The New Edge: Blurring the Boundaries Between Consumers and Grid

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The meter divide

- One way flow, unconnected loads
The meter divide
Blurring the meter divide

- Traditional roles are up for debate

Ecosystem
- Consumers
- Vendors
- Aggregators
- Utilities
- GenCos
- Investors
- Regulators
What are the key concerns?

• What are consumers choosing?
  – Business, markets and policy challenges?

• What are tech possibilities?
  – Role of cloud (distributed intelligence) and consumer engagement
What technology needs de-risking?

• Can we maintain the privacy of consumers and aggregators while coordinating?

• What types of services can be provided reliably and economically?
Powernet: Coordinating from the Cloud

ISO
Supply-Demand Balance 24/7

Electric Utility

Networked Switch, Meter or Power Electronics

Local Autonomous Estimation & Optimal Dispatch of Load-Gen-Storage

Cloud

DEPARTMENT OF THE NAVY
UNITED STATES OF AMERICA

arpa-e

Google
What data says about consumer choices?

VISDOM: Visualization and Insight System for Demand Operations and Management
How consumers behave?

14%
How to predict impacts of changes?

Selling at TOU

Selling at LMP

Coordination savings ($M)

Adoption (%)