



Beacon Power Corporation

Participation of Beacon Power's Flywheel Energy Storage Technology in NYISO's Regulation Service Market

Prepared for:
New York Business Issues Committee
May 21, 2008



Safe Harbor Statement



This presentation contains forward-looking statements, including the Company's beliefs about its business prospects and future results of operations. These statements involve risks and uncertainties. Among the important additional factors that could cause actual results to differ materially from those forward-looking statements are risks associated with the overall economic environment, the successful execution of the Company's plan of operation, changes in the Company's anticipated earnings, continuation of current contracts, changes in gaming and other applicable regulations, and other factors detailed in the company's filings with the Securities and Exchange Commission, including its most recent Forms 10-K and 10-Q. In addition, the factors underlying Company forecasts are dynamic and subject to change and therefore those forecasts speak only as of the date they are given. The Company does not undertake to update them; however, it may choose from time to time to update them and if it should do so, it will disseminate the updates to the investing public.

Agenda



- Company Overview
- Use and Benefits of flywheel-based energy storage technology for grid regulation
- Challenges to Participating in NYISO's Regulation Service Market:
 - Generator
 - DSASP
- Discuss new Stored Energy Resource Category



Who Is Beacon Power?

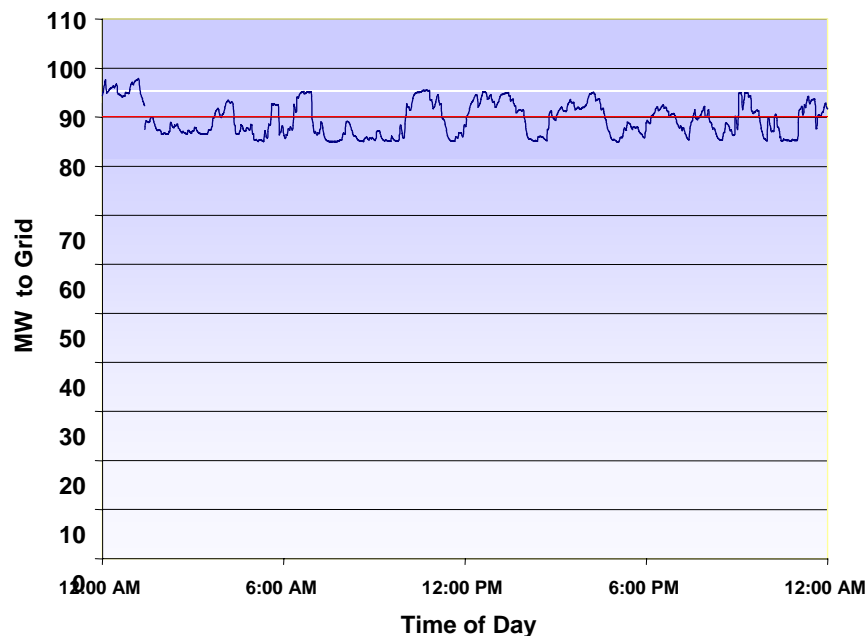


- Provider of flywheel-based energy storage grid regulation services
- Headquartered Tyngsboro, MA
- ~ 50 employees
- 10-years in development; \$160 million invested
- NASDAQ: BCON
- Technology approved by CAISO, NYISO, PJM
- Commercial Service Goal: First plant 2008 in Stephentown, NY
- Finalist for DOE Loan Guarantee Program

Regulation Using Generation vs. Flywheel Energy Storage

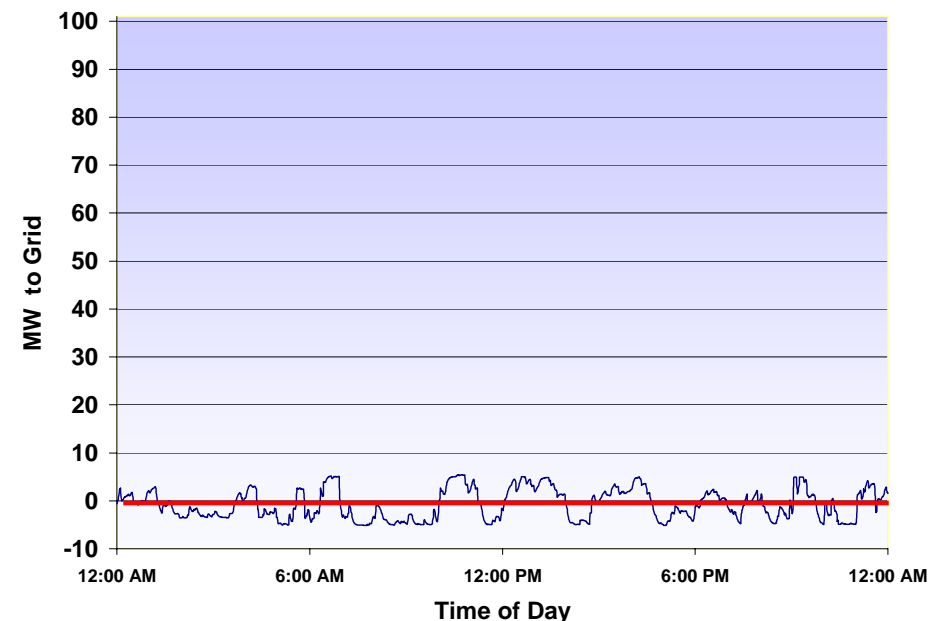


**100 MW Generator
Set at 90 MW with 5 MW Regulation**



- **Generator varies output**
 - Decreases efficiency
 - Increases emissions
 - Increases maintenance

**Energy Storage
providing 5 MW of Regulation**



- **Flywheel recycles energy**
 - Generation exceeds load: stores energy
 - Load exceeds generation: release energy
 - Zero direct emissions

Flywheel Energy Storage for Regulation Service



- 20 MW Flywheel Energy Storage Regulation Plant
 - 200 high-speed, high-energy 25 kWh/100 kW flywheels
 - Operating Range is +/-20MW with a 0 MW (or slightly negative) Basepoint
 - Achieves full up or down power in less than four seconds
 - Quickly and precisely follow moment-by-moment changes in load
 - Continuous 24/7 Regulation Provider
- Energy storage capacity of flywheel designed, with technical input from PJM, to achieve greater than 95% availability
 - Energy Duration of 20 MW for 15 minutes
- Regulation Only Provider: Available to provide regulation service “a la carte” without generation

Demonstration Unit – Outside View



- Successful demonstration of flywheel energy storage for regulation in New York and California
- Funded by CEC, NYSERDA, DOE
- Tested for 12 months in New York following frequency signal
- Tested in California for 18 months; used live ISO signal
- Independently monitored by DOE, Sandia National Labs

Typical NYSERDA Response

Sept 28, 2006



UNSCHEDED
OFFLINE

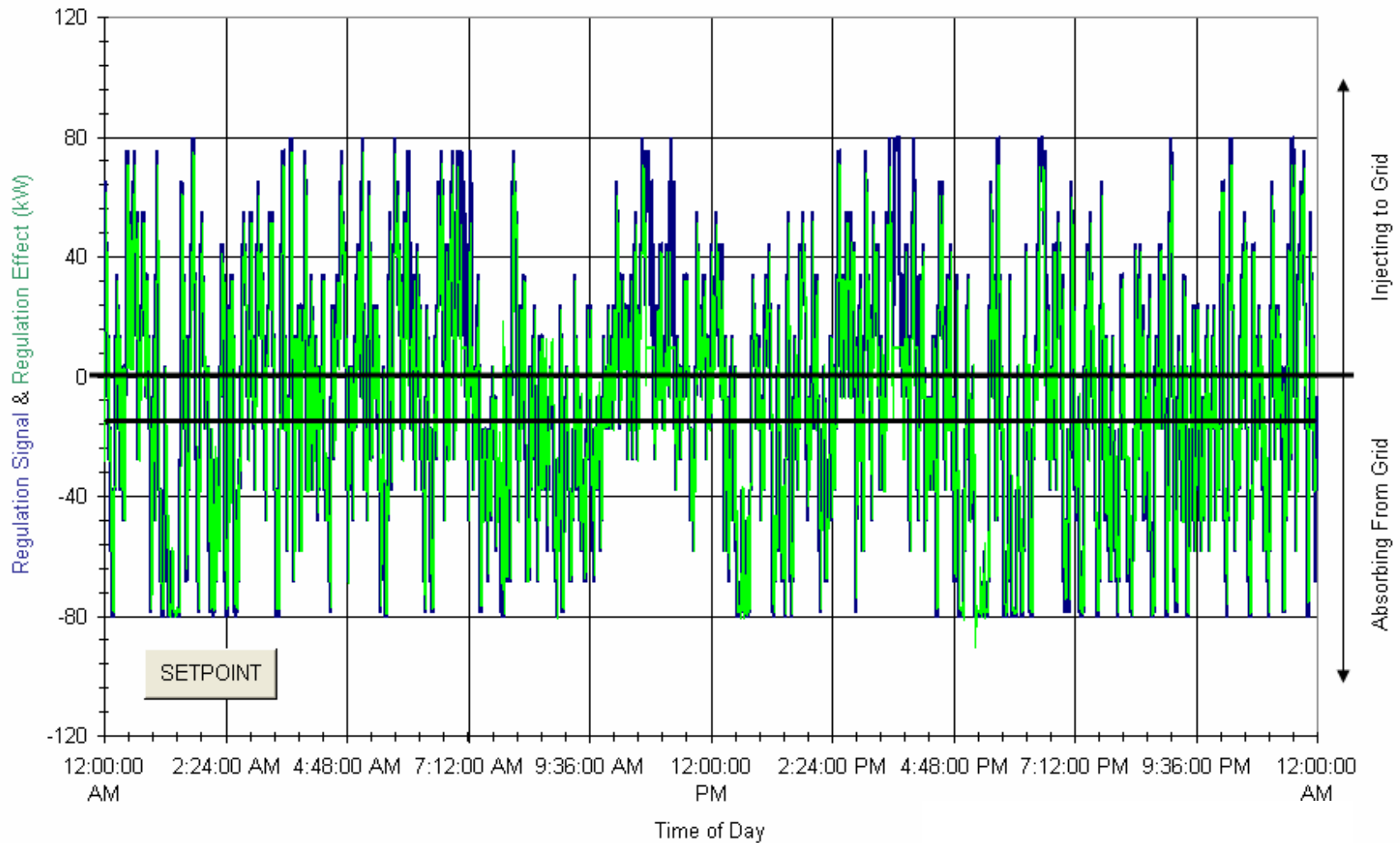
UNSCHEDED
OFF-LINE

Regulation Signal Vs. Regulation Effect

SCHEDULED
OFF_LINE

SCHEDULED
OFFLINE

— Regulation Signal — Regulation Effect — Set Point



NYSERDA Report



“We find the Beacon flywheel technology to be acceptable and viable for use in the New York ISO grid,”

“We look forward to working with Beacon Power to implement this important new technology.”

-Michael Calimano

Former Vice President of Operations, New York ISO

“The system demonstrated availability to respond to a fast changing frequency regulation signal and provide regulation 97.2% of the time it was online”

“Grid Frequency Regulation by Recycling Electric Energy in Flywheels”

J. Arseneaux, Beacon Power

J. Sayer, NYSERDA

3/27/08

20 MW Substation-Style Design



First Commercial Plant Development Stephentown, NY



- First Commercial 20MW flywheel energy storage plant underdevelopment in Stephentown, NY
- Interconnection Process with NYISO
 - Application filed September 25, 2007
 - System impact studies being conducted
 - Proposed in Service Date: End of 2008
- Site permitting
 - Working with Stephentown Planning Commission
 - Granted environmental approval: May 15th

Advantages of Flywheel Energy Storage for Regulation

- Full response to signal in four seconds
 - Precisely follow moment-by-moment changes
- Available separately – without generation
- Low operational cost (no fossil fuel)
- Zero direct carbon emissions
- High reliability; 20-year projected life
- Frees generation capacity (1- 3%)

Advantages of Flywheel Energy Storage for Regulation (cont.)

- Facilitates integration of intermittent renewable resources (wind, solar)
 - CAISO Integration of Renewable Resources Report
 - With Addition of 6,700 MW wind (10% penetration)
 - Need for Up Reg increases from 170 MW to 250 MW
 - Need for Down Reg increases from 100 MW to 500 MW
 - CA study shows 10 times greater need for Regulation than previous estimates
 - 7,000 MW of wind in the NYISO interconnection queue

Lower cost, clean technology that facilitates more renewable generation on the grid

FERC Order 890



- FERC Order 890: Preventing Undue Discrimination and Preference in Transmission Service issued February 16, 2007
 - Promote competition, reduce barriers to entry and increase openness
- Modified Open Access Transmission Tariff (OATT) Schedule 3 Regulation Service to include non-generation resources
 - *“Accomplished by committing on-line generation whose output is raised or lowered and by other non-generation resources capable of providing this service”*
- Beacon Power filed protests to ISO-NE, MISO, CAISO, NYISO Order 890 compliance filings (October 2007)
 - Favorable rulings in ISO-NE, MISO, CAISO
 - MISO created new Stored Energy Resource category
- NYISO Order 890 compliance
 - FERC found NYISO will not fully comply with Order No. 890 until non-generation resources can provide regulation service
 - Will address specific concerns in DSASP proceeding

Participation in the Regulation Service Market



- Objective: Ability for flywheel energy storage to participate on a non-discriminatory basis in the Regulation Service market in 2008
 - Provide 20MW of Up and Down Regulation Service
- Current market rules not designed for energy storage technologies
 - Energy storage technologies continuously alternate between storing (load) and supplying (generator) energy
- Analyzed three scenarios for participating in market:
 - Participate as a Generator
 - Participate as a Demand Side Resource
 - Creation of a Stored Energy Resource Category

Participate as a Generator



- NYISO stated Beacon Power qualifies to participate in Regulation Market as a Generator under existing definition in NYISO tariff
- However, with a limited energy output duration of 20MW for 15 minutes not well suited to participate in energy market
 - Requires Beacon Power to develop bid strategy to avoid being selected to provide energy
 - Exposes Beacon Power to financial risks in energy market
- Net negative energy device
 - Losses due to power electronics
 - Buy and sell energy at RT LMP every 5 minutes
 - Pay for losses at RT LMP

Participate as a Demand Side Resource (DSRs)



- New Rules for DSRs providing Regulation
 - DSRs committed to provide Regulation in DA are committed for 0MW Energy
 - Receive no energy settlement
 - DSRs not subject to RRAP/RRAC
- Operating under DSASP rules not viable for Beacon Power
 - Under DSASP rules Beacon Power would not receive compensation for energy supplied to the grid
 - However, Beacon Power must buy energy when charging flywheels
- Operating as a DSR only works if can “net meter” energy

Generator and DSR Regulation Performance Qualification



- New Regulation Specific Criteria proposed
 - “Be capable of supplying Regulation Service continuously in both the up or down direction for intervals in the scheduled hour and for all hours with accepted bids”
 - Attain a minimum time weighted Regulation Performance Index $\geq .85$ over the period of the test
- Beacon Power
 - Demonstrated ability to provide regulation 97.2% of the time
 - NYISO stated our technology is acceptable and viable
 - But this new criteria will preclude our energy storage technology from participation in the regulation market
- Ability to provide continuous up regulation is not necessary to provide effective regulation service

Generator and DSR Regulation Performance Qualification



- Requiring ability to provide continuous up regulation contrary to FERC 890 directive to allow new technologies to provide service
 - Effectively requires ability to provide energy 24/7
 - Requires new technologies to have the operating characteristics of traditional generators
- Blurs distinction between Regulation, Operating Reserves and Energy

MISO Solution: New Stored Energy Resource (SER) Category



- FERC mandated MISO to work with Beacon Power to make adjustments to their operating requirements and ASM procedures to remove barriers to new technologies
 - Submit revised tariff sheets in 60-days, report on progress
- MISO solution: April 25th MISO created Stored Energy Resource (SER) category that reflects unique characteristics of energy storage
- Operational provisions specific to SER:
 - Removed requirement that must be able to supply a minimum continuous duration of 60-minutes of operating reserves (spin and supplemental)
 - Must be available to supply 60-minutes of regulation *subject to energy storage limits*
 - Maximum amount of total reserves (regulation, spin, supplemental) that may be supplied by SERs cannot exceed market-wide regulation requirement for that hour

Key Elements of MISO Tariff for Stored Energy Resource (SER)



- Must be able to supply Regulation for 60 minutes, subject to energy storage limitations
- Exempted from 60 minute operating reserve requirement
- New offer parameters that allow MISO to properly model the dynamics of SERs in a manner to permit SERs to participate in simultaneously co-optimized markets
- SER eligible to supply Ancillary Services only
- While not eligible to offer or supply energy, MISO may dispatch energy into and out of SER
- Not subject to Regulation Deployment Adjustment (RRAP/RRAC)
- Settle energy at Hourly Ex Post LMP

- Beacon Power has developed a new, clean, fast response energy storage technology for providing regulation service
 - New wind deployment will increase need for Regulation
 - Beacon Power's plant will be in service by end of 2008
 - New Regulation Resource requirement blocks Beacon Power's participation in Regulation market
 - Request
 - Do not impose a new requirement that will preclude us from participating in the Regulation market as a Generator
- OR
- Create a new resource category, similar to MISO, that recognizes the benefits of energy storage to the power grid and acknowledges operational limitations



Beacon Power Corporation

Contact Information

Judith Judson

Director of Regulatory and Market Affairs

Beacon Power Corporation

65 Middlesex Road

Tyngsboro, MA 01879

Phone: 978-661-2070

