transmission Organizations (“RTOs”) have created separate resource categories for generators and demand response, RTOs should also be encouraged by the FERC to promote a separate asset category for energy storage that recognizes its unique operating characteristics. In order to achieve comparability in the ancillary service markets new, advanced energy storage technologies must be able to appropriately model and bid their resource based upon their actual operating characteristics. Creating a separate category for energy storage resources will therefore be a superficially mundane, but pragmatically crucial step toward integrating energy storage into today’s wholesale markets.<sup>6</sup>

One RTO, the California Independent System Operator (“CAISO”), has undertaken a multitude of independent, but highly interrelated, policy initiatives and stakeholder processes over the last few years that are making varying degrees of progress toward FERC-approved tariff

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<sup>6</sup> It would follow, of course, that energy storage that it is interconnected to transmission to provide ancillary services under open access transmission tariffs (“OATTs”) should be FERC jurisdictional. Moreover, if the FERC defines energy storage as a separate asset class it should enable it to obtain incentive-based rates, similar to advanced transmission assets, if it can demonstrate that the application provides incremental benefits that increase operational and energy efficiency, enhance grid operations, and result in greater grid flexibility.

status.<sup>7</sup> An unfortunate example that comes immediately at hand is the CAISO's Revised Transmission Planning Process ("RTPP"), aimed at helping the State of California meet its increasingly ambitious renewable portfolio standard goals, which recently failed to pass muster at the FERC, and is now the subject of a scheduled Technical Conference.<sup>8</sup> Another tariff filing was made just last week to bring comparability required by RTOs to non-generator resources that may well face a similar fate.<sup>9</sup> Worse yet, a CAISO initiative focused specifically on integrating energy storage with renewable resources has seemingly stalled at the pilot project stage.<sup>10</sup>

Also in California, the California Public Utilities Commission ("CPUC") has very recently come to the realization that it is faced with a comparable plethora of active proceedings that involve, but are insufficiently focused to resolve, regulatory barriers to deployment of energy storage.<sup>11</sup> In a stakeholder outreach effort that bears a striking resemblance to the Request for Comments, the CPUC's staff has very recently issued a "White Paper," calling *inter alia* for a new rulemaking proceeding dedicated exclusively to energy storage. Of course, it is far too early to tell where either the FERC or the CPUC staffs' inquiries and recommendations will lead, but it is encouraging to note that they mirror each other in their observations from both sides of the wholesale vs. retail jurisdictional divide that is both a cause and effect of the multiple value streams that are the defining quality of energy storage.<sup>12</sup>

In a very real sense, the Request for Comments has already accomplished what CESA views as the essential prerequisite for a meaningful step-level increase in progress, namely high-level focus and wide-spread education of public officials and the general public on the importance of energy storage at the National level. Energy storage is an important aspect of the

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<sup>7</sup> It is convenient for CESA to highlight the CAISO as an example of RTO policies and practices, but all RTO's, and CESA's members are experiencing the same evolving market experiences described in these comments to some degree or another.

<sup>8</sup> Order Conditionally Accepting and Suspending Proposed Tariff Revisions and Establishing Technical Conference, [Docket No. ER10-1401-000] (Issued July 26, 2010); Notice of Technical Conference, [Docket Nos. ER10-1401 and EL10-76,] (Issued August 2, 2010).

<sup>9</sup> *California Independent System Operator Corporation*, [Docket No. ER10-1755], Tariff Amendments Regarding Interconnecting Asynchronous Generators (Filed July 22, 2010).

<sup>10</sup> *See, Participation of Limited Energy Storage Resources in CAISO Wholesale Electricity Markets*, CAISO Discussion Paper, January 16, 2009.

<sup>11</sup> *See, e.g.*, Demand Response (R.07-01-041, issued January 25, 2007), Smart Grid, (R.08-12-009, issued December 18, 2008). Distributed Generation (R.10-05-004, issued May 6, 2010), Long-Term Procurement Planning (R.10-05-006, issued May 6, 2010).

<sup>12</sup> *Electric Energy Storage: An Assessment of Potential Barriers and Opportunities*, Commission Policy and Planning Division White Paper, July 9, 2010.

FERC's foundational Orders 890<sup>13</sup> and 719<sup>14</sup>, and it is also presently a subtopic in several active dockets at the FERC<sup>15</sup>. One-off rulings issued in response to specific requests for clarification by means of declaratory orders that may have less obvious connections to energy storage (such as several varieties of feed-in tariffs in California) may also have far-reaching ramifications for tension between the FERC's jurisdiction and state-level retail programs that should be avoidable.<sup>16</sup> Nonetheless, it is vital that the FERC and the states both speak with as much clarity (if not unanimity) as possible to the question of jurisdiction - whether or not the FERC may, or may not, have jurisdiction in a particular case (*e.g.* demand response). A consensus must emerge that in the context of both state and Federal regulatory schemes energy storage is *sui generis*. Unfortunately, the net result to date from a state and national policy perspective is considerably less than might be hoped for.

## II. COMMUNICATIONS AND CORRESPONDENCE.

Address all communications and correspondence in the above-captioned proceeding to:

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<sup>13</sup> *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, FERC Stats. & Regs. ¶ 31,241, *order on reh'g*, Order No. 890-A, FERC Stats. & Regs. ¶ 31,261 (2007), *order on reh'g*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *order on reh'g*, Order No. 890-C, 126 FERC ¶ 61,228 (2009).

<sup>14</sup> *Wholesale Competition in Regions with Organized Electric Markets*, 125 FERC ¶ 61,071(2008) *Order on Rehearing*, 128 FERC ¶ 61,059 (2009).

<sup>15</sup> See *e.g.*, Notice of Proposed Rulemaking on Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities [Docket No. RM10-23-000] 131 FERC ¶ 61,253 (Issued June 17, 2010); Notice of Proposed Rulemaking on, *Demand Response Compensation in Organized Wholesale Energy Markets*, 130 FERC ¶ 61,213 (2010); *Notice establishing date for comments re Frequency Regulation Compensation Organized Wholesale Electric Markets*, [Docket No. AD10-11] (May, 27, 2010); *Integration of Variable Energy Resources*, 130 FERC ¶ 61, 053, [Docket No. RM10-11-000] (January 21, 2010); and *Western Grid Development, LLC*, 130 FERC ¶ 61,056 (2010).

<sup>16</sup> Compare: “*Request for Comments*: “Staff believes that the chief electric storage uses implicating Commission jurisdiction are: 1) maintaining service to unbundled transmission customers; 2) enhancing the value of generation; and 3) providing ancillary services (p. 10, and fn. 2). These uses are exclusive of the service storage may provide to retail load.” Contrast, *White Paper*: “A cost benefit analysis for energy storage may need to consider costs and benefits that may be outside the jurisdiction of the CPUC” (p. 8, fn. 10).

### **III. MOTION TO INTERVENE IN DOCKET AD10-13-000.**

CESA is an unincorporated association, the membership of which consists of A123 Systems, Altairnano,, Applied Intellectual Capital/EAST PENN Manufacturing Co., Beacon Power Corporation, Chevron Energy Solutions, Debenham Energy, Deeya Energy, Inc., Enersys, Enervault, Fluidic Energy, Ice Energy, International Battery, Inc., MEMC/SunPower, Powergetics, Primus Power, Prudent Energy, PVT Solar, Restore Energy Systems, Samsung SDI, SEEO, Suntech, Sunverge, SustainX Energy Storage Solutions, and Xtreme Power. The views expressed in these comments are those of CESA, and do not necessarily reflect the views of all of the individual CESA member companies. CESA's intervention in this proceeding is in the public interest, and CESA's interests will not be adequately represented by any other party. CESA therefore respectfully requests that this motion to intervene be granted.

### **IV. CESA'S RESPONSES TO SPECIFIC QUESTIONS POSED BY THE STAFF'S REQUEST FOR COMMENTS.**

#### ***A. Under what circumstances should or can an energy storage provider be classified and receive compensation as a transmission asset?***

Energy storage should be able to participate in the CAISO transmission planning process as transmission, generation or demand response. In accepting the CAISO's Order No. 890 compliance filing (again taking California as an example) the FERC examined the CAISO's transmission planning process and found that CAISO had adequately provided for consideration of "demand response" alternatives as part of its consideration of both reliability driven, and economically-driven additions and upgrades.<sup>17</sup> The FERC noted that Section 24.2.2(d) [now Section 24.2.3(d)] of the CAISO's OATT provides for inclusion of demand response programs "as alternatives to transmission upgrades if they are proposed during the request window;" that Section 24.2.2.1 [now Section 24.2.3.1] provides that "demand response programs and generation projects proposed during the request window will be subject to the same screening criteria as other [transmission] projects;" that Section 24.1.2 provides that "demand side management and interruptible loads will be considered as alternatives to transmission upgrades or additions when the CAISO is considering reliability related projects; and that Section

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<sup>17</sup> *California Independent System Operator Corporation*, 123 FERC ¶ 61,283 at ¶ 106 (2008).

24.1.1(b) provides that “the CAISO must consider the costs and benefits of viable alternatives to proposed economic transmission projects, including demand-side management programs.”<sup>18</sup>

While the FERC’s order accepting the CAISO’s Order No. 890 compliance filing does not explicitly state that energy storage is a form of demand response, it is clearly what the FERC intended. Specifically, “[t]he Commission made clear in Order No. 890 that advanced technologies and demand-side resources must be treated comparably where appropriate in the transmission planning process and, thus, the transmission provider’s consideration of solutions should be technology neutral.”<sup>19</sup> Since Order No. 890 does not limit “advanced technologies” to transmission equipment, it was the FERC’s intent to require all forms of energy storage that can provide alternatives in the transmission planning process to be eligible to participate.

**B. *Under what circumstances should an energy storage project be permitted to receive compensation as transmission and also receive compensation for enhancing the value of merchant generation or providing ancillary services?***

Because advanced battery systems and similar energy storage technologies provide multiple benefits, the FERC should afford regulatory flexibility in its rate treatment. Specifically, merchant energy storage providers should be compensated for the services they provide, rather than be classified and constrained by asset categories associated with technology type - such as battery or flywheel - or market segment - such as load, generation, or transmission. The FERC staff has expressed concern in the Request for Comments that facilities operating in cost of service regimes not be allowed to “overcollect” their total revenue requirement with other revenue streams. This potential issue can be addressed in several ways. First, if a storage system is owned by a transmission owner and serves, in part, a transmission function (or serves as a substitute for transmission upgrades), the transmission owner should be permitted to include the investment costs in its transmission ratebase, and required to provide credits to its transmission account for any revenues that might be received from the non-transmission functions. This simple approach should adequately guard against overcollection.

Currently, there is a lack of incentive for utilities to abandon the use of conventional - but more costly - transmission or ancillary service solutions. Another approach to cost and benefit allocation would therefore be to split the cost of the energy storage system based on anticipated

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<sup>18</sup> See, e.g., CAISO Tariff at Sec. 24.1.1(b), Sec. 24.1.2.

<sup>19</sup> *Id.*

functions. The transmission share could be included in cost of service rates, and the merchant energy service provider could participate in competitive ancillary service or energy markets with the remaining share. This would provide assured cost recovery for part of the transmission share of the asset, and treat the remainder as a merchant investment. This type of approach would help create and foster a more vibrant market for energy storage technologies, and reduce the risk to transmission customers. It would also encourage utilities to move forward with deployment of energy storage assets.

- C. *Should creation of a stand-alone contract energy storage service be considered and in particular, and should a storage provider be permitted to only provide the service of electricity storage and leave it to its customers to determine how to use their contracted share of use of the provider's storage device?*

CESA supports all regulatory options that enable energy storage to be utilized as a transmission alternative or supplement and still participate in the energy markets so long as the transmission and reliability responsibility takes precedence. With transmission and generation projects, developers have a range of options from wholly rate-based to merchant, as well as the option to reclassify projects as needed to best serve ratepayers. This type of flexibility is needed to assure that the full value of energy storage technology is understood and can be captured by parties that deploy energy storage. The Request for Comment's suggestion of an energy storage service contract should be only one of numerous means of achieving this type of flexibility.

There are others, but - at a minimum - the following business models should be allowed to coexist under an optimized regulatory framework:

- a. **Rate-Based Energy Storage** – The utility owns the energy storage system and recovers its cost through rate-base, not selling any services from the energy storage system into the market.
- b. **Rate-based Energy Storage, With Revenue Credits From Market Usage** - The energy storage is utility-owned and included in the utility's transmission rate-base, but utility uses energy storage in the market only in periods when the energy storage system is not needed to comply with reliability requirements as established and directed by the RTO. The RTO would determine on a day-ahead basis when the energy storage system is called for reliability use and precluded from participation in the market. Revenue received from incremental market transactions flow back to reduce



the amount of recovery needed from the ratepayer, with a portion being retained by the utility as an incentive to maximize market revenue recovery. However, If the utility breaches its first use obligation for reliability, the utility could see all or a portion of the incremental market revenue disallowed. Enable incremental market transactions from a utility asset is not a new precedent - utilities have been selling excess capacity and energy from their rate-based generation for years.

- c. **Merchant Energy Storage, Reliability Contract with the Utility** – Energy storage is owned by a merchant, who has a contract with a utility using the energy storage system to provide reliability services. The merchant energy storage owner sells the utility a term “reliability service” product in lieu of the utility either building a “lumpy” transmission addition or investing in an energy storage system the utility needs only as a “bridge” until it can justify the transmission addition or upgrade. The merchant’s first priority obligation during the term of the contract is to the utility as directed by the RTO. At the same time, the contract anchors feasibility of financing while the merchant owner sells services from the energy storage project into the market.
- d. **Merchant Energy Storage** - Energy storage is merchant-owned and all costs are recovered from the market.

**D. *Should new accounting and reporting requirements be created in order to facilitate Cost of service ratemaking for new storage technologies?***

The FERC’s accounting requirements (18 C.F.R. Part 101 (2009)) currently do not contain specific accounting parameters or functional classification for new electric storage technologies. As such, it is difficult for owners of such technologies to complete their reporting requirements. This in turn makes it difficult for regulators to determine costs and establish appropriate rates for new electric storage technologies. Several modifications and additions to the FERC’s accounting requirements are necessary to facilitate cost of service or other rate policies for new electric storage technologies. The Commission’s existing accounting requirements classify utility plant costs that lack: (1) a specific utility plant cost classification, (2) plant and equipment accounts, and (3) operation and maintenance expense accounts for new

energy storage technologies poses a reporting challenge for owners of such technologies and a cost determination challenge for regulators of rate policies. Because energy storage technologies may be classified as production, as transmission, or as distribution, depending on the circumstances, it is necessary to modify (or at least clarify) each of these three plant functions to better capture storage plant costs. As noted earlier, it would be preferable to capture energy storage plant costs by creating a new storage plant function instead of modifying existing plant functions.

Different electric storage technologies have different operating cost structures, some have higher upfront capital costs and lower operating costs, while other storage technologies may have lower capital costs and higher operating costs. Therefore, it is important to enable utilities to properly capture these expenses for cost-of-service rate purposes.<sup>20</sup> Some additions to the FERC Form No. 1 needed to accurately capture these financial and non-financial data specifically for energy storage. Once these changes are made, the FERC and utilities may use the information in the same manner that they use it for other technologies to develop and monitor cost-based rates.

## **V. CESA’S OBSERVATIONS ON TOPICS NOT SPECIFICALLY RAISED IN THE STAFF’S REQUEST FOR COMMENTS.**

### **A. Order 890 Reforms Are Still Very Much a Work in Progress**

The Request for Comments notes “Some new technologies have the potential to respond to frequency deviations in the transmission system faster than other (traditional generation) resources.” (p. 4, fn. 3). The OATT reforms undertaken as a result of Order 890 provide a regulatory basis for energy storage devices to be comparably compensated for their unique abilities.<sup>21</sup> Yet the process of modifying the tariff provisions to accomplish this comparability has been slow. Expediting these market reforms will in turn accelerate energy storage deployments and hasten the arrival of significant customer benefits. The current language in the *pro forma* OATT should allow energy storage technologies to offer regulation services. The specification of “other non-generation resources capable of providing this service” has provided organized markets with the initial motivation to incorporate energy storage devices into the regulating reserve markets. While tariff changes throughout the regional wholesale markets have

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<sup>20</sup> KEMA, *Cost Comparison for a 20 MW Flywheel-based Frequency Regulation Power Plant*, September 2007

<sup>21</sup> [cite].

begun to allow energy storage participation in the organized markets, the changes are incomplete and have yet to fully incorporate the full range of energy storage's capabilities.

**B. Energy Storage Should be Paid for Performance.**

Key differences between energy storage and traditional generators that should be valued, and fairly priced, include the following:

- a. **Broad Operating Range** – Many energy storage technologies can operate in a range anywhere between minus 100% nameplate and positive 100% nameplate capacity, looking either like a load or a generator in response to system needs. Gas turbines can typically only operate between nominally 50% - 100% of nameplate capacity rating.
- b. **Negligible Air Emissions** - Energy storage is able to utilize grid-sourced energy which enables sourcing from renewables. In addition to the air emissions from conventional fossil generation, the emission levels per unit of energy output also increases when the fossil generator operates with output varying from its design point, which is typical when providing ancillary services.
- c. **No Efficiency Impact** - Many energy storage systems use solid state technologies, which have significantly reduced negative efficiency impacts during turndown and variation from its nameplate rating, making storage a more efficient provider of ancillary services.
- d. **Quick Response** - Energy storage output can be moved from zero to nameplate output or input almost instantaneously through an electronic signal as a responsive reserve. Fossil generators must received advanced notice in order to get on-line and synchronized to the grid and then have ramp rates significantly slower than modern energy storage technology.
- e. **Ramp Rates** - Modern energy storage technologies respond virtually instantaneously, which makes storage very effective for use as a provider of regulation service, responsive reserves, and other fast and accurate ancillary services.

While energy storage systems outperform traditional grid management resources, many U.S. markets do not adequately value fast responses. For example, a PJM official recently noted “We probably are underpaying right now for good performance.”<sup>22</sup> The current PJM regulation performance requirements specify that a regulation resource has five minutes to attain the operator’s dispatch target. Yet, an energy storage system that can respond in cycles does not receive additional value under PJM’s current tariffs. In contrast, the Independent System Operator, New England (“ISONE”) pilot program provides a “mileage payment” for the total up and down movement made by regulation service. The mileage mechanism can result in payments as much as 2.5 times greater than a traditional generator.<sup>23</sup> This market structure is ideal for encouraging participation by merchant energy storage providers.

The ideal market would provide performance-based compensation based on speed and precision of the energy storage resource. Existing best practices, such as the ISONE mileage payment or the New York Independent System Operator (“NYISO”) Liquid Energy Storage Resource rules provide a positive example of tariff structures that reward performance and decouple the unique capabilities of energy storage from an unnecessary obligation to supply energy. The ability to substitute energy storage for reserve requirements frees up generators to pursue more profitable energy sales in some international markets. Further reforms in this direction will be required in all regions to provide a workable market for fast energy storage services.

Traditional reserve market rules have been optimized for slow ramping generation units providing nearly unlimited energy. New units with fast ramp rates could significantly reduce the cost of reserve procurement, but their market participation is hampered by prevailing tariff regimes. A widely cited Pacific Northwest National Laboratory study, among others, has clearly demonstrated increased reliability from closer balancing as well as lower cost from reduced reliance on higher cost generators for regulating reserves.<sup>24</sup> KEMA and Carnegie-Mellon studies, likewise among others, have modeled significantly lower CO<sub>2</sub> emissions from frequency

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<sup>22</sup> Testimony of Andrew Ott, Transcript of the FERC Technical Conference on Frequency Regulation, May 26, 2010, Docket AD10-11-000, pg. 72.

<sup>23</sup> Testimony of Mike Potishnak, Transcript of the FERC Technical Conference on Frequency Regulation, May 26, 2010, Docket AD10-11-000, pg. 85.

<sup>24</sup> Y.V. Makarov, J. Ma, S. Lu, and T.B. Nguyen, Assessing the Value of Regulation Resources Based on Their Time Response Characteristics, June 2008, PNNL-17632..

regulation when thermal generators are replaced with flywheels, and other fast-response energy storage technology.<sup>25</sup>

**C. Energy Storage Should be an Integral Part of all Transmission Planning.**

The FERC should require full and fair consideration of viable cost-effective energy storage as an option in every transmission study, and as part of the analysis and decision-making process for all transmission projects. One necessary prerequisite for such a process to be effective is the elimination of unintended consequences of legacy tariff language that excludes energy storage in favor of generation.

**VI. CONCLUSION.**

CESA appreciates this opportunity to submit these comments in response to the Request for Comments. CESA strongly urges the FERC to continue to pursue the host of regulatory issues that are resulting from the recent improvements in energy storage technology and economics.

Respectfully submitted,



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<sup>25</sup> See, *Research Evaluation of Wind Generation, Solar Generation and Storage Impact on the California Grid* California Energy Commission, June 2010 *Renewable Integration: Market and Product Review*, July 8, 2009; and *see Air Emissions Due to Wind and Solar Power*, Carnegie Mellon Electricity Center, October 23, 2008.

**CERTIFICATE OF SERVICE**

I hereby certify that I have this day served a copy of the *Motion to Intervene and Comments of the California Energy Storage Alliance on Request for Comments Regarding Rates, Accounting and Financial Reporting for New Electric Storage Technologies* on all parties of record in proceeding *AD10-13-000* by serving an electronic copy on their email addresses of record and by mailing a properly addressed copy by first-class mail with postage prepaid to each party for whom an email address is not available.

Executed on August 9, 2010, at Woodland Hills, California.

  
Michelle Dangott

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