



## Energy, Sustainability, and Infrastructure

# COVID-19 Utility Response Plan: Customer Risks

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### About Guidehouse

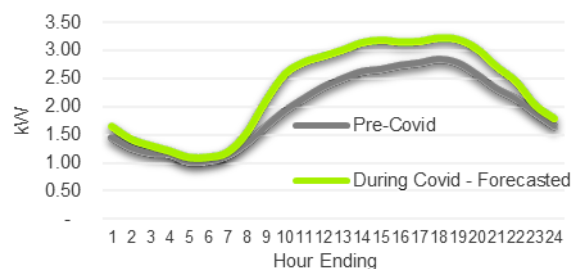
Guidehouse is a leading global provider of consulting services to the public and commercial markets with broad capabilities in management, technology, and risk consulting. We help clients address their toughest challenges with a focus on markets and clients facing transformational change, technology-driven innovation and significant regulatory pressure. Across a range of advisory, consulting, outsourcing, and technology/analytics services, we help clients create scalable, innovative solutions that prepare them for future growth and success. Headquartered in Washington DC, the company has more than 7,000 professionals in more than 50 locations. Guidehouse is led by seasoned professionals with proven and diverse expertise in traditional and emerging technologies, markets and agenda-setting issues driving national and global economies.

Are you prepared for these scenarios?

**COVID-19 Utility Impacts:** Grid stability and resiliency is paramount in any return to normalcy. The spread of COVID-19 has brought most of the world to a standstill yet we are still dependent on reliable electricity to power our home-based workforce, and ensure people’s safety, health, and welfare. While overall electricity consumption has decreased, the usage patterns are highly variable across customers. Residential electric use has increased with stay-at-home orders, and will continue to increase as we hit peak usage months. Along with localized areas of capacity-constrained grid infrastructure, this usage increase could lead to grid reliability issues, potential outages, and higher bills for customers. These represent challenges for utilities and customers alike. Utilities need to act now to better understand these potential constraints and determine what steps they can take to prevent impacts on the grid and on customers.

**Preparing for the unexpected: What happens to your demands if your customers are under a stay-at-home order?:** The effects of COVID-19 are highly variable across customer segments and seasons. Analysis of March and early April data shows that commercial consumption has fallen significantly, while residential consumption has increased and shifted substantially.

Peak Day Average Residential Load Per Customer



**What happens when customers are faced with higher than normal bills that they are unable to pay?:** Do you have programs in place or the ability to put programs into place quickly—including technology-driven and behavioral demand response programs—that will help your customers with their energy bills *and* provide needed distribution grid resources? How can you get energy-saving measures and devices into homes when it may not be feasible to have contractors perform installations?

**Do you have problem transformers or substations?:** For utility transformers already under strain from new air conditioning and EVs, COVID-19 could be the straw that broke the transformer’s back. Were you already worried about transformers in neighborhoods with EV adoption? If you have highly loaded substations or clusters of substations that include a large proportion of residential loads, or residential loads combined with critical industrial or agricultural loads, your likelihood of having a broader failure goes up during a stay-at-home order.

**What happens to your demands if/when a stay-at-home order is relaxed?:** Most businesses that survive the economic disruption will get back to work, with many commercial building-related loads recovering to close to pre-COVID-19 levels. However, many people will still work from home due to continuing disruption to schools and childcare providers, or out of an abundance of caution to avoid getting sick. This means that residential loads may continue to be elevated significantly as non-residential loads recover.

# How Can Guidehouse Help?

Guidehouse provides end-to-end support assessing customer and operational impacts, and development and implementation of an action plan, to respond to unexpected load changes and load shifting from the COVID-19 crisis.

What uncertainties and problems might your utility face?	What support can Guidehouse provide?
<p><b>How can you help customers,</b> including businesses that are facing increasing economic pressure and residential customers who may be experiencing both a reduction in income and an increase in their utility bill?</p>	<p><b>Customer insights</b>, including which customers are most likely to be impacted and how customers will respond to different kinds of demand side solutions or economic relief.</p> <p><b>Fast online survey design</b> and deployment, facilitation of <b>virtual focus groups</b> with your customers to determine which solutions will work best.</p>
<p><b>How might customer loads change</b> in response to COVID-19 shelter-in-place orders and changed economic conditions?</p> <p>Are any <b>transformers or substations at risk</b> with changes in residential load?</p>	<p><b>Analytics and modeling</b> to provide forecasted new peak day load shapes for utility equipment and characterization of technical requirements of solutions.</p> <p>Strong, broad-based analytics expertise to <b>combine understanding of shifting demand side customer behavior with the grid-side implications</b> to improve forecasting of utility system impacts under highly variable and uncertain conditions.</p> <p><b>Actionable insights</b> with graphical explanation of data findings.</p>
<p><b>What actions can you take in response to changes in customer load?</b></p>	<p><b>Increasing behavioral demand response</b> with individualized communications that encourage customers to help their community and do their part by reducing their load on critical peak days.</p> <p><b>Accelerating the enablement of smart load management devices</b> via enhanced customer acquisition and self-install solutions leveraging partnerships with smart thermostat, bring-your-own-device, and demand response platform providers.</p> <p><b>Developing new and modifying existing load management strategies</b> to ensure the right customers are being called on at the right time to efficiently and effectively reduce peak load while avoiding customer fatigue.</p> <p><b>Accelerating the interconnection of renewables</b> to alleviate load constraints.</p>
<p><b>What financial implications could COVID-19 have on utility revenue in the near- and longer-term?</b></p>	<p><b>Financial scenario analyses</b> to understand bottom-line implications.</p> <p><b>Business model innovation and strategic planning</b> to mitigate impact and financial risk.</p>
<p><b>What regulatory steps might need to be taken in response to COVID-19?</b></p>	<p><b>Regulatory support</b> in getting emergency approval for program changes including analytical support, writing briefs, expert testimony, and witness preparation.</p> <p><b>Revenue recovery</b> support in the face of potential lost revenue.</p>