December 5, 2014

Hon. Kathleen H. Burgess, Secretary
State of New York Public Service Commission
Three Empire State Plaza
Albany, New York 12223-1350

Re: Clean Energy Fund Proposal submitted by NYSERDA toward Case 14-M-0094 – Proceeding on Motion of the Commission to consider a Clean Energy Fund

Dear Secretary Burgess,

On behalf of Harbec, Inc. I respectfully share this response with the New York State Public Service Commission regarding the "*Clean Energy Fund Proposal*" submitted by the New York State Energy Research and Development Authority (NYSERDA) to the Commission on September 23, 2014. This response addresses two categories:

- Market Development Strategies
- Technology and Business Innovation Strategies

The attached comments summarize Harbec's experience with deploying and integrating clean energy solutions. Harbec has proven that an integrated approach to on-site clean energy solutions yields significant opportunities for reducing Greenhouse Gas (GHG) emissions, improving manufacturing operating efficiency, expanding business/market opportunities, and becoming a more resilient and sustainable business.

Harbec, Inc. is in support of NYSERDA's Clean Energy Fund (CEF) Proposal. The enactment of a Clean Energy Fund is needed to continue the mitigation of unnecessary risks and barriers that impede the ability of Harbec and other State manufacturers proactively working to transition toward a clean energy future.

Thank you and kind regards.

Robert Bechtold
President, Harbec, Inc.

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Executive Summary

Numerous micro-and-macro market indicators are influencing change within the nation's energy sector. Global and national emphasis on climate change and greenhouse gas reductions has been a significant influence in support of continued diversification of the power generation mix to cleaner fuel and generation sources. Advancements in smart grid technologies including advanced meters have created opportunities for greater transparency and accountability in energy accounting and management. Further, renewable generation, energy efficient, and on-site distributed energy technologies have continued to demonstrate favorable returns-on-investment (ROI) while dramatically reducing GHG's.

New York's economic prosperity directly aligns with its energy future. New York's energy infrastructure, resources, and management are the beating heart of how economic and energy objectives can converge. Efforts have been underway to create a shared vision of New York's energy future. The dialog and planning activities have served to provide a framework for funding implementation strategies to achieve the future energy vision.

To this end, New York's Reforming the Energy Vision[1] (REV), Clean Energy Fund (CEF), and Net Metering Law represent specific efforts working to reinforce the State's evolving energy landscape. Taken as a class of "clean energy solutions," these policy strategies and a portfolio of proven clean energy technologies can provide New Yorkers with scalable, predictable, reliable, and secure energy sources and infrastructure which align with economic, environmental, and social interests. As shown in Figure 1, New York's REV, CEF, and Net Metering dialog represent the playing field where a clean energy future can truly be achieved for New York.

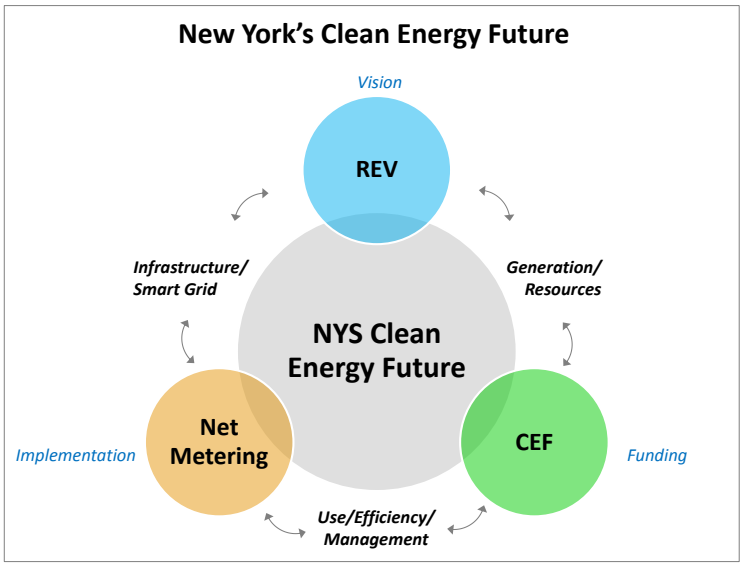

Figure 1

To remain competitive in a global economy U.S. manufacturers have to remain innovative, cost-effective, and flexible to the shifting demands and needs of their customers. To do so, Harbec, Inc. has adapted to three core realities (1) addressing converging "sustainability" challenges embedded in energy (availability and cost), environmental quality (managing carbon and other greenhouse gases), and materials (the availability, cost, and new requirements on proper use of materials); (2) the changing realities of the global economy characterized by a commodity driven culture for lower prices and high quality; and (3) the transformative nature of new technologies and innovations.

Founded by Bob Bechtold, Harbec, Inc. began operations in 1977 out of an Upstate NY barn. Since then Harbec, Inc. has become a trusted and respected custom injection molding business employing more than 150 people who operate three shifts from a 50,000 sq.ft. facility in Ontario, NY. Harbec serves a diversity of customers around the world. Although they are a small manufacturer, their impact is felt at a local and global level. Harbec has sustained and grown its business through a deliberate practice of innovation and continuous improvement.

[1] Source: NYS Public Service Commission, "14-M-0101: Reforming the Energy Vision (REV)," http://www3.dps.ny.gov/W/PSCWeb.nsf/All/26BE8A93967E604785257CC40066B91A?OpenDocument

In 2013 Harbec achieved carbon neutrality, a tremendous accomplishment for a company which uses a great deal of energy. This unique accomplishment was made possible from a disciplined approach to energy efficiency, energy management, and demand-side clean energy generation and use. For the past fifteen years Harbec has been diligently working to maximize energy efficiency and the use of clean energy. During this time, NYSERDA has been a tremendous supporter of Harbec's energy efficiency and clean energy goals.

In 2001 Harbec deployed its first on-site demand-side wind turbine, a 250 kW unit. In the same year Harbec deployed a 750 kW combined heat and power (CHP) system at their facility. In 2012 Harbec implemented a 850 kW wind turbine. In 2014 they upgraded their CHP facility to be more efficient and have a larger thermal potential. Harbec runs its CHP system as a "thermal priority," meaning they optimize the production of thermal energy for space heating and cooling, water heating, and other facility needs. This allows their total BTU efficiency of energy to be between 65-75% depending upon the time of year. Harbec's fifteen year journey to integrate advanced energy efficiency measures with on-site deployment of renewable energy and high-efficiency CHP has yielded quantifiable energy, economic, and environmental benefits for their business. They have reduced and better managed their energy costs which typically represent 6-to-8% of the operating costs for a business like theirs.

In doing so, Harbec has become more efficient, competitive, and sustainable. Around 2010 Harbec realized that achieving carbon neutrality was a business imperative. The business chose to pursue and adopt ISO 50001, an energy management system certification which requires Harbec to account for its energy use. Harbec chose to go beyond ISO 50001 and adopt the U.S. Department of Energy (USDOE) "Superior Energy Performance (SEP)" track associated with their pursuit of ISO 50001. The SEP designation requires Harbec to not only be accountable for their energy use, but to set forth energy reduction targets and a plan to monitor, measure, and report-out on the achievement of those targets by 2020. In 2013 Harbec was certified to ISO 50001/SEP. The ISO/SEP process further validated Harbec's business experience to date, that integrating energy solutions makes financial sense. Harbec has realized significant energy cost savings, return-on-investment, and upside business growth associated with its 15-year energy journey culminating in its 2013 carbon neutrality achievement.

In Harbec's experience, technological advancements for energy efficiency coupled with tangible user experiences integrating clean energy technologies such as renewable and combined heat and power (CHP) systems operating on thermal priority have proven to be eco-economic opportunities for their business to de-risk and decouple their energy requirements from traditional utility models, but in ways that can mutually support broader energy system resilience, adaptability, and even black-start capabilities.

The integration of multiple clean energy technologies (*i.e.,* renewable and highly efficient thermal priority generating assets) behind the meter is not only possible, it is practical and desirable if energy is to be truly optimized and associated externalities such as GHG emissions, environmental and human health impacts marginalized. The net outcomes associated with enacting a Clean Energy Fund (CEF) to support New York businesses includes:

- Lower greenhouse gas (GHG) emissions.
- Lower costs of doing business.
- Predictable energy costs.
- Optimization of energy resources.
- Localized energy micro-grids.
- Greater reliability of utility-grid.

NYSERDA's Clean Energy Fund Proposal

The following comments on NYSERDA's Clean Energy Fund (CEF) Proposal are intended to be focused on two primary categories:

- **Market Development Strategies**
- **Technology and Business Innovation Strategies**

Market Development Strategies

The more efficient use and diversification of energy generation resources have been stated as goals of the New York State Energy Plan[2]. Although New York is recognized as the 4th most energy-efficient state in the nation, barriers remain, in some cases inadvertently, preventing the integration of clean energy solutions (*i.e.*, high energy efficiency and alternative/renewable energy technologies) behind the meter (demand-side) at industrial and commercial sites in New York.

New York State businesses exist to drive economic growth, revenue, and a rate of return that enables them to grow their business. When businesses are burdened by excessive or unnecessary costs, or when their only option is to purchase business critical energy supplied from inefficient suppliers, their profitability diminishes their ability to remain competitive and a contributor of employment and domestic product for the State.

Recent New York State Public Service Commission (NYSPSC) rulings on remote net metering[3] have focused on maintaining the intent of net metering without hindering customers' ability to leverage the law for their mutual benefit. In addition, new Bill's including Bill No. S6700 (an act to amend the public service law, in relation to net energy metering for certain solar and wind electric generating systems) and A6270-B (an act to amend the public service law, in relation to remote net metering by farm and non-residential customer-generators) are equally representative of the Senate and Assembly desire to further strengthen the intent of remote net metering so that it can facilitate the adoption of renewable energy (namely wind and PV) within New York.

Numerous policy, advocacy, public benefit, and industry trade organizations including NYSERDA, NYSPSC, Alliance for Clean Energy New York (ACENY), Advanced Energy Economy Institute (AEE Institute), and the New England Clean Energy Council have made comments upon the State's efforts associated with Reforming the Energy Vision (REV), the Clean Energy Fund (CEF), and the Net Metering law. While the individual comments have been separate and unique, the underlying sentiment is a shared vision for the future that more fully recognizes and values distributed generation and on-site renewable energies as complements and components of the future utility model.

Although there are subtle differences and nuances to the funding structures, incentives, and rules for integrating distributed generation and renewables behind the meter and within operating microgrids that provide robust and reliable localized power that supports the larger grid, many stakeholders share a conceptual framework and mutual understanding that a future model of energy production, delivery, and use must be inclusive of such technologies and integration of technologies.

The REV, CEF and Net Metering efforts represent positive and proactive efforts to guide New York's energy future through sound public policy and stakeholder input. The efforts are not mutually exclusive.

[2] Source: New York State Energy Plan, 2014. http://energyplan.ny.gov/

[3] PSC CASE 13-E-0150 "Cornell University – Petition for a Declaratory Ruling Concerning New York State Electric & Gas Corporation's Remote Net Metering Tariff," Declaratory Ruling on Minimum Load Requirements for Remote Net Metering; Issued and Effective May 16, 2013.

The outcomes of REV, CEF, and Net Metering law amendments will individually have a profound impact on the State's energy future. However the combined impact of these initiatives will determine whether New York's utility industry can evolve in a timely and efficient manner and mitigate unnecessary barriers which limit the eco-economic potential of integrating demand-side thermal and renewable energy solutions.

The on-site demand-side deployment and integration of clean energy technologies is increasing. As shown in Figure 2, the drivers for increased utilization of clean energy technologies including demand-side solar and wind generation and combined heat and power (CHP) have included: more favorable energy and economic policies and incentives, more robust and cost-effective technology solutions, energy supply and price volatility, industry-led efforts to minimize energy use and maximize efficiency and profit, the evolving and global carbon trading market, and consumer-and-financial market expectations for greater accountability and transparency on material risks to business (*i.e.*, energy supplies, operational efficiency) and on sustainability (*i.e.*, sustainable products, supply chains, product labeling, sustainable manufacturing, and so on).

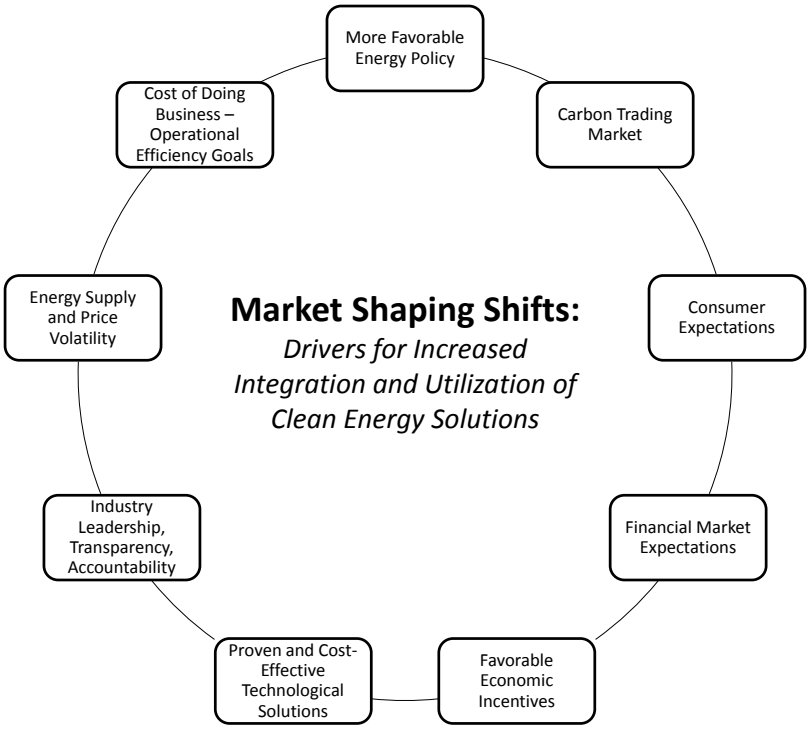

Figure 2

There is tremendous potential for the REV, CEF, Net Metering Law, and other public policy and benefits program initiatives to support a future energy model that values demand-side renewable and combined heat and power generation *more equitably*.

NYSERDA's CEF Proposal stated on page 72, ***"Restrictive regulations and codes: State standards and codes discourage deployment of CHP and efficiency appropriate to industrial firms in many cases."*** This has been the experience of Harbec, Inc. After 14 years of experience in operating a 750 kW integrated CHP system at their Ontario, NY manufacturing facility, they can attest that additional support for addressing supply side barriers such as this is critical to realizing a more sustainable energy future in New York.

NYSERDA's CEF Proposal outlines an Industrial Program strategy, on page 73, for ***"Serving as a policy advocate to improve codes, standards and mandates."*** The strategy includes: ***"Advocate for policy / regulatory changes to reduce the market, structural and pricing barriers currently challenging CHP penetration in NYS industrial facilities (e.g., work with utilities and regulators to explore the expansion of the standby tariff structure to all customers)."*** Harbec believes this is a needed strategy which can result in:

- Demand side integration of clean energy technologies (*i.e.*, renewable energy, CHP systems, and other technologies) which can result in the more wise and efficient use of energy and dramatic reductions in greenhouse gases (GHGs) for New York State businesses. In addition, these reductions support federal goals for curtailing GHG emissions.

- By generating, managing, and accounting for their own on-site energy, New York businesses can also become more resilient to energy supply disruption associated with events including super storms, natural disasters (*i.e.*, flooding, earthquakes, ice storms, etc.), terrorist attacks, or other natural or human interferences.

- The integration of CHP as a net-metering opportunity in parallel with renewable power can support black start capabilities for New York businesses, thereby supporting overall electric grid integrity. As more New York businesses have the opportunity to integrate and leverage on-site energy supplies, they can also serve to ensure existing electric and gas infrastructure in the State remains efficient and reliable.

Technology and Business Development Strategies

Harbec's experience demonstrates that the requirement to decouple the CHP generation from renewable generation led to higher project costs and schedule/timeline overruns. Demand-side energy generating solutions including solar, wind, fuel cells, biogas, and CHP have been proven, technically, economically, and operationally. As business becomes more comfortable with this suite of technologies it is projected that more integration (coupling of technologies) will occur to bolster demand-side efficiency and renewable power generation that is cost-effective, reliable, and provides additional benefits such as black-start capability. Further, this portfolio of energy technologies has potential to further strengthen more reliable energy infrastructure and models of distributed power generation and utilization within reliable micro-grids that serve localized demand while interconnecting to the broader electric utility infrastructure to support grid reliability.

In the spirit of advancing the State's goals for clean energy and an advanced utility model, it is hereby proposed that the NYSPSC consider:

- Including high-efficiency non-residential combined heat and power (CHP) facilities operating on thermal priority as a clean energy measure eligible to be included within a context of the REV and net metering. Currently micro-CHP (10 kW residential systems) is allowable under NYS net metering law; and 1.5MW fuel cells are eligible for non-residential applications. Non-residential CHP systems which operate on thermal priority can be an incredible opportunity to advance the intended adoption of demand-side renewables in the State.

- Further, it is proposed that in instances where two or more eligible net-metered technologies may be integrated to provide a clean energy solution for a customer, that they be afforded prudent and cost-effective means to do so. The experience at Harbec, Inc. to integrate wind and CHP at one utility

service meter was not possible because (1) nonresidential CHP operating at thermal priority (highest energy efficiency) is not recognized under NY law as an eligible technology and (2) the utility deemed coupling of electric generation from CHP with wind into one meter as illegitimate.

- The specific inclusion of non-residential CHP systems and the integration (coupling) of one or more approved net metering technologies into one meter would provide New York ratepayers a tremendous benefit. In the short-term businesses like Harbec would benefit by being able to fully account for the full potential of energy they could utilize through net metering. In the mid-to-long term (next 3-to-5 years) businesses and communities throughout New York will benefit by having greater opportunity to integrate CHP as a solution that can be combined with other renewable technologies for optimizing the performance, reliability, and economics of integrated demand-side renewable power systems.