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Utilities are facing a drop in demand and revenue as COVID-19 impacts the broader economy. While utilities are used to adapting when emergencies strike, the COVID-19 pandemic is an emergency on an unprecedented scale. The smart use of digital technology is the key to success while adjusting to this new normal now and for the long term.

The demand for energy has dropped noticeably. The Energy Information Administration projects a bigger impact on commercial and industrial consumption compared with residential year to year (Figure 1). Despite the slowdown in business, energy at the residential level in the U.S. will be nearly consistent. The Midcontinent Independent System Operator that delivers power to 15 U.S. states and the Canadian province of Manitoba reports an 18% drop in March peak compared with last year. Europe has seen drops of more than 20%. The U.K. is expected to use 15% less electricity. China experienced a drop of 7.8% year on year in January and February.

These are some flash results. While still too early to be specific, even with bounce back late in the year, an energy reduction in the order of 10% is still consistent all over the world.

As commercial and industrial businesses close or change schedules and more people work from home, utilities will continue to see load reduction. There is also a change in the load shapes as more energy is consumed in neighborhoods and less in urban downtowns and office parks. The morning peak hours are now later, moving from 8 a.m. to around 10 a.m., and the load curve is flatter as people stay home all day. These changes will have a negative impact on utility revenues and cost structures. In addition to the revenue impact from reduced sales, utilities will also face strain in collections as customers struggle to pay their bills.

As a result of lockdowns and social distancing measures, many utility customers are unemployed and unable to pay their bills. A record 22 million Americans filed for temporary unemployment benefits from March 14 to April 11, according to the U.S. Department of Labor. The unemployment rate rose to 4.4% in March compared with 3.5% in February and is expected to hit double

digits in April. Given the scale of this crisis, utility companies are responding by suspending disconnections. In 42 states, temporary prohibitions on disconnections for non-payment are now in place, and many utilities are voluntarily extending those prohibitions beyond the timelines mandated by regulators.¹

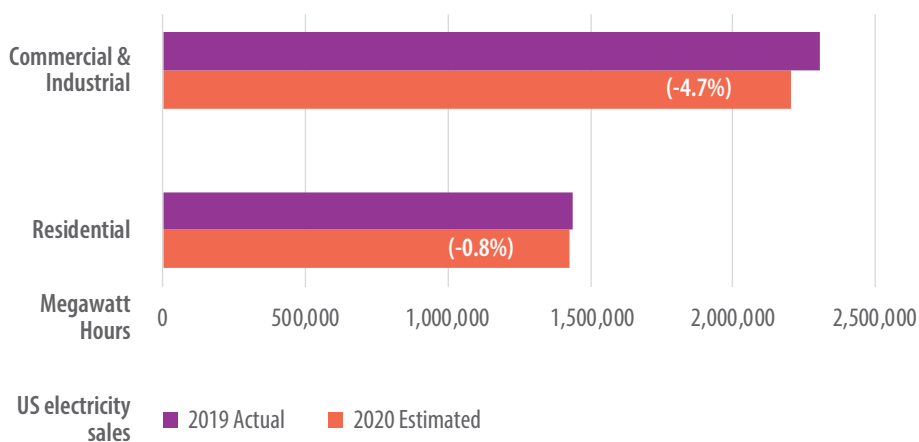
Utilities have a unique challenge when it comes to balancing customer relationship management with service obligations. Those unpaid bills will cause significant revenue lags and directly affect short-term working capital. Utilities have to increase their share of higher-cost short-term debt to cover near-term budgetary expenses.

Globally, governments and utilities are collaborating to remain operational, solvent and accessible for end customers. In North America, the Edison Electric Institute and American Gas Association recently petitioned the Federal Reserve Chair to extend access to Tier 2 short-term debt instruments during this national crisis. The Australian government and Energy Networks Australia announced an electricity and gas network relief package that helps ensure energy retailers can assist small businesses and residential customers facing hardship. For example, small businesses in Australia won't have to pay electricity and gas network charges from April through June 2020 if their consumption is less than a quarter of what it was in 2019.

Recouping revenue

Revenue falls are likely to be noticeable and widespread. Rate design and revenue decoupling enable certain regulated utilities to recover lost revenues through rate cases, but this process is also suffering under COVID-19. Regulators have delayed rate case hearings until further notice, as social distancing makes the process difficult.

Figure 1. Noticeable drop in energy demand



Source: EIA

Figure 2. The three areas where utilities are feeling the impact of COVID-19



The New York State Department of Public Service delayed National Grid's approved rate increases from April to September. The North Carolina Utilities Commission indefinitely postponed Duke Energy's rate case hearing. It's also considering a temporary suspension of the minimum demand charges paid by manufacturers and other large commercial customers. Regulators on more than 47 state commissions have made administrative changes, including suspending meetings or deadlines and closing offices. As a result, planned regulatory relief through rate increases is uncertain at this time. Also, both Maryland and Colorado legislative bills associated with renewables are delayed because of COVID-19.

Deregulated utility firms will likely suffer a bigger impact as they don't have this regulatory fallback. Thirty-five nations have deregulated or open energy markets, representing 44% of the world's energy consumption. The worst-case scenario is that deregulated energy companies, without the rate case system to back them up, start to fail. It's up to government agencies to decide how or if they will help.

The Public Utility Commission of Texas, for instance, voted in March to give deregulated electricity providers millions of dollars in reimbursements and interest-free loans funded by ratepayers. The move was made to keep the competitive retail market

that covers most of Texas afloat. The COVID-19 Electricity Relief Program will add a fee to regulated utility bills in Texas to cover expected revenue losses from unpaid bills.

An operational and safety crisis

COVID-19 is hitting the utility workforce hard. Multiple large utilities report employees testing positive, including field workers. As of early April, 170 Consolidated Edison employees tested positive for COVID-19. Eversource Massachusetts reports that 12 employees tested positive during the same time frame. Field workers make up 10 of those 12 COVID-19 cases.²

Precautions are being taken to reduce the risk of viral transmission across the workforce, but social distancing and lack of personal protective equipment can delay the response and effectiveness of workers who often need to work closely in small groups to solve a problem. The inability of field workers to perform scheduled maintenance work could potentially affect equipment warranty and longevity.

In this difficult situation, utility companies will be stretched to deal with another emergency – like a weather event. Normally, emergencies are regional, and utilities from other areas can help through the mutual

assistance program. That long tradition of sharing resources during emergencies may not be possible when the number of field workers is limited nationwide.

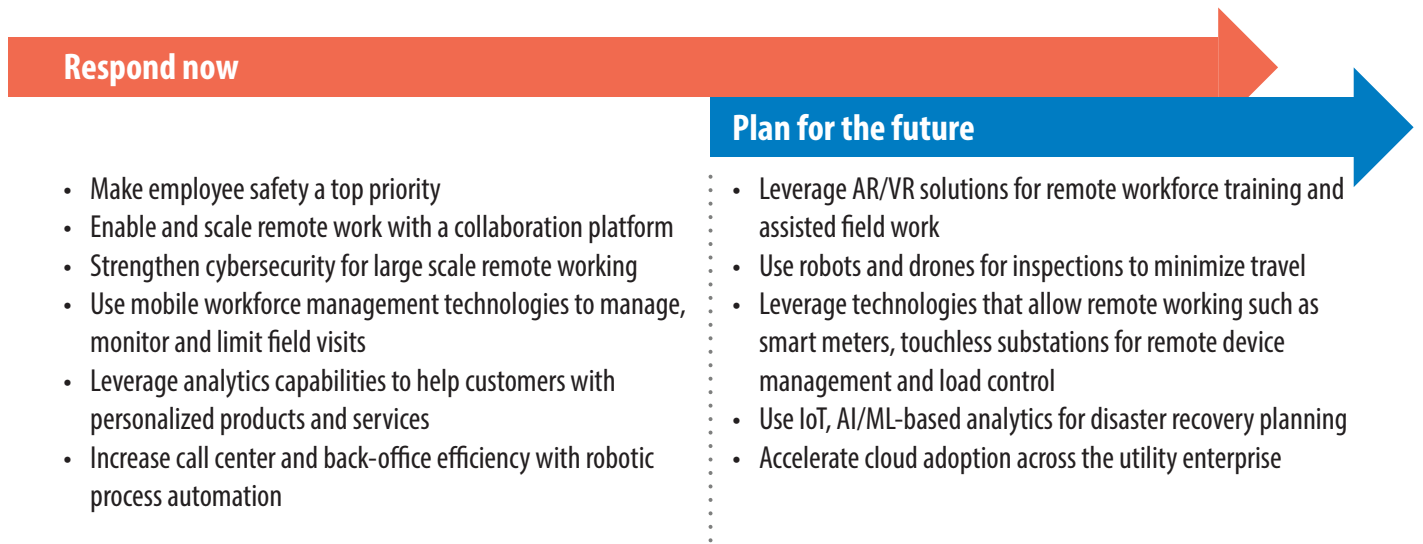
Social distancing and lack of PPE can delay problem solving by utility workers who collaborate closely

The EEI says utilities could see up to 40% of employees unable to work during this crisis because of illness, quarantine or a sick family member.³ Utilities will face productivity challenges as a large part of their workforce transitions to working remotely. Home IT infrastructure and corporate remote applications are experiencing higher loads as a result of a large number of people working from home.⁴ Cybersecurity incidents have increased, with a 40% rise in phishing emails building up the risk of breach across the industry.⁵

Value chain impact

COVID-19 has also affected the utilities value chain from generation to transmission and distribution to retail and wholesale. Supply chain disruption is impacting the renewables sector that depends on suppliers in Asia for critical components. Further, workforce and material availability could limit utility companies' ability

Figure 3. How utilities should respond now and plan for the future



Source: Infosys

to conduct regular maintenance of field assets. Utilities without advanced distribution management systems capabilities are facing field force challenges. Some states in the U.S. — notably, Pennsylvania, Illinois and Ohio — have banned door-to-door energy sales affecting retail.

Suppliers will be stretched to fulfill orders for critical parts, components, equipment and materials as governments task them with supplying COVID-19-related items. High demand for PPE to protect field workers from COVID-19 may impede the acquisition of safety gear for workers and cleaning materials for offices and warehouses, thus affecting productivity.

COVID-19: Responding now and for the long term

There is no denying that this is a very challenging time for all industries. As providers of critical infrastructure,

regulated utility firms will likely survive this crisis better than most, but utilities still face serious challenges in the short to medium term. In the longer term, the crisis may be a spark to open up new digital transformation opportunities that will enable utilities to weather future crises better.

A well-planned path to digital adoption including the right blend of person, power and technology is the recipe for success

In the short term, utilities' focus will be primarily directed to ensuring the health and safety of workers, field staff, and customers. Utilities that had already invested in digital capabilities, such as a remote work infrastructure, automation and mobility capabilities, are better able to adjust to this new normal, and to provide better, safer, service to their customers.

After meeting basic needs by providing personal protective gear

and other support, utilities should take the next steps to enable the field force with automated processes and technology, including augmented reality/virtual reality. By increasing automation and using emerging technology, utilities can minimize person-to-person contact. Digitizing and enabling the field force to work remotely will pay off long after COVID-19 is gone.

COVID-19 has underscored the importance of going digital through remote working and operations. A well-planned path to digital adoption with new workflows incorporating the right blend of person, power and technology is the recipe for success during and after COVID-19. Utilities should prepare, choose, plan and execute actions in the short, medium and long term.

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