Date Filed: August 21, 2026

Witness: John P. DiPaola-Tromba, Sean D. Redding and Jenna Turner
Request from: Office of Consumer Counsel

Question:

(VMP) Referring to Exhibit CLP-VMP-1, page 8. Provide support for the claim the Company has experienced increased severity and frequency of strong weather systems as compared to the storm impact over the last 26 years.

Response:

This statement reflects the Company's observation that weather conditions affecting its electric distribution system have become increasingly challenging over time. This observation is supported by multiple, complementary sources of information, including independent climate research specific to Connecticut and the Northeast, documented changes in Connecticut's vegetation and forest environment and the Company's own operating experience.

Because the characteristics, timing, location and impact are different for every weather event, the Company does not define a "strong storm" solely by a particular wind speed, precipitation amount, or number of customer outages. Rather, the operational impact of a weather system is the result of multiple interacting factors, including wind speed and duration, precipitation intensity, soil saturation, snow or ice loading, lightning, antecedent weather conditions, vegetation health and condition, and the location of trees and other vegetation relative to electric facilities.

Independent Climate Data
Independent scientific assessments demonstrate that Connecticut and the broader Northeast are experiencing measurable changes in climate and certain types of extreme weather. Please refer to OCC-247, Attachment 1. The *Connecticut Physical Climate Science Assessment Report* found that previous studies of the Northeast document an observed increase in precipitation and in the frequency and intensity of heavy precipitation events. The report further explains that more than 75 percent of extreme precipitation days in the Northeast are associated with extratropical storms, except during September, when tropical storms account for more than 50 percent.

Connecticut-specific observations similarly show changes in precipitation patterns. Please refer to OCC-247, Attachment 2. NOAA's *Connecticut State Climate Summary 2022* reports that annual and summer precipitation have generally been above average since the 1970s and that the greatest number of days with two inches or more of precipitation occurred during the 2005–2009 and 2010–2014 periods. NOAA also projects increases in annual precipitation and in the number of extreme precipitation events, noting that these changes may increase inland and coastal flooding risks.

The Fifth National Climate Assessment[1] provides additional national and regional context. This assessment concludes that climate change is increasing the frequency and severity of a number of extreme weather and climate events, including heavy precipitation and flooding.

These findings do not mean that every individual storm affecting Connecticut is stronger than storms occurring historically, nor is the Company relying on that proposition. Rather, the occurrence of these weather patterns demonstrate that the underlying weather environment in which the Company's electric system operates is changing, including changes in weather variables that can materially affect an overhead electric distribution system.

Vegetation and Antecedent Environmental Conditions

Weather alone does not determine the resulting impact on the electric system. This distinction is particularly important in Connecticut because of the significant interaction between the State's overhead electric infrastructure and its heavily forested environment. Weather conditions, antecedent soil conditions, and vegetation health can interact in ways that affect the likelihood of trees or limbs contacting electric facilities.

Connecticut's forest environment has itself experienced significant health stresses during the period relevant to this interrogatory. Please refer to OCC-247, Attachment 3. The Connecticut Agricultural Experiment Station's ("CAES") *2024 Forest Health Highlights* documented 82,214 acres of new forest damage during its 2024 aerial survey, including damage associated with beech leaf disease, spongy moth, white pine needle disease and emerald ash borer. CAES further cautioned that aerial surveys likely underestimate the actual extent of certain forest-health impacts.

Several of these forest-health threats emerged or expanded substantially during the period examined by the Company. Emerald ash borer was first detected in Connecticut in 2012 and subsequently spread throughout the State. In CAES's 2024 sampling, 314 of 387 ash trees were dead, and at sampled locations where emerald ash borer was first detected in 2012 or 2013, CAES found no living overstory or midstory ash trees. Beech leaf disease, first detected in Connecticut in 2019, subsequently spread throughout the State and has resulted in substantial deterioration in the condition and growth of affected beech trees.

These forest-health conditions demonstrate that the environment affected by weather systems has also changed. This distinction is important when evaluating impacts to an overhead electric distribution system. Heavy or prolonged precipitation can contribute to soil saturation; wind acting upon trees rooted in saturated soils may produce different consequences than similar winds

[1] https://toolkit.climate.gov/NCA5_2023_FullReport

under dry conditions; and dead, diseased or otherwise stressed trees may respond differently to those same weather conditions than healthy trees.

Accordingly, the ultimate impact of a weather system cannot necessarily be determined from a single meteorological variable, such as peak wind speed. Weather severity, antecedent conditions, vegetation health and electric-system exposure interact to determine the ultimate system impact.

Company Operating Experience

The Company's historical operating experience provides another, complementary perspective. Whereas climate and environmental studies describe changes occurring in Connecticut's weather and natural environment, the Company's outage-event data provide a means of evaluating how frequently weather conditions are producing operationally significant impacts on the electric system.

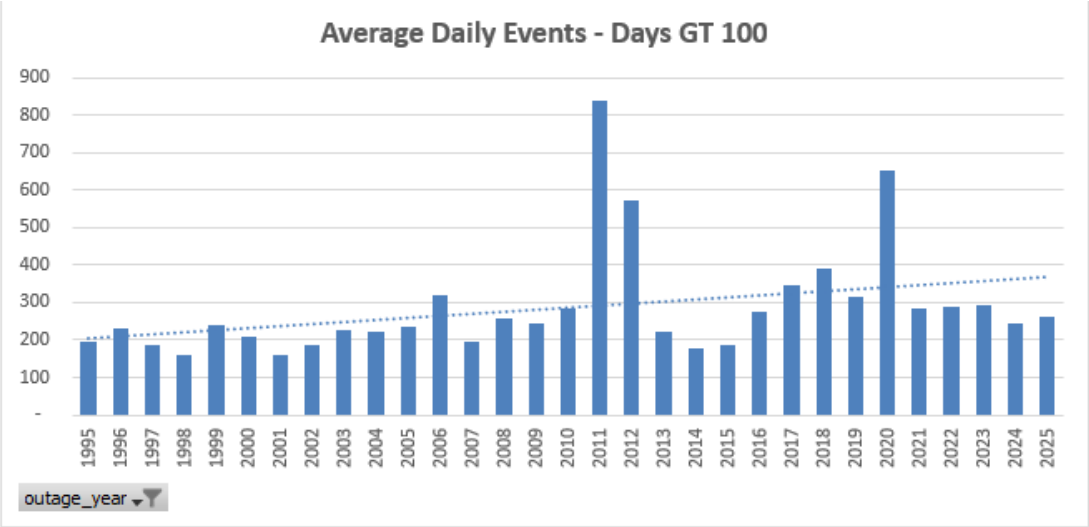
For purposes of this analysis, the Company has reviewed the frequency of days experiencing more than approximately 100 outage events. The Company does not use 100 outage events as a meteorological definition of a "strong storm," nor does reaching that level necessarily constitute activation of the Company's Emergency Response Plan. This level of outage events is simply a level of outages that would not be expected on a blue sky day and that would generally need to be provoked by an external weather impact, or other force. That is, approximately 100 outage events represents an operationally meaningful reference point because, at approximately that level of system impact, the Company's normal operating and staffing structure generally begins to require adjustment.

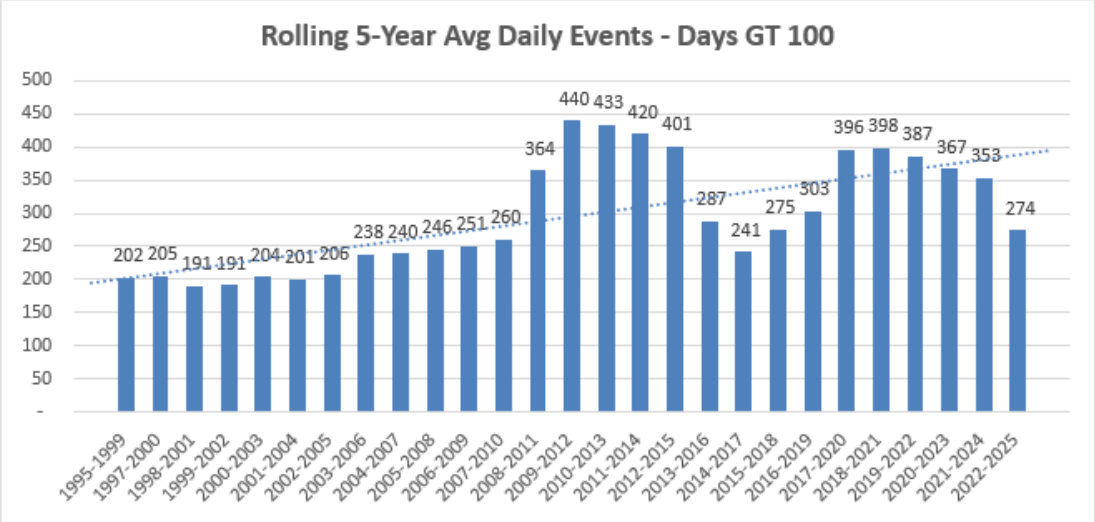
Under normal conditions, resources such as Response Specialist Organization personnel and lineworkers are allocated among outage response, corrective maintenance, capital work, and other normal operations. As outage-event volume increases, additional personnel may need to be redirected from their normal assignments to restoration activities, staffing structures may need to be supplemented, and additional coordination and operational support may become necessary.

The precise point at which these actions occur is dynamic and depends upon factors including the geographic distribution and complexity of outages, expected weather duration, damage conditions, available resources, and forecast conditions. Nevertheless, approximately 100 outage events provides a reasonable and consistent reference point for examining the frequency with which weather affects the system sufficiently to cause the Company to move beyond its ordinary operating posture.

The Company's review of its historical operating data shows an increasing trend in the number of days on which the electric system experiences more than 100 outage events, including a clear upward trend. Additionally, a comparison of the rolling five-year average of days with greater than 100 outage events also shows a clear upward trend. This information is relevant because it

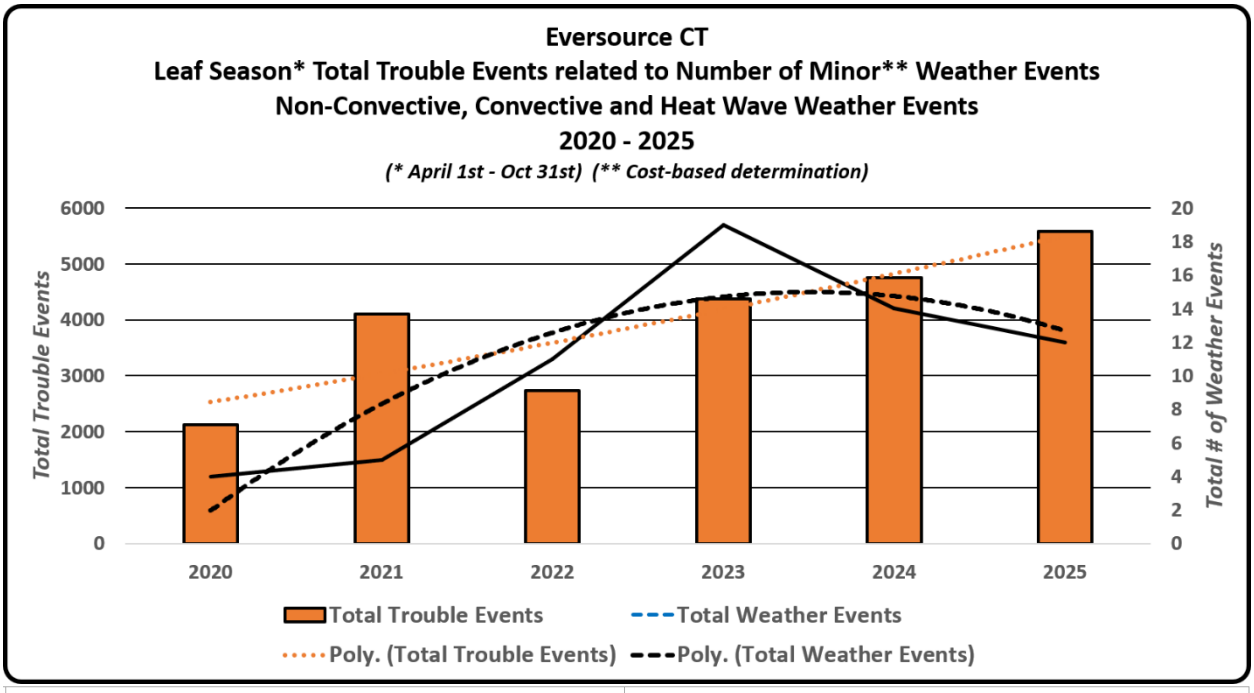
measures the consequence of weather from an electric-system operations perspective rather than attempting to characterize storm strength through a single meteorological variable.

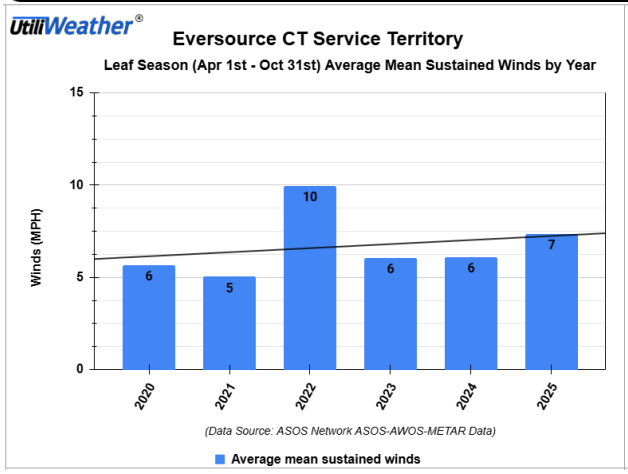


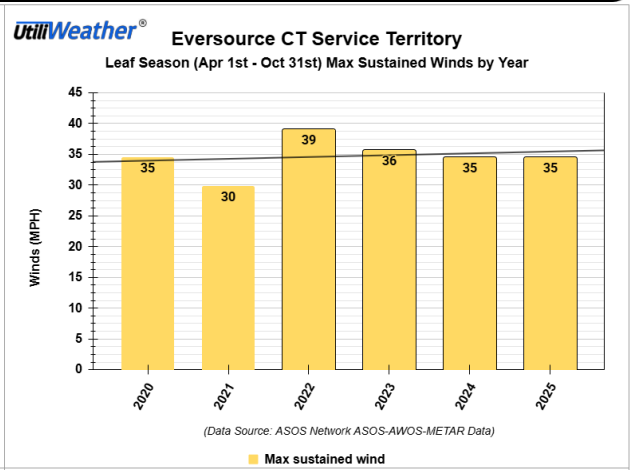


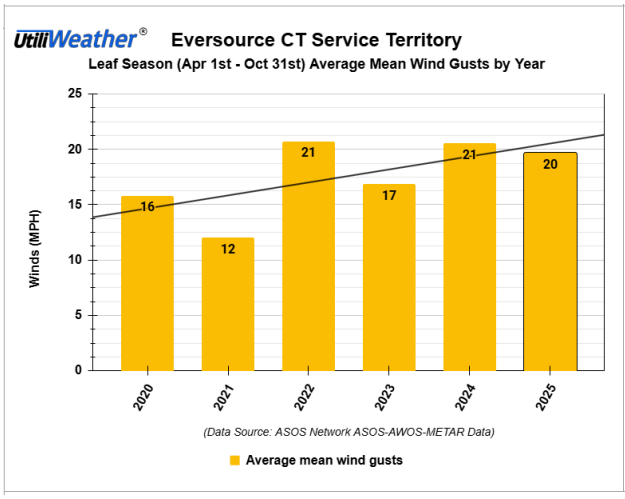
Recent meteorological data reviewed by the Company provides additional context for these observed operational trends. UtiliWeather analyzed four wind-profile parameters over a recent five-year period: average mean sustained winds, average maximum sustained winds, average mean wind gusts, and average maximum wind gusts. UtiliWeather found increasing linear trends across these wind parameters, with sustained winds exhibiting a modest increase and wind gusts exhibiting a somewhat more robust increase over the period analyzed. While the five-year period is not, standing alone, sufficient to establish a long-term climatological trend, these observations

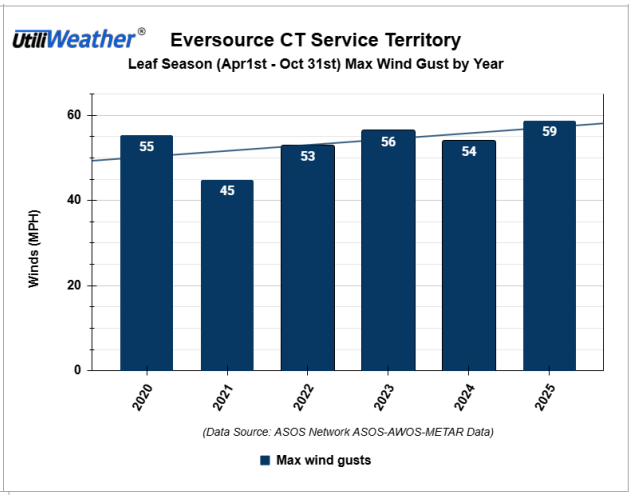
provide additional recent meteorological context that is consistent with the Company's operating experience and the longer-term regional climate information discussed above.



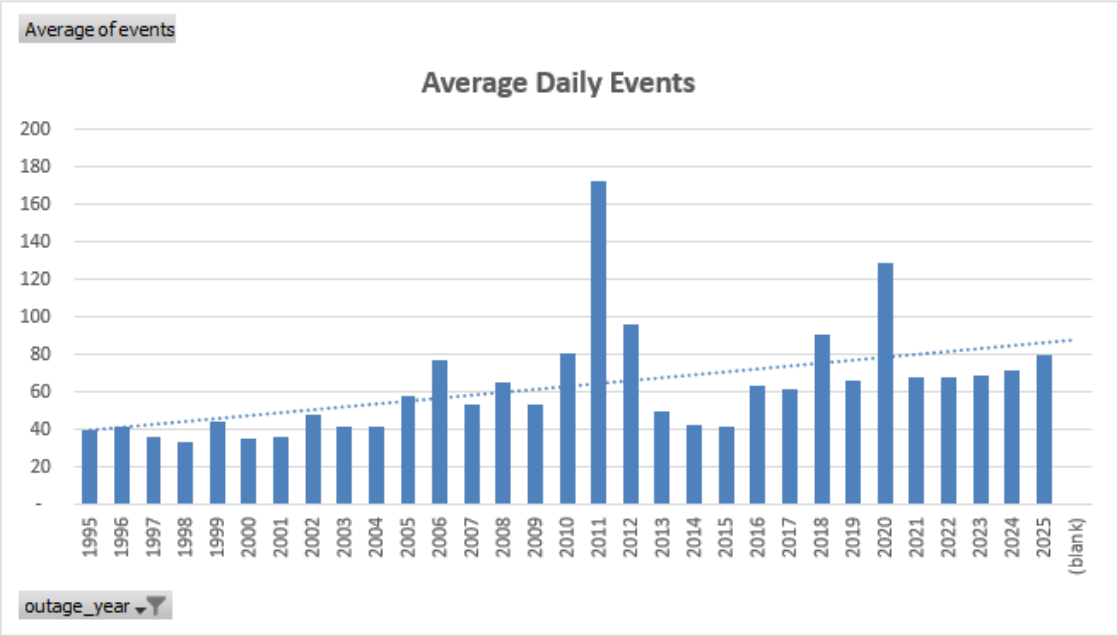


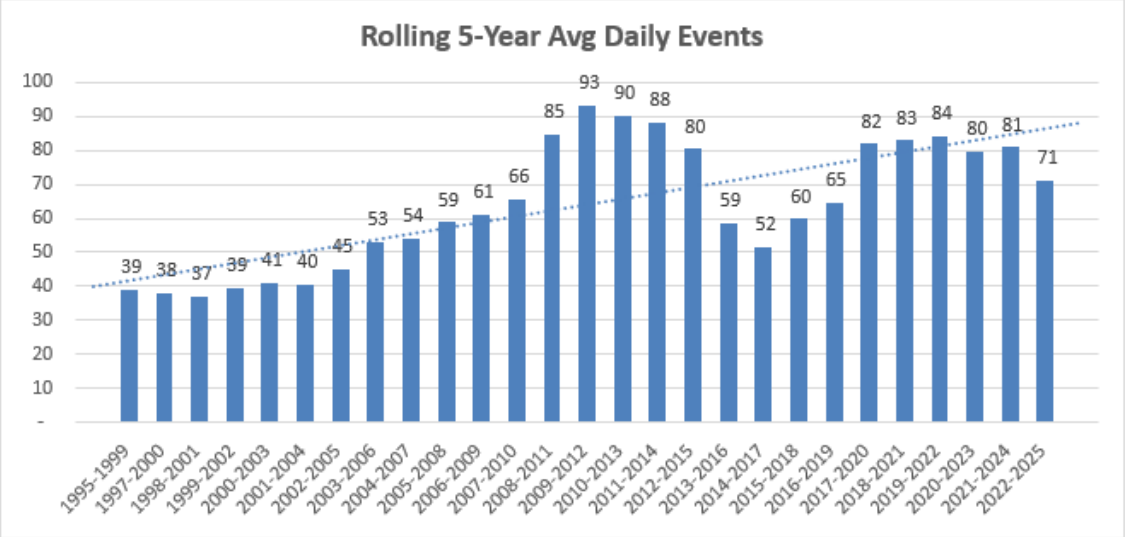






A look at the average amount of daily outage events also indicates a clear increase that the system is seeing increased outage activity on a daily basis.





At the same time, this operating trend, standing alone, does not necessarily prove that weather systems have become stronger or that climate change is responsible for any particular outage. Electric-system impacts are affected by multiple variables, including weather, vegetation, antecedent environmental conditions, infrastructure exposure and system configuration. Accordingly, the Company's operating data are appropriately considered together with, rather than as a substitute for, independent meteorological and environmental information.

Relationship to System Resilience
An increase in operationally significant weather impacts should also not be interpreted, by itself, as evidence of declining system resilience. Reliability and resilience investments can reduce the consequences of weather events, but they do not eliminate the underlying exposure of an overhead distribution system to weather and vegetation. In fact, system-impact data reflect the combined effect of the hazard to which the system is exposed and the system's ability to withstand and recover from that hazard.

For that reason, it is important to evaluate the trend in system impacts together with independent evidence regarding changes in the external environment rather than attempting to infer either weather severity or system resilience solely from outage counts.

This is also consistent with the broader treatment of infrastructure risk in the Fifth National Climate Assessment, which recognizes that additional climate-related loads and stressors can interact with infrastructure and its operational constraints to produce cascading impacts.

Conclusion
Weather, vegetation, antecedent environmental conditions and electric-system impacts are interrelated and changes in outage activity cannot reasonably be attributed to any single variable.

However, in addition to the Company's actual operational experience, multiple independent lines of evidence point in the same general direction. Scientific assessments document changes in Connecticut and the Northeast's climate, including increases in heavy precipitation and other extreme-weather characteristics relevant to electric infrastructure. Connecticut-specific observations demonstrate changing precipitation patterns, while broader assessments identify increasing risks to infrastructure from extreme weather. Those weather conditions interact with Connecticut's vegetation and antecedent environmental conditions, meaning that similar meteorological events do not necessarily produce similar electric-system impacts.

Added to this context, the Company's own operating experience demonstrates an increasing frequency of days on which weather-related impacts are significant enough to exceed approximately 100 outage events and require the Company to begin adjusting its normal operating posture.

Recent meteorological data reviewed by the Company also identifies increasing trends in sustained winds and wind gusts over the five-year period analyzed, with the increase in wind gusts being somewhat more pronounced

Viewed collectively, this data provides a more complete picture than any individual measure could provide: the weather and environmental conditions affecting Connecticut are changing; those

conditions can increase the stresses placed on an overhead electric distribution system; and the Company is experiencing an increasing frequency of operationally significant weather-related system impacts.

Accordingly, the Company's statement is made on the basis of the increasing frequency and operational severity of weather-related impacts experienced by the Company's electric system, considered in the context of independent scientific evidence documenting changes in the weather and environmental conditions affecting Connecticut.