



NSF WORKSHOP: Using Smart Grids Big Data

Panel 3: Data Analytics and Tools

Grid Analytics Journey:
Developing A Solid Strategy And Game Plan

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About Exelon

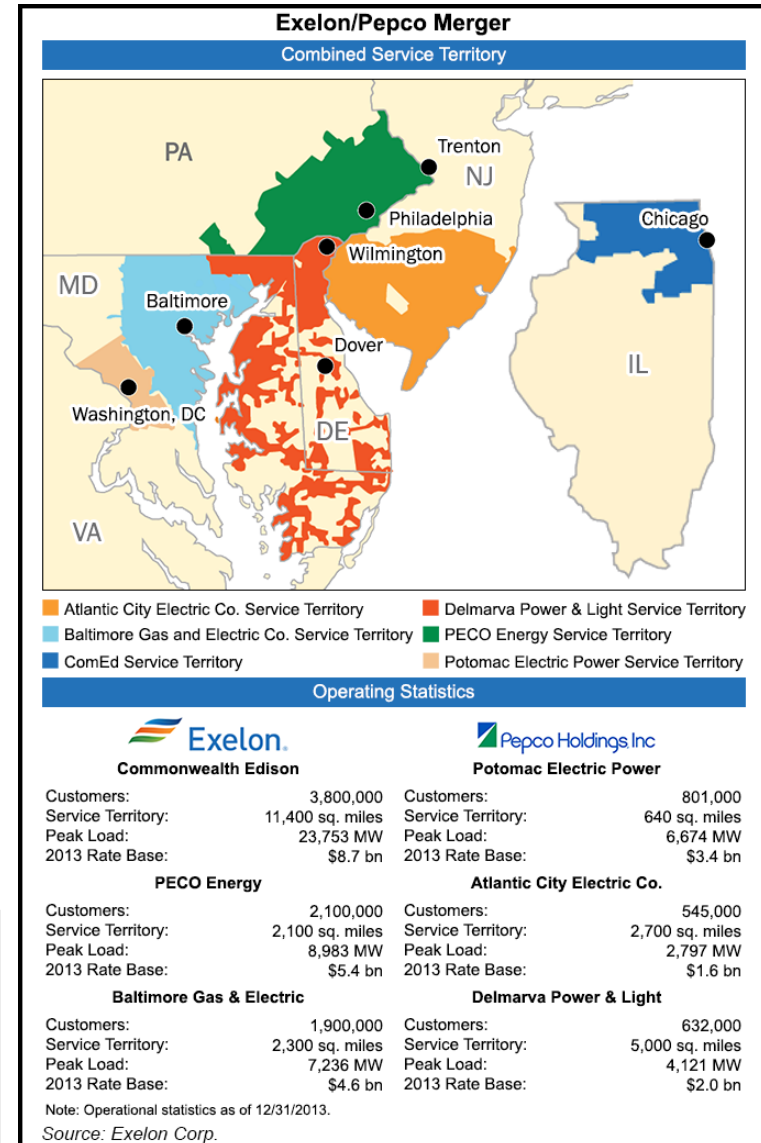
Exelon is the leading U.S. competitive energy provider, with one of the cleanest and lowest-cost power generation fleets and largest retail customer bases in the country. The Exelon family of companies participates in every stage of the energy business, from generation to power sales to transmission to delivery. Headquartered in Chicago, the company does business in 48 states, the District of Columbia and Canada.

By the Numbers:

- Operating Revenues: **\$34.5 billion**
- Employees: **~34,000**
- Owned U.S. Generating Capacity: **32,700 megawatts**
- Customers: **10 million** (Atlantic City Electric, BGE, ComEd, Delmarva Power, PECO and Pepco subsidiaries; **peak load of 53 GW**)
- Service Territory: 24,200 square miles
- Electric Transmission: 11,000 miles
- Competitive Energy Sales: 2 million residential, public sector and business customers, including more than two-thirds of the Fortune 100

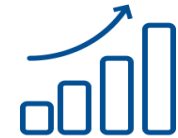
“Our integrated business model provides a strong foundation for success in an industry experiencing dramatic changes. Diversification and innovation enable us to take advantage of a broad range of opportunities, rather than betting on any one segment of our industry.”

- Chris Crane, Exelon President and CEO



5 Functional Domains Within the Broader BIDA Initiative

BIDA addresses 60+ opportunities to leverage analytics, clustered into 5 functional domains; The underlying Data Analytics Platform exchanges data with multiple sources and will provide flexibility for future solutions and vendors



Grid (T&D)

Customer

Business Support

AMI

Grid (T&D)

Smart Energy Services

Customer

Business Support

Select Use Cases

- Meter Malfunction Identification
- Theft Detection
- Meter System
- AMI Performance
- Meter Deployment

- Asset Health (T&S, Distribution)
- Network Connectivity
- Historical Outage
- Outage Prediction
- Storm Readiness
- Asset Investment Planning
- Management (AIPM)
- Grid Monitoring
- Synchrophasor Systems for Grid Awareness

- Home Energy Reports
- Web Presentment
- Peak Time Rebates
- High Usage Alerts
- Green Button
- Social Networking
- Business Energy Reports
- Analytics Toolkit
- EPA Portfolio Manager
- Load Curtailment

- Call Center Effectiveness
- Channel Effectiveness
- Social Media Feed

- Crew Prep & Routing
- Credit & Collections
- Inventory Mgmt.
- Remote Visualization
- Field Safety Analytics
- Vehicle Fleet Analytics
- Warehouse Management

Data Analytics Platform

Extract

Load

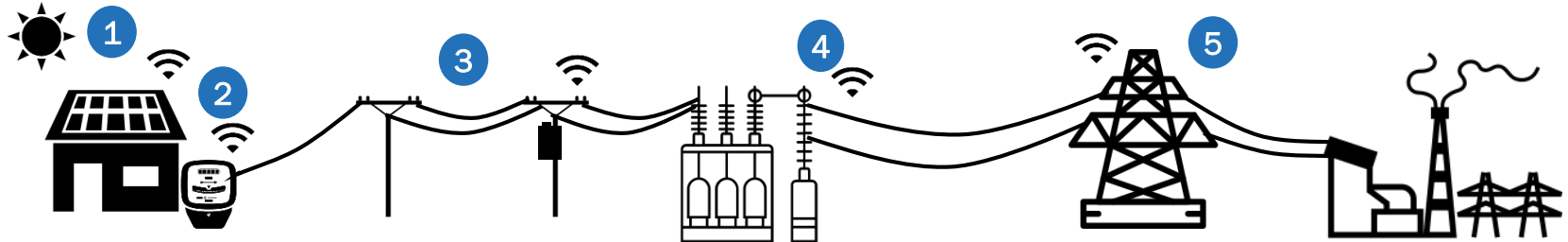
Transform

Store

Analyze

EU BIDA Grid T&D Summary

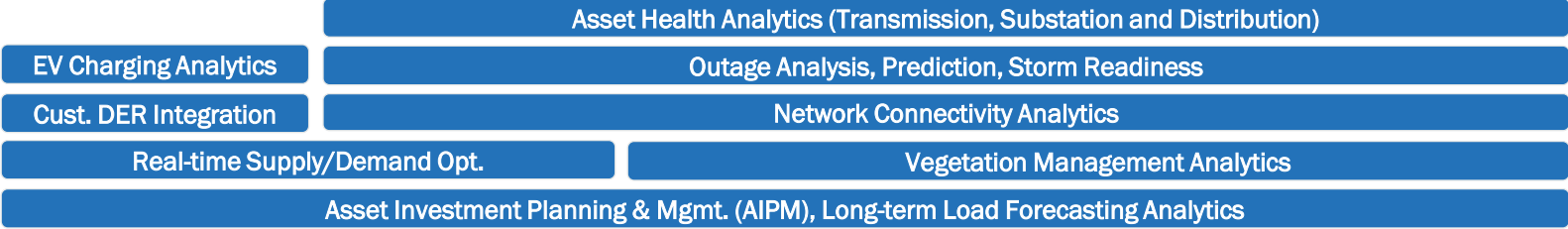
Prior to the implementation of smart grid, visibility to the T&D system was limited. New sources of data such as AMI, reclosers, and distributed sensors at different points along the grid network increase visibility into the performance and health of the assets. Analytics combines these data points into new insights to unlock value that improves operations and reliability, lowers costs and system risk.



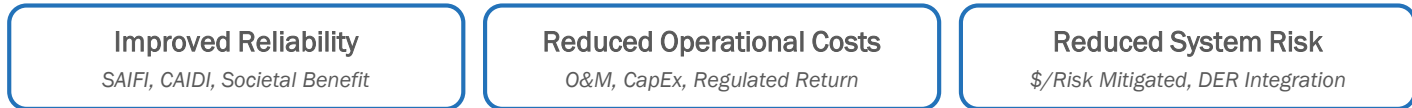
What's New

- | | | | | |
|---|---|---|---|--|
| <p>1 Customer</p> <ul style="list-style-type: none"> • Less predictable, intermittent loads • Customer awareness and engagement in energy programs • Social media | <p>2 Meter</p> <ul style="list-style-type: none"> • AMI interval voltage, usage data • Meter temperature • Last gasps | <p>3 Distribution</p> <ul style="list-style-type: none"> • Distribution automation devices, reclosers • Volt-var optimization, CVR devices | <p>4 Substation</p> <ul style="list-style-type: none"> • Remote monitoring and sensing equipment • Remote dissolved gas analysis (DGA) | <p>5 Transmission</p> <ul style="list-style-type: none"> • Aerial drone videography • LiDAR • Remote sensing equipment |
|---|---|---|---|--|

Use Cases*



Outcomes



*Use Case list non-exhaustive