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April 30, 2021

Debra Howland
Executive Director
New Hampshire Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, NH 03301-2429

RE: Docket No. DE 19-057 & Docket No. DE 20-161
Public Service Company of New Hampshire d/b/a Eversource Energy
Notice of Intent to File Rate Schedules & Least Cost Integrated Resource Plan

Customer Survey Results

Dear Director Howland:

On December 15, 2020 the Commission issued Order No. 26,433 approving an October 9, 2020 Settlement Agreement (“Settlement”) in Docket No. DE 19-057 relating to the rate case filing of Public Service Company of New Hampshire d/b/a Eversource Energy (“Eversource,” “PSNH” or the “Company”). Relevant to this filing, Section 11.4 of the Settlement provides “At the Company’s expense, the Company shall conduct a comprehensive survey of PSNH’s customers regarding their prioritization of reliability and resiliency versus cost. The Company shall work collaboratively with Staff and the OCA on development of the survey instruments.” Section 11.5 of the Settlement states that the results of the survey would be submitted by March 31, 2021 as supplemental testimony in the docket for Eversource’s 2020 least cost integrated resource plan (“LCIRP”) filing, Docket No. DE 20-161.

On March 15, 2021 Eversource sought an extension of the filing deadline to April 30, 2021 based upon the need for extended outside collaboration in developing the survey instruments. The Commission granted that extension by Order No. 26,464 (March 26, 2021) on a *nisi* basis.

Consistent with the Settlement, as modified in Order No. 26,464, enclosed with this letter are the results of the customer survey contemplated in the Settlement. Eversource hereby requests that the results of the survey be included as a supplement to the LCIRP filing in Docket No. DE 20-161. If you have any questions, please do not hesitate to contact me. Thank you for your assistance with this matter.

Very truly yours,

A handwritten signature in blue ink, appearing to read "Matthew J. Fossum", written over a white rectangular background.

Matthew J. Fossum
Senior Regulatory Counsel

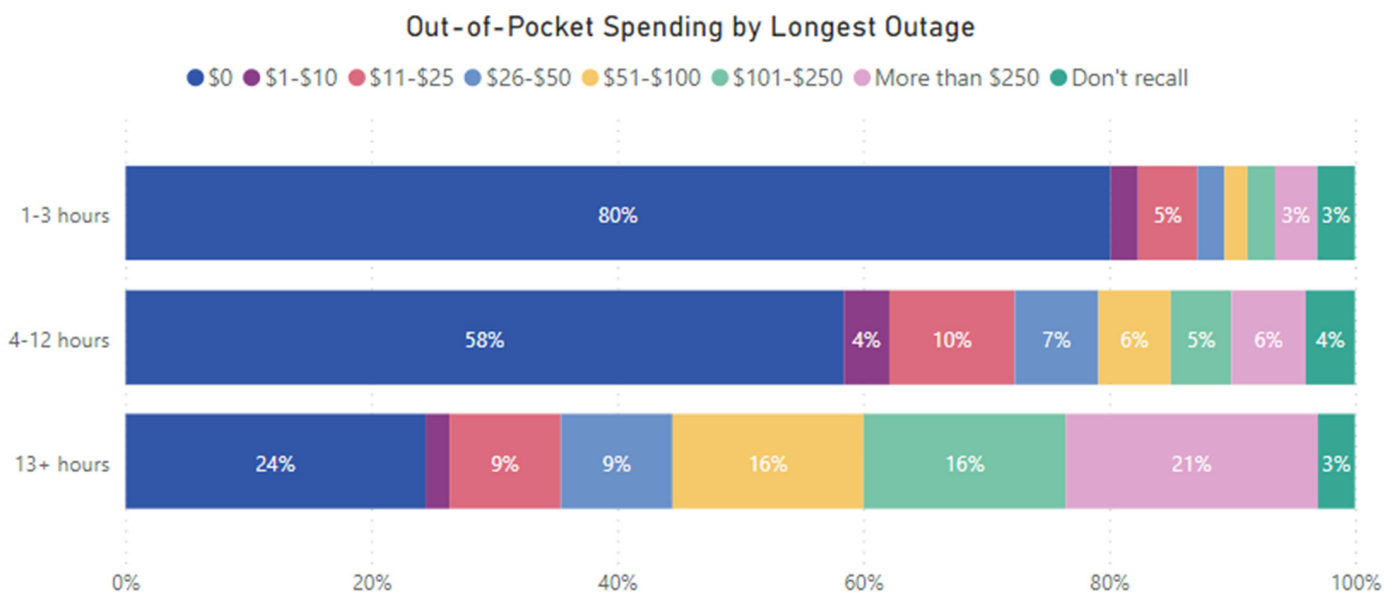
Enclosure
CC: Service List

New Hampshire Reliability Survey Executive Summary

This report summarizes the findings of the New Hampshire Reliability Study, which Eversource agreed to conduct in compliance with the settlement agreement in Docket No. DE 19-057. Per section 11.4 of that settlement: “At the Company’s expense, the Company shall conduct a comprehensive survey of PSNH’s customers regarding their prioritization of reliability and resiliency versus cost. The Company shall work collaboratively with Staff and the OCA on development of the survey instruments.” This survey was conducted via an online survey between April 15th and April 23rd, 2021.

Results from the survey show that significant percentages of customers, particularly in the Seacoast and Southern NH, continue to work from home. These customers, by a substantial margin, report that losing service has become a more disruptive experience over the last year, a direct result of the changes to their work environment due to the COVID-19 pandemic. Many other NH customers, particularly in the Connecticut River Valley, the Lakes Region, and Northern NH report that they are currently retired, and that the impact of losing electrical service has not changed for them over the past year.

The data also clearly demonstrates that outages cause customers to incur out-of-pocket expenses, and that those expenses can be significant, particularly for outages that last more than a few hours. Overall results show that among customers who recall an outage within the last three years, a majority (60.9%) experienced a longest outage of 8 hours or less. However, among customers experiencing lengthier outages, out-of-pocket expenses quickly accumulate, rising to significant sums as the length of an outage grows. These results should serve as a warning of the impact to customers’ budgets should reliability decrease and outage occurrences and durations begin to tick upwards. A majority of customers who experience an outage of 13 hours or more can be expected to spend at least \$51-\$100 out of pocket as a result of their outage. To put this in more recent context, New Hampshire experienced two lengthier outages in recent months. In December, 2020, many customers experienced an outage in the 13+ hour range. And in March, 2021, customers experienced a storm-related outage in the 4-12 hour range. And while research shows storm frequency and severity has increased, it is important to note that the study shows that respondents feel reliability has remained stable over the past several years or has improved.



Using a series of questions designed to measure the customers' willingness and ability to absorb a cost increase in their monthly electric bills with a goal to support additional reliability spending, a "break point" of less than \$1 per month in additional costs can be established. If we assume conservatively that this would equate to \$0.50/month, or \$6.00/year in additional electricity costs to customers, the results on customer spending show that if reliability can be improved with this additional spending, many customers will save more money over time due to the reduction of outages and outage length. In other words, the additional cost incurred by the customer in their electric bill (\$6 a year in this example), would be significantly less than that customer would incur in out-of-pocket expenses during an outage of any significant length of time. For example, if a 13+ hour outage could be reduced to a 4-12 hour outage with additional reliability spending, that customer would stand to save *at least* \$45 dollars from that one outage, or more than seven times the amount in additional reliability spending.

The research also confirms that it is clear that Eversource has set an expectation among NH customers of a current high level of reliability, and any movement backwards in reliability will have a detrimental effect on a wide swath of customers, particularly in light of changing work patterns such as the rise of working from home over the last year. Furthermore, customer out-of-pocket costs incurred during an outage as a result of the potential of declining reliability would likely quickly exceed the expected range of annual electric bill impacts that may arise as a result of continued investments in electric infrastructure improvement, targeted to maintaining and improving reliability and resiliency in New Hampshire in a targeted way. Given that Eversource's continued focus and attention on ensuring the safety, reliability, and resiliency aligns with customer's expectations in those regards, and are not expected to cause bill impacts in excess of what customers indicate they are willing to absorb (particularly when factoring in the costs that can be avoided by limiting the frequency and duration of outages), future reliability investments are prudent for customers.

NH Reliability Survey Results

The Eversource Voice of the Customer team conducted a survey among New Hampshire customers on the topic of reliability and the perceived costs of electrical outages and reliability. Customers were invited via email to participate in an online survey on the Qualtrics research platform. 1,991 customers responded to the survey between Thursday, April 15th and Friday, April 23rd, 2021.

The table below shows response counts broken out by region of the state. Results in all 5 regions identified in NH are statistically significant at the 95% confidence interval.

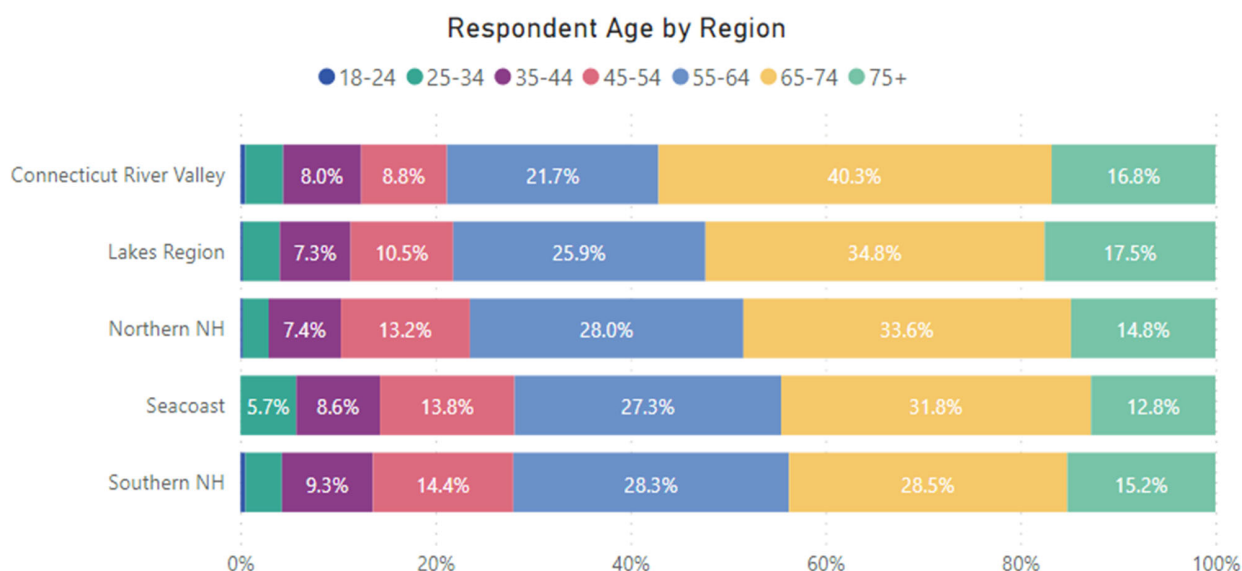
Region	Respondent Count	Margin of Error +/-
Connecticut River Valley	410	4.8%
Lakes Region	396	4.9%
Northern NH	398	4.9%
Seacoast	400	4.9%
Southern NH	387	5.0%

In addition to the online survey, interviews with 15 representatives from different large commercial customers were conducted via telephone by an independent research firm, the University of New Hampshire Survey Center. Findings from these qualitative responses are included in the report below.

Demographics

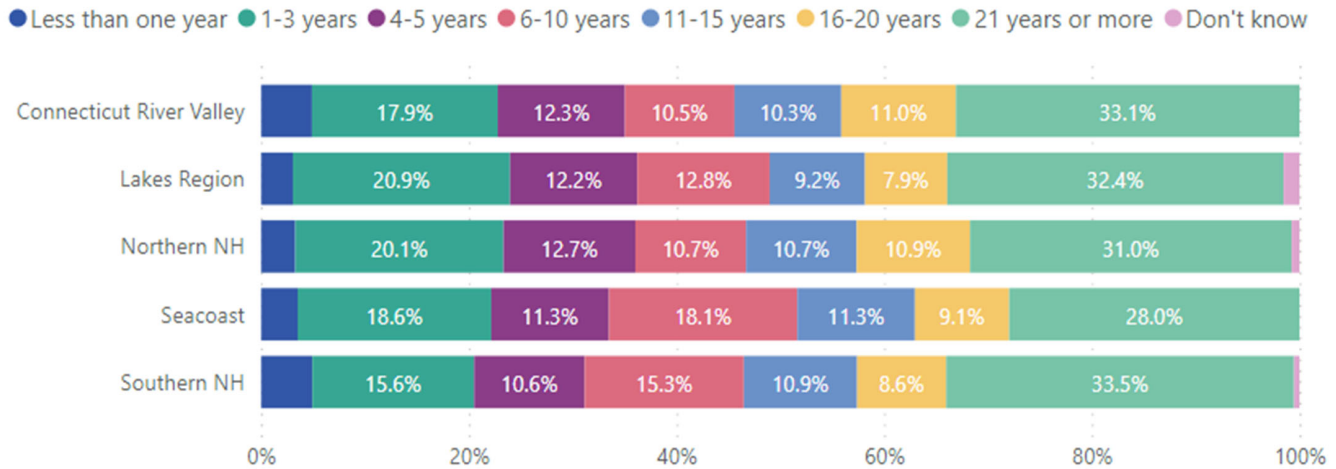
Collected demographics were not compared to U.S. Census data for New Hampshire, as data collection and sampling method were not intended to provide a statistically generalizable sample of the state population overall, but rather a statistically significant sample of Eversource customers within each region of the state.

Respondents trended older across all regions in the state. This was most pronounced in the Connecticut River Valley and the Lakes Region, where majorities in both regions were 65 or older.



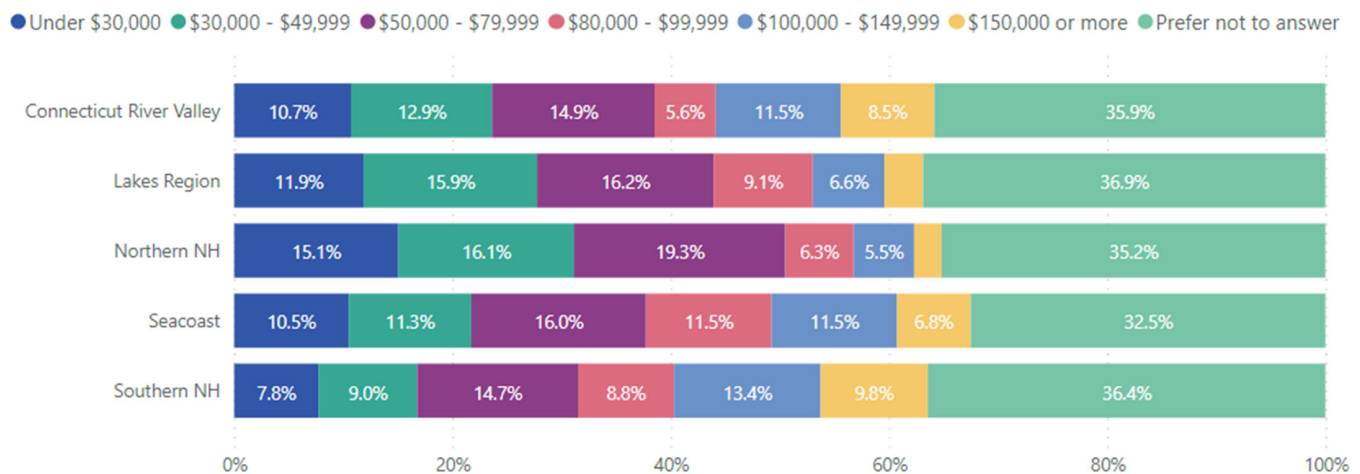
Respondents showed a wide range of experience with Eversource at their current address. Approximately a third of customers in each region have live at their current address for 5 years or less, while a similar amount of customers have 21 years or more of experience with Eversource at their current address.

Years at Current Address by Region



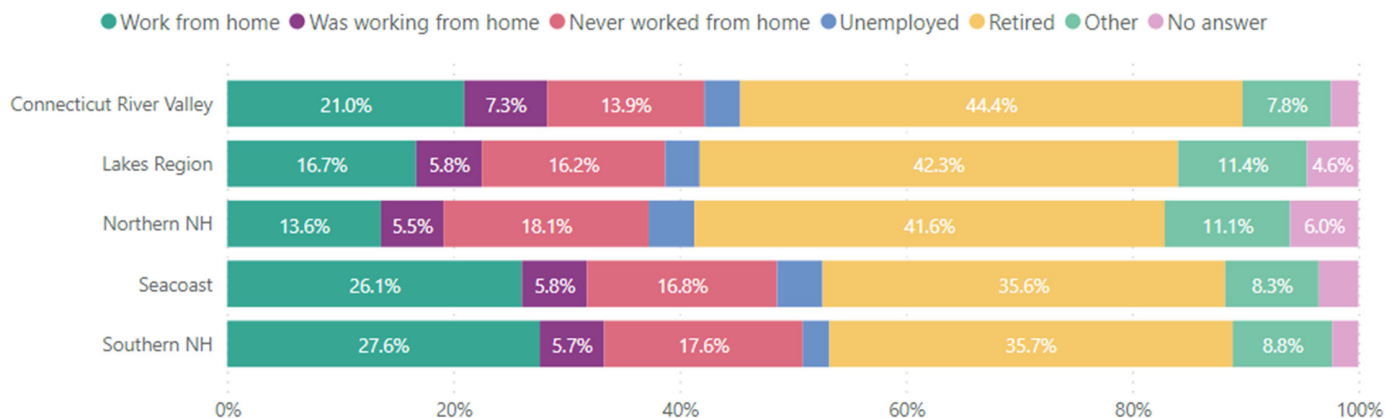
As often seen in survey research, many customers prefer to not give information about their household income. Based on data gathered, Northern NH customers tended to have lower income levels compared to other regions, while Southern NH had trended slightly higher in income levels.

Income Ranges by Region



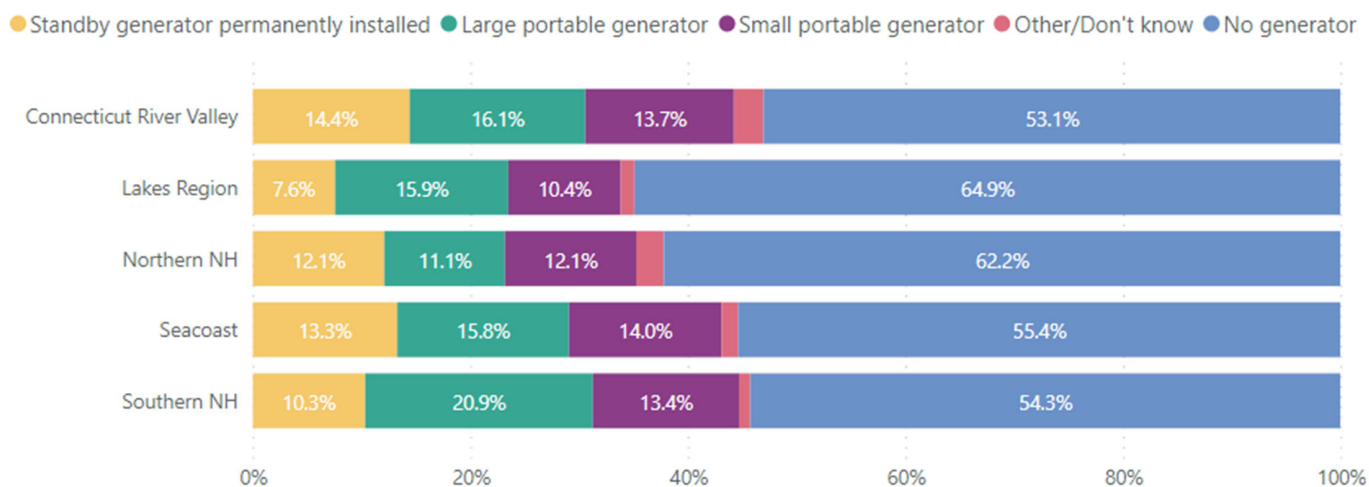
As can be expected with a respondent population that tends to be older, significant percentages of respondents to the survey are retired, particularly in the Connecticut River Valley, the Lakes Region, and Northern NH. Customers in the Seacoast and Southern NH are most likely to be currently working from home.

Work Status During Pandemic by Region



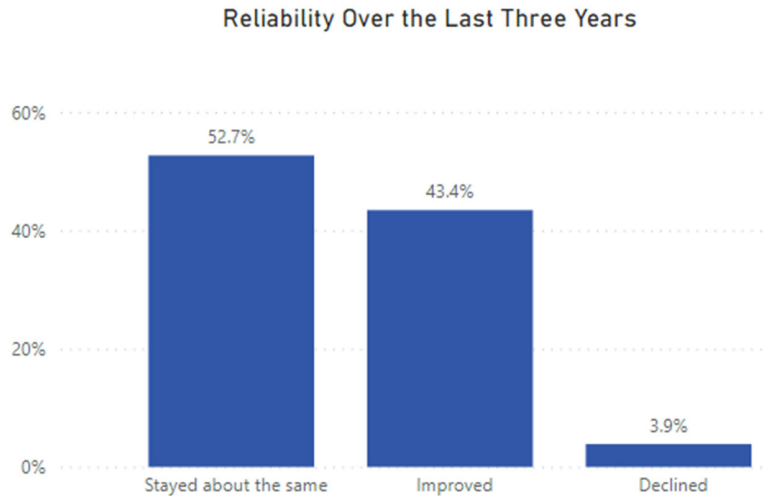
While many Eversource customers have access to a generator at their home, between one-half and two-thirds of customers in each region do not have a generator to deal with electrical outages. Generator access is lowest in Northern NH and the Lakes Region.

Generator Ownership by Region



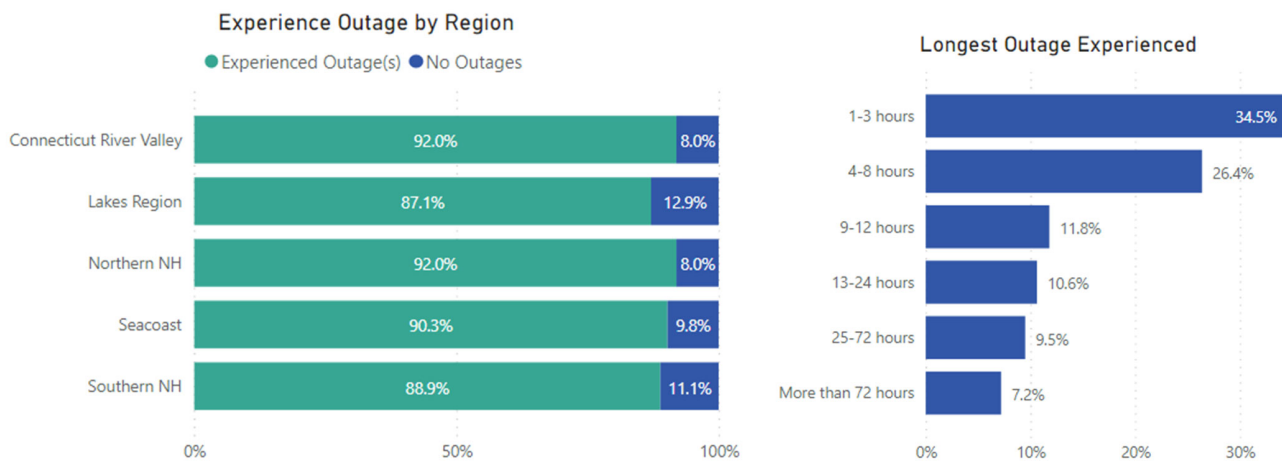
Outage Experiences

Over the last three years, a majority of customers believe that their electric reliability from Eversource, that is a lack of outages or consistency of service, has stayed about the same. Most other customers think their service reliability has improved, while very few think it has declined.



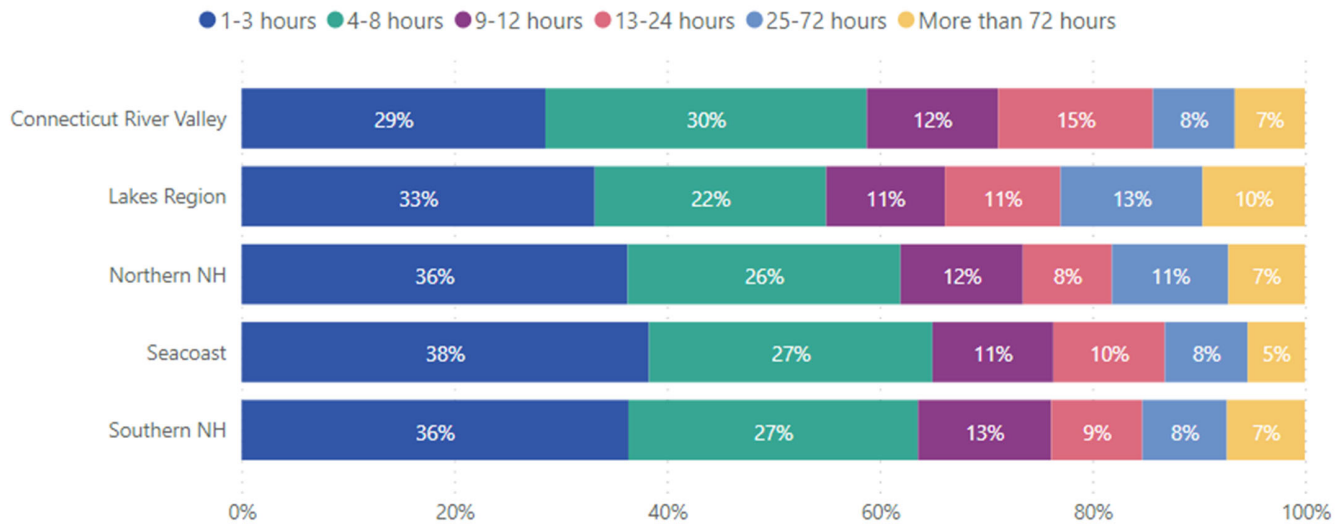
Most respondents across all regions in the state recall experiencing at least one outage in the past three years. Among customers experiencing an outage, approximately one-third of customers recall their longest outage as 1-3 hours. Another 26% of customers said 4-8 hours was their longest outage. About 27% of customers experienced an outage of 12 hours or more.

Virtually all customers who experienced multiple outages indicated the shortest outage they recall was 1-3 hours (94%).



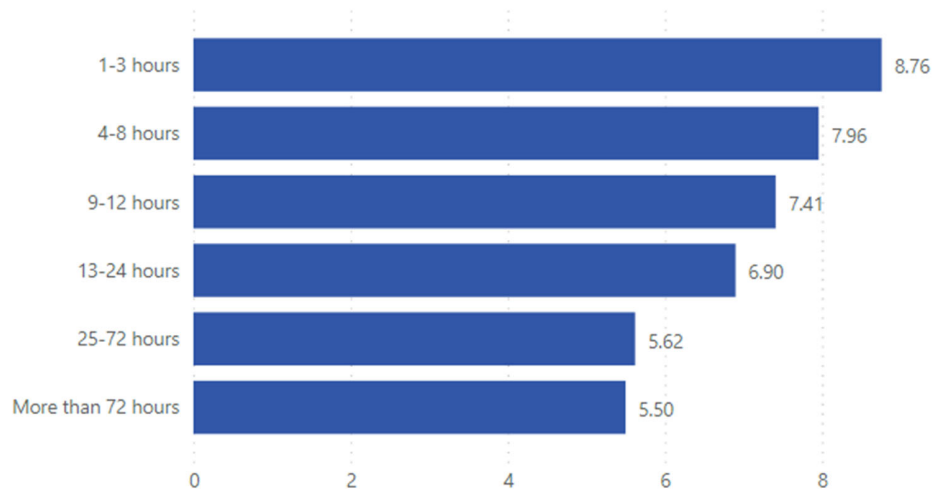
Length of outage was also analyzed by region. Overall, length of outage does not differ significantly from region to region. The Connecticut River Valley is slightly more likely to experience lengthier outages, while the Seacoast is slightly more likely to experience shorter outages.

Longest Outage Experienced by Region



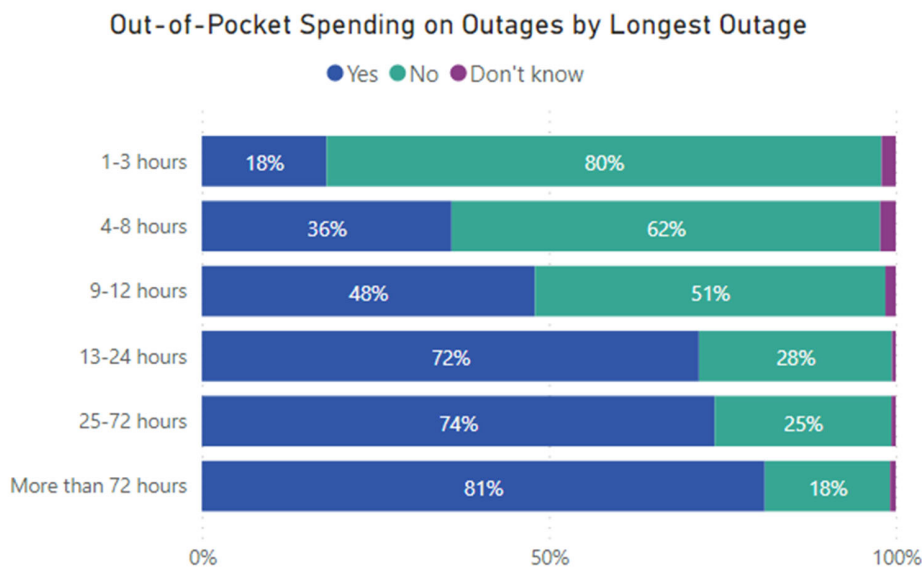
Customers were asked to rate their satisfaction with the speed of restoration on a scale of 1-10, where 1 is unacceptable, 10 is outstanding and 5 is average. As seen in previous outage restoration satisfaction surveys, satisfaction with Eversource’s restoration efforts is tied to the overall length of the outage. Customers are most satisfied if Eversource is able to restore service in 1-3 hours, but satisfaction is lowest among customers experiencing an outage of more than 12 hours.

Satisfaction with Speed of Restoration with Longest Outage Experienced

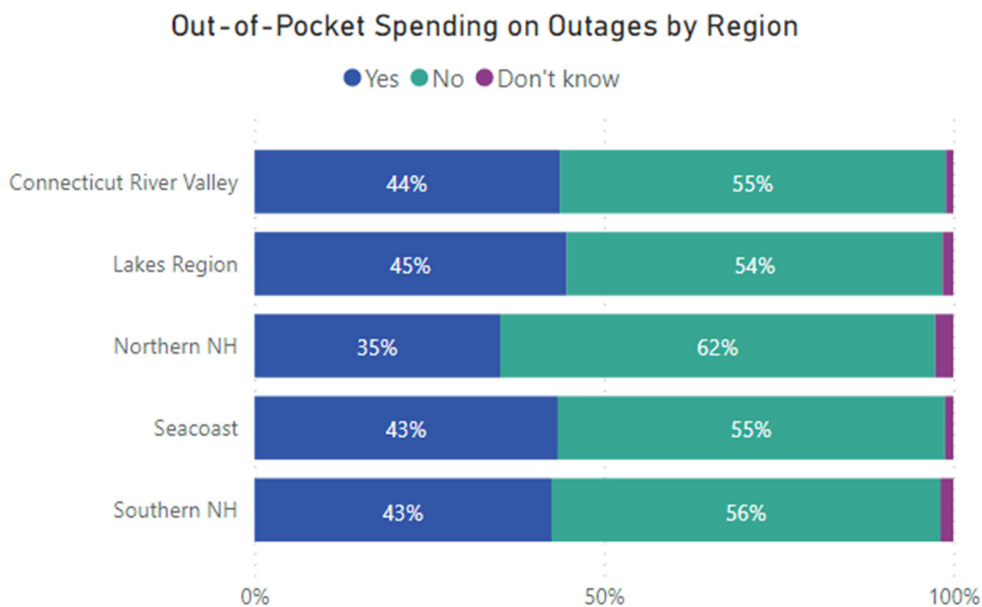


Large commercial contacts were very positive about Eversource’s ability to restore power after an outage. Several pointed out the benefit of having a dedicated contact at Eversource who can help to expedite resolutions to service interruptions. Some customers pointed out that they have very few power interruptions and are pleased with Eversource’s reliability.

Customers were asked if they have ever needed to spend money on out-of-pocket expenses as a result of outage, such as replacing spoiled food or medicine, purchasing fuel for a generator, getting a hotel room, or any other type of expenses. Very few customers (18%) felt the need to spend money as a result of a 1-3 hour outage. Customer spending on outages grew as the length of their longest outage increased, with a clear spike in spending when an outage exceed 12 hours in length. At an outage of more than 72 hours, customer spending recall was the inverse of spending at the 1-3 hour mark.

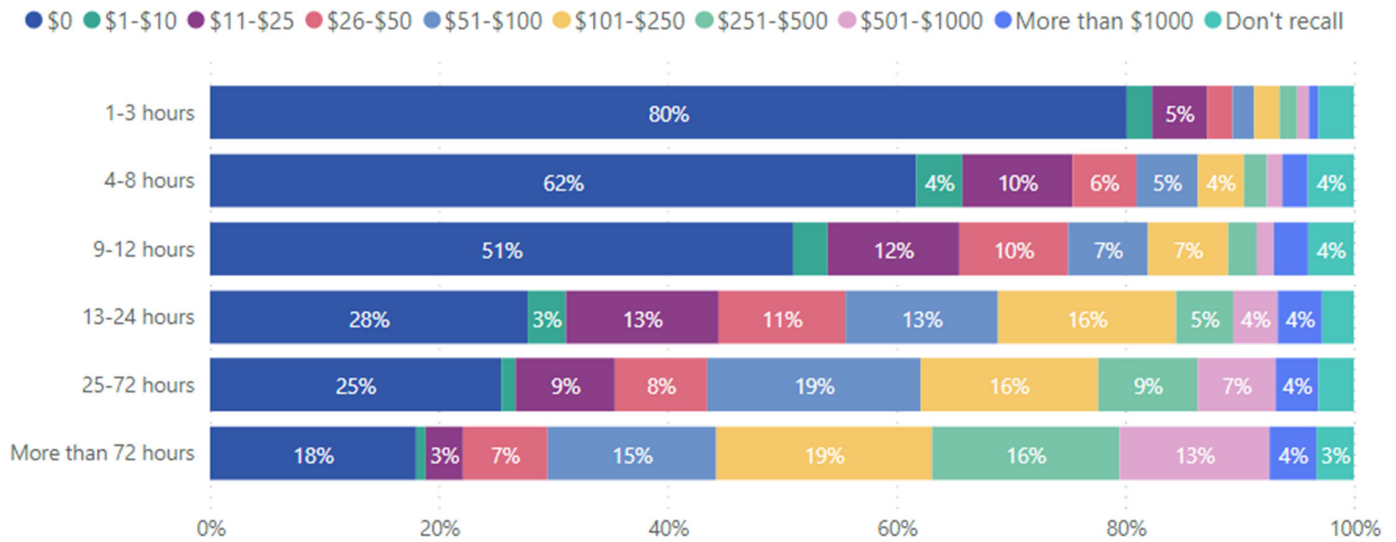


When looking at out-of-pocket spending by region regardless of length, most regions reported similar levels of spending. The exception was Northern NH, which reported spending money out-of-pocket about 10 percentage points less than other regions.



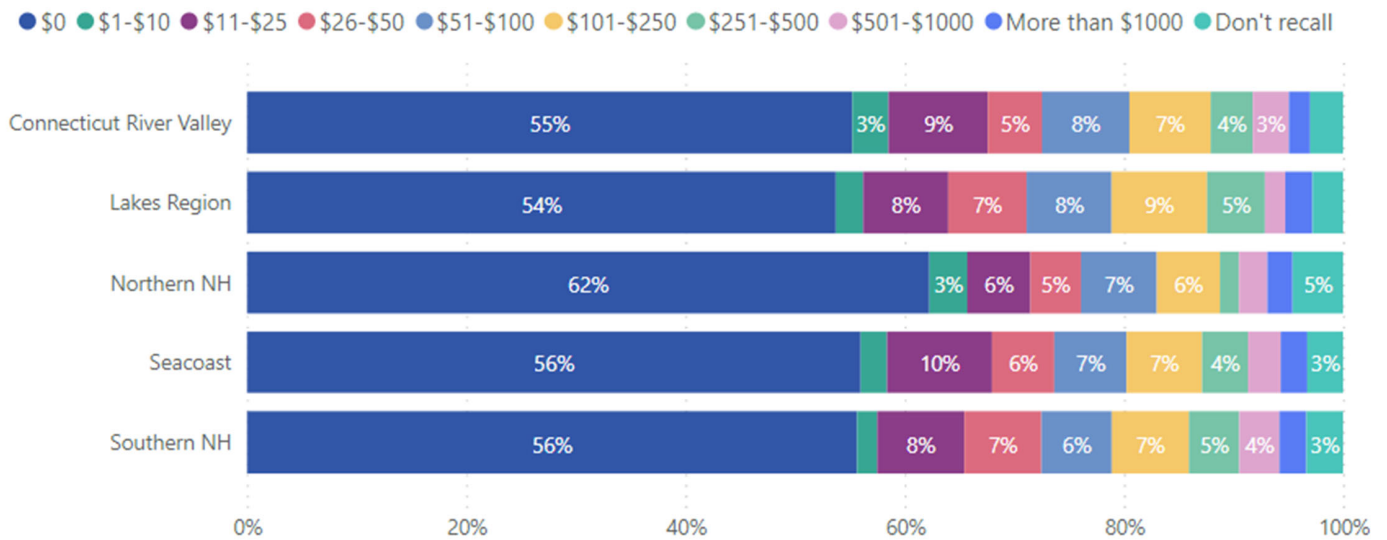
Similar to how the percentage of customers who report spending increases with the length of outage, the amount of spending also increases significantly with the length of an outage. When an outage reaches a length of 9-12 hours, approximately half of customers (45%) are spending at least \$1-\$10 due to an outage, with most of this population spending more than \$10. At any outage length over 12 hours, most customers will be spending at least \$26-\$50 due to an outage.

Out-of-Pocket Spending by Longest Outage



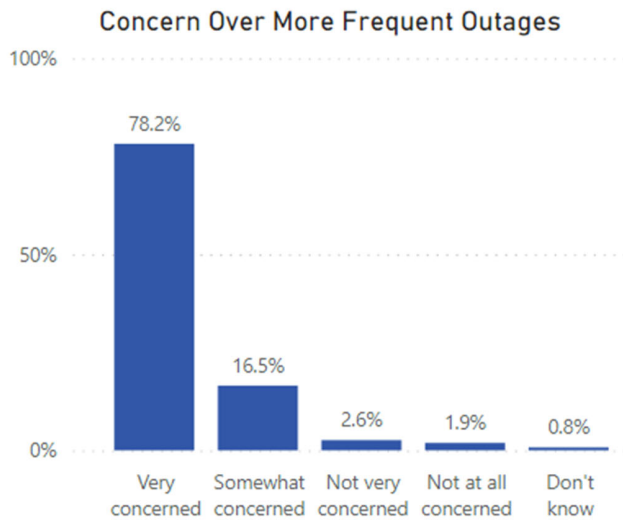
Overall spending does not differ significantly when broken out by region, again with the exception of Northern NH. This suggests that the costs resulting from an outage are similar in scope from region to region (i.e. food, fuel, etc.). This also aligns with results seen previously that the length of outages experience by customers does not differ significantly from region to region.

Out-of-Pocket Spending by Region

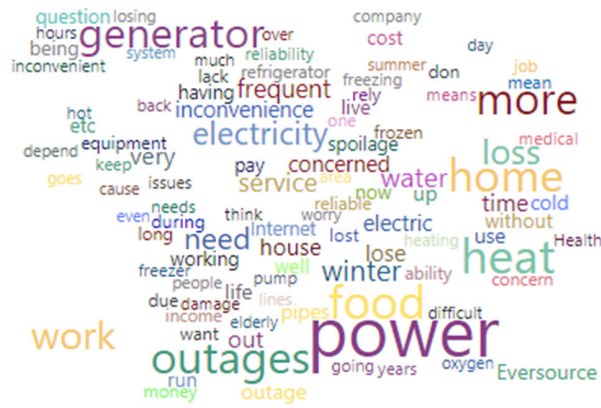


The cost of outages to large commercial customers can often be extremely high in absolute terms compared to residential customers. While some large commercial contacts were not able to estimate a dollar amount to costs, they described lost production time, needing to pay manpower hours while employees were unable to work, and needing to fuel generators to pick up the load to continue business. More specific cost estimates among contacts ranged from tens of thousands of dollars to an extreme of \$700,000 a day if they are unable to conduct normal business.

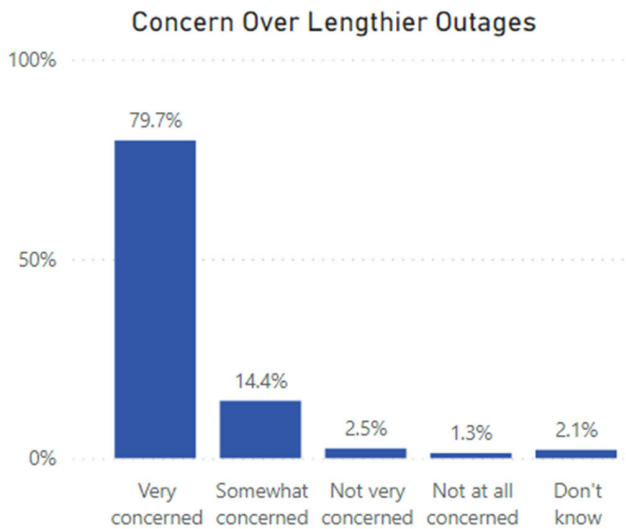
Virtually all respondents express concern over the idea of service reliability declining and experiencing more frequent outages. Customer concerns center around the areas where customer out-of-pocket costs would go to, specifically food costs (spoilage, eating out, etc.), fuel for generators, needing to heat the home, and working from home difficulties.



Reasons to be Concerned Over More Frequent Outages



Almost identical results can be seen when asking customers about their concerns if reliability should decrease and customers see lengthier outages. Significant numbers of customers simply refer to their previous answer around the concerns of more frequent outages.



Reasons to be Concerned Over Lengthier Outages

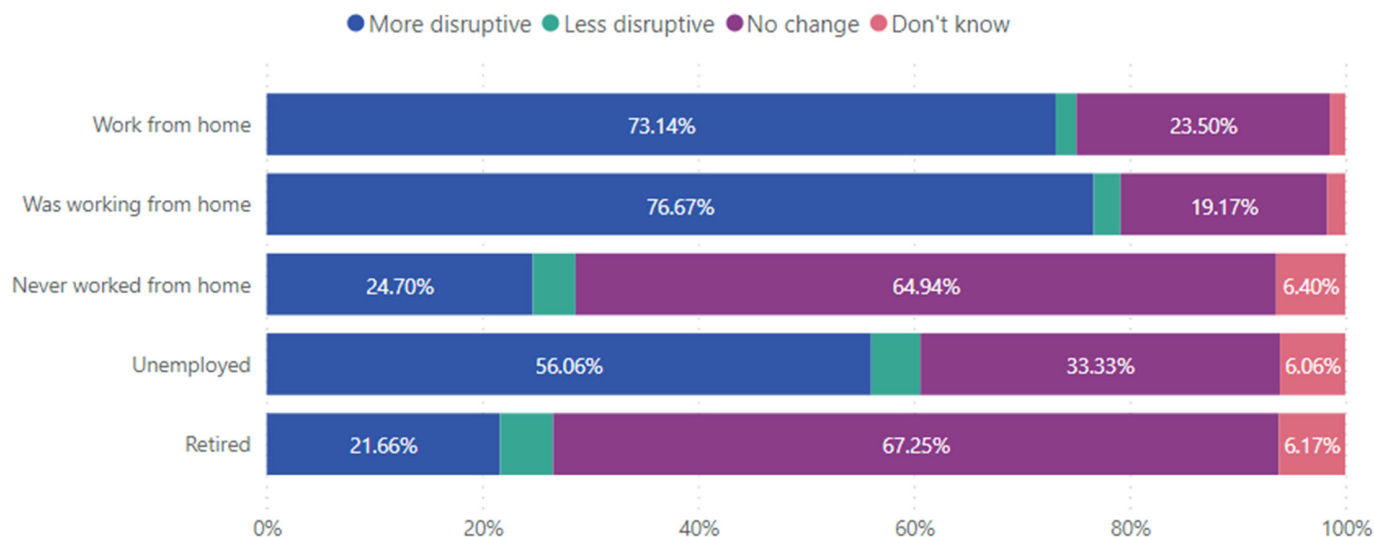


There was universal concern over the idea of reliability decreasing and more frequent outages occurring as a result among large commercial customers. Large commercial customers expressed several concerns, including about the ability to maintain production schedules, the stability of equipment at their locations, and the lost hours of productivity. These customers commented on the potentially high costs associated with this kind of disruption.

Like residential customers, large commercial customers expressed the same level of concern about an increase in lengthier outages as they did about more frequent outages. Also, like residential and small business customers, large commercial customers expressed that the reasons for their concern are generally the same as previously cited for more frequent outages.

The level of disruption that a service outage has on customers is significantly different compared to their work status since the start of the COVID-19 pandemic. Customer who currently work from home or had been working from home report that it is significantly more disruptive to lose service now compared to a year ago. Customers who never worked from home or who are retired report there has been no change.

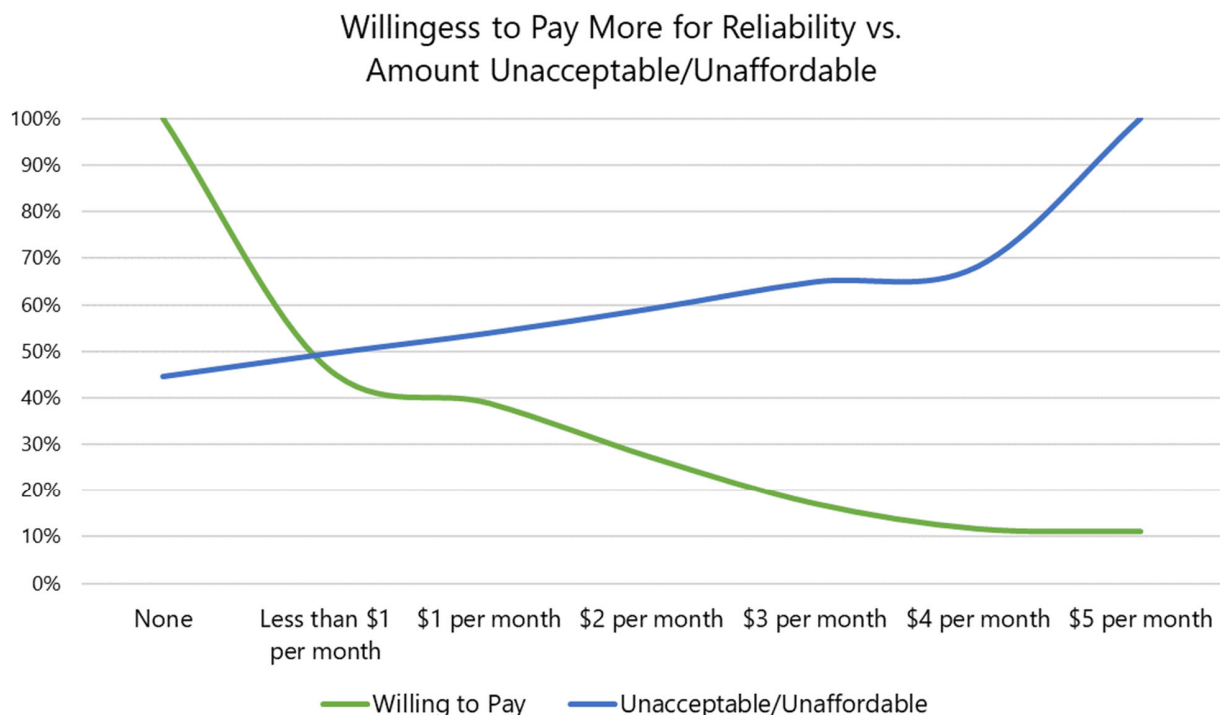
How Disruptive an Outage Would Be Compared to One Year Ago by Work Status



Customer Views on Additional Reliability Spending

Customers were asked two questions to understand their views on paying additional amounts in their bill each month towards maintaining and improving reliability. The first was “How much additional money would you be willing to pay in your Eversource bill to maintain and improve their infrastructure to help minimize future power outages?” The second question was “How much additional money would be unacceptable and unaffordable in your Eversource bill to maintain and improve their infrastructure to help minimize future power outages?”

By mapping these results on a chart and examining where the results cross, the data can show what is the “break point” for customers where a majority of customers can bear additional costs. Results to this survey show that the break point is at less than \$1 per month in additional spending. An analysis of results by region did not show any significant differences from region to region or compared to the overall results.



Several large commercial customers expressed that they were not in a position to comment on their company’s willingness to spend more in their monthly bills towards outages. Other large commercial customers indicated that the amounts they already pay were high, and that no additional amount should be needed to maintain or improve their reliability. Finally, some customers expressed a willingness to pay more, but only if it could be guaranteed that reliability would be improved.