Who is Echelon?

First Energy Control Network

HQ Silicon Valley

“Plant-to-Plug” solutions

Commercial, Utilities

Echelon Energy Control Network: delivering the open, intelligent, distributed control necessary to realize the $50B+ Smart Grid future
What’s happening in the utility market?

**YESTERDAY:**
- Single source, local
- Steady-state
- Captive consumer
- Ubiquitous, cheap
- Single business model

**TODAY:**
- Distributed energy sources, global
- Erratic demand
- Consumer choice and participation
- Key GDP component, price pressure
- New business models
How do you react to these dynamic changes?

Push Control to the Edge

*Energy Control Network*

**“Push Control to the Edge”**

- Local, Real-Time, Autonomous Decisions
- Process High Data Volumes, Share Relevant Information
- Eliminate Failure: Sense and Respond, Drive 100% Reliability
- Make it Easy to Add Applications, Over Time
Intelligence, Control and Monitoring at the Distribution Transformer

- Distribution Sensors
- Solar Panels
- Demand Response Load Control
- IP WAN (VPN)
- Smart Meters
- Water & Gas Meters
- Smart Meters
- EV and V2G
- IHDs
- Cap Banks Reclosers
- Street Lights

Echelon Confidential
Why An Echelon Energy Control Network?

<table>
<thead>
<tr>
<th>NET-NET: Lower cost structure, drive revenue, improve customer experience</th>
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<tr>
<td><strong>Smart, Fast Local Decisions</strong></td>
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<tr>
<td>• Distributed intelligence</td>
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<td>• Zero latency</td>
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<td>• Automated: no human intervention</td>
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<td><strong>Relevant Information</strong></td>
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<td>• Prevent data deluge: share results</td>
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<td>• Open/interoperable: across every device and network</td>
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<td><strong>Bullet-Proof Reliability</strong></td>
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<td>• No single point of failure: 100% survivable</td>
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<td>• Harsh environments</td>
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<td><strong>Infinite Applications</strong></td>
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<td>• Start anywhere</td>
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<td>• Backward/forward compatible</td>
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<td>• Add more apps, over time</td>
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<td>• Plant-to-Plug solutions</td>
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Orchestrated, managed across multiple networks and devices
Benefits of an Energy Control Network

“Plant to Plug”

- Cut energy delivery costs 20% by eliminating “peaker plants”
- Reduce building HVAC and lighting costs 50% with automated control and demand response
- Dynamically manage loads (including renewables) at new levels of speed and accuracy
- Deliver an exponentially superior experience by giving customers participation and choice
- Make it easy to utilize new technologies, as they become available
- Drive new revenue streams with new pricing model and customer choice
- Cities cut CO2 and energy use by 35%
- Cut energy delivery costs 20% by eliminating “peaker plants”
These Utilities Have Begun the Journey

- **SeasonVNE**
  - $8M saved annually due to remote meter readings and $2M saved annually in network and communication costs

- **VATTENFALL**
  - 600,000 smart meters installed; high customer satisfaction with remote control

- **Enel**
  - Achieved a return on investment in 4 years: invested 2.2B Euro and earn 500M Euro per year

- **Linz AG Strom**
  - Echelon is helping Linz Strom install a smart grid infrastructure from plant to plug: Smart street lighting, residential demand response and automations

- **E.on**
  - Customer satisfaction increased 26% and complaints reduced with 370,000 smart meters
Thank you!

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