



APPLICATIONS NOW OPEN TO JOIN THE CLEAN ENERGY BUSINESS INCUBATOR PROGRAM

Premier cleantech incubator shares important marketplace lessons from its 10-year history to help accelerate and scale impact

By David C. Hamilton, Executive Director CEBIP

Cleantech, clean energy, climate tech.

Different names have fallen in and out of favor over the years, but the fact remains that innovations enabling cleaner generation, storage and the efficient use of energy are critical for the future of humankind.

As significant as the market need and opportunity may be, clean energy technologies remain a tough innovation category. They tend to be associated with greater risk and longer commercialization runways, in part because they often involve bleeding-edge science and hardware, and in part because power grid assets are expected to last reliably for decades. There is no “beta” launch for utility infrastructure nor tolerance for repeated hard reboots or over-the-air upgrades.

Addressing this challenge was the impetus for the creation of the Clean Energy Business Incubator Program (CEBIP) in 2011 by the Long Island High Technology Incubator and Stony Brook University. CEBIP selects clean technology entrepreneurs who are working on some of the toughest innovation challenges so that their trajectories and market readiness can be accelerated through CEBIP programming. Since its inception, CEBIP has been incredibly successful at engaging and pushing energy technology companies towards commercialization.

“We have to be aggressive in addressing climate change. Academic research and bleeding-edge science are often discounted as having too long of a commercialization timeline, but that’s not the right way to look at how game-changing innovations can impact the market, both today and in the future.”

– Robert B. Catell,
Chairman of the Board,
AERTC

LESSONS LEARNED

On the surface, what CEBIP has experienced by actively supporting 43 early-stage clean technology companies is that business strategic thinking, R&D and manufacturing design are always messy, and commercialization is not synonymous with commercial scale – sometimes they are a frustrating decade apart in time.

Fortunately, by mining through the wealth of CEBIP experiences, an optimistic picture emerges of how certain activities have indeed moved the needle and accelerated clean technology commercialization and impact.

Here are some of the highlights:

1. Next-generation clean technologies successfully moved faster with early and frequent ecosystem support.

StorEn Technologies is an example of such an accelerated progress. Although based originally in Italy, StorEn sought out CEBIP and became a New York-based company to work with CEBIP's robust team of industry experts and technical advisors, while also benefitting from local ecosystem support. StorEn is developing a new generation of vanadium flow batteries for behind-the-meter and grid-scale storage, a perfect complement to New York State's leading work in offshore wind. These synergies, combined with third-party technology validation that the Advanced Energy Research and Technology Center at Stony Brook University and industry partners provided, has propelled StorEn forward in a significant way, including several operational sites around the world and substantial funding raised. By receiving feedback from a real ecosystem of customers and partners, StorEn went from lab to game plan and launch in record time. Said another way, when game-changing science is effectively coupled with leading marketplace knowledge, the result is a game-changing market-ready solution.

2. Enhancements to current technologies have materially boosted our clean energy impact.

Just because a clean technology problem has been "solved" does not mean that incremental enhancements only bring about incremental value. In many markets, it is quite the contrary.

For example, Unique Electric Solutions (UES) manufactures an all-electric propulsion system for buses and trucks, which can be retrofitted to upgrade an internal combustion engine fleet to an all-electric one. By thinking about the number of non-depreciated internal combustion engine trucks out there, it quickly becomes clear that retrofitting, at a fraction of the cost of a new vehicle, is a faster path to maximize EV impact than starting anew.

In another case, dust on solar panels can reduce energy output by up to 25% in desert regions and up to 100% during dust storm events. SuperClean Glass' patent-pending, self-cleaning electrode technology removes dust from solar panels such that up to 95% of what would otherwise be lost energy can be retained. Given the market acceptance and growth of solar today, the level of immediate traction and impact that such a technology can have is significant.

3. Technology and incentives working in tandem have created a positive feedback loop to help change the game even more.

This was true for Bonded Energy Solutions (BES), which is a portfolio company that works at the intersection of technical expertise and government incentives knowledge to create powerful clean energy solutions that drive greater customer value at a much lower up-front cost.

Specifically, the company offers superior temperature control in steam-heated buildings, which is a significant dual benefit to customers in both comfort and energy savings. By taking advantage of incentives, BES was able to get more customers early — but that was not all. Ample early trials meant ample early feedback, which created a positive feedback loop: (1) early customer insights allowed BES to test the limits of its business model, (2) BES was able to represent the voice of the customers back to the agencies providing the incentives, and (3) this insight is forming the next round of incentives that could accelerate the clean energy transformation even more.

4. Human relationships have had a significant impact on the timing and scale of clean technology innovation.

We learned that good old-fashioned relationship-building and collaboration makes a bigger difference on clean technology innovation timing and scale than one might think. Why? Because electricity fundamentally moves along a grid and directly into customer homes and businesses, and that means that everything on it is connected to everything else at some level. So when the humans managing it are connected with the innovators, it is not surprising that the technologies developed fit better from the get-go.

Take ThermoLift as an example. ThermoLift's patented Thermal Compression Climate Control (TC3) helps end users become frontline leaders in carbon reduction, cutting carbon dioxide emissions and energy costs by as much as half across residential and commercial applications. As a single solution that obviates the redundancies of multiple legacy systems — heating, cooling and hot water — the biggest implementation hurdle for ThermoLift was in figuring out how to enable that customer transition. By taking advantage of ecosystem connections made through CEBIP, Stony Brook University and NYSERDA, ThermoLift was able to learn and connect the dots across all its operational considerations — manufacturing, policy, customers, implementation partners and talent — for a faster commercialization pathway.

CONCLUSION

In summary, CEBIP has successfully guided its portfolio companies through a myriad of commercialization hurdles by providing customized support, for which the approaches taken have been as diverse as the clean technologies the companies represent. Regardless of the approaches, several important areas of consistency have allowed CEBIP to maximize clean energy impact across the board: (1) CEBIP portfolio companies are tackling the world's toughest clean energy challenges and (2) New York State represents a highly motivated buying community for technologies that are beneficial to the goal of a clean future.

Because of its success at accelerating the pace of innovation, CEBIP has recently graduated several of its companies and is actively looking for new technologies and entrepreneurs to benefit from its resources. By becoming a CEBIP portfolio company, entrepreneurs can not only engage with CEBIP's stellar operations team and 25-member advisory board, but they will also have access to test facilities, grant assistance, independent validation, professional services, marketing and media support, and engineering and manufacturing expert services. Technologies with a solid IP strategy are preferred, and challenging hardware innovations are welcomed. The clean energy future is now. Visit <https://application.cebip.org/> to get started.