



# What Electrification Means for Utilities

A Focus on Distribution

John Hoffman – i3 Consulting



Over the last 20 years, there has been significant investment in transmission infrastructure across the country. “Based on information compiled from utility reports to the Federal Energy Regulatory Commission (FERC)—filed by utilities representing about 70% of total U.S. electric load—those utilities spent about \$21 billion on capital additions in 2016. The Edison Electric Institute (EII) estimates that utility spending on transmission infrastructure continued to increase in 2017.” Although market analysts consistently predict the contrary, Transmission spending has continued to grow year-over-year and has focused on upgrades, replacement of aging infrastructure, system hardening to minimize adverse catastrophic events, and expansion to integrate renewables and natural gas.

Significant investment has also been made on the distribution side, but unlike the transmission (which focused on station equipment, poles, fixtures, and overhead lines, and devices), much of the distribution spend has been spread over a variety of improvements including infrastructure, smart grid, smart metering, reliability improvements, and system hardening. The amount of distribution upgrades continues to be a strong focus of utilities across the country but the questions remain if it will be enough, soon enough?

Other factors add additional complexity to planning for the future distribution. The impact of solar, electric vehicles, end user storage and co-generation highlight the need for a modern reliable distribution system. As state and local communities continue to put restrictions on the use of fossil fuels, the demand on distribution systems will continue to increase.



Distribution networks took the bulk of the savings initiatives over a time frame when consumers wanted cheaper electricity at any cost.

Distribution utilities have long been faced with creating a balance between keeping costs in line with consumer expectations, providing the reliability that is expected, and replacing and maintaining equipment to improve system performance. In addition, the need to introduce smart grids, meet the demands of electric vehicles, and increase system automation has created a complex problem for utilities.

The answer to the demands of utility distribution systems is simple, keep investing. However, creating the balance between expectations and reality is what is difficult. Distribution networks are the most susceptible to outages; whether during storm events or blue-sky days and it is clear that customers' expectations are not to limit outages, but not to have them, even blink events. Faced with a global pandemic, what was previously a residential inconvenience outage has now become a work

interruption. It has been estimated that up to 62% of Americans have worked part-time or full-time from home adding another element to the need for a resilient, reliable electric distribution system.

Utilities, first and foremost, must continue to invest in infrastructure improvements. The prioritization of work and the need for strong Portfolio Management based on data-driven decisions is crucial to meeting customer and regulator expectations. Utilities completing the right work at the right time within the necessary timeframes is a discipline that needs to be continually developed and enforced. The demands on the distribution network will continue, if not increase, as will the demands on utilities to make improvements while minimizing rate increases. A proactive approach will not only prioritize work to meet demands but also act as justification for spending.



Many utilities today are faced with a situation where their work portfolio isn't prioritized, work is engineered and not completed, projects aren't managed to a critical path, and roles, responsibilities and accountabilities are unclear. We have worked with utilities and improved their throughput up to 20%, without adding resources. Reach out for a conversation on how today.

- Do you fail to spend your entire capital budget each year?
- Do you spend your entire budget (and sometimes more) without completing all planned projects?
- Do you spend time, money and engineering resources on projects that frequently get pushed out to subsequent years or never get executed?
- Do you feel your distribution crews are maximizing their time on the job site?

If you answered 'yes' to any of these questions, reach out today to discuss portfolio and project management.