New England District proposing solar array at Cape Cod Canal

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A team of New England District personnel is working on a proposed project with U.S. Army Corps of Engineers Headquarters and the Huntsville Engineering Support Center that would reduce the carbon footprint of the Cape Cod Canal in Bourne, Massachusetts and the New Bedford Hurricane Barrier in New Bedford, Massachusetts. The New England District proposes to lease approximately six acres at the Cape Cod Canal for the installation of a solar array via a Power Purchase Agreement (PPA). This would be the first Civil Works renewable energy PPA within USACE. Both the Canal and the New Bedford Hurricane Barrier will be connected to the solar energy grid.

"The solar array will be constructed approximately halfway between the Bourne and Sagamore Bridges on the Cape Cod side of the canal," said Lindsay Flieger, Sustainability Program Coordinator for New England District. "The project will require 5-6 acres of land and will provide 680kW of power."

According to Erika Mark, Project Manager, USACE Headquarters provided the funding to do the feasibility work such as real estate, NEPA and environmental baseline conditions, but the District will not be paying for the array itself.

"The third party vendor who wins the bid for this contract will pay for installation, operation and maintenance costs," she said. "There are no out-of-pocket costs for USACE as the array will be fully funded by the vendor and the District benefits by paying a discounted rate on our power."

In 2007, Congress mandated the federal government to acquire 25-percent of its energy needs through renewable resources by 2025, according to Mark. Flieger said the Canal and NBHB, the District's second largest energy user, have had several energy-saving initiatives introduced over the last few years. These initiatives included replacing the lighting along the Canal and on the Bourne Bridge with LED lights and making the maintenance building a high performance sustainable building. Despite all these efforts, the Canal still uses a huge amount of energy.

"New England District enlisted the support of Huntsville to assess the canal and determine what type of large scale renewable energy project would be the best fit," she said.

The team visited the Canal in 2014 and determined a solar panel array would be the best method. "The Power Purchase Agreement method was also determined as the best way to make the project a reality," said Flieger. "The solar array will provide 100-percent of the power to the Cape Cod Canal and the New Bedford Hurricane Barrier."

Mark said the Canal's and the hurricane barrier's energy needs would be covered on days when solar power might not be an option. "Both will be on solar power most of the time; however, this is New England and we have some pretty grim winters," she said. "If there isn't sun, or it's night and they're not producing power, we will still have access to a power grid as a backup."

The Canal and the hurricane barrier will be running on solar power as soon as the array is installed and online, according to Mark.

Flieger said because the District will be the first to have an agreement of this kind, the team will compile a summary of the process, tools and lessons learned into a guidance document for other districts who wish to implement something similar. The New England District team members on the Cape Cod Canal Solar Power PPA project are: Erika Mark, Megan Burke, Anne Kosel, Mary Mason, Rose Schmidt, Grace Moses, Kate Atwood, Jeff Teller, Scott Barr and Eric Pedersen.