Intelligent and Trustworthy Smart Grid

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at ILLINOIS INSTITUTE OF TECHNOLOGY

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Service Territory

Electricity Illinois Can Depend On

- 11,000 square miles in northern Illinois
- More than 400 municipalities
- 25 counties
- 70% Illinois population



To support competition, ComEd sold its coal-fired generating stations in 2000 and sold its nuclear generating stations to Exelon Nuclear in 2003.

These divestitures separated the business of generating and selling power from the business of transmitting and distributing it.





The Energy Infrastructure Modernization Act (EIMA)

Creating a new model to deliver even more value for customers



EIMA authorized \$2.6B in incremental spending—half was dedicated to improving system reliability and half on smart grid technology.

- In enacting the EIMA (Smart Grid bill) in 2011, the General Assembly authorized ComEd to invest \$2.6B over 10 years to strengthen and modernize the electrical system in northern Illinois to improve reliability, give customers more control over energy consumption and costs, create 2,000 full-time equivalent jobs (FTEs) and keep Illinois competitive
- To accomplish these goals, lawmakers set a new framework for distribution rates through a formula rate model providing utilities with greater predictability around the recovery of actual costs so they can make long-term investments
- EIMA places Illinois at the forefront of innovative strategies that both stimulate needed infrastructure investment and hold utilities accountable to specific customer benefits and operational savings passed on to customers: ComEd is the first U.S. investor-owned electric utility to have allowable Return on Equity (ROE) tied to performance
- Under EIMA, ComEd invested \$165M in 2012 dedicated to improving system reliability and new smart grid technology creating more than 700 jobs and giving a boost to dozens of Illinois businesses in the process





Half of the \$2.6B investment will digitize the system with new smart grid technology

Investment

Digital Technology:

- Install distribution automation devices to detect issues on the grid and automatically re-route power to minimize customer outages
- Upgrade 10 electrical substations that will improve automated monitoring of grid performance, increase reliability and reduce power delivery expenses
- Over **four million smart meter** installations—one in every home and business that will ...
 - $_{\odot}$ Enhance outage identification and restoration
 - $_{\odot}$ Improve meter reading and billing efficiencies
 - o Reduce electricity theft
 - $_{\odot}$ Enhance disconnection and reconnection of electric service
 - \circ Provide customers more information, services, savings, choice and control







Customer Participation



Distributed Energy

- Plug-in Electric Vehicles
- Self-generation

Customer Gateway

 Advanced Metering Infrastructure (AMI)

Grid Modernization

- Distribution Automation
- Smart Substations
- Renewable
 Interconnection



