BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order instituting Rulemaking Pursuant to Assembly Bill 2514 to Consider the Adoption Of Procurement Targets for Viable and Cost-Effective Energy Storage Systems.	)	**Rulemaking 10-12-007 (Filed December 16, 2010)**

OPENING COMMENTS OF BEACON POWER, LLC ON THE DECISION ADOPTING PROPOSED FRAMEWORK FOR ANALYZING ENERGY STORAGE NEEDS

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OPENING COMMENTS OF BEACON POWER, LLC

Pursuant to Rule 14.3 of the Rules of Practice and Procedure of the California Public Utilities Commission (the "Commission"), Beacon Power, LLC ("Beacon Power" or the "Company") a manufacturer and merchant developer of an innovative advanced energy storage technology that uses flywheels to provide fast accurate Regulation service to the grid hereby files its Opening Comments on the Proposed Decision Adopting Proposed Framework For Analyzing Energy Storage Needs that was issued in the above-captioned matter on July 2, 2012.

I. COMMUNICATIONS

Beacon Power respectfully requests that Communications and correspondence related to this filing should be directed to the Company's representatives:

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II. ABOUT BEACON POWER

A. The Technology

Beacon Power's innovative energy storage technology operates by using flywheels to rapidly inject and withdraw power from the grid in order to quickly and accurately follow fast-changing regulation control signals. When generated power exceeds load, Beacon Power's flywheels store this excess energy. When load increases, Beacon's flywheels return the energy to the grid. Using a 25 kWh/100 kW flywheel system, Beacon Power's technology can respond nearly instantaneously to a system operator's control signal, or up to one hundred times faster than traditional generation resources. Beacon's flywheel technology has a life-span of 20 years with extremely low maintenance requirements. The ability of Beacon Power's flywheels to quickly and precisely respond to moment-by-moment system changes make this technology ideally suited to provide frequency regulation.

B. Benefits of Using Flywheel Storage for Ancillary Regulation Services

Beacon Power's flywheel technology offers many key advantages over the conventional generation resources now used to provide Regulation Service and will provide numerous benefits to California ratepayers and ensure reliable operation of the California power grid.

1. Fast Response

As affirmed by the California Independent System Operator Corporation ("CAISO") in its January 16, 2009 Discussion paper "Participation of Limited Energy Storage Resources in CAISO Electricity markets", flywheels are ideally suited to provide Regulation Service given their ability to charge or discharge nearly instantaneously. Beacon Power's flywheel technology participated in California demonstration project as part of a 2006 trial sponsored by the California Energy Commission. In a December 26, 2006 letter to Beacon Power, CAISO stated:

> "The California ISO is pleased to certify that the 100 KW high speed flywheel technology demonstrated by Beacon Power is an acceptable technology for potential use as a regulation resource for the power grid.... The unit's high speed response rate and outstanding performance was clearly demonstrated to the California ISO, the CEC and documented in the report provided to the Department of Energy."

Specifically, with the addition of more intermittent wind generation to the California Control Area, the grid will benefit from flywheel's fast response capability to address the control issues created by the frequent and unpredictable changes in wind output. As the amount of power generated by wind and other intermittent resources increases in order to meet California's Renewable Portfolio Standards, the need for fast regulation will also increase. Fast regulation resources, such as Beacon's flywheels, will assist CAISO in maintaining grid reliability as wind penetration increases.

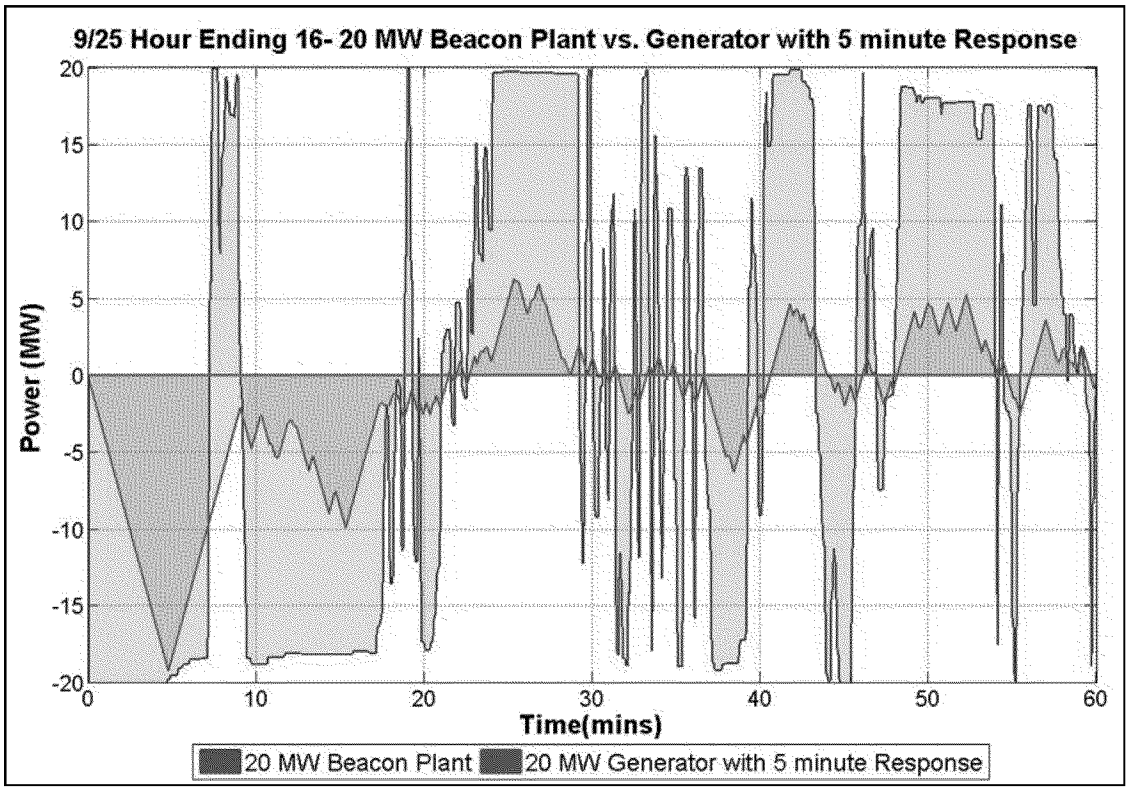
2. Cost Effective

Because fast regulation resources are significantly more effective at responding to system imbalances than slower-ramping generation resources, their use on the grid can lower the overall amount of Regulation that needs to be purchased by California's ratepayers to maintain system reliability. A recent study requested by the California

Energy Commission found that a 30-50 MW fast-response storage device could provide as much or more Regulation capability than a 100 MW combustion turbine.[1]

Flywheel frequency regulation systems from Beacon Power have been demonstrated to be a more effective and environmentally friendly alternative to conventional fossil-fuel-powered frequency regulation methods. Our 20 MW Frequency Regulation Plant operating on the NYISO power grid has demonstrated the value of flywheels providing fast response frequency regulation in the NYISO. To take advantage of our nearly instantaneous response rate, NYISO dispatches our facility as the first responder to frequency deviations. The chart below shows actual performance data of our 20 MW flywheel facility (in blue) as compared to 20 MW of regulation from a traditional generator with a 5 minute response rate (in red). The areas under each curve show the amount of energy provided by each resource to correct frequency imbalance, or Area Control Error (ACE) Correction. In this hour, flywheels, with their 4 second ramp rate, provided 4 times more energy than the slower responding resource. On average we have seen that Beacon Power's 20MW flywheel plant is 10% of the frequency regulation market capacity, yet provides 25% - 35% of NYISO's ACE Correction. Due to the speed of response, flywheels are far more effective per MW of capacity than traditional regulation providers.

[1] "Research Evaluation of Wind Generation, Solar Generaton, and Storage Impact on the California Grid," Study by KEMA, Inc., done for California Energy Commission funded via Public Interest Energy Research Program (PIER) page 6, June, 2010.



Furthermore, deploying Beacon Power's flywheel energy storage for Regulation Service will reduce costs to California's ratepayers by introducing new competition to the market and by displacing relatively high cost regulation deployments by traditional generators. Existing fossil fuel-powered plants displaced by Beacon Power's flywheel-based frequency regulation can be shifted to provide a corresponding amount of added peak generation capacity. In doing so, these plants can run at full capacity, improving their energy efficiency and reducing emissions.

3. Environmentally Friendly

Unlike generators that consume fossil fuel, Beacon Power's flywheel technology recycles existing power, thereby lowering its operating costs to provide regulation and benefiting the environment by producing zero direct CO_2 greenhouse gas, particulates or other air emissions. A study by KEMA concluded that a 20MW Flywheel Energy

Storage System emits 56% less CO2 than a natural gas power plant providing regulation and 26% less emissions than a pumped hydro power plant.[2] KEMA notes that continued reliance on thermal generating units to meet increased regulation requirements could actually increase emissions of CO2, NOX and other pollutants, thereby defeating one of the main benefits of wind generation.

C. Company Information

On March 6, 2012, a majority of Beacon Power Corporation's (the "Corporation") assets were acquired by Rockland Capital ("Rockland"), a leading private equity firm focused on electric power investments, following the Corporation's voluntary filing for Chapter 11 bankruptcy on October 30, 2011. The Corporation's acquired assets and agreements have been placed into a private company named Beacon Power, LLC that is wholly-owned by Rockland Power Partners, LP. Among those assets acquired by Rockland are the Corporation's Frequency Regulation assets, including a 20-megawatt ("MW") flywheel energy storage plant in Stephentown, New York, that now operates in NYISO's Regulation market. Among the reasons why Rockland determined to purchase most of these assets of Beacon Power Corporation was due to the expected implementation of the Federal Energy Regulatory Commission ("FERC") Order No. 755 that would result in pay-for-performance pricing for frequency regulation resources.

The bankruptcy of Beacon Power Corporation underscores the importance of regulatory policy and market rules that value the unique benefits that storage provides the grid. While flywheel technology is proven and is successfully providing fast, accurate regulation service on the grid today, in order for this and other storage technologies to

[2] KEMA, Emissions Comparison for a 20MW Flywheel-based Frequency Regulation Power Plant, May 18, 2007.

remain viable in the market, the regulatory framework for storage must recognize the value of the resources and enable them to achieve project financing. If this is done, then ratepayers will benefit from this new source of clean, low-cost, reliable grid technology.

With the expected implementation of CAISO's Regulation Energy Management Tariff and compliance with FERC's Order No. 755 by CAISO, which will result in compensating frequency regulation providers based on the fast response and accuracy by which these resources respond to the grid's dispatch signal, and the Commission's undertaking of this Rulemaking, Beacon Power submitted a request to interconnect a 20-MW flywheel-based regulation plant to be located in Tehachapi California. However, the timing of the development of the plant heavily depends on the outcome of both the market rule changes and this proceeding.

III. COMMENTS

Beacon Power appreciates the Commission's commitment to energy storage and is pleased to participate in this proceeding and to support the proposed framework outlined in the staff decision. Specifically, we agree with the proposed approach to focus on a few end uses considered high priority as a starting point for CPUC Staff in Phase 2. In particular, Beacon Power supports the CPUC's focus on "Scenario D: Ancillary Services", which will look into the use of energy storage systems at the transmission level to provide generator-like services for ancillary markets, such as frequency regulation. While this issue is largely under the jurisdiction of CAISO and FERC, the CPUC has a vitally important role to play in enabling advanced storage technologies to participate in the CAISO's ancillary services markets due to its jurisdiction over energy commodity procurement in California.

As the Commission is aware, since the time that the Commission opened this Rulemaking, the CAISO has made great progress on opening its Regulation market to storage. On August 22, 2011, CAISO filed its Regulation Energy Management tariff ("REM") [Docket No. ER11-4353-000] which enables advanced storage resources to provide service in CAISO's frequency regulation market. REM was approved by FERC on November, 30, 2011 and is scheduled to be implemented on November 27, 2012. In addition, on April 27, 2012, CAISO filed its pay-for-performance tariff [Docket No. ER12-1630-000], pursuant to FERC Order No. 755, which will pay frequency regulation resources based on their speed and accuracy of response to an ISO dispatch signal. Pending FERC approval, CAISO is planning to implement its pay-for-performance tariff on April 9, 2013, once implemented, CAISO will pay fast-ramping storage resources for the additional value they provide to CAISO's power grid.

However, even with the new federal rules, it will be difficult to finance the construction of new advanced storage projects designed to provide Ancillary Services-only in California without a regulatory change in how utilities procure energy and ancillary services. Currently, there is no method for utilities to procure frequency regulation from advanced storage technologies designed to provide regulation-only (*i.e.* not designed to provide energy). This means storage projects must be financed based on their expected revenue in the Regulation spot market, which makes it virtually impossible to obtain traditional private-capital project financing. Consequently, even though Beacon Power's flywheels are successfully providing frequency regulation on the grid today in other parts of the country (Beacon Power's obther projects were financed through government funding), it will remain difficult for the Company to obtain project financing

for energy storage regulation projects in California because the private capital markets will not provide debt financing without some level of revenue certainty.

In contrast, traditional generators in California are able to obtain traditional private-market project financing on the basis of long-term power procurement contracts ("LTPP contracts") for their energy and ancillary services. With LTTP contracts in place, generators can receive traditional project financing for their projects. Including regulation-only energy storage systems in utilities LTPP plans and Resource Adequacy ("RA") obligations, which is under the Commission's jurisdiction, would help overcome the project financing barrier thus removing a significant barrier to fast, accurate, cost-effective environmentally-friendly storage providing ancillary services in CAISO.

The Commission has an opportunity to ensure these mandates are implemented both as part of the second phase of the Rulemaking, by focusing on the energy storage "end use" described in Section D Figure 4 (as attached to the Commission's Order on page 20) *and* more expeditiously, in dockets currently open. For example, rather than wait for the completion of Phase 2 of this Rulemaking, the Commission can create an RA value for storage and allow utilities to procure regulation from storage technologies as part of its consideration in other Commission proceedings, such as long term procurement planning (CPUC Docket No. R. 12-03-014) or in defining the RA value for storage (CPUC Docket No. R.11-10-023). In other words, there are mechanisms that the Commission can implement immediately to ensure that California ratepayers experience the financial and environmental benefits of using new technologies to provide frequency regulation to the grid.

In addition, Beacon Power supports the proposed definition of Energy Storage System ("ESS"). CA Pub. Util. Code § 2835(a) and Assembly Bill (AB) 2514 (Stats. 2010, ch. 469) defines energy storage, in pertinent part, as available technology that is capable of absorbing energy, storing it for a period of time, and thereafter dispatching the energy. The definition allows storage to be owned by "a load-serving entity or local publicly owned utility". In its Rulemaking in Phase 2, the CPUC should clarify that load-serving entities can (in addition to contracting with storage providers) own storage that provides frequency regulation services in CAISO's market. Allowing utilities to own storage would greatly facilitate their use and adoption on the power grid thereby benefiting both the grid and California's ratepayers.

IV. CONCLUSION

Beacon Power, an energy storage company with extensive experience establishing markets, creating opportunities and removing barriers for the utilization of energy storage resources on the grid, appreciates the opportunity to participate in this proceeding and looks forward to working with the Commission and other parties in the process.

Respectfully submitted,

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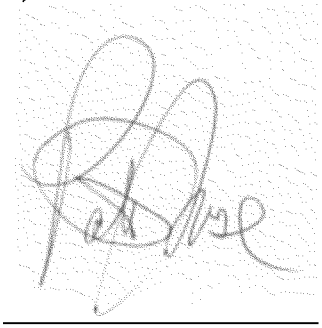
Dated: July 23, 2012

CERTIFICATE OF SERVICE

I hereby certify that I have on this day served via email, a true copy of the foregoing "**OPENING COMMENTS OF BEACON POWER, LLC** " to all known parties to R.10-12-007 listed on the most recently updated service list available on the California Public Utilities Commission website.

Executed this 23rd day of July 2012 in Boston, Massachusetts.



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