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Patrick Administration Awards $18.4M to Communities for Energy Resiliency Projects

Thirteen grants made available through Governor Patrick's Climate Preparedness Initiative

BEVERLY – Monday, December 29, 2014 – Energy and Environmental Affairs Undersecretary for Energy Mark Sylvia and Department of Energy Resources Commissioner (DOER) Meg Lusardi today awarded $18.4 million in grants to municipalities to implement clean energy technologies and improve resiliency at critical facilities.

Undersecretary Sylvia and Commissioner Lusardi announced the grants in Beverly, where the Metropolitan Area Planning Council will use more than $500,000 to implement a solar PV plus storage system that will allow the facility to island and operate its critical energy loads during an extended grid outage. This is the second round of grants through the Community Clean Energy Resiliency Initiative, the first totaling $7.4 million, which is part of the Patrick Administration's comprehensive climate change preparedness effort.

"These grants will assist municipalities across the Commonwealth in using innovative clean energy technologies to prevent disruption to critical facilities and services during times of emergency," said Undersecretary Sylvia.

Through the Resiliency Initiative, $40 million in state funding has been made available to cities and towns that identify facilities in their communities where the loss of electrical service would result in the disruption of a critical public safety or life sustaining function, including emergency services, shelters, food and fuel supply and communications infrastructure.

Municipalities can use the funding to implement clean energy technologies to keep their energy systems operable.

Under the program, administered by DOER, cities and towns applied for either technical assistance or direct project implementation. Projects eligible for funding include clean energy generation, energy storage, energy management systems, islanding technologies and microgrids.

“These grants, another example of our partnership with cities and towns, will support local communities during climate change-induced events, by making critical facilities able to continue service using clean energy technology solutions,” said Commissioner Lusardi.

Funding for these project implementation grants, the first round project implementation grants and technical assistance awards previously announced comes from Alternative Compliance Payments (ACP), which are paid by electrical retail suppliers if they have insufficient Renewable or Alternative Energy Certificates to meet their compliance obligations under the Renewable and Alternative Portfolio Standard programs. Communities receiving technical assistance can apply for project implementation grants in a second solicitation later this year.

In January, Governor Patrick announced a coordinated plan for climate preparedness to increase resiliency across the Commonwealth. In addition to the energy resiliency initiative, the plan includes funding for critical coastal infrastructure and dam repair, including two new municipal grants offered by the Office of Coastal Zone Management (CZM). Their Community Resiliency Program offered $1 million in municipal grants to reduce or eliminate risk associated with coastal storms and sea level rise. As natural solutions have often proved to be the best defense against nature, CZM also implemented a $1 million program for Green Infrastructure for Coastal Resilience pilot project.

Applicants receiving project implementation funding are as follows:

Barnstable – $406,000 – The Barnstable Intermediate School serves as a primary emergency shelter for the town. This project is for the procurement and construction of the resiliency equipment associated with a 60kW combined heat and power (CHP) system to support the school with both electric and thermal power. With the resiliency equipment, namely the islanding and black start features of the selected system, this unit will be able to operate in parallel with the utility grid or independently during a broad scale utility outage. This functionality will ensure that the shelter will be able to continue to provide critical services through a long-term outage event.

Boston – $3,680,000 – The City of Boston is proposing to partner with Boston Medical Center to install a new 2MW co-generation system that is capable of black start and island operation at that facility. The system will be configured to, not only support the hospital, but to provide extended duration backup electric power in the event of a normal power outage to the regional emergency communications infrastructure located on the roof of the high rise housing building located at 35 Northampton St (across the street from the plant). Grant funding is requested for engineering, controls, electrical switchgear and wiring required for cogeneration machine black start and interconnection of city emergency communications infrastructure system.

Cambridge – $851,868 – Cambridge's proposed project will involve installing battery storage to complement a planned 170kW solar PV system and other equipment to enable the system to island during an outage event. The project would enable the drinking water treatment system to operate during brief interruptions of the power supply and enable the Water and Electrical Department offices, water laboratory, and emergency operations center to operate during longer outages.

Cape and Vineyard Electric Cooperative (CVEC) – $1,479,193 – The Dennis Yarmouth Regional High School is designated as a Regional Shelter by the Barnstable County Emergency Planning Committee (BCEPC). It is one of six regional shelters open to all residents and visitors to Barnstable County during an emergency. It also serves as a food preparation and distribution center for the remaining shelters due to its size and capacity. This project is for the addition of 512kW of battery back-up, energy management and islanding capability to its nearly complete solar array (split across a 715kW system and a 641kW system). In addition, the battery back-up system would be used, if possible, to reduce demand charges through peak load shedding at the school during regular, non-emergency operation.

Chelmsford – $74,941 – Chelmsford is looking to retrofit an existing solar PV system to provide emergency generation in island mode at the McCarthy Middle School, which serves as a community shelter. The integrated system will provide automated controls for grid and island mode.

Greater Lawrence Sanitary District – $4,389,000 – The Greater Lawrence Sanitary District (GLSD), a Regional Wastewater District, is pursuing a three-phased construction project (the grant award is for resiliency components of Phase 2 and Phase 3 only) to accept source separated organics (SSO) and produce electricity and heat for its main plant and electricity for its pump station. Phase 2 includes biogas metering, monitoring, collection and safety improvements, high pressure transfer pumps, an outside waste acceptance and blending tank, two 1550 kW CHP units, and electrical feeds from the main plan to the pump station. Phase 3, includes the addition of a fourth anaerobic digester. Phase 3 includes the addition of a fourth anaerobic digester. The estimated cost to design and construct the entire project is estimated at $25M.

Greenfield – $ 367,310 – The City of Greenfield is awarded funding for battery storage to complement a proposed 207kW solar PV installation at its new LEED certified high school. Currently, the back-up power at the site is diesel powered generators that will operate for 2-3 days. With recent severe weather events and accompanying power outages for up to 1 week in some local areas, there is a strong need to have more resilient facilities that can meet the community's needs. The new high school is in a perfect location to provide shelter and necessary services to the Town's growing elderly population and high percentage of high-needs populations.

Holyoke – $1,013,794 – Holyoke is awarded funding at three different project sites all of which will provide resiliency through the combination of islandable renewable energy generation and battery storage. After in depth analysis at the Fire Headquarters serving Holyoke, the Cadmus Group recommended a 53 kW photovoltaic system be installed on the roof of the building, paired with a 300 kWh battery bank. This combination, along with the existing back-up generator, would be

enough to cover 100% of the building's load in a grid outage for approximately 3 days. Holyoke looks to pursue this recommendation and is granted funding for the battery bank. Holyoke also looks to install a combination of a small PV system, small wind turbine, and a 200 kWh battery (for which it is awarded funding) at the Mt. Tom Tower, the emergency communication tower for the city. This combination will be enough to cover 100% of the facility's load in a grid outage for approximately 3 days. The city is also awarded funds to support pairing islanding equipment and a 483 kWh battery bank with a planned 600 kW PV array at the Dean School, a community shelter. This combination, along with the existing back-up generator, would be enough to cover 100% of the building's load in a grid outage for approximately 3 days.

Medford – $833,366 – The City of Medford's goal is to provide heat and power to as many of its key first responder facilities, critical infrastructure support buildings and potential large shelters as possible, during and after a major storm or grid-disrupting incident. Medford is currently engaging with the MAPC regional procurement project to install solar PV at the DPW and Andrews School and requests support in integrating resiliency work at these facilities. The awarded resiliency project would involve adding islanding equipment and battery storage at each of the independent sites.

Metropolitan Area Planning Council – Beverly – $526,180 – This project, which specifically focuses on four critical facilities at the Beverly Cache Site, proposes a 232kW PV array to be connected to the electric grid in a behind the meter configuration with 77kWh of battery storage. This system will be used to power the four critical facilities in the event that the power grid is not operational. This site serves as a Regional Equipment Cache for the Northeast Massachusetts Homeland Security Region, the location of the Beverly, MA Civil Defense Department, as well as the home base of Massachusetts Task Force 1. The Northeast Massachusetts Homeland Security Region Cache houses and coordinates the lending and delivery of critical emergency response equipment to communities within the Region, as well as state wide, during local and widespread emergencies. The Beverly, MA Civil Defense Department coordinates all emergency management activities for the City. Massachusetts Task Force 1 is one of the Nation's 28 FEMA Urban Search and Rescue Teams.

Metropolitan Area Planning Council – Wayland – $264,627 – The Metropolitan Area Planning Council project in Wayland is awarded funding for the implementation of islanding capability and advanced switches at Wayland Middle School. Wayland is seeking to augment a proposed PV carport at the school with switchgear and inverters that would allow solar to decrease the burden on the diesel back-up generator during an event. As the Town's primary community shelter, Wayland's Middle School has harbored folks in wheelchairs, people with their pets, senior citizens, and young families with children. As a regional shelter, it has hosted residents from other municipalities, including Weston, Framingham, and Sherborn. Adding resiliency features will leverage ongoing planning processes facilitated by MAPC to construct municipal solar installations. The proposed resiliency project will harden the clean energy infrastructure for the shelter while establishing an exciting demonstration of islanding/microgrid technology to which advanced battery storage systems can be added at a future date. While the requested amount is higher than the maximum award offered to Wayland, this facility does serve as a shelter for the region and is therefore eligible for a waiver of that maximum.

Northampton – $3,078,960 – The goal of the project is to increase the resiliency of three of Northampton's high priority emergency facilities: the Smith Vocational and Agricultural High School (SVAHS), the Department of Public Works

(DPW), and Cooley Dickinson Hospital (CDH). The city plans to identify, through an engineering study, specific critical loads and an appropriate control strategy, verify the feasibility of interconnecting across the public way, identify an economically sized natural gas generation configuration or possible alternative on-site generation and/or storage at CDH, and determine the system benefits and impacts on the combined microgrid. Based on the engineering study findings, the city will construct a microgrid with on-site RE and battery storage to serve the facilities.

Sterling – $1,463,194 – This proposed battery storage project would deliver multiple layers of resiliency benefits to the Sterling community. First, the battery array would be designed to ensure that the battery array is sized to allow for islanding of critical services within the Sterling police station and dispatch center. The goal is to be able to continue to supply heat, water, cooking equipment and life safety services that require electricity for up to 100 hours. The battery array will be used daily to provide real-time demand response, frequency regulation services, and off-peak to on-peak load shifting to increase the resiliency of Sterling's solar-reliant microgrid.

Since taking office, the Patrick Administration has been committed to mitigating the impacts of climate change by advancing renewable energy and energy efficiency in the Commonwealth. As a result, Massachusetts now has nearly 746 of wind and solar installed and has established the most ambitious energy efficiency plans in the nation.

The American Council for an Energy Efficient Economy (ACEEE) has named Massachusetts number one for three years running. Last year, Governor Patrick set a new solar goal to install 1,600 megawatts by 2020, after reaching the previous goal of 250 megawatts four years early. The clean energy revolution is yielding economic benefits as well, with 10.5 percent job growth in the last year and 47 percent growth since 2010; nearly 88,000 people are employed in the nearly 6,000 clean tech businesses in Massachusetts.