

Grid infrastructure investment: A societal decision?



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Photo: IMCORP

Grid infrastructure investment needs to be a societal decision. I believe utilities have an amazing opportunity in this new era of electrification to make the case to society, their rate payers, to get support for capital investments which achieve the reliable, resilient, and sustainable grid we need.

Our industry is at an inflection point. Our aging infrastructure is not able to consistently withstand weather events. At the same time electric power is needed to support more of our critical tasks than ever before. According to the US Energy Information Administration (EIA),



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the average American withstands seven hours of electric service outage per year. Obviously, this means that some of us experience no outages for years, while others are out for days or longer. According to the US Census, an increasing percentage of us are choosing to live in beautiful areas with high risk of fire or storm damage; places our ancestors never would have dreamed of living. As we journey to electrify a larger portion of our residential energy needs, and extreme weather, like storm Uri, takes out our power, many of us cannot maintain safe temperatures in our homes, protect our houses from damage, support in-home medical care devices, cook and preserve food, do our job, communicate with loved ones and emergency personnel, or drive our electric vehicles (EV), or even evacuate in our EVs during emergency situations!

If the power goes out for a couple days due to storms, what's the economic impact? The local utility will need to make significant investments to rebuild and often asks regulators for some relief on the shoulders of rate payers. But that is just the tip of the iceberg! Take the state of Florida for instance. The state GDP is estimated at over three billion dollars per day. If one third of the state can't do business, that's one billion dollars of loss per day. One billion of GDP worth loss including wages paid, commerce not transacted, and taxable revenues that will never be realized. And in case you think your area is exempt, the NOAA National Centers for Environmental Information (NCEI) claims that there have been over twenty billion-dollar storms each year for the last few years in almost every part of the country.

According to EIA, seventy-two percent of us are supplied by investor-

owned utilities (IOU). This model has been nothing short of amazing in bringing safe, reliable and affordable electricity to the masses with minimal government investment during the first wave of national electrification. However, now that most of our significantly aged grid exists, who should make the decision to invest in upgrades to support new sustainability and resilience goals? Who decides to make the infrastructure upgrades that can withstand high impact low probability (HILP) events with little or no customer outage? Is it the IOU, an appointed government regulator, Wall Street, or a specific consumer advocacy group? I applaud bellwether utilities like Florida Power and Light, WEC Energy, and PG&E. These utilities have made the case to their rate payers for large proactive capital investments to their existing infrastructure spread out over years to achieve a more sustainable, reliable and resilient grid.

FPL is hardening their overhead feeder cable systems and undergrounding the rest of their 27,000 miles of residential circuits. WEC Energy Group surveyed their rate payers and found strong support for a reasonable increase to monthly bills to get upgraded resilient infrastructure. They have now undergrounded two thousand miles of their worst-performing overhead lines and achieved over 95% improvement. PG&E stated they are planning to underground ten thousand miles and have called it the ultimate sustainable solution for their high wildfire risk areas.

What if more utilities see themselves as long term capital investment institutions for society's benefit? What if they could get the public's support to invest billions in proactive capital investment measures that could guarantee sustainability and resiliency? Reports indicate rate payers are willing to pay for

sustainable reliability and resiliency, regulators want predictable rate growth and avoid frequent requests for storm relief, Wall Street wants a steady rate of return on investments, politicians want local investment with good jobs and protection for future tax revenues, and the utilities would be happy to avoid the storm fire drills that put their employees in harms way and reactive operations and maintenance costs that negatively impact their bottom line and stock price. Have I left anyone out? I believe utilities have an amazing opportunity in this new era of electrification to make the case to society, their rate payers, and get their support for large capital investments spread out over decades that achieves the reliable, resilient, and sustainable grid we need at the lowest total cost of ownership. I think grid infrastructure investment needs to be a societal decision. Do you agree?