

# RESILIENT POWER CASE STUDY

## Massachusetts Community Clean Energy Resiliency Awards

November 2014

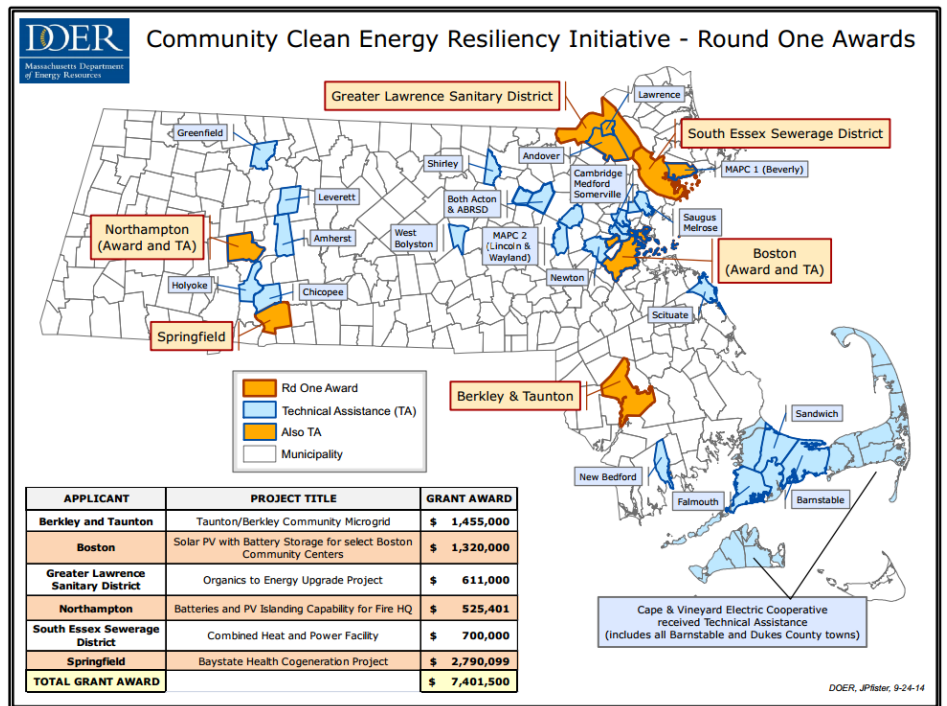


For many years, we at Clean Energy Group have been advocating for the deployment of clean, distributed energy technologies that can support critical infrastructure, such as hospitals, public shelters, fueling and communications centers and the like, when the grid goes down due to a storm or other natural disaster.

In 2012, Superstorm Sandy hammered that point home for many states on the eastern seaboard. In the wake of Sandy, a number of states began designing programs to allocate public funds to this purpose.

In fall of 2014, the Massachusetts Department of Energy Resources (DOER) and the Patrick Administration awarded \$7.4 million to six municipal-led resilient power projects that will support critical infrastructure and services during natural disasters and other emergencies. In addition, DOER awarded 27 technical assistance grants to communities seeking funding to design resilient power projects. These projects, once constructed, will keep electricity flowing to public shelters, wastewater treatment plants, and other critical community facilities when the electric grid goes down.

The awards are the first in a two-part, \$40 million state grant program focused on using clean and renewable energy solutions to achieve municipal resilience. The program is funded by Alternative Compliance Payment (ACP) funds, which are collected from electrical retail suppliers that are unable to meet their compliance obligations under the state's Renewable and Alternative Portfolio Standard programs. The communities receiving technical assistance awards may apply



for project implementation grants in a second solicitation, for which awards will be announced later this year.

The project implementation awards include one microgrid, three combined heat and power (CHP) projects, and two solar PV projects with battery storage. The critical facilities to be supported include schools and community centers that serve as public shelters, police and fire stations, wastewater treatment plants, a municipal fueling station, and a hospital. The projects are located in Berkeley/Taunton, Boston, Lawrence, Northampton, South Essex and Springfield. More details may be seen in the accompanying map (above) and table (next page).

Table 1 – Massachusetts Community Clean Energy Initiative – Round One Projects

Applicant	Project Title	Grant Amount	Brief Description	Facility(ies)
Berkley and Taunton	Taunton/Berkley Community Microgrid	\$1,455,000	Community Microgrid	(1) Middle School – shelter (2) Emergency Services Building – Police and Fire (3) Community School – shelter (4) Municipal fueling station/pump (5) Police/fire radio repeater
Boston	Solar PV with Battery Storage for select Boston Community Centers	\$1,320,000	Solar and storage based islandable community shelters	(1) Shelburne Community Center – shelter (2) Roslindale Community Center – shelter (3) Tobin Community Center – shelter (4) Curtis Hall Community Center – shelter
Greater Lawrence Sanitary District	Organics to Energy Upgrade Project	\$611,000	Islandable and black start capable self-sustaining wastewater treatment facility	(1) Wastewater treatment facility
Northampton	Batteries and PV Islanding Capability for Fire HQ	\$525,401	Solar and storage based islandable fire station, that incorporates existing backup generation for further resiliency	(1) Northampton Fire Department
South Essex Sewerage District	Combined Heat and Power Facility	\$700,000	Islandable and black start capable combined heat and power facility at wastewater treatment facility	(1) Wastewater treatment facility
Springfield	Baystate Health Cogeneration Project	\$2,790,099	Islandable and black start capable combined heat and power facility at regional hospital	(1) Baystate Health – hospital
<b>Total</b>		<b>\$7,401,500</b>		

There are a number of significant innovations in the Massachusetts program that should provide a basis for similar programs in other states:

**Municipal-led proposals:** When it comes to critical infrastructure and resiliency, municipalities are often in the best position to identify and prioritize the need, as well as to implement projects that frequently involve municipal facilities such as water and wastewater treatment plants, public schools, community buildings, municipal fueling stations and others. Targeting grants to municipal-led projects engages the state’s cities and towns in the resiliency discussion, and helps to ensure the success of projects that are deployed.

**TA fund:** Uniquely among the state resilient power programs announced thus far, the Massachusetts program includes a carve-out fund for technical assistance, to help municipalities define their needs and design project proposals. Municipalities often do not have in-house expertise in such advanced energy systems as solar +

storage and microgrids, and may not be able to pay for the engineering expertise required to craft a project proposal. DOER put together a technical assistance team and encouraged municipalities to apply for a technical assistance grant in Round 1 of the solicitation. Those who were awarded TA grants in Round 1 are now eligible to apply for project implementation funds in Round 2.

**Casting a wide net:** The Massachusetts program does not focus on a single technology, such as CHP, nor does it require a specific size of system, such as microgrids, which tend to be larger than some municipalities need or could support. This agnostic approach allows each project to be tailored to the need of the municipality that will host it.

More information about this program can be found on the MA DOER website at: <http://www.mass.gov/eea/energy-utilities-clean-tech/renewable-energy/resiliency-initiative.html>.

We at CEG look forward to continuing to support the resilient power efforts of Massachusetts and other states.

This paper is a product of Clean Energy Group and part of a series of reports and case studies issued through the Resilient Power Project, a joint project of Clean Energy Group and Meridian Institute. This project works to expand the use of clean, distributed generation for critical facilities to avoid power outages; to build more community-based clean power systems; and to reduce the adverse energy-related impacts on poor and other vulnerable populations from severe weather events. This project has been generously funded by The JPB Foundation, The Kresge Foundation, and The Surdna Foundation. The views and opinions expressed in this publication are solely those of the authors. For more information about this project, download its reports, and links to sign up for its webinars and e-distribution list, please visit the Resilient Power Project’s website at [www.resilient-power.org](http://www.resilient-power.org).