

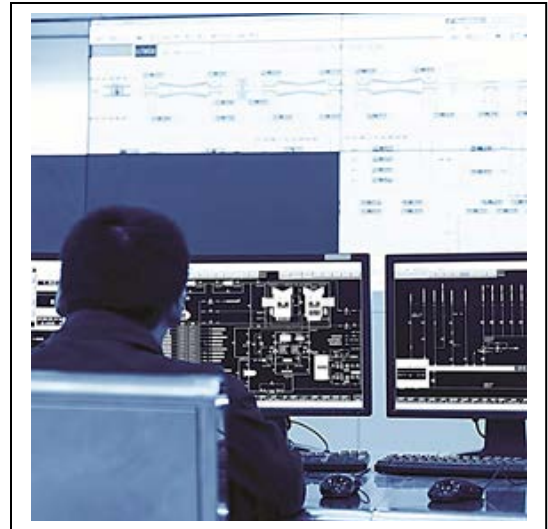
## How Can Distribution Automation Improve Grid Reliability and Efficiency While Reducing Costs?

### Technologies and Business Models are Evolving

Utilities are striving to improve and maintain high levels of service reliability and operating efficiency while focusing on cost and sensitivity to environmental impacts. They are doing so in a rapidly evolving landscape where distributed generation, renewable energy resources, microgrids, and energy storage are being adopted at an increasing rate, and many of these technologies have radically different characteristics than traditional sources and loads.

### Solving the Integration and Grid Operation Problems

Distribution automation (DA) has emerged as a key component of a modern grid, and provides a path to maintain reliability and accommodate new technologies at a reasonable cost. DA technologies include intelligent distribution systems that use a network of sensors and controls to provide greater reliability, flexibility, and agility. These technologies enable active participation by consumers; help integrate new products, services, and markets; accommodate all energy generation and storage options; improve power quality; optimize asset utilization and operating efficiency; anticipate and respond to system disturbances in a self-healing manner; and operate resiliently against physical attacks, cyberattacks, and natural disasters.<sup>1</sup>



### Modern Utilities Need Modern Business Models and Regulatory Structures

To realize the benefits that DA technologies offer, regulators must lead the transition from outdated regulatory structures to performance- and outcome-based regulatory regimes or targeted rate structure reform. Many states are already headed in this direction, including efforts in California, Massachusetts, and New York that are changing the way utilities do business and aligning their practices with public policy objectives. NEMA supports these efforts and will continue to work with other state stakeholders to facilitate this transition.

Utilities should work with regulators, vendors, customers, and other stakeholders to identify areas where DA can be incorporated into their systems. Utilities and regulators both need to take the bold steps necessary to incorporate modern grid technologies into a single hierarchical system rather than implementing stand-alone systems that offer only incremental system improvements.

### NEMA Has the Answers to Your Questions

NEMA's Distribution Automation Section represents manufacturers of DA equipment, systems, and software used to supervise, measure, monitor, and control electrical loads on distribution grids and at distribution substations. The section has recently published a whitepaper that covers these topics in more detail, including NEMA's recommendations for fully realizing the benefits of DA systems. It also contains case studies highlighting utility experiences. The paper is available at the following URL: <http://www.nema.org/DA-Modernized-Grid-Whitepaper>

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<sup>1</sup> U.S. Department of Energy's Modern Grid Initiative, "Metrics for Measuring Progress toward Implementation of the Smart Grid." U.S. DOE, June 2008. Even though these metrics were released seven years ago they are still relevant and the industry continues to work towards these goals.