
CHP for Resiliency Accelerator Partner Profile

1. Resilience Planning

The New York State Energy Research and Development Authority (NYSERDA) is a public benefit corporation headquartered in Albany, NY. It is focused on providing analysis, research, technical expertise, and program administration services in energy and energy efficiency. To support Governor Andrew M. Cuomo's Reforming the Energy Vision (REV) strategy to build a clean, resilient and affordable energy system for all New Yorkers, NYSEDA is actively involved in providing solutions to increase energy resilience in New York State and encourages deployment of CHP and microgrids in a number of ways. NYSEDA is currently exploring the role of "hybrid" energy systems consisting of CHP, solar PV and storage in meeting resiliency planning goals. At NYSEDA's on-site power [conference](#) held in December 2016, presentations demonstrated how adding storage to CHP could improve operational flexibility of the system and in turn, increase end-user resilience and economic value.

NYSERDA realizes that wide-scale deployment of resilient CHP can only occur when CHP can be shown to be cost-effective in the absence of subsidies (otherwise, deployment would be limited based on the magnitude of an incentive program's budget). NYSEDA has observed indications from the marketplace that hybrid CHP systems are the nearest-term pathway to cost-effective resilient CHP. Additionally, NYSEDA is exploring various ownership structures for CHP and microgrids. These include single-owner CHP plants, single-owner hybrid plants and community microgrids (with multi-site CHP and multi-site hybrid plants). Finally, NYSEDA is focused on simplifying and standardizing aspects of CHP development including interconnection processes and deployment of pre-engineered, or "packaged" CHP systems to help lower overall system costs. REV has been a major driver for CHP solutions, helping to grow the installed base of CHP systems in New York State to 570 buildings.

2. Program or Project Implementation

NYSERDA is focused on CHP and microgrid solutions to increase energy resilience through multiple programs or initiatives, including the CHP program (PON 2568), the packaged CHP system catalog, and NY Prize. NYSEDA's CHP program offers incentives up to \$2.5 million for systems up to 3 MW in size. In order to receive an incentive, in almost all cases systems are required to be capable of independent operation during grid outages (black-start capable), and installed to provide priority power during grid outages. NYSEDA offers bonus incentives for black-start capable CHP systems installed at critical infrastructure sites. For customers interested in installing systems less than 3 MW, NYSEDA offers a [packaged CHP system catalog of modules that are pre-approved for program incentives](#). For projects in the 1-3 MW size range, NYSEDA allows customers to choose either the catalog approach, or a custom-designed approach. The catalog provides enhanced consumer confidence for smaller projects and helps accelerate the decision making and deployment timeframes through a catalog of pre-engineered CHP systems.

The [NY Prize Program](#) is a unique initiative aimed at helping communities create microgrids to reduce energy costs, promote clean energy and improve reliability and resiliency. It is comprised of three separate stages that can help accelerate microgrid deployment through funding feasibility studies (Stage 1), overall systems design (Stage 2), and project build-out (Stage 3). Eighty-three feasibility studies were completed in the first stage of the program. NYSEDA is also assisting 11 eleven Stage 2 design efforts including the development of microgrid projects in Long Island, Buffalo, Binghamton, and Albany.

Additionally, NYSEDA's initiatives have successfully encouraged increased resiliency at multifamily

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buildings with CHP so that these sites can enable residents to shelter-in-place during adverse weather events and grid outages (this reduces the number of displaced persons needing to seek government resources that tend to be sparse during an emergency event). Recent hurricanes such as Harvey, Irma and Maria, as well as Superstorm Sandy have highlighted the need for shelter-in-place facilities. NYSERDA commissioned a study to explore methods to monetize the enhanced resiliency of CHP; the initial work performed under that [study by ACEEE](#) has catalyzed follow-on work funded by US DOE.

3. Lessons Learned

NYSERDA is focused on helping interested sites move beyond a stage of ‘analysis paralysis’. Potential CHP customers often tend to compare bids from competing vendors that rarely align in terms of sizing recommendations or dispatch modeling. These confusing bids can lead customers to need to seek advice from an independent expert, which can be costly. To address this hurdle, for 2015 through 2023 NYSERDA has retained an Outreach & Technical Assistance Contractor to provide no-cost, unbiased information to prospective customers. When designing for resilience, some customers may consider sizing CHP systems larger than necessary in order to ensure robust electricity supplies during a grid outage, as opposed to right-sizing a system for maximum efficiency. NYSERDA’s “N+1 configuration” is a good compromise for sizing purposes, but it can be challenging for sites to embrace the procurement of additional equipment that will be idle 99% of the time. NYSERDA’s [Outreach & Technical Assistance Contractor](#) can also help address design decisions related to increased resilience, the use of a consistent set of assumptions and financial pro forma models to enable comparability as a way to help simplify the process. NYSERDA has also arranged peer-to-peer dialogues so that “CHP veterans” can provide mentoring to “CHP recruits.” NYSERDA continues to [compile](#) big-data regarding performance of numerous CHP systems. NYSERDA is working to distill the data into meaningful insights that will be shared with the marketplace (in the future).

4. Additional Information

- ▶ [NYC Mayor’s Office of Recovery and Resiliency \(ORR\)](#)
- ▶ [OneNYC 2018 Progress Report](#)
- ▶ [NYSERDA Combined Heat and Power Program](#)
- ▶ [NYSERDA’s Distributed Energy Resources Integrated Data System](#)
- ▶ [NY Prize](#)
 - ▶ [Assessing the Benefits and Costs of Developing a Microgrid: Model User's Guide](#)
 - ▶ [Cost Benefit Analysis Spreadsheet](#)
 - ▶ [Resources for Applicants](#)
- ▶ [REV Demonstration Projects](#)
- ▶ [NYSERDA’s On-Site Power Conference: Scale for Potential Growth of Hybrid/Integrated On-Site Power Systems](#)
- ▶ [New York State of CHP Page](#)