

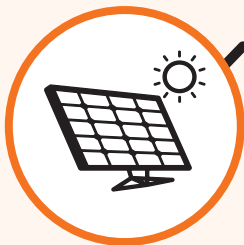
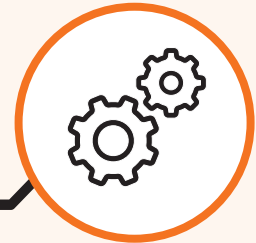
Grid Modernization Technologies Today

Why Are Electric Companies Modernizing the Energy Grid?

TO ENHANCE
resiliency, reliability,
and security



TO IMPROVE
grid efficiency
and optimization



**TO INTEGRATE
AND MANAGE**
renewable energy and
distributed energy
resources (DERs)



TO OFFER
new customer
solutions



What Does Smarter Energy Infrastructure Achieve?

- Energy grid optimization
- Grid-edge visibility and diagnostics
- Optimized power quality and power flow
- Automated outage management and service restoration
- Data systems integration
- DER integration and management

What Grid Modernization Technologies Are Deployed Today?



Advanced Metering Infrastructure (AMI), or smart meters, gather information and make it available to both the customer and the electric company, helping to better manage energy use at the customer's home or business. AMI is the foundation for connecting the smart grid to the customer.



Power flow management technologies enable DER integration and assist in energy grid optimization. These technologies include:

- Smart inverters
- Volt/VAR management
- Power line monitors

These technologies provide grid operators with tools to better manage the distribution grid.



Distribution automation and outage management systems

allow electric companies to automate distribution grid operations and detect and manage outages to improve reliability and resiliency. Examples of these systems include:

- Outage management systems (OMS)
- Workforce management systems (WMS)
- Distributed energy resource management systems (DERMS)
- Advanced distribution management systems (ADMS), which integrate multiple systems



Data analytics is critical to energy grid operations. Key uses include:

- Predictive infrastructure maintenance
- Real-time grid visibility
- DER integration
- New customer services



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