



From Threat to Asset: How CHP Can Benefit Utilities

**ACEEE 2015 National Conference on Energy
Efficiency as a Resource**

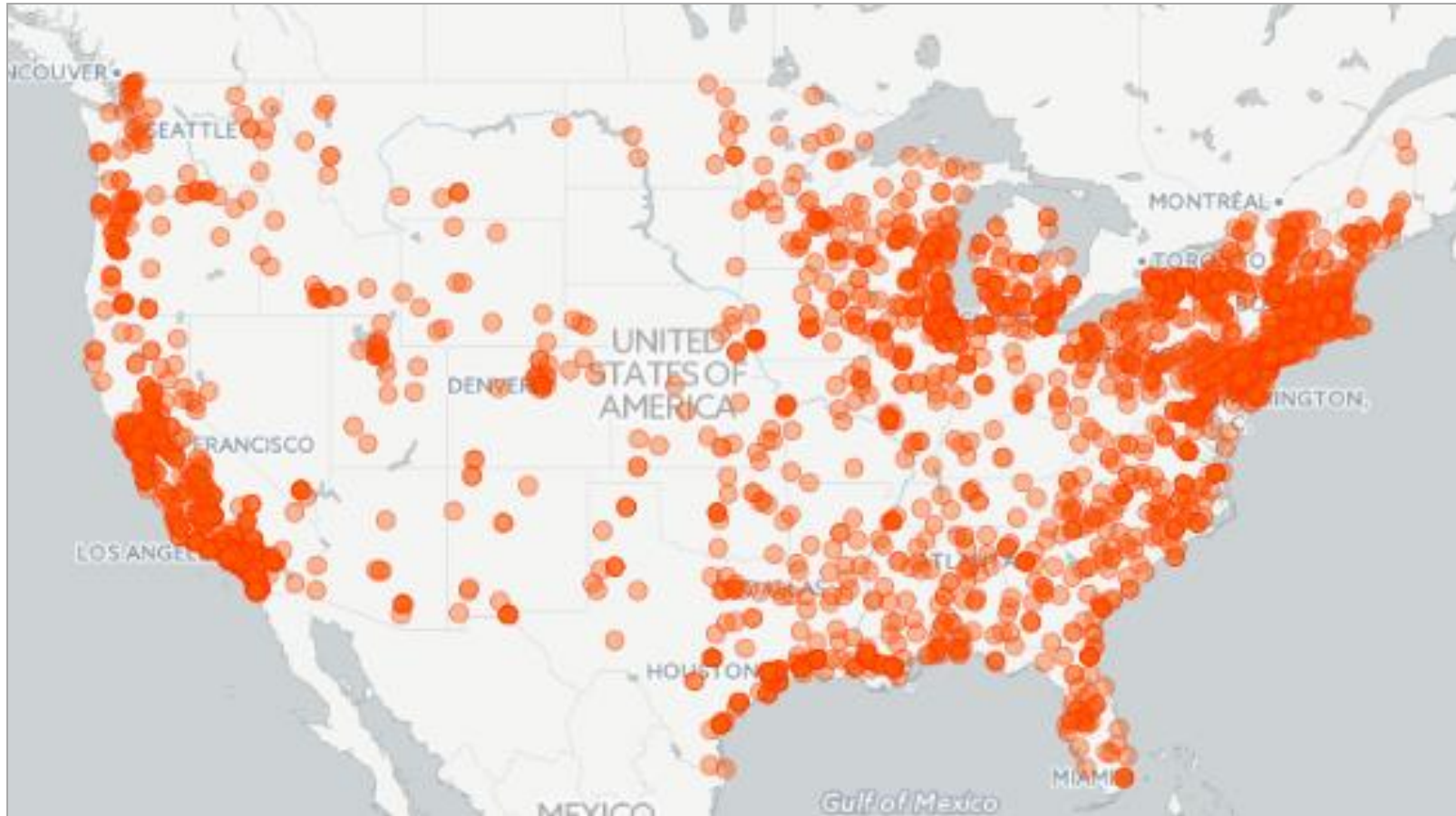
**Little Rock, Arkansas
September 22, 2015**

What is Combined Heat and Power?

- CHP – also referred to as cogeneration – produces both electricity and useful thermal energy from one fuel source
- Thermal energy can meet several needs
 - Industrial process heating
 - Water heating
 - Space heating or cooling
- CHP systems are energy efficient
- Hardware available from multiple vendors
- Flexible fuels, with natural gas being a common choice



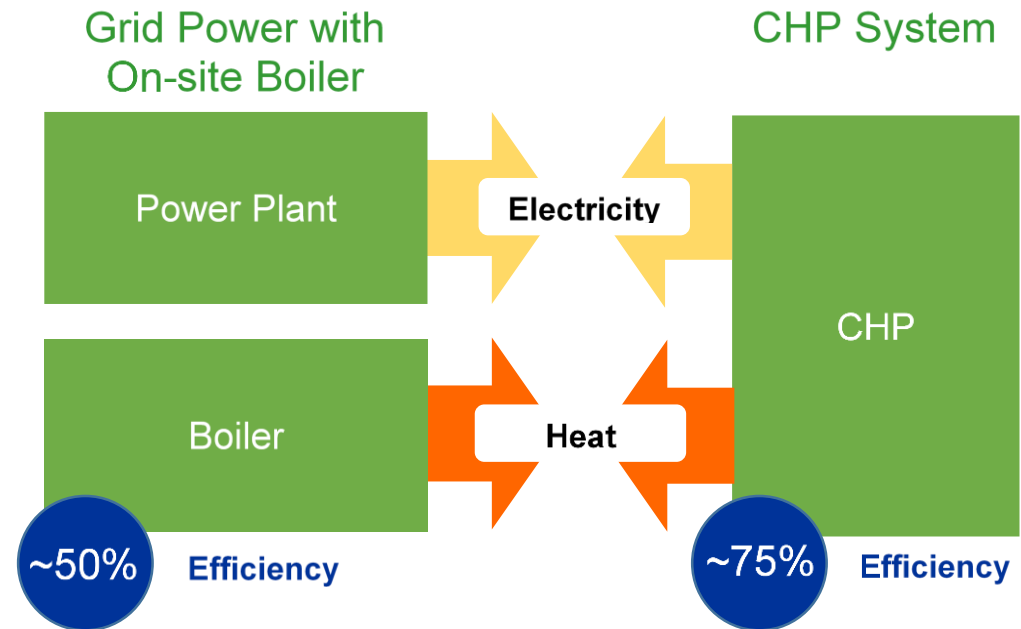
CHP is Located in Every State



Source: CHP Association

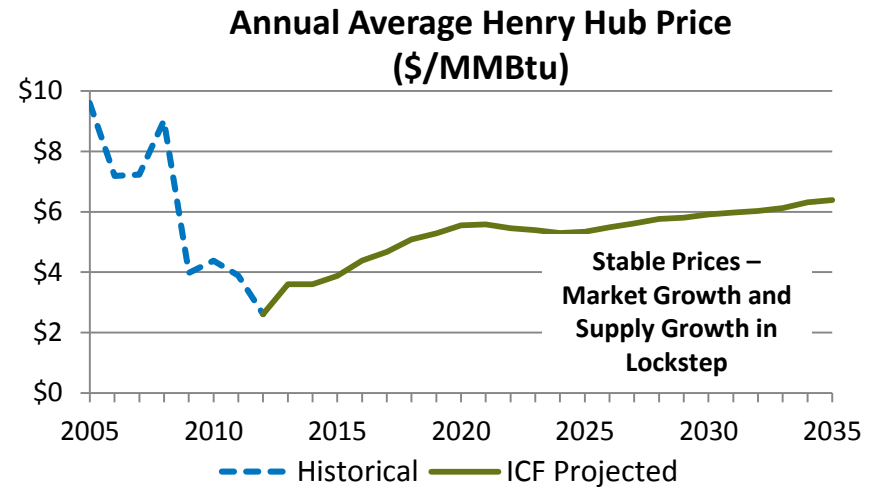
What are the Benefits of CHP?

- Increases energy efficiency
- Reduces air pollutant emissions
- Enhances site energy reliability
- Can provide locational benefits to the grid
- Delays need for new T&D infrastructure
- Provides capacity and ancillary services to the grid

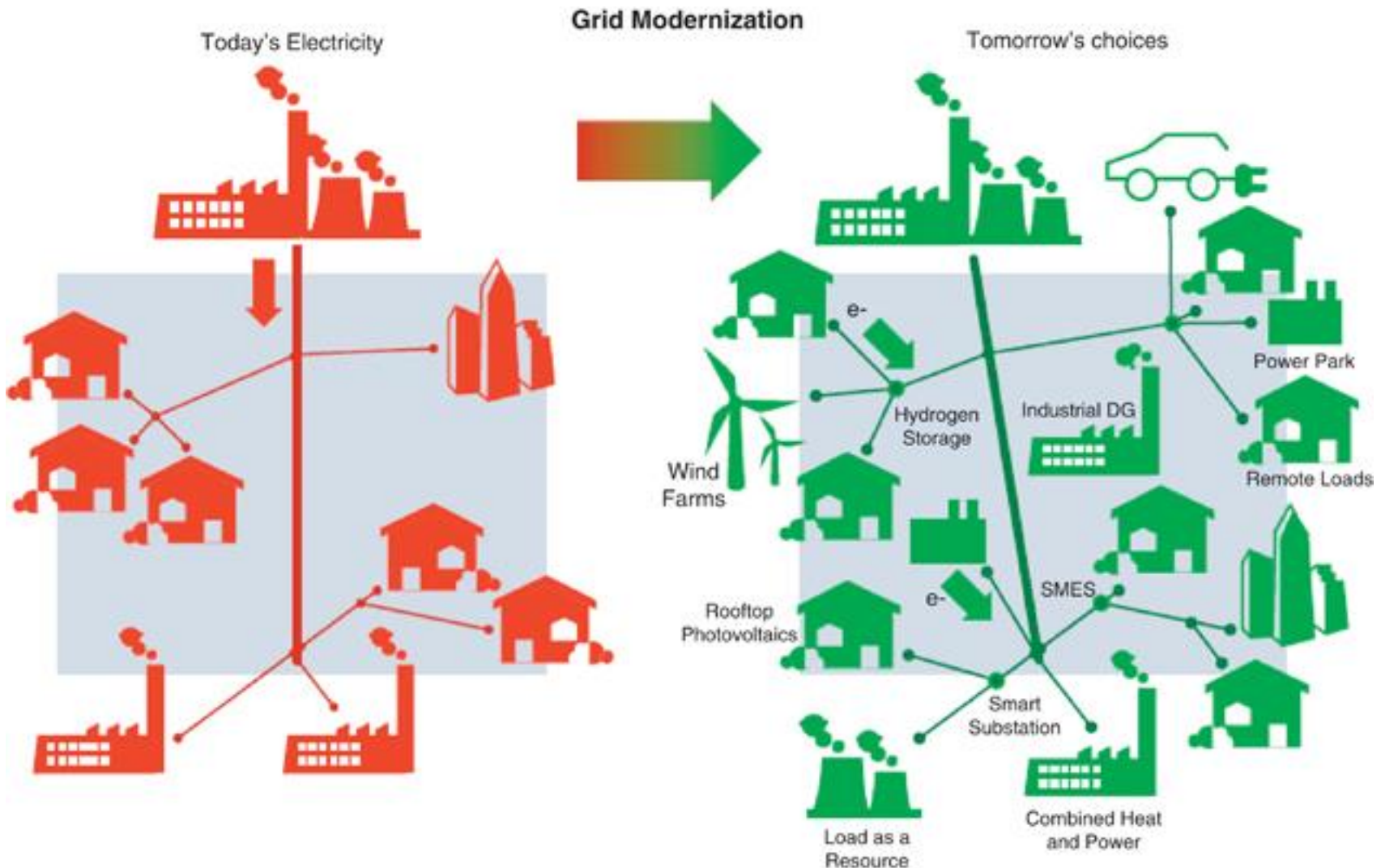


Drivers for CHP

- Outlook for natural gas
 - Prices are currently low
 - Forecasts show long-term stability
- Energy reliability and resiliency
- State policies and regulatory actions
- Environmental regulations
- Project replicability
- Changing utility landscape



Electric Grid is Evolving from Centralized Power Generation to a More Distributed Network



Source: Journal of Database Marketing & Customer Strategy Management (2010)

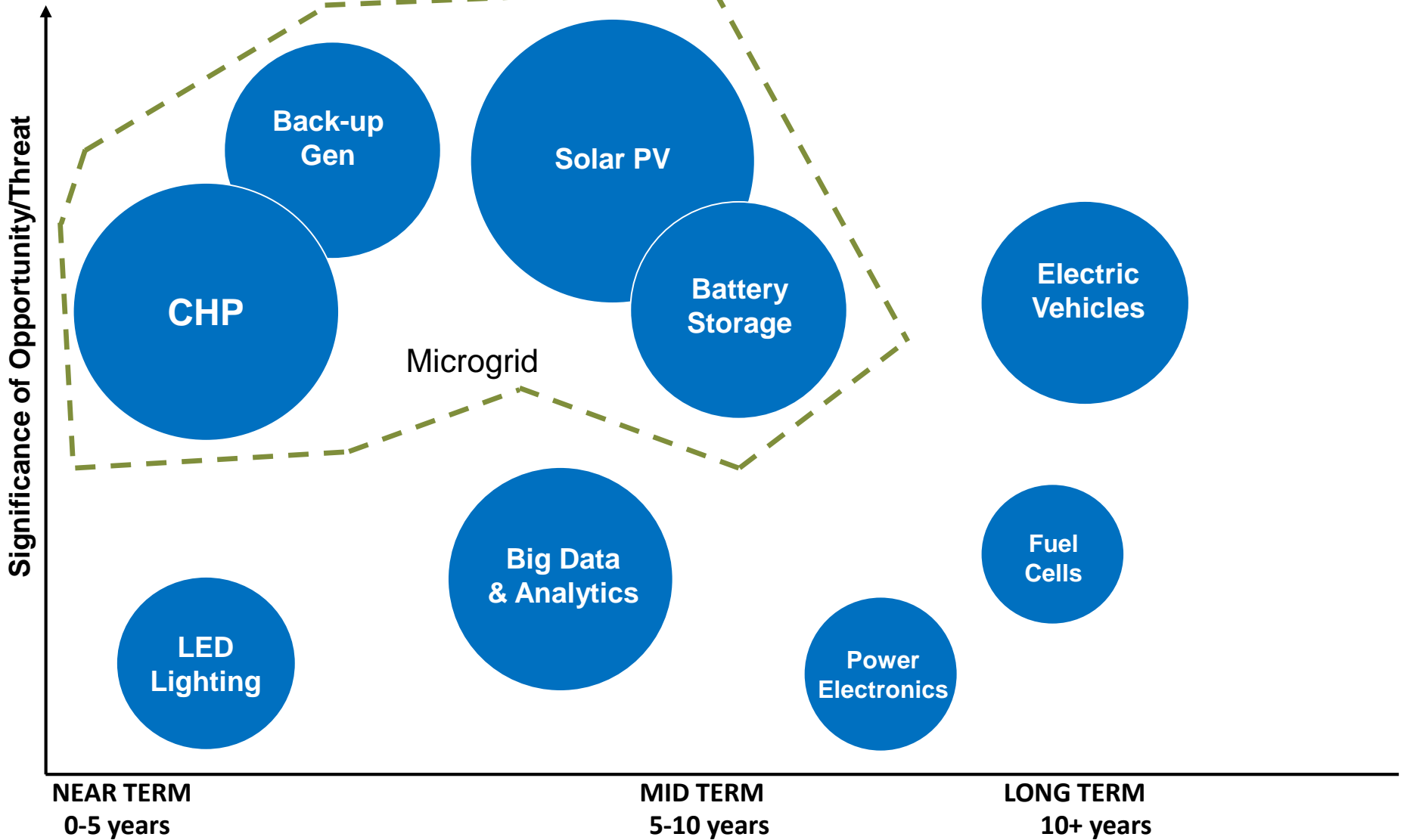
Changing Utility Landscape

- DG identified as a large disruptive threat to utility business models and financial health (EEI)
- Increased interest in – and deployment of – DG/CHP is changing how utilities interact with customers
- Utilities are seeking opportunities to provide services that deliver value to their customers and investors
- Many utilities taking a proactive position by actively engaging with DG/CHP customers and new stakeholders



National DER Development is Advancing

Potential Timing & Impact



Utility Involvement in CHP and Regulatory Actions

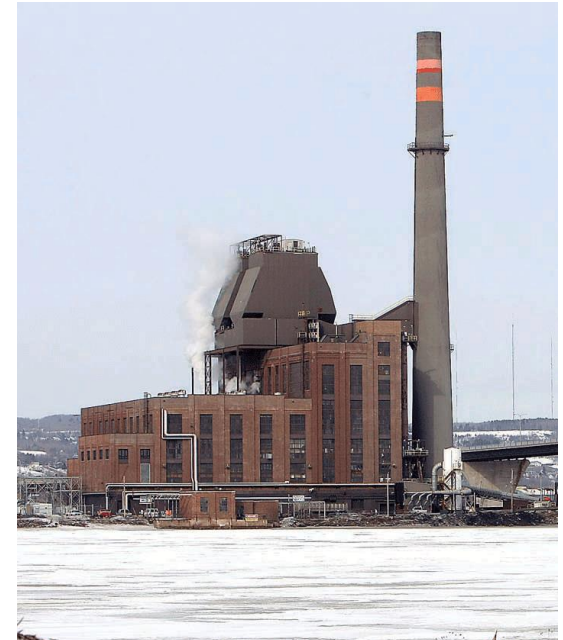


- Utility involvement with CHP systems is dependent on each state's regulatory framework, which is changing in some states
- Utility awareness of attractive CHP opportunities
 - Large volume high load factor customers
 - Customers with critical power needs
 - Congested circuits that need T&D upgrades
- New York State – Reforming the Energy Vision (REV)
 - Redesign regulatory framework to focus on increasing grid reliability and use of clean energy
 - Transform electric utilities into Distributed System Platform Providers (DSPP) that function like traffic cops instead of monopoly providers of electricity
 - NY PSC considering if DSPPs can own, operate, or finance DG



Utility Ownership of CHP

- Minnesota
 - Minnesota Power: Several biomass CHP energy centers
- Michigan
 - Lansing Board of Water and Light: 100 MW combined cycle CHP plant serving a district heating/cooling system
- Florida
 - Gainesville Regional Utilities: 4.1 MW CHP system serving University of Florida Health Shands Hospital
 - JEA: Recently issued solicitation to identify and screen CHP opportunities with goal of developing CHP projects



**Minnesota Power
Hibbard Energy Center**

CHP in Ratepayer-Funded Energy Efficiency Programs



- Baltimore Gas & Electric – Energy Savers Program
 - Adopted in 2008 to help meet targets in EmPOWER Maryland Energy Efficiency Act
 - Program provides CHP capital cost and performance based incentives
 - Program has been successful, with initial round of funding committed to CHP projects ranging from 75 kW to 2 MW. New funding available for projects on a rolling submission basis.
 - Projects have been cost effective, saving over 15 GWh annually. Five more projects under construction.
- Utilities in other states, such as Illinois and Ohio, are starting ratepayer funded CHP programs
 - ComEd
 - Dayton Power and Light
 - Nicor

New Gas Tariff in California

- Southern California Gas Company (SoCalGas) received a proposed decision from the California PUC for a Distributed Energy Resources Services (GO-DERS) tariff
- GO-DERS allows SoCalGas to build, own, and operate distributed energy equipment on a customer's site
- Eligible applications for GO-DERS include:
 - CHP and waste heat to power (WHP)
 - Fuel cells
 - Mechanical drive equipment
- SoCalGas expects to begin offering the GO-DERS tariff in 2016



Next Steps on CHP for Utilities

- Assess the market for CHP and what levels of CHP penetration to expect in utility service territories.
- Develop scenarios for CHP inclusion in integrated resource plans and existing energy efficiency programs.
- Conduct locational analysis for installation of CHP for grid congestion alleviation.
- Evaluate potential business structures that would benefit both ratepayers and the utility's operating groups.

Thank You!



Questions & Contact Information

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