Date Filed: November 05, 2026

Witness: Christopher E. Colorio and Mark P. Baldwin
Request from: Office of Consumer Counsel

Question:

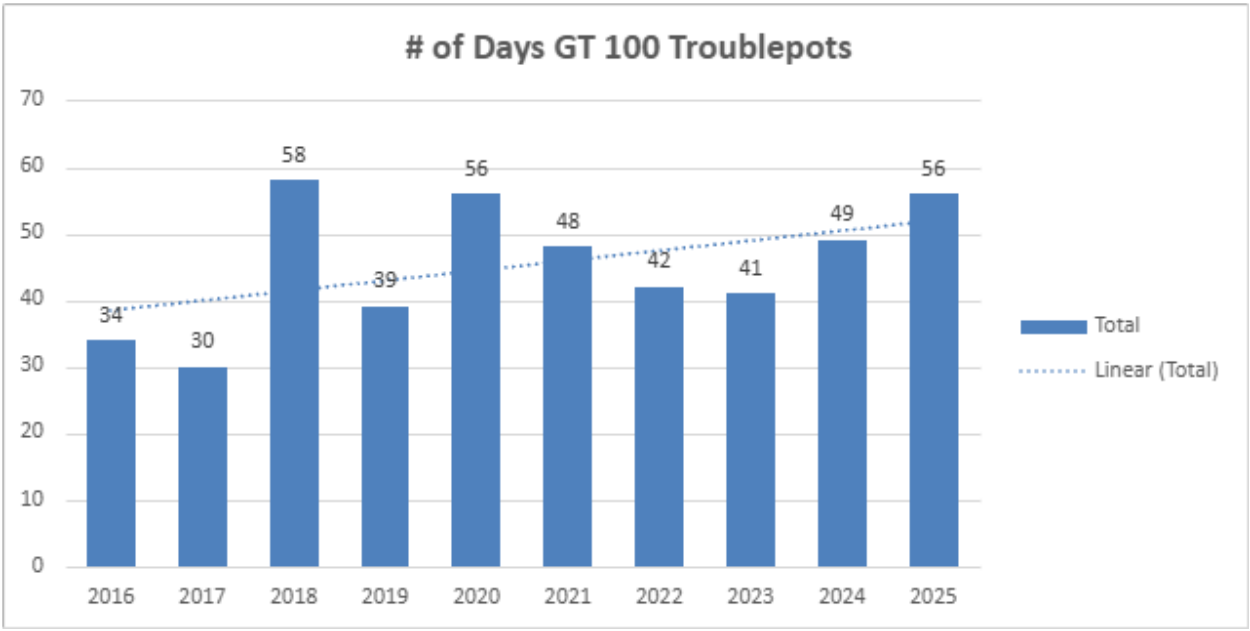
(VMP) Referring to Exhibit CLP-VMP-1, page 8. Provide support for the claim the Company has experienced increased severity and frequency of strong weather systems as compared to the storm impact over the last 26 years.

Supplemental Response:

The Company supplements its response to provide corrected and additional information regarding the frequency and operational impacts of weather events. Following submission of the original response, the Company continued its review of historical outage and weather-event data and identified that certain data had been inadvertently omitted from one of the analyses provided with the original response. Upon identifying the omission, the Company reviewed and corrected the analysis. The corrected chart is provided below. The Company is also providing additional analyses developed as part of its continuing review of available historical data. These supplemental analyses provide additional context regarding the frequency of weather events and their associated impacts on the Company's electric distribution system.

As discussed in the Company's response to OCC-247 the Company does not define a "strong storm" based solely upon a particular meteorological measurement or number of outage events. From an operational readiness perspective, however, approximately 100 trouble events represents a useful planning benchmark because outage activity at or approaching this level may require the Company to adjust its normal operating posture and supplement resources dedicated to outage response. This is not a fixed threshold, a measure of system resilience, or a threshold for activation or implementation of the Company's Emergency Response Plan. Operational decisions remain dynamic and consider forecast and actual weather conditions, geographic distribution and complexity of damage, anticipated duration, and available resources.

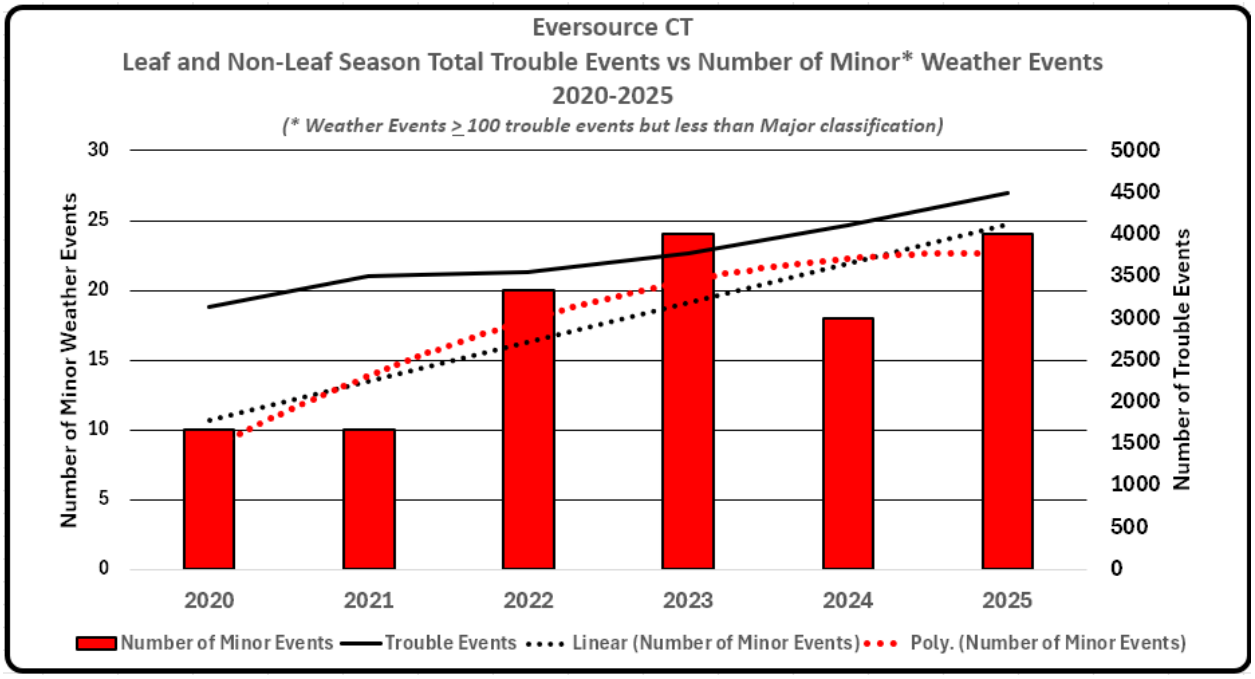
TEN-YEAR ANALYSIS – DAYS EXCEEDING 100 TROUBLE EVENTS
The Company's review of the number of days experiencing greater than 100 trouble events from 2016 through 2025 demonstrates year-to-year variability, as would be expected with weather-related activity, but an overall increasing trend during the ten-year period. The number of such days increased from 34 in 2016 to 56 in 2025, with variability during the intervening years.



This analysis provides a longer-term view of the frequency with which the Company has experienced levels of trouble-event activity that may require adjustment of its normal operational posture. Importantly, the approximately 100-event benchmark is being used as an operational indicator and not as a definition of storm strength.

2020–2025 WEATHER EVENT AND TROUBLE EVENT ANALYSIS

The Company also reviewed weather events resulting in 100 or more trouble events, but below the Company's Major Event classification, during the 2020–2025 period. The analysis demonstrates an overall increase in the number of these weather events as well as an increase in the total number of trouble events associated with them.

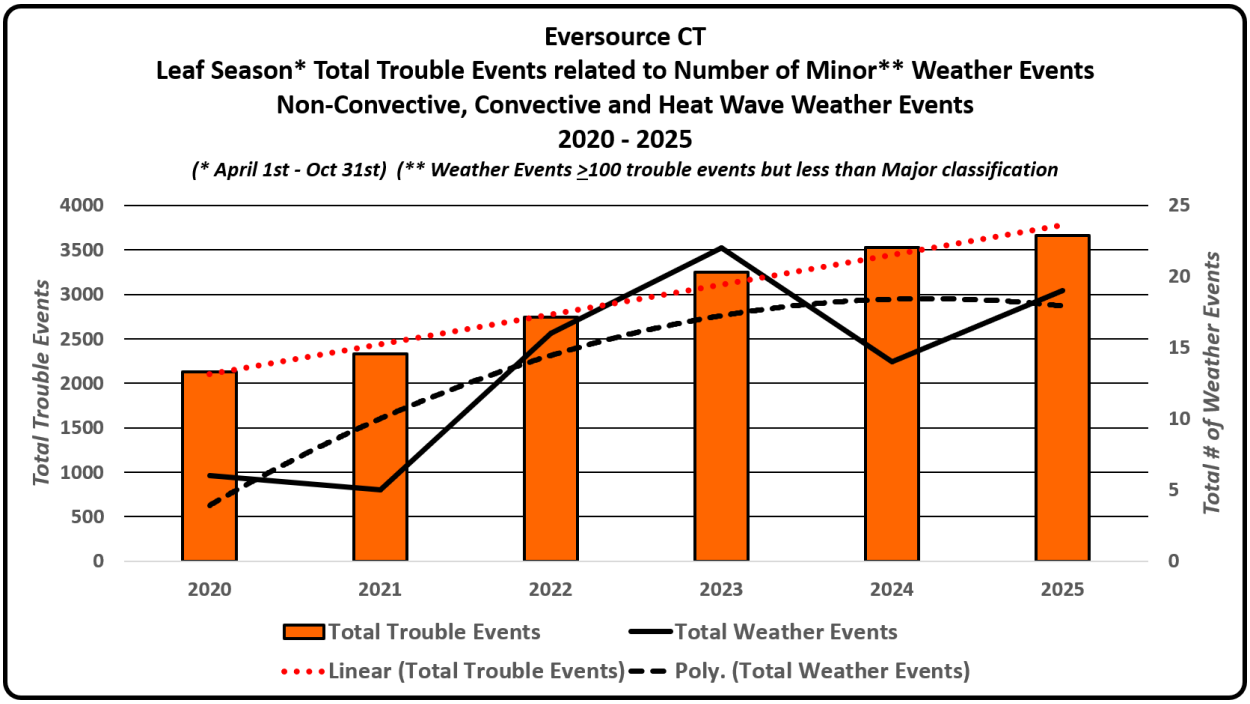


This analysis is significant because it demonstrates that the Company's increased operational response is not limited to Major Events or large named storms. Weather events below the Major Event classification are also producing levels of outage activity that can require augmentation of the Company's normal operational resources.

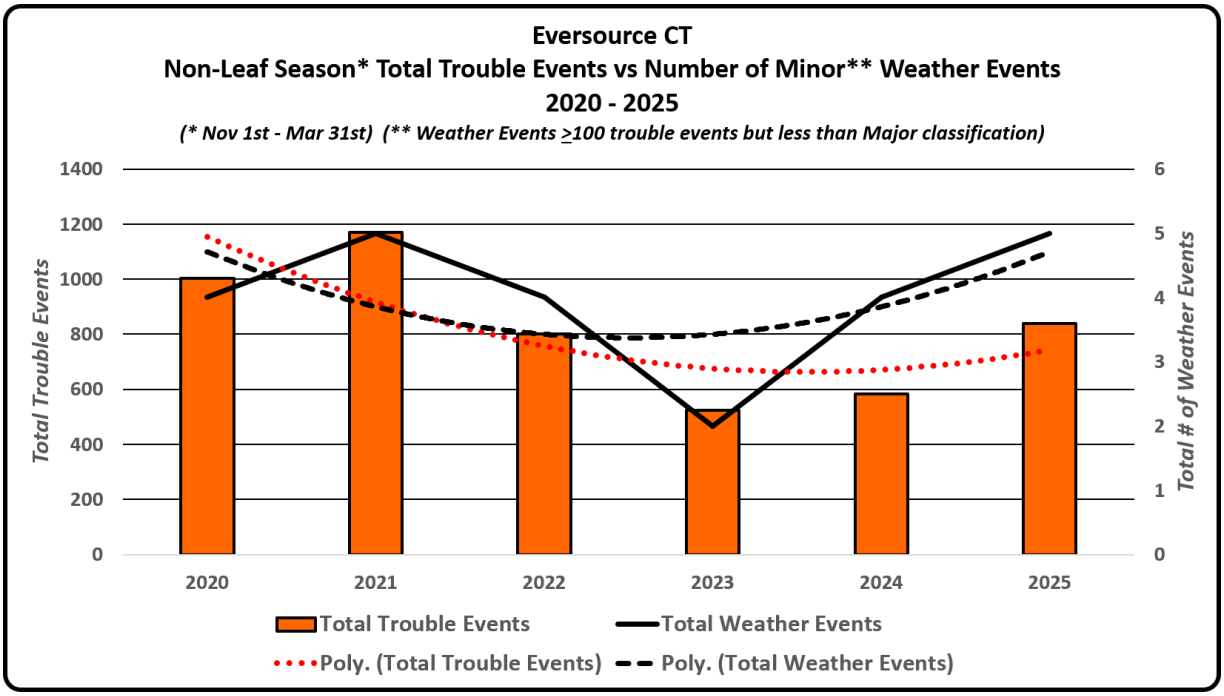
SEASONAL ANALYSIS

The Company further evaluated the relationship between qualifying weather events and associated trouble-event activity separately during leaf season and non-leaf season.

During leaf season (April 1 through October 31), the data demonstrate an overall increase in both the number of qualifying weather events and the associated number of trouble events from 2020 through 2025. The data also demonstrate that changes in weather-event activity generally correspond with changes in the resulting volume of trouble events.



The non-leaf-season analysis demonstrates a similar relationship. Although the magnitude of outage activity is lower and year-to-year variability exists, increases and decreases in the number of qualifying weather events generally correspond with changes in associated trouble-event activity.



The observation of this relationship during both leaf and non-leaf seasons provides additional context regarding the influence of weather-event activity on resulting trouble-event volumes. While vegetation and seasonal conditions can influence the magnitude and nature of system impacts, the data demonstrate that changes in weather-event activity generally correspond with changes in trouble-event activity across both seasonal periods.

OVERALL OBSERVATION

Collectively, the corrected and supplemental analyses demonstrate an overall increase in the frequency of weather events producing meaningful operational impacts and a relationship between weather-event activity and resulting trouble-event volume. While year-to-year variability exists, as would be expected with weather-related activity, periods of increased weather-event activity generally correspond with increased trouble-event activity. This relationship is observed during both leaf and non-leaf seasons.

The data further demonstrate an increasing frequency of days on which trouble-event activity reaches levels that may require the Company to augment its normal operating posture. These operational adjustments are part of the Company's established approach to efficiently scale resources in response to changing conditions and should not be interpreted as a measure of system resilience.

The Company provides the corrected and supplemental analyses to ensure that the record contains the most complete and accurate information available from its continuing review.

Original 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

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

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 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

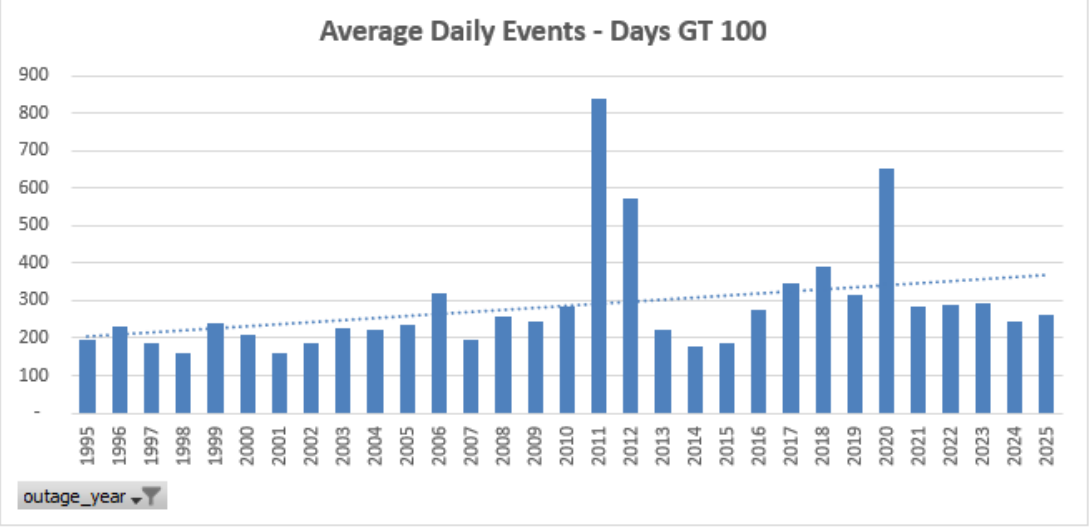
and natural environment, the Company's outage-event data provide a means of evaluating how frequently weather conditions are producing operationally significant impacts on the electric system.

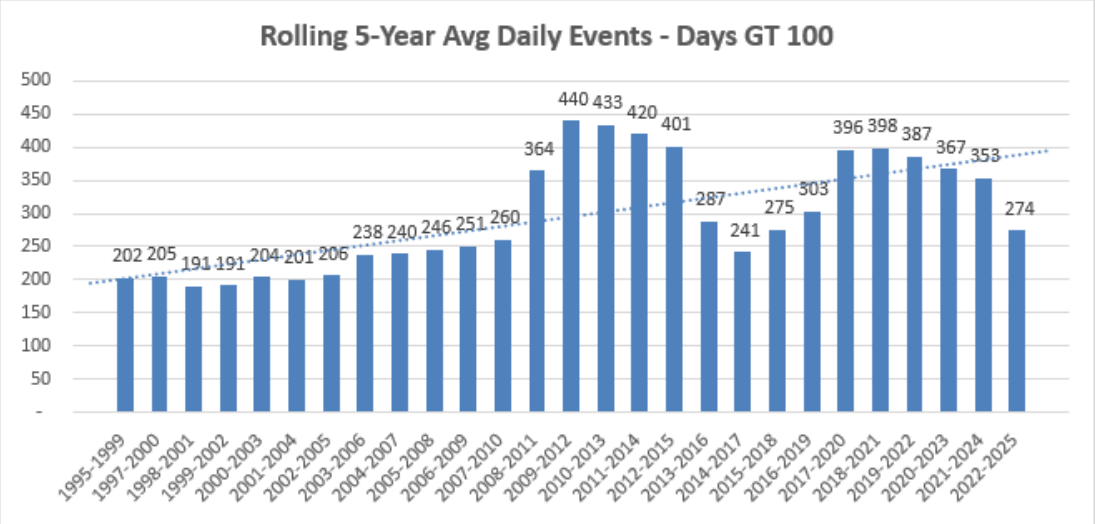
For purposes of this analysis, the Company has reviewed the frequency of days experiencing more than approximately 100 outage events. The Company does not use 100 outage events as a meteorological definition of a "strong storm," nor does reaching that level necessarily constitute activation of the Company's 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.

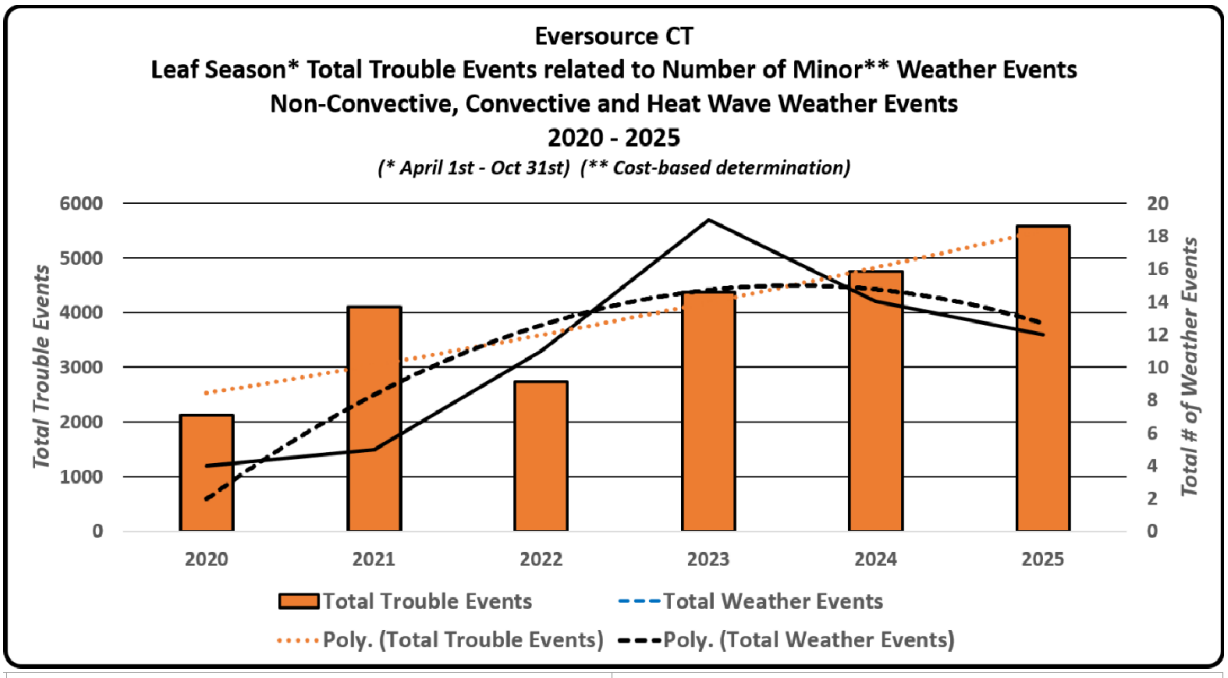
The precise point at which these actions occur is dynamic and depends upon factors including the geographic distribution and complexity of outages, expected weather duration, damage conditions, available resources, and forecast conditions. Nevertheless, approximately 100 outage events provides a reasonable 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.

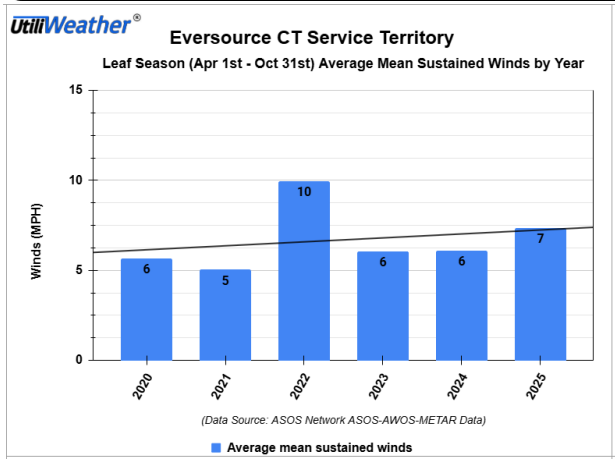
The Company's review of its historical operating data shows an increasing trend in the number of days on which the electric system experiences more than 100 outage events, including a clear upward trend. Additionally, a comparison of the rolling five-year average of days with greater than 100 outage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

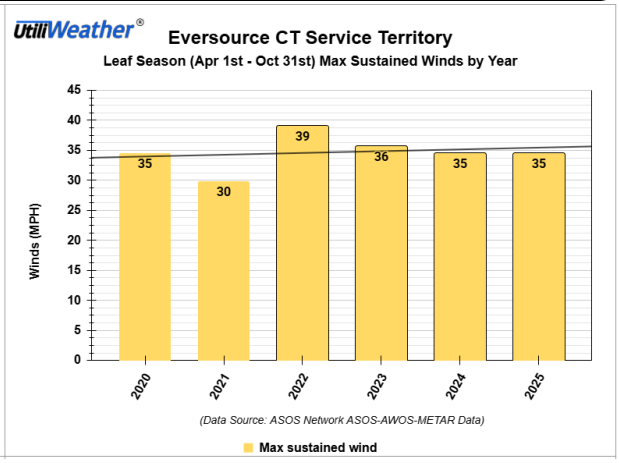


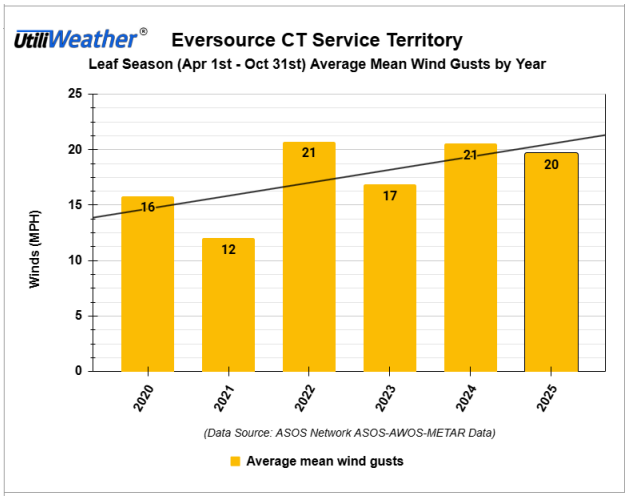


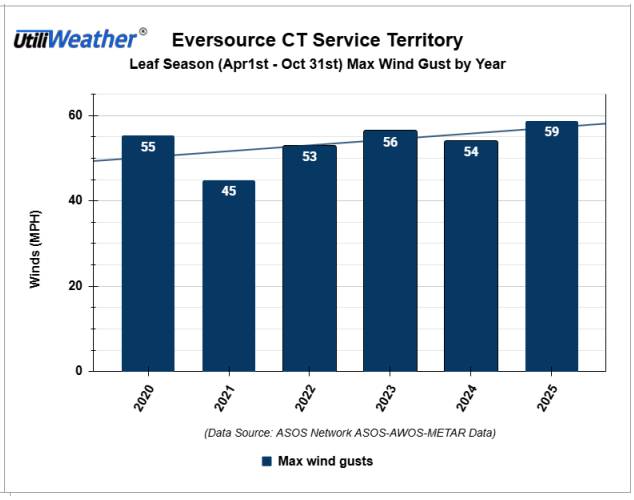
Recent meteorological data reviewed by the Company provides additional context for these observed operational trends. UtiliWeather analyzed four wind-profile parameters over a recent five-year period: average mean sustained winds, average maximum sustained winds, average mean wind gusts, and average 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.


Eversource CT
Leaf Season* Total Trouble Events related to Number of Minor** Weather Events
Non-Convective, Convective and Heat Wave Weather Events
2020 - 2025
(* April 1st - Oct 31st) (** Cost-based determination)
Total Trouble Events
Total # of Weather Events
6000
5000
4000
3000
2000
1000
0
20
18
16
14
12
10
8
6
4
2
0
2020
2021
2022
2023
2024
2025
Total Trouble Events
Total Weather Events
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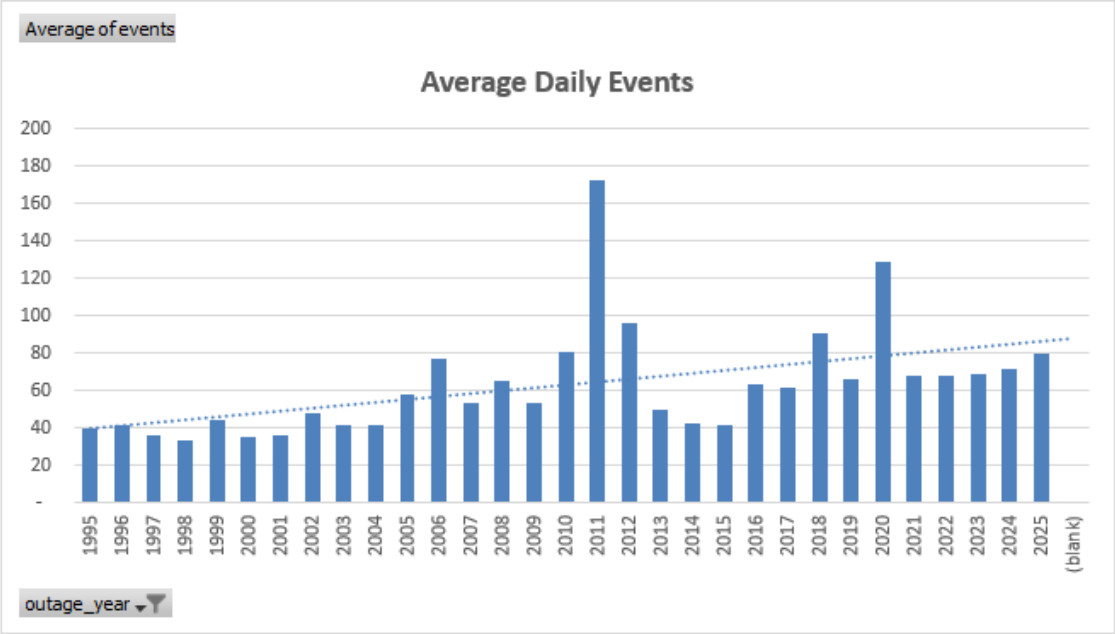

UtiliWeather
Eversource CT Service Territory
Leaf Season (Apr 1st - Oct 31st) Average Mean Sustained Winds by Year
Winds (MPH)
15
10
5
0
6
5
10
6
6
7
2020
2021
2022
2023
2024
2025
(Data Source: ASOS Network ASOS-AWOS-METAR Data)
Average mean sustained winds

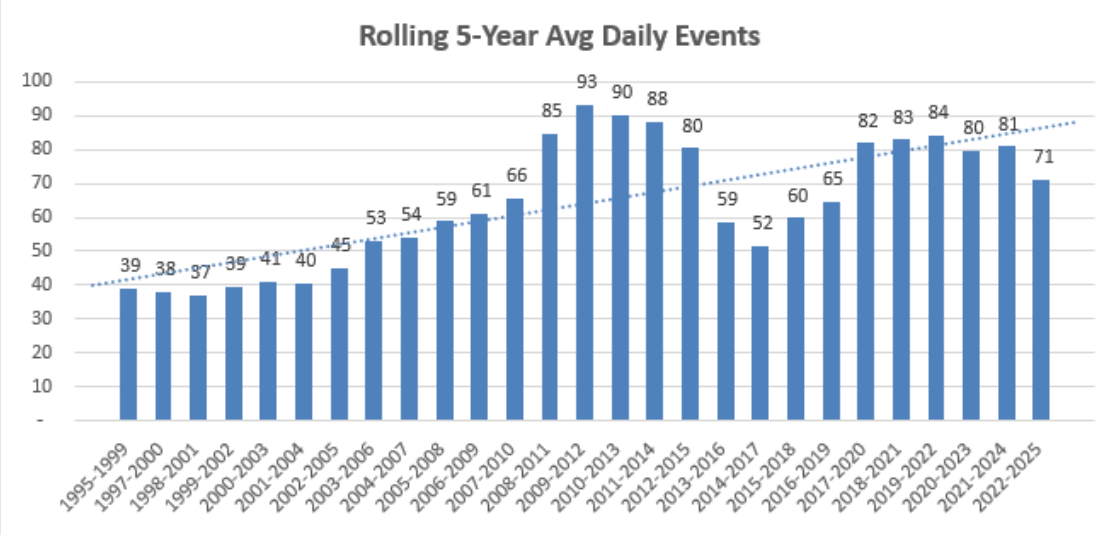

UtiliWeather
Eversource CT Service Territory
Leaf Season (Apr 1st - Oct 31st) Max Sustained Winds by Year
Winds (MPH)
45
40
35
30
25
20
15
10
5
0
35
30
39
36
35
35
2020
2021
2022
2023
2024
2025
(Data Source: ASOS Network ASOS-AWOS-METAR Data)
Max sustained wind





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.