

Questions for Eversource

Eversource responses in Blue below each question
September 11, 2020

1. What scenario analysis has Eversource done for Category 4 hurricanes, ice storms and other severe weather events on the Island? What is the potential duration of outages under each scenario?

Eversource has not done an analysis identified above at this time. In the case of a Category 4 hurricane it is expected that there would be widespread damage from both flooding and winds. It should be noted that flood risk would be to any underground facilities that are in flood zones and that winds would damage both poles/wires and trees which could impact poles and wires as well. The Company builds to standards to withstand 90 mile an hour wind. A Category 4 would have winds substantially in excess of this and therefore would be expected to create significant damage.

In addition, a hurricane can take many paths and the exact path would influence the amount of damage on the island and surrounding area. It should also be noted the conditions at the time prior to a storm can influence damage – an example of this is the current drought conditions in CT is believed to have increased tree damage from storm Isaias that recently hit the state. This is to point out any modeling can only be an indication of actual damage that could be experienced from either winds or flooding storm surge.

In terms of potential duration of outages – it is difficult to provide any estimate related to this as it would depend on many factors including the extent of the damage on the island and in the surrounding area – the more widespread the damage the more resources to restore it are stretched to multiple areas rather than concentrated. It would also be dependent on the total resources available and their ability to get to the island with all equipment, tools and materials needed based on the damage experienced.

2. Eversource has stated that undergrounding last-mile connections is unfeasible from a cost perspective. At what point will undergrounding become feasible in terms of resiliency?

To put distribution lines underground it is estimated, through various studies, that it costs at a minimum 10 times the cost of overhead lines or approximately \$1M per mile (with some estimates much more than this). This is a significant cost that is hard to justify to customers who are concerned about the impact of high energy bills on their individual budgets (especially at the current time). It is unknown if there will be a point in time when this will change.

- Can Eversource do a peak-load analysis (seasonal and daily) from the average load scenario, including the CATF’s projected increase in both EV adoption and electric heating and cooling? (Assume this is similar to today's summer peaks, but proportional to the overall increase in electricity use.)

Eversource cannot provide a peak demand analysis incorporating the CATF projected load increases. The CATF projections for EV adoption and heat pump cooling are based on annual consumption (GWH), whereas the Eversource peak demand forecast is based off the maximum hour output over the entire summer (GW). Eversource cannot convert annual consumption projections into peak demand.

- How much diesel fuel did Eversource/NRG burn on-Island in 2018 and 2019, and so far in 2020?

This information would only be known by the owner of the diesels (NRG) and is not available to Eversource.

We provide here a high-level estimate based upon public records and the actual run hours for 2019.

Per NRG’s DEP air quality operating permits for the Oak Bluffs diesels, which are a public record and posted at the link here (<https://www.mass.gov/files/documents/2018/05/21/op-nrgcanal-renewal.pdf>), one 2.5 MW unit consumes approximately 209 gallons per hour. It is assumed that this was linearly proportional to the output (i.e. Consumes 209 gallons per hour at 2.5 MW and linearly drops off from that).

This is a very high approximation, subject to the correctness of presumptions of fuel consumption rates, subject to substantial roundoff and other errors. Also, there are times when the dispatch for particular units exceeds 2.5 MW, so the total reported gallons exceeds that by simply multiplying the operating hours times 209.

	2019 Operating Hours	Total Fuel
Oak Bluffs unit #1	269	122474
Oak Bluffs unit #2	79	38519
Oak Bluffs unit #3	16	6876
W. Tisbury unit #1	21	8485
W. Tisbury unit #2	363	142810
	Total Fuel	319,164 gallons

- To date, it seems that increasing the electrical supply to the Vineyard and improving infrastructure on the Island have come as a direct response to greater usage. Given the Island’s goal of 100% renewable energy by 2040; and the projected increase in extreme weather events, flooding, heatwaves, drought, and wildfire associated with climate change, what steps is Eversource now taking or planning to take to ensure the resilience of our power supply and meet the potential increase in demand?

In addition to current early planning efforts around supply to the island based on the potential for significantly increasing loads due to the MVC CATF efforts we identify the following factors affecting system resilience that we already perform as a standard practice:

- We install Hendrix spacer cable for some new construction as opposed to new open wire. This was done for the new #75 line when the new submarine cable was installed in 2014
- We perform vegetation management (tree trimming) per a specific trim cycle
- We installed distribution automation (D/A) switches, reclosers, etc. to improve outage response time
- We install animal guards to reduce outages caused by animal intrusions
- We conduct IR (infrared scans) on line hardware and station equipment to identify overheated components
- We conduct circuit walkdowns on distribution circuits to identify faulty equipment. This includes inspections by helicopter for transmission lines and to identify locations of Osprey nests. A future plan to use drones for this type of work is being investigated.
- We contract with a third party to analyze health of poles
- We are replacing substation equipment on the 23/4kV stations on the island with new padmount equipment
- In the future we may install S&C Intelliteam / Intelliruptor (or Cooper) switches which have a self-healing self-restore feature if deemed appropriate

6. As discussed at our meeting on August 3, please provide a map of areas on the Island that are best suited to community solar arrays.

As we noted at the meeting, such a map cannot be produced – an impact study would be required for any standalone PV application. We did indicate previously that the closer to the source a PV array is located the better in terms of its ability to connect to the system without significant impacts.

7. Given its benefits in regard to mitigating peak demand and responding to outages, when will Eversource integrate smart metering on the Island?

The MA DPU has not authorized any MA utilities to implement smart metering at this point in time. The DPU has recently indicated in a docket it is investigating the need for smart meters for EV customers specifically, but this could expand to other customers, that will be at the discretion of the DPU. Eversource is participating in this investigation and can provide updates in the future as it proceeds.

8. Please explain why a cluster study is needed for the Oak Bluffs Capped Landfill PV/Storage interconnection if the point of interconnection is robust enough to handle the increased power from the diesel generators brought online in the summer.

The first item to note regarding this is that intermittent PV and diesels are very different in their impact on the distribution system, with diesels being able to provide power in a different way than a PV system.

Additionally, regarding the cluster studies - Eversource has a large amount of DG applicants in the Eastern MA area. Historically, the company conducted the impact studies sequentially, in queue order, first-in-first-out. Due to the huge backlog of applications it would have taken years to complete studies on these applications.

There are two (2) open DPU dockets which are now requiring group (or cluster) studies. DPU 19-155 covers Affected System Operator (ASO) studies where Transmission studies are required by ISO-NE for interconnection of large clusters of Distributed Generation. DPU 17-164 covers now-required cluster studies grouping together all applicants in one substation area or subarea of the Company's service territory into one impact study.

The Oak Bluffs landfill PV+Battery storage application is grouped into one of these cluster studies. And unfortunately, no study has yet been completed to verify the statement that if the system is robust enough for the diesels, it is robust enough for the new application.

9. What is the timeline for upgrading the Falmouth Tap Switching Station, and what will that project mean for the Island?

Falmouth Tap Upgrade is a proposed project, for which we currently do not yet have internal authorizations or cost estimates completed, and any regulatory permitting that is required has not been fully identified or obtained. The in-service date for the project has not been fully vetted and is estimated to be the end of 2024 or later.

The Falmouth Tap upgrade project upgrades a series 115kV bus with a single circuit breaker to a full breaker and a half scheme, which eliminates multiple single points of failure and will increase system reliability for the Cape and Martha's Vineyard.