



# Renewable Communities 2020

Massachusetts cities and towns  
leading the way to 100% renewable energy

## Nantucket: Reducing peak demand for electricity

As an island, Nantucket relies on underwater cables to supply residents and businesses with electricity, with diesel generation as backup.<sup>1</sup> The first cable was laid in 1996, and a second cable was installed in 2006, at a cost of \$41 million dollars to Nantucket ratepayers.<sup>2</sup> Peak electricity load on the island has continued to grow, from 37 megawatts in 2008 to almost 49 megawatts in 2018, raising the possibility that a third cable will be needed.<sup>3</sup> Relying on electricity from the mainland also leaves Nantucket vulnerable to a disruption in service in the event that one of the cables fails.<sup>4</sup>

Town officials and the electric utility, National Grid, have pursued a range of strategies to reduce peak load, increase resiliency, and delay or avoid the need for a third cable. Reducing electricity use during times of high demand on Nantucket, particularly if those periods line up with peak demand for the New England electric grid as a whole, will also help reduce the need to use the region's dirtiest power plants.<sup>5</sup>

The town of Nantucket's Energy Office offers several programs to encourage residents and businesses to reduce demand for electricity during peak periods, typically late afternoons and evenings in the summer. In addition to free home energy assessments and incentives that are available to most Massachusetts residents, people who live on Nantucket are eligible for additional incentives for energy-efficient products, including free dehumidifier replacements and electric heat pump water heaters.<sup>6</sup>

Additionally, the town offers rebates of up to \$4,000, on top of state incentives, for residents who install solar

panels. This program is funded through a small additional charge in the town's municipal electricity aggregation program.<sup>7</sup>

Toward the end of 2019, National Grid unveiled a 6-megawatt, 48-megawatt-hour Tesla battery system on Nantucket, the largest battery storage installation in New England.<sup>8</sup> The utility plans to charge the batteries at night and use the power during the day, to reduce the need to buy electricity during peak demand times. In total, this project was completed for \$81 million, far less than the projected \$200 million cost of a new cable.<sup>6</sup>

1. "National Grid unveils new Nantucket back-up energy source," Ethan Genter, *The Inquirer and Mirror*, 16 October 2019, <<https://www.ack.net/news/20191016/national-grid-unveils-new-nantucket-back-up-energy-source>>.
2. "A brief history of energy on Nantucket," Town of Nantucket Energy Office, <<http://www.ackenergy.org/brief-history-of-energy-on-nantucket.html>>.
3. "A brief history of energy on Nantucket," Town of Nantucket Energy Office, <<http://www.ackenergy.org/brief-history-of-energy-on-nantucket.html>>.
4. "Nantucket Gets Largest Back-Up Energy Source in New England," Distributed Energy, 23 October 2019, <<https://www.distributedenergy.com/storage/article/21111560/nantucket-gets-largest-back-up-energy-source-in-new-england>>.
5. "Shave the Peak," Green Energy Consumers Alliance, <<https://www.greenenergyconsumers.org/shavethepeak>>.
6. "Beat the Peak! : Nantucket's Energy Initiatives," Town & County of Nantucket, MA, <<https://www.nantucket-ma.gov/997/Beat-the-Peak-Initiative>>.
7. "Local SOLAR" Rebate Program," Town & County of Nantucket, MA, <<https://www.nantucket-ma.gov/970/Local-SOLAR-Rebate-Program>>.
8. "National Grid unveils new Nantucket back-up energy source," Ethan Genter, *The Inquirer and Mirror*, 16 October 2019, <<https://www.ack.net/news/20191016/national-grid-unveils-new-nantucket-back-up-energy-source>>.
9. "There once was a 48 MWh Tesla battery on Nantucket, which saved National Grid \$120M in its budget," Iulia Gheorghiu, *Utility Dive*, 10 October 2019, <<https://www.utilitydive.com/news/Tesla-national-grid-battery-energy-storage-8hour-long-duration-diesel-generation-system-nantucket/564428/>>.