

COVID-19 Impacts on Utility Loads and Implications for Load Management Programs

Survey Results & Analysis

June 17, 2020

COVID-19 Load Management Impact Survey

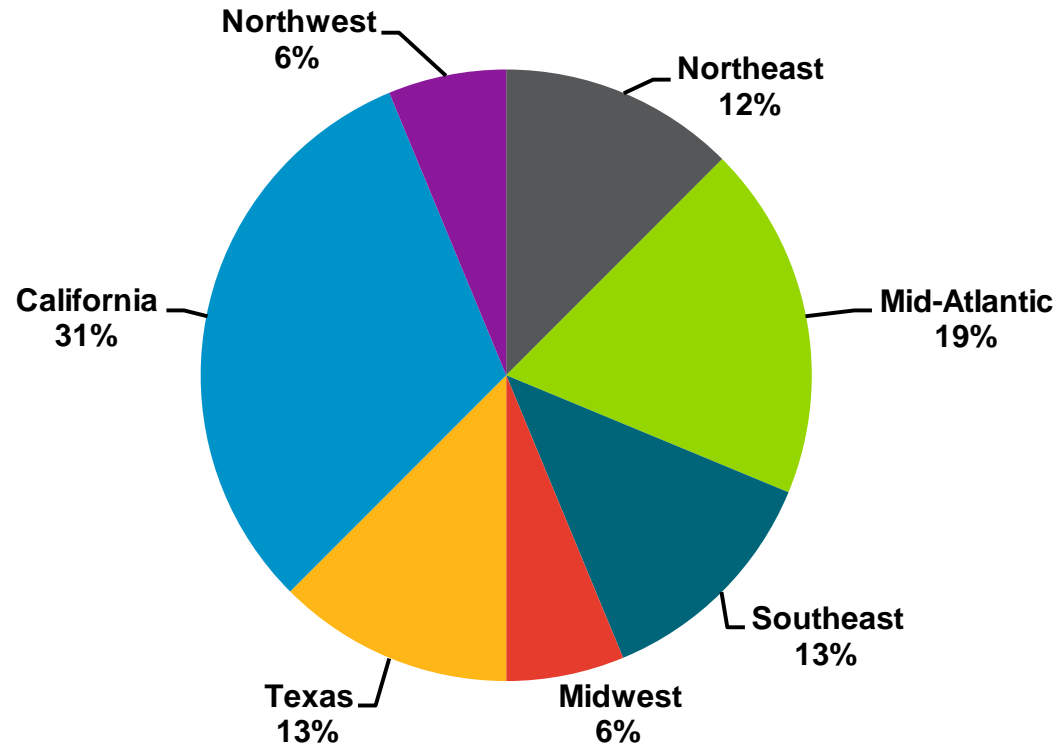
Survey Introduction

- This survey examines the COVID-19 impacts on utility loads and associated implications for load management programs in the United States.
- PLMA and Guidehouse sent the online survey to PLMA's Board of Directors, which represents PLMA member companies, in May 2020. This resulted in the following respondents:
 - 22 utility professionals
 - 23 non-utility demand response practitioners
- Respondents were asked specific questions about how COVID-19 is affecting, or is predicted to affect, DR programs with relation to:
 - Peak demand and system load across customer segments
 - Program changes & customer opt outs
 - Program budgeting and load scenario planning



COVID-19 Impact Survey: Utility Location

Where is your utility located? Please select all that apply.

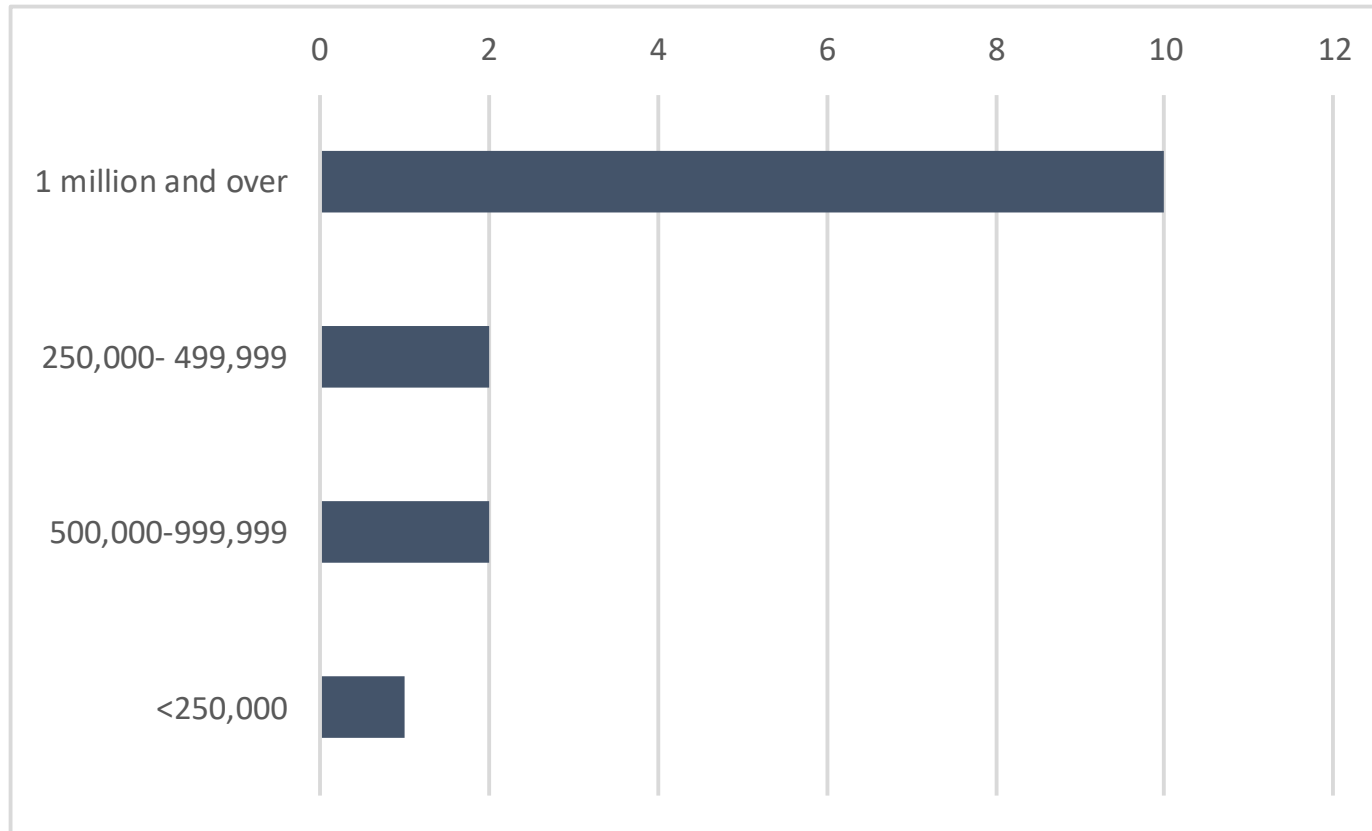


- Responding utilities represent almost all major regions of the country.
- This diversity provides a good representation of different economic and weather conditions around the country.



COVID-19 Impact Survey: Utility Respondent Size

How many residential customers does your utility serve? (Utility respondents only).



- Most responding utilities are on the large side of the spectrum, with a few mid-sized and a small utility as well.

Note that numbers don't add to total respondents since all respondents taking the survey did not answer this question



Executive Summary

- Respondents expect that system peak demand will decrease during the summer 2020.
 - Some respondents predict that residential peak demand will see a slight increase
 - Peaks may shift toward different times of day.
 - Correspondingly, C&I peak demands are predicted to decrease
 - There are a variety of factors that may affect C&I loads including specific industry variations, length of stay-at-home orders, and more general return to offices.
 - Generally speaking, forecasting has proven a challenge given the uneven rate at which local jurisdictions and their economies are opening back up.
- Some respondents note that they are already implementing changes to load management programs, while others remain uncertain.
 - Changes consist of a variety of program adjustments such as
 - Reduction in program resources
 - Tools to help customers better manage energy bills
 - Changing event windows



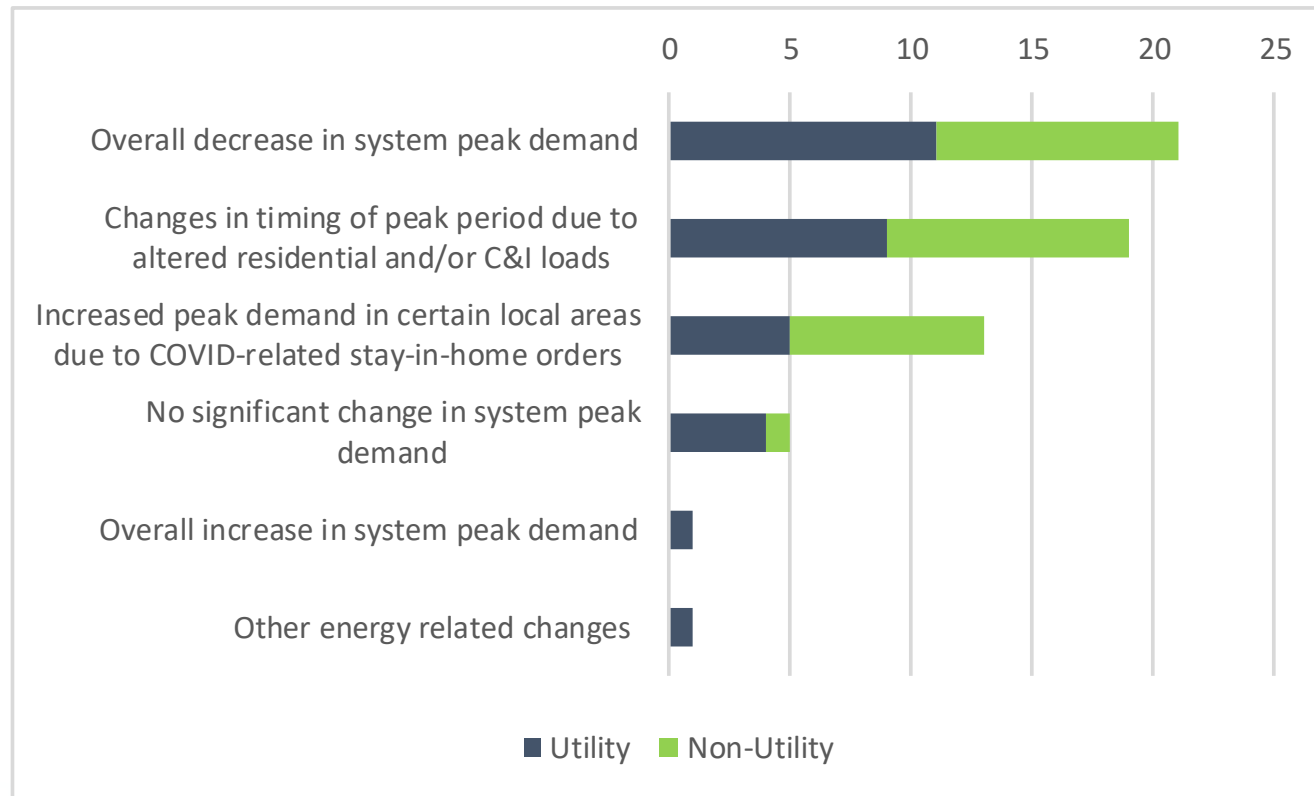
Executive Summary cont.

- The majority of utilities are concerned that residential DR overrides and opt outs will prove a challenge this summer.
 - Overrides may be due to lengthened residential peak periods and longer events.
- COVID-related uncertainties pose challenge to utility load forecasting, with an equal number of utilities engaged in and abstaining from scenario planning at this time.
- Only one utility foresees a potential return to pre-COVID-19 conditions during the summer 2020 program season.
 - Some note long-term changes as workers and their employers implement more lasting work from home practices.



COVID-19 Impact Survey: Question 1

How is COVID-19 and the related economic downturn expected to impact peak demand at your utility during the upcoming summer months relative to the original Summer 2020 Forecasts?

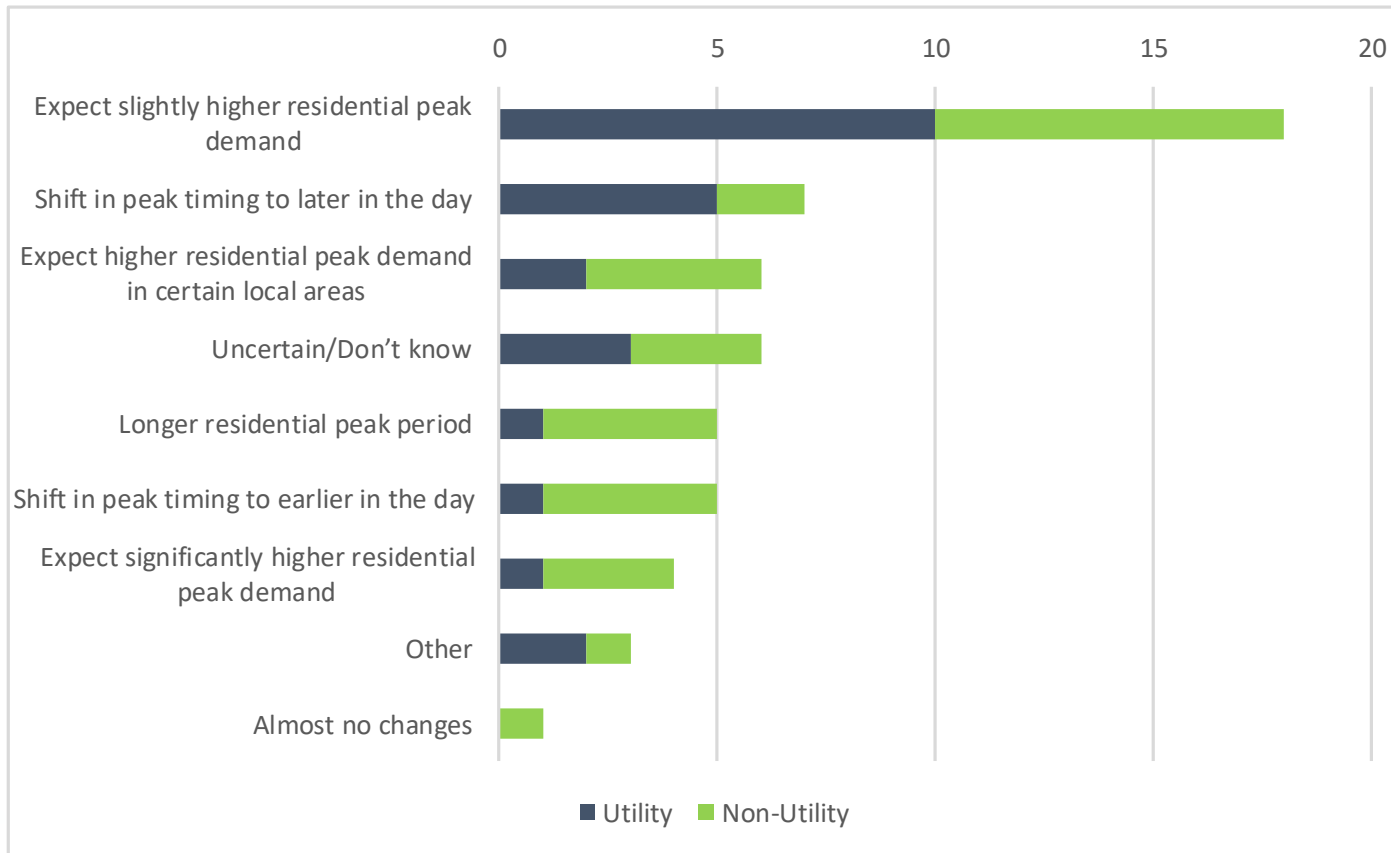


- Both utilities and non-utility DR practitioners predict an **overall decrease in system peak demand** and **changes in timing of peak periods** will result from the COVID-19 crisis.
- One utility respondent noted that overall load is expected to be similar, but with a **shift toward the residential segment, particularly during daylight hours.**
- **Local increases in peak demand** are expected due to higher residential load.



COVID-19 Impact Survey: Question 2

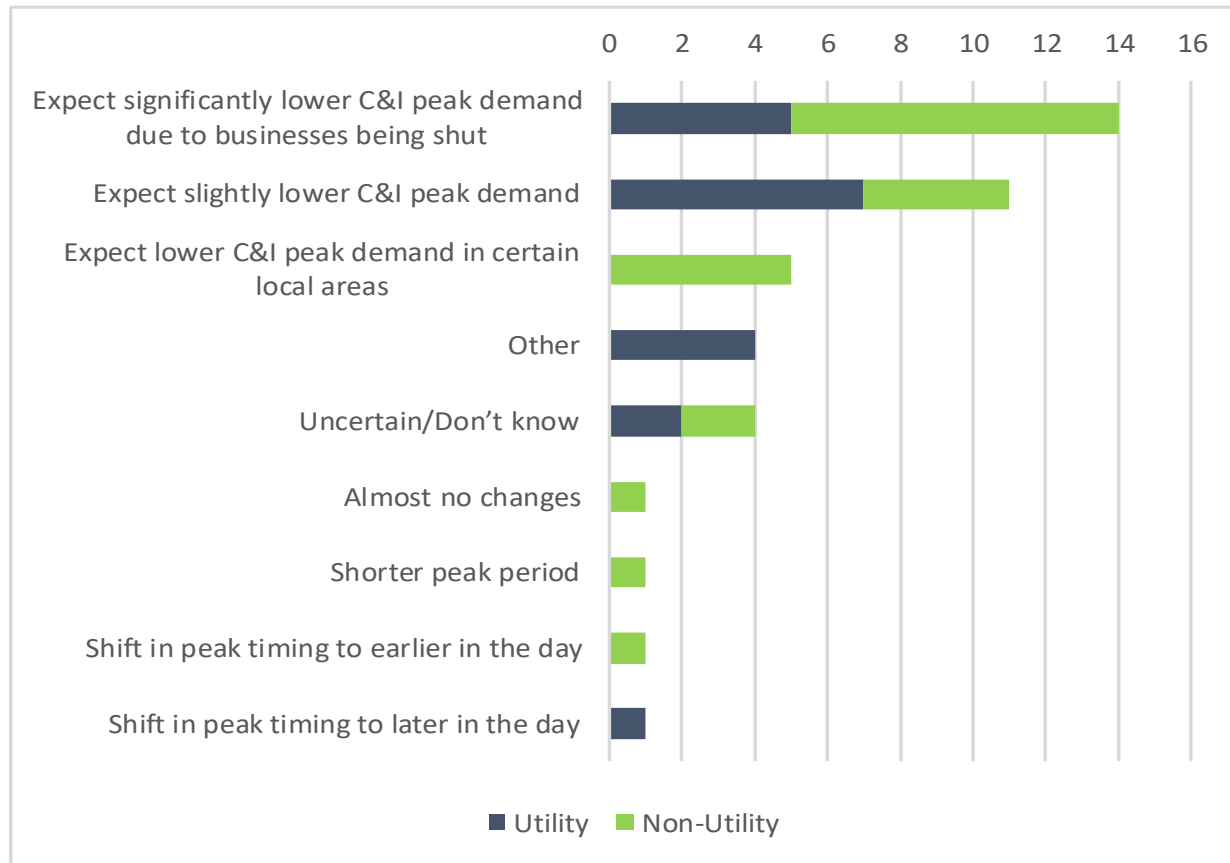
For residential peak load changes due to COVID-19, which of the following apply? Please select all that apply.



- Overall peak demand is expected to drop; however, many respondents expect that **residential peak demand will be slightly higher this summer.**
- Survey respondents indicate that a **shift in residential peak demand times may take place**, with utilities expecting peak to occur later in the day.
 - Non-utility respondents more often indicated that the shift may lead to earlier peak demand times.
- One utility respondent noted varying residential customer demographics will result in differences in load change patterns across service territory.

COVID-19 Impact Survey: Question 3

For C&I peak load changes due to COVID-19, which of the following apply? Please select all that apply.

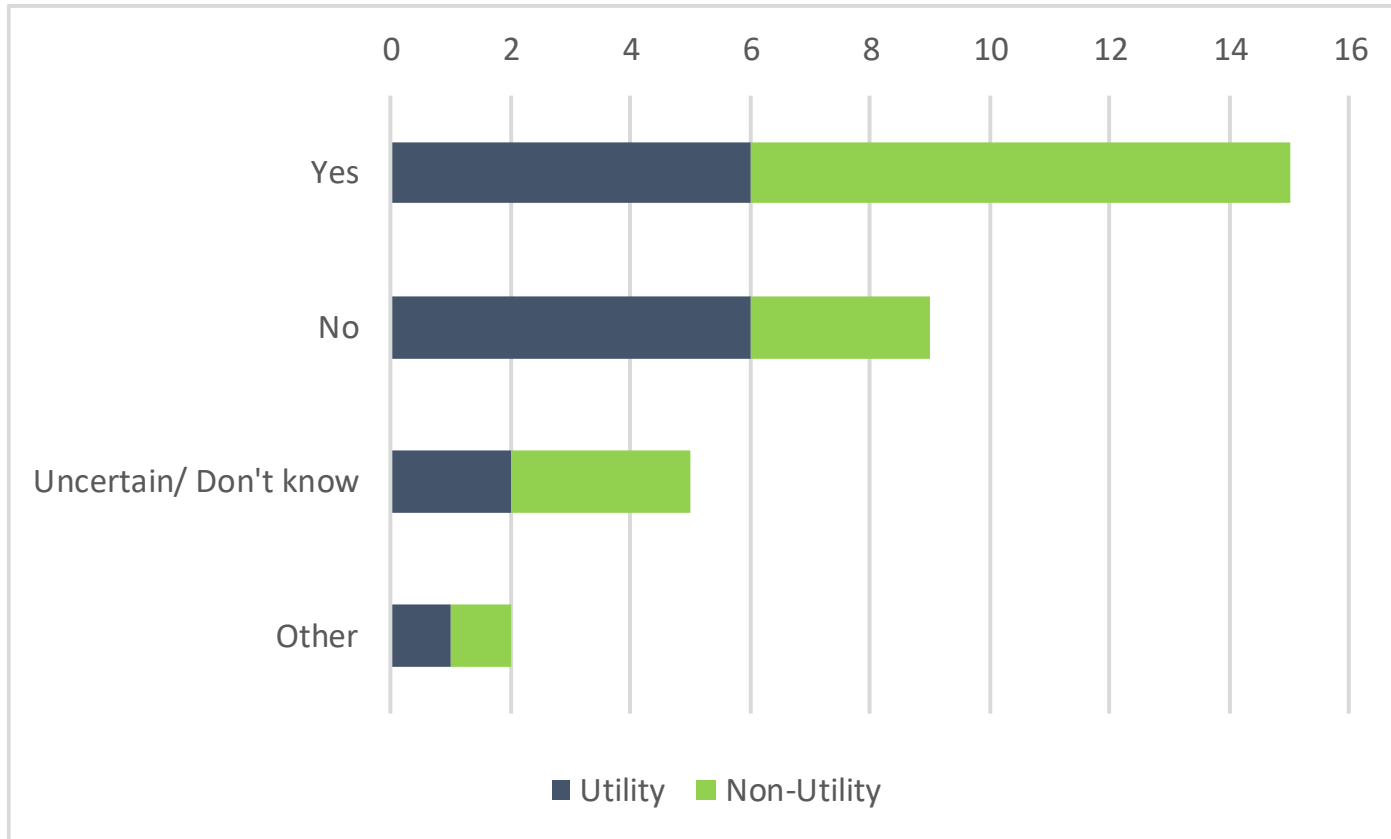


- DR practitioners generally predict significant reductions in C&I peak demand, where **utilities tend to expect only slightly lower C&I peak demand.**
- Respondents **feel less strongly about the duration and shift in peak demand times** for the C&I segment than for Residential, with only some DR practitioners reporting likely changes here.
- One survey respondent notes that **C&I peak demand is sector dependent**, with fewer changes to manufacturing than sectors like education and retail.



COVID-19 Impact Survey: Question 4a

Has your utility, or utilities that you are working with, planned changes to existing DR programs (including pilots) for the upcoming summer season in response to COVID-19?

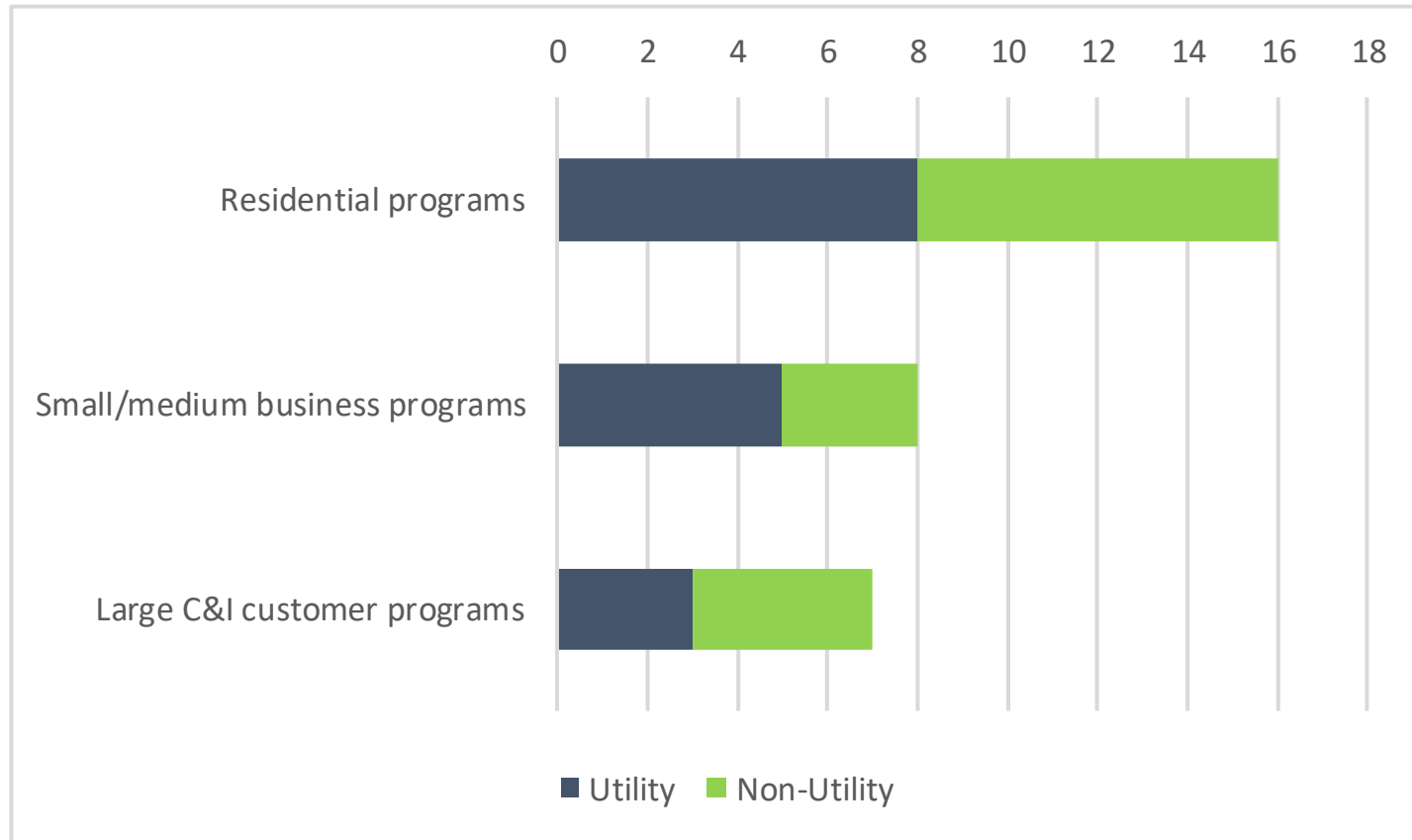


- **Some utilities have planned changes to DR programs in response to the effects of COVID-19.**
- **A DR practitioner stated that program features may not change, but that utilities are prepared for changes in the level of load secured through DR.**



COVID-19 Impact Survey: Question 4b

Please indicate which customer programs these changes apply to, selecting all that apply.

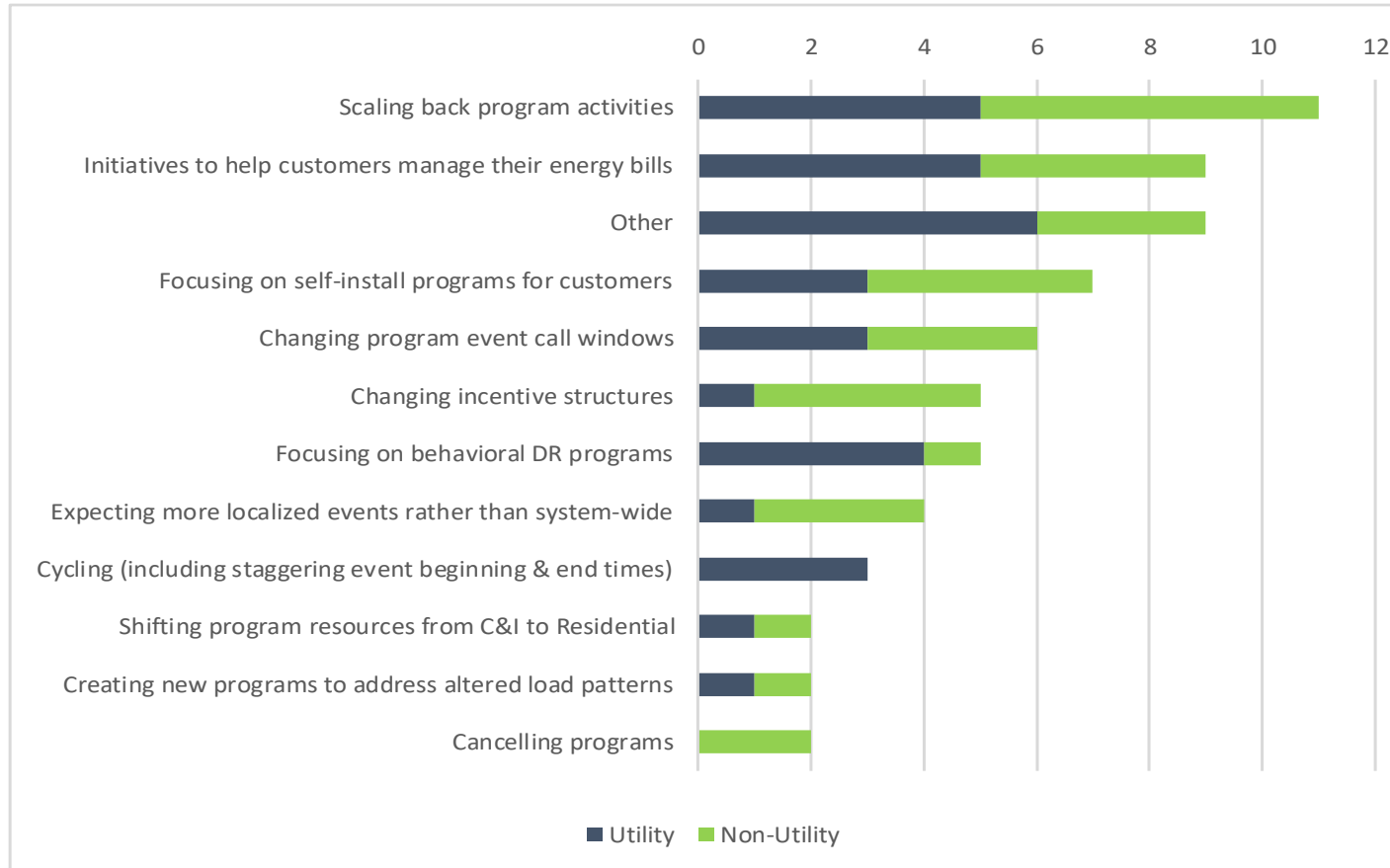


- Respondents note that the **residential sector will see the greatest adjustments to utility DR programs.**
- **There are differences in observations across the C&I segment.** DR practitioners note a greater number of large C&I programs with planned changes than utilities who report more changes to small & medium business programs.



COVID-19 Impact Survey: Question 4c

Which of the changes below is your utility, or utilities you work with, planning? Please select all that apply.

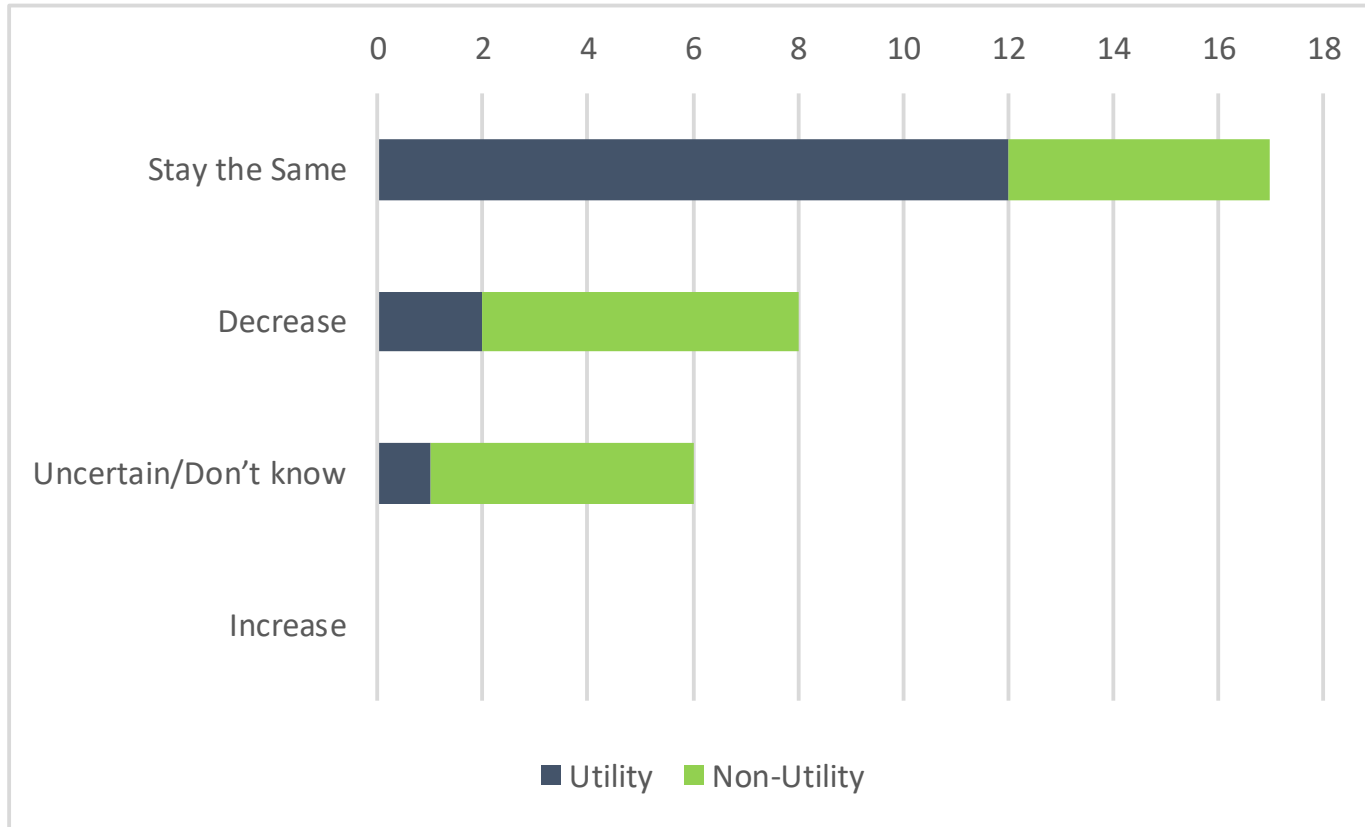


- **There is no clear consensus on the manners in which utility DR programs will change as a result of COVID-19**
 - Scaling back of program activities received the most responses
- **Generally, utilities' and DR practitioners' responses align with regard to how program features may change.**
 - However, non-utility respondents appear to expect a greater range of changes than utility respondents
- **Other possible changes** reported include:
 - Reductions in marketing activities
 - Remote site verification
 - Remote application review & approval



COVID-19 Impact Survey: Question 5

Based on COVID-19, do you expect your summer DR budget to:

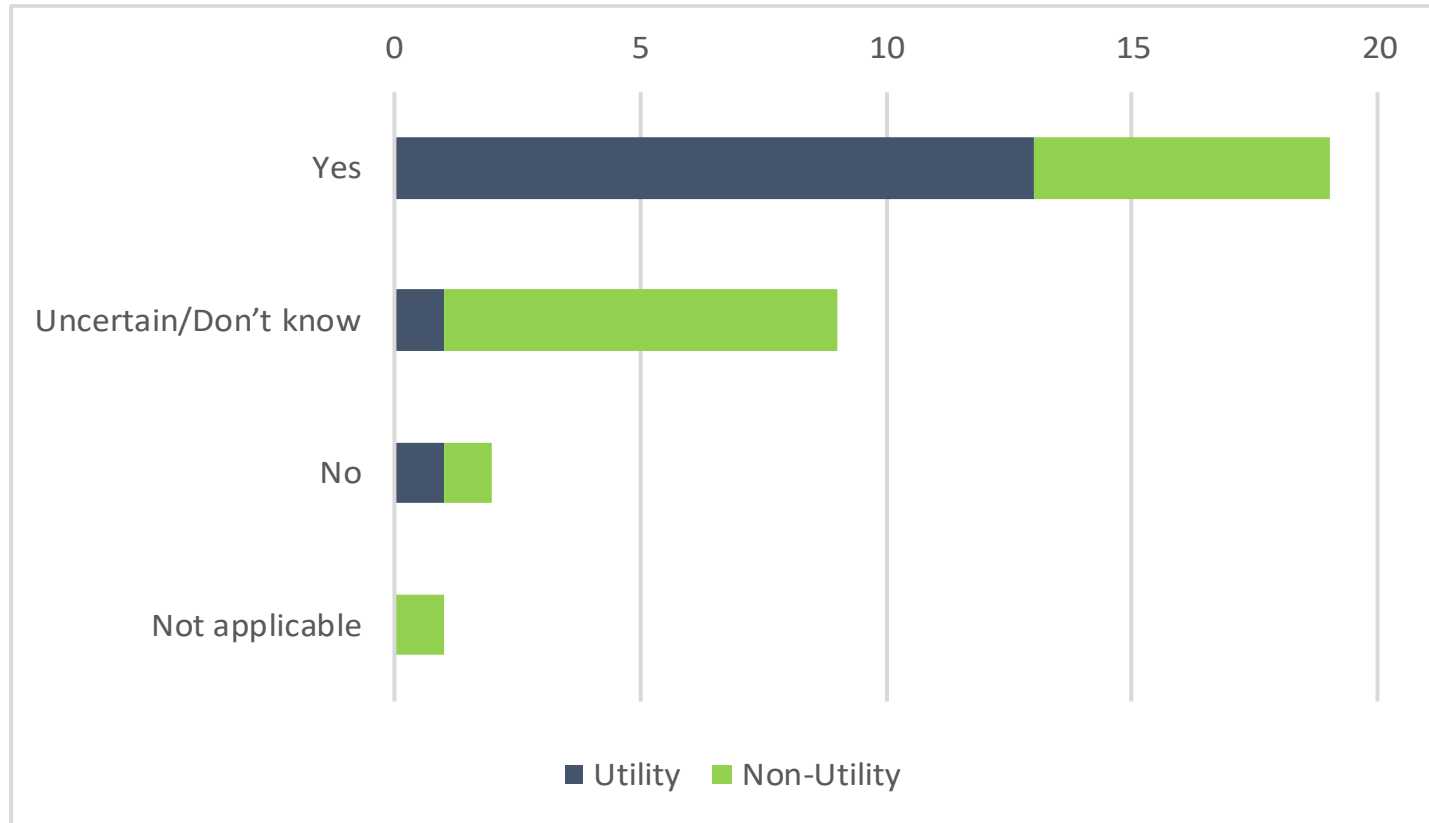


- **Many respondents noted that utility summer DR budgets will stay the same.**
 - One utility respondent noted that budgets for the year were set prior to COVID-19, but how much of the budget will be spent is the unknown.
- Another respondent noted that **utility budgets are down across the board**, and not just for DR programs.
- **No increases to budgets, even for residential programs, are expected.**



COVID-19 Impact Survey: Question 6

Are you concerned about more residential DR event overrides and opt outs due to people working from home?

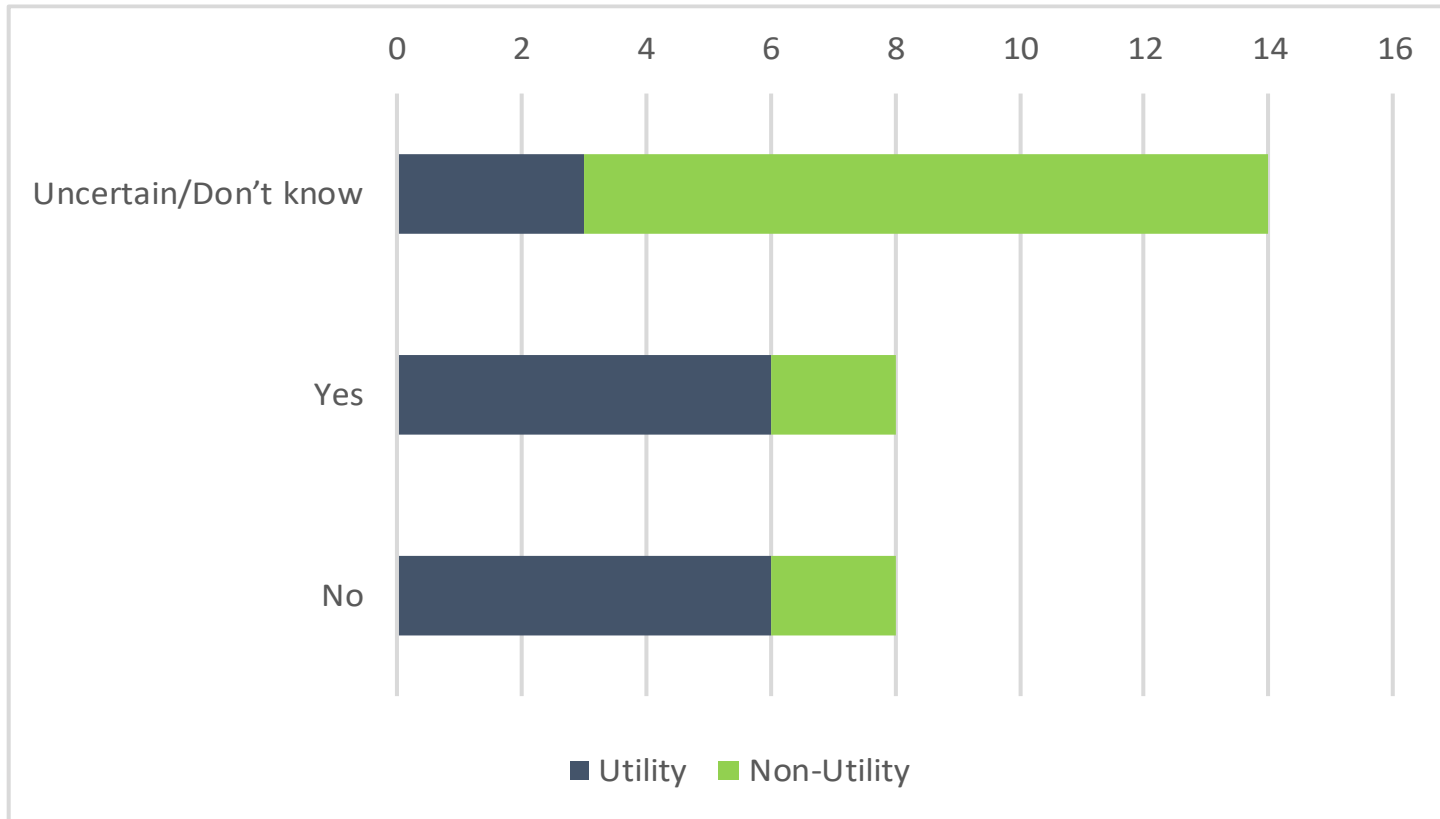


- The **majority of utilities are concerned that residential DR overrides and opt outs will prove a challenge** this summer.
 - Non-utility DR practitioners largely agree or are uncertain about the effects.
- One respondent noted that residential peaks may be lengthened causing the **utility programs to run T-stat programs for longer periods of time and later into the evening.**



COVID-19 Impact Survey: Question 7a

Are you, or the utilities you work with, planning for different load scenarios considering future uncertainties and how these might influence DR program offers (i.e., C&I load comes back during the summer)?

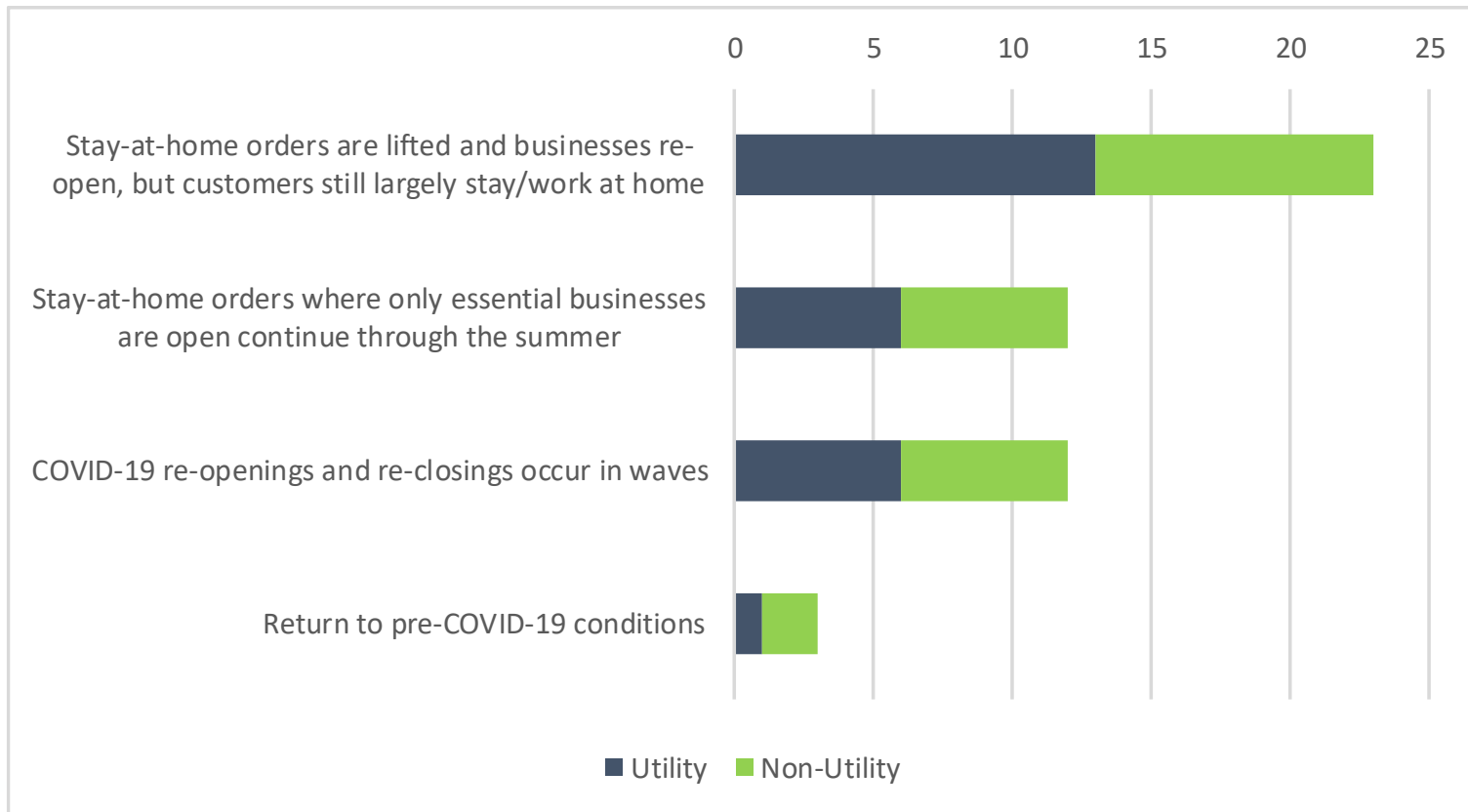


- **An equal number of utilities are and are not planning for different load scenarios with regard to their DR programs.**
- **The majority of surveyed DR practitioners are uncertain about the load forecasting scenarios of utilities they work with.**



COVID-19 Impact Survey: Question 7b

Which of the following scenarios is your utility, or are utilities you work with, planning for this summer? Please select all that apply.



- The majority of respondents engaged in scenario planning **believe that utility customers will continue to work at home, regardless of whether a stay at home order is lifted.**
- **Few respondents are engaged in scenario planning that accounts for waves of re-opening & re-closing in response to the virus.**
- One utility, and only two DR practitioners, are planning for a return to “business as usual” during summer 2020.



COVID-19 Impact Survey: Question 8

Is there anything else you would like to note regarding activities you may be undertaking, questions, experiences/insights, or recommendations related to the COVID-19 crisis that might benefit the load management practitioner community?

Utility Respondents

- One utility notes petitioning the state PUC for relief on performance metrics; states like NY have already taken action.
- Utilities reemphasize uncertainty with regard to load forecasting in the absence of concrete re-opening details.
 - A utility noted that the rate at which counties in its large service territory are returning to normal challenges load forecasting.
 - Some utilities note that this has led to few concrete changes to DR programs & their related incentives.
 - Utilities and DR practitioners will continue to keep an eye on performance and adjust through the summer seasons.

Non-utility

- Shift of load toward the residential sector may, to some degree, be permanent as one respondent's sources indicate 25% of the work force will choose to remain WFH indefinitely.
- Patterns with regard to load and program planning have yet to emerge, given the large levels of uncertainty; this challenges utility and other DR program practitioner planning.
- Some regulators have pushed back DSM filings in response to the pandemic.
- One respondent notes utilities should use this time to strengthen their customer outreach and education initiatives.



Conclusions

1. Increases in residential load may lead to higher load management event numbers, duration, or capacity; participant opt-outs may increase in response.
 - A. Utilities and DR practitioners could reinforce resources this summer season to educate residential customers on program participation incentives and other utility bill management tools. One utility noted concern for its residential customers without AC, who may not go to public places to cool down; customers of concern, like these, should be educated about their options to stay comfortable as well.
2. Uncertainty remains a barrier to planning for the summer 2020 load management season (including number of events, timing of events, capacity sourced from events, and more).
 - B. Load management professionals should maintain an open dialogue with stakeholders and regulators to share experiences and best practices with regard to adapting DR programs in response to COVID-19.
3. Load management professionals do not foresee a return to pre-COVID-19 load conditions in the foreseeable future.
 - C. To the degree possible, utilities and their partners could consider scenario planning that takes into account the uneven effects of COVID-19 across industries and customer segments, that takes into account varying time-tables to stay-at-home orders lifting and economic reopening and recovery.



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