GRID STORAGE TECHNOLOGIES

INTRODUCTION

Grid Storage Technologies (GST) has developed a utility scale zinc/air battery technology with a cost considerably lower than other battery and power storage technologies – less than $1 million per MW and $150k per MWh. A standard GST zinc/air battery has a rated power capacity of 1 MW with 6 hours of energy storage with very low maintenance cost. The GST battery also has superior energy density, heat management, cycle life, depth of discharge, flexibility of application and environmental safety relative to other battery technologies.

BATTERY PERFORMANCE AND SPECIFICATIONS

GST has patented several advances in its battery design including those related to inexpensive membrane/separator materials, durability, operational quality and cost. The patent-pending metal/air cathode design further improves space efficiency, flexibility of application, capital cost and operating efficiencies. Our 1 MW/6MWh battery is the size of a standard ISO shipping container. Below is a table of GST battery specifications and characteristics:

Standard Module Size	1 MW/ 6 MWh
Capital Cost/kW	Less than $1,000/kW
Capital Cost/kWh	~$150/kWh
Cycle Life	~10,000 true cycles
Calendar Life	30 full years with no interim re-investment
Volumetric Energy Density	400 wh/l
Depth of Discharge	90%-95%
Response Time	Immediate
Round trip efficiency	~75%
Safety	Non-toxic, environmentally benign and stable
Facility size	Standard ISO 40' shipping container; transportable
Heat Management	Minimal heat management issues with wider power range
On-going O&M Costs	Low, with no periodic replacement of components
Degradation	Negligible
Manufacturing	Manufacturability in U.S. in scale designed into battery

GST COMPANY STRATEGY

GST's primary focus is utility scale applications, including grid infrastructure and capital deferral, peak shaving and energy price arbitrage, improvement or replacement of non-economic or environmentally deficient generation assets, firming and smoothing of renewable energy sources, and ancillary services to the grid and utilities. The initial target markets will be wind and future solar farms, baseload plants, transmission or distribution assets, and substations in the United States and Europe.

Management Team

Steven Amendola, Inventor

Steve invented and patented GST's battery technology and co-founded the company Grid Storage Technologies. Steve is also the inventor and founder of Reaction Sciences (RSI), a silicon processing technology that reduces silicon costs by more than 60% compared to the industry standard silicon processing methods (RSI has been funded by the Quercus Trust and has started manufacturing at its plant in Easton, PA.) Steve also founded the company Millennium Cell to develop the technology for fueling vehicles with hydrogen. Steve managed the company (which grew to 50 employees and later went public) before leaving to develop new technologies in 2002. Steve has been awarded more than a dozen U.S. patents, with approximately 20 additional patents pending and many corresponding foreign patents related to new fuels, turbines, hydrogen production and other energy technologies. Steve's area of specialty is electrochemical power storage. He has a deep knowledge and decades of experience evaluating and developing related technologies.

Michael Oster, CEO

Michael's experience includes real estate, emerging markets, technology and renewable energy. Prior to GST, Michael launched Clean Energy Holdings as a vehicle to develop solar power and invest in energy technologies. He has developed several of the largest commercial solar power systems in New Jersey in partnership with a major European utility. Michael co-founded and was the lead investor in Grid Storage Technologies. Michael began his career in strategy and business planning for IBM and later joined the international management consulting firm of A. T. Kearney. In 1991, Michael moved to Russia as privatization was starting and built what was one of the largest real estate investment and development companies in Moscow and St. Petersburg. In 1994, Michael established the first institutional real estate investment fund in Russia in partnership with the AT&T pension fund, and developed numerous successful projects. In the last decade, Michael formed and capitalized an early stage venture capital firm in New York City and was one of the original partners to launch the global energy technology firm OILspace, where he populated the board and investor group with OPEC oil ministers, US cabinet members and other global energy industry leaders.

Ben Rogers, President and COO

Ben joined Grid Storage Technologies from Goldman Sachs' Global Natural Resources Group within the Investment Banking Division. While at Goldman, Ben's responsibilities included both execution and coverage of regulated utilities, merchant power assets and alternative energy companies. Ben's alternative energy areas of focus included renewable energy and smart grid technologies. Before joining Goldman, Ben worked for several years at Cinergy Corp., now part of Duke Energy. While at Cinergy, Ben worked in various groups including the Power Trading Group focused on trading in the Northeast markets, Financial Planning and Analysis, and Corporate Development. Before joining Cinergy, Ben spent more than five years at Enron Corp. in Houston working in various power and natural gas related roles within Enron Capital and Trade (ECT). His main responsibilities included power plant development, power and natural gas origination and structuring, power trading and corporate development. Ben brings to GST a broad and deep set of industry experiences and relationships that range from regulated utilities, merchant power assets and markets, electricity and natural gas structuring, and alternative energy businesses.

Contact Information

Michael Oster moster@gridstoragetechnologies.com
Ben Rogers brogers@gridstoragetechnologies.com