New England Electricity Restructuring Roundtable

Jane S Park
VP Regulatory Policy & Strategy

September 30, 2016
OVERVIEW

• ComEd and Our Roots in Smart Grid

• Integrating DER: A Platform-Based Business Model View

• The Next Steps:
  • Next Generation Energy Plan and Rate Design
  • Community of the Future Project
  • Smart Cities Projects
ComEd At A Glance

Our Customers:
• 3.85 million customers in northern Illinois, including the City of Chicago

Our Company:
• One of six utilities owned by Exelon
• 6,800 Employees
• Service Territory: 11,428 square miles

Our Grid:
• Peak Load: 23,753 MW
• 526,000 distribution transformers
• 5,502 circuit miles of transmission
• Including 2nd largest underground network in the U.S
• Over 2 million smart meters installed with completion targeted 2018
Illinois’ Smart Grid Law: The Foundation

On October 27, 2011, the Illinois General Assembly enacted the Energy Infrastructure Modernization Act (EIMA), setting in motion a $2.6 billion investment by ComEd to strengthen and modernize the state’s electric grid.

- The Investment Plan has two primary components:

  - **Reliability-Related Investments** – 5 year program, $1.3B
    - Underground cable – mainline, URD, manholes
    - Ridgeland 69kV cable replacement
    - Training centers
    - Wood pole inspection, reinforcement/replacement
    - Storm hardening – undergrounding, spacer cable

  - **Smart Grid-Related Investments** – 10 year program, $1.3B
    - Distribution Automation
    - Smart Substations
    - Smart Meters

The legislation also established:
- Energy Foundry
- Test Bed
The utility value chain is already beginning to evolve... but what will the future look like?

The electricity system of the past

Producer = utilities

CG + T + D = C

The electricity system of today

Mix of regulated and unregulated kWh

CG + T + D = C

The electricity system of the future

?
Other industries have evolved by turning to the “platform business model”

**Pipe Model – focus on the product**

- Companies produce, assemble, and distribute goods and services to end customers through a process
- Value is created through the optimization of this process

Value = f(qualities of the final product)

**Platform Model – focus on the interaction**

- Companies enable interactions between both producers and consumers, with parties potentially shifting between roles
- Value is generated through creation, curation, and consumption of content
- 3 types of exchanges: *information, goods/services, currency*

Value = f(number of transactions)
## Platform for Utility of the Future

<table>
<thead>
<tr>
<th>Services &amp; solutions marketplace</th>
<th>Producer</th>
<th>Marketplace</th>
<th>Consumer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable interactions between producers and consumers for energy and utility-enabled products and services</td>
<td>Lead gen / marketing &amp; sales</td>
<td>Marketplac e curation</td>
<td>Product / service selection</td>
</tr>
<tr>
<td>4</td>
<td>Installation integration</td>
<td>Transaction execution</td>
<td>Financing solutions</td>
</tr>
<tr>
<td>3</td>
<td>Ongoing operations and maintenance</td>
<td>Market transparency</td>
<td>Customer service</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transactive commodity exchange</th>
<th>enabling interactions for commodity transactions</th>
<th>Enable a liquid, efficient, and transparent exchange for commodity transactions</th>
<th>Market rules and governance</th>
<th>Enabling pricing transparency</th>
<th>Compliance and M&amp;V</th>
<th>Trading and settlements exchange</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Plan, operate and maintain an evolving, open, and reliable system at the lowest total cost over the medium to long-term</td>
<td>Plan, operate and maintain an evolving, open, and reliable system at the lowest total cost over the medium to long-term</td>
<td>Long-term planning</td>
<td>Real-time system operations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 1 | The physical asset base | Build and maintain the distribution grid on time, on budget, and with optimal reliability | Execution of grid investment plan | Implementation of new grid edge infrastructure | Ongoing grid operations and maintenances | |

### Key Features
- **Services & solutions marketplace**: Enable interactions between producers and consumers for energy and utility-enabled products and services.
- **Transactive commodity exchange**: Enable a liquid, efficient, and transparent exchange for commodity transactions.
- **System operation and planning**: Plan, operate, and maintain an evolving, open, and reliable system at the lowest total cost over the medium to long-term.
- **The physical asset base**: Build and maintain the distribution grid on time, on budget, and with optimal reliability.

---

Proprietary & Confidential
Next Generation Energy Plan

- **Nearly doubling energy efficiency** programs, yielding $4 billion in energy savings
- Enhance **grid security and reliability**
- Provide $1 billion of **low-income assistance**
- Support at risk nuclear plants through a **Zero Emission Standard**
- **Jumpstart solar** with more than $140 million annually for new solar development
- Reduce fixed charges by 50%, **giving customers more control**
- Strengthen and **expand** **Renewable Portfolio Standard**
- Create **new clean energy jobs** through new programs
The Community of the Future

✓ A place where ComEd and a local community collaborate to create a “smart community”

✓ We envision a community where the energy system – and the many uses of its digital network – is localized and human-centered, with power that is ultra-reliable and can be generated and controlled at the community level.

✓ The Community of the Future promotes piloting customer-focused initiatives that:
  - Create a smarter, more secure, more reliable, more resilient and affordable grid by protecting and reducing outage duration for critical infrastructure in the event of catastrophic incidents.
  - Connect residents to smarter technology that enable them to make an impact on their energy usage, cost, and footprint.
  - Enhance livability, workability and sustainability.