



# OPENING PLENARY SESSION

*Shaping the Utility of the Future: How Can Energy Efficiency Benefit the Changing Utility Model?*





# KATERI CALLAHAN

*President*

*Alliance to Save Energy*

@KateriCallahan @ToSaveEnergy



- [https://prezi.com/iypssd0kliwg/kateri-opening-plenary-remarks/?utm\\_campaign=share&utm\\_medium=copy](https://prezi.com/iypssd0kliwg/kateri-opening-plenary-remarks/?utm_campaign=share&utm_medium=copy)



# MALCOLM WOOLF

*Senior Vice President, Policy and Government Affairs  
Advanced Energy Economy*

@AEEnet



# Shaping the Utility of the Future: How Can Energy Efficiency Benefit the Changing Utility Model?

May 12, 2015



**ADVANCED  
ENERGY  
ECONOMY**

***A national association of businesses transforming public policy to enable the rapid growth of secure, clean, and affordable energy.***

Leadership Council

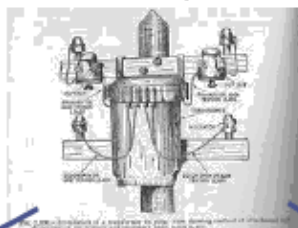


# BASIC INDUSTRY STRUCTURE OVER 100+ YEARS

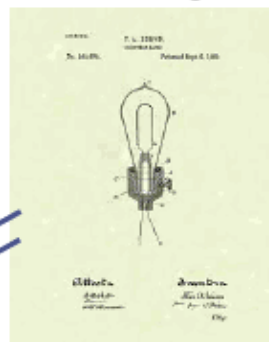
Pearl Street Station



electric pole



electric light



**Power Grid 1884**

**One-Way Power Flow/Minimal Customer Control**



**Power Grid 2004**

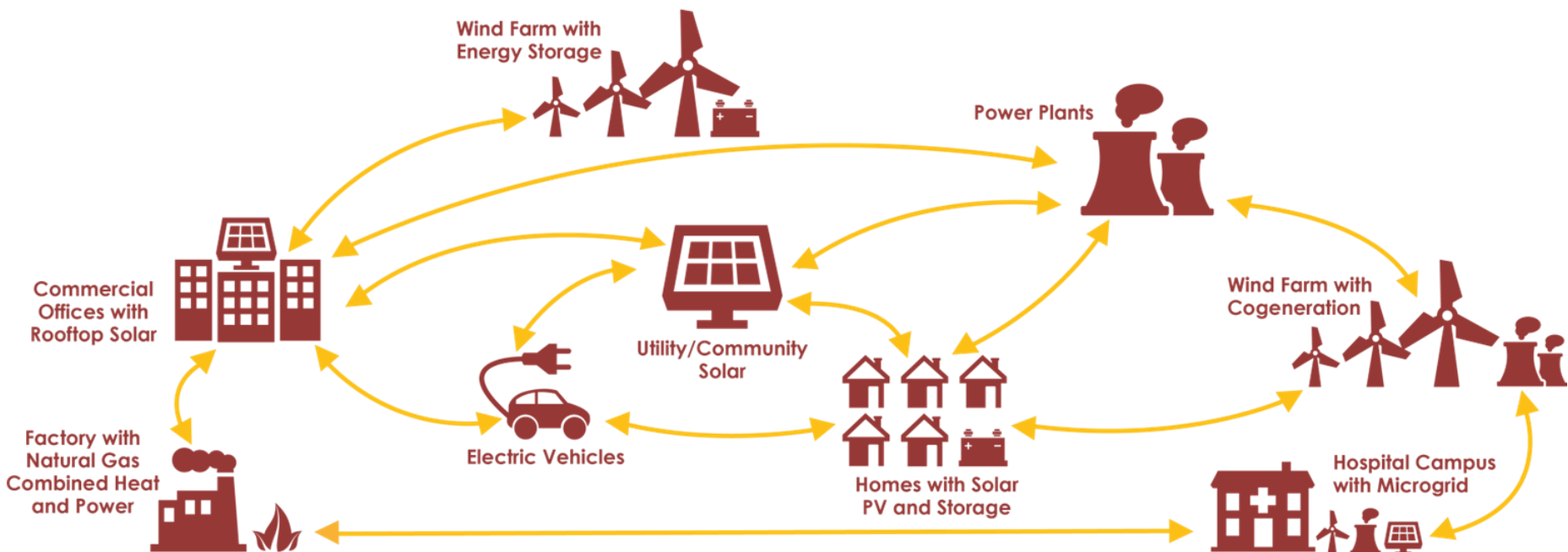
# TECHNOLOGY INNOVATION IS CHANGING POWER DELIVERY AND CUSTOMER ENGAGEMENT

Power Grid 2015+

Distributed Energy Resources

Two-Way Energy Flows

Digitalization of the Grid





# EXPECTATIONS OF WHAT THE GRID CAN DELIVER ARE CHANGING

## Core Attributes

- Universal access
- Safety
- Reliability
- Affordability

## Emerging Attributes

- Environmental sustainability
- Resiliency
- Adaptability/flexibility
- Greater customer control
- More service options

## Additional Pressures

- Need to replace/renew aging infrastructure (rising costs)
- Minimal to declining load growth (falling revenues)
- Variable renewable energy integration (wholesale & retail)
- Cyber and data security

# NEW BUSINESS MODELS CAN ACCELERATE THE TRANSITION TO A MODERN POWER GRID...

1884



2015

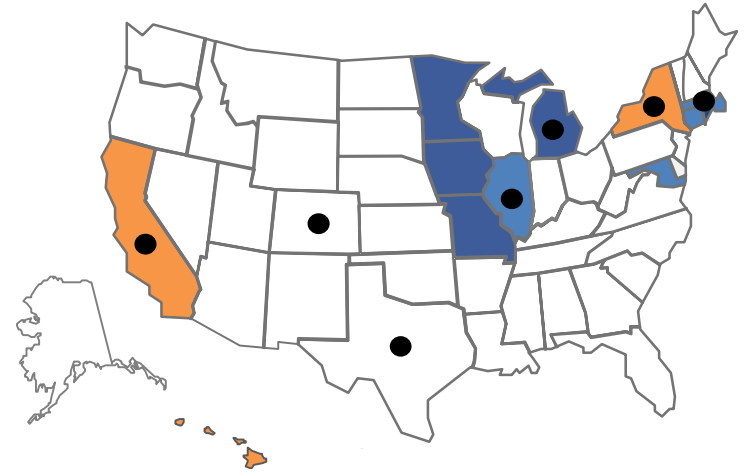


2020



# WE ARE AT A PIVOTAL TIME FOR TRANSFORMATIONAL POLICY

- NY, CA and HI are leading states, with impact beyond their borders
- States like MN, MA, MO, CT interested
- Based on a series of convenings with utility CEOs and advanced energy CEOs, AEE is developing “best practices” that will be shared in an upcoming AEE market design forum for state Commissioners



# Example of How Efficiency Can Benefit New Utility Model - ConEd's Brooklyn Queens Demand Management Program

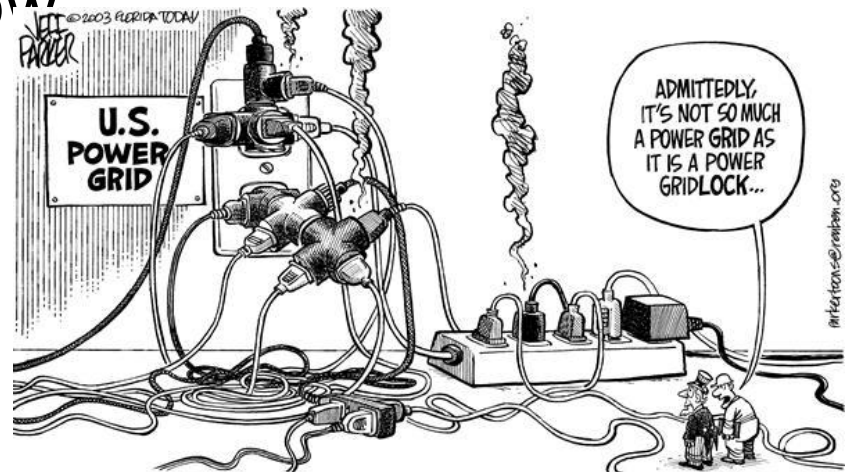
- ConEd has regulatory approval to invest up to \$200M, mostly in efficiency and other distributed energy resources, to avoid/defer a \$1B traditional T&D upgrade
- ConEd can earn incentives for reaching goals (DER capacity deployed, cost effectiveness, third-party participation, etc.)
- Example of “animating markets”



# 21<sup>ST</sup> CENTURY ELECTRICITY SYSTEM: ‘THE FUTURE IS NOW’

“Every day utilities and customers spend more and more dollars just to maintain a system that has been around since the time of Edison. We can’t keep rebuilding the system of the past. We need to start building the system of the future... The future is now.”

Richard Kauffman, Chairman  
Energy & Finance  
State of New York, 11/13/14





***ADVANCED  
ENERGY  
ECONOMY***

**the business voice of advanced energy**



# COMMISSIONER CHERYL LAFLEUR

*Commissioner*

*Federal Energy Regulatory Commission (FERC)*

@CLaFleurFERC @FERC





# GIL QUINIONES

*President & CEO*

*New York Power Authority (NYPA)*

@GQenergy @NYPAenergy



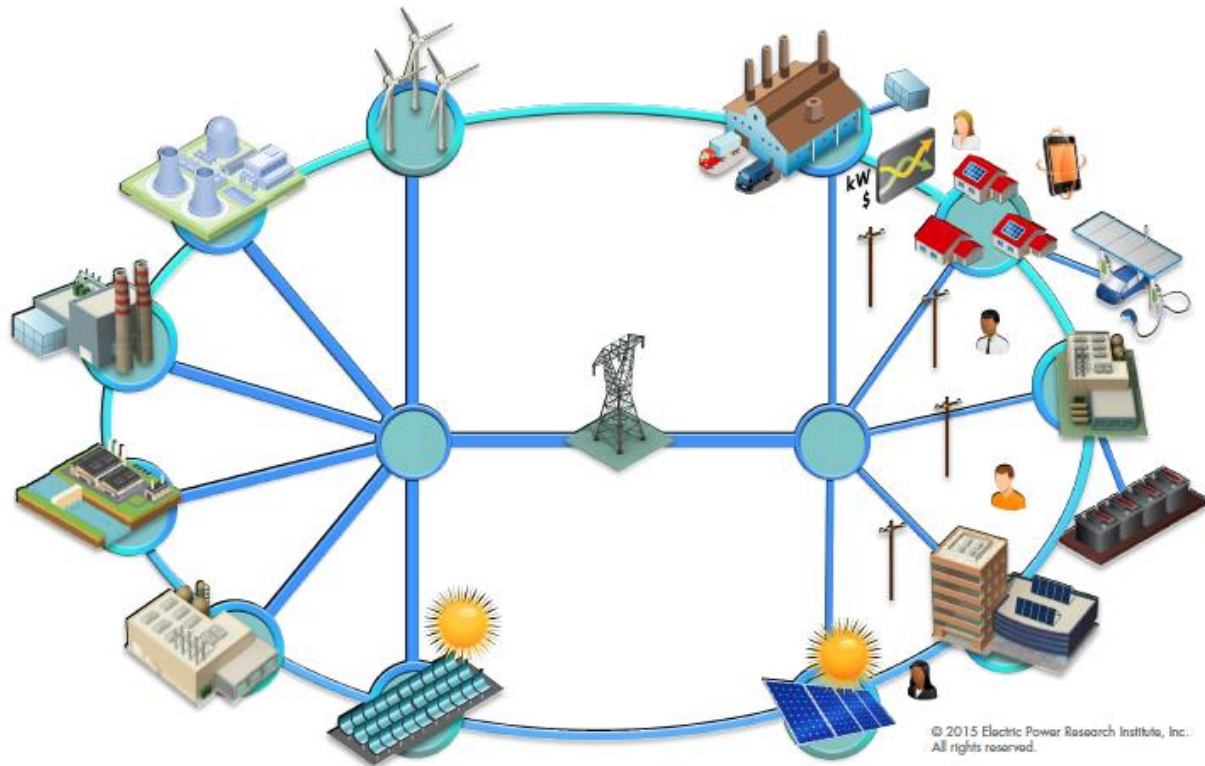




**Reforming the  
Energy Vision**

# **Reforming the Energy Vision**

# The Integrated Grid



## PSC's Reforming the Energy Vision Proceeding is about:



Empowering customers to better manage energy...



...through animating markets for distributed energy resources...



...in order to drive toward higher efficiency, lower environmental impacts and increased affordability.

**REV's first major order was adopted on February 26, 2015, deciding policy, launching important implementation activities and setting the stage for rate issues.**



## The Feb. 26 order addresses 4 foundational building blocks:

1. Establishing the Distributed System Platform (DSP)
2. Engaging customers
3. Animating the market
4. Meeting environmental objectives

# The Track 1 Order represents one step on a transition path to REV:

**Initial implementation steps**



Demonstrate progress, build market confidence, answer questions needed to move forward

*Underway*

**Utility DSIP plans**



Identify needed investments, strategies, and action plans to build the DSP market and underlying infrastructure

*Due Dec 15*

**Track 2**



Translate the REV vision into specific business model, incentive rate-making and rate design strategies with public involvement

*Rates straw proposal in Q2*

## Initial implementation steps are underway:

- Demand response tariff offerings
- Demonstration projects
- Market Design and Platform Technology working groups
- Benefit cost assessment framework development



**THANK YOU**





# GRAHAM WEALE

*Chief Economist*

**RWE AG**

@RWE\_Group



# Energy Efficiency - The Dual Roles of Governments and Utilities

**Graham Weale, Chief Economist - RWE AG**  
**Energy Efficiency Global Forum**  
**Washington DC, 13<sup>th</sup> May 2015**



# Motivation for energy efficiency and need for focus

- **Benefits of energy efficiency going beyond GHG emissions:**
  - **Individual level:** health, reduction of poverty / improved welfare
  - **Sectoral level:** lower energy costs for industry
  - **National level:** job-creation and increased energy security
  - **International level:** energy accessibility for developing countries
- **Need for focus:**
  - **Reduce fossil fuel consumption** thus CO<sub>2</sub> emissions and fuel imports
  - **Minimise environmental intrusions of forms other than CO<sub>2</sub>**
  - **Achieve long-term low energy supply costs**

# Three different levers of energy efficiency

## 1. Reduce useful energy requirement

- e.g. improve household insulation, smaller cars

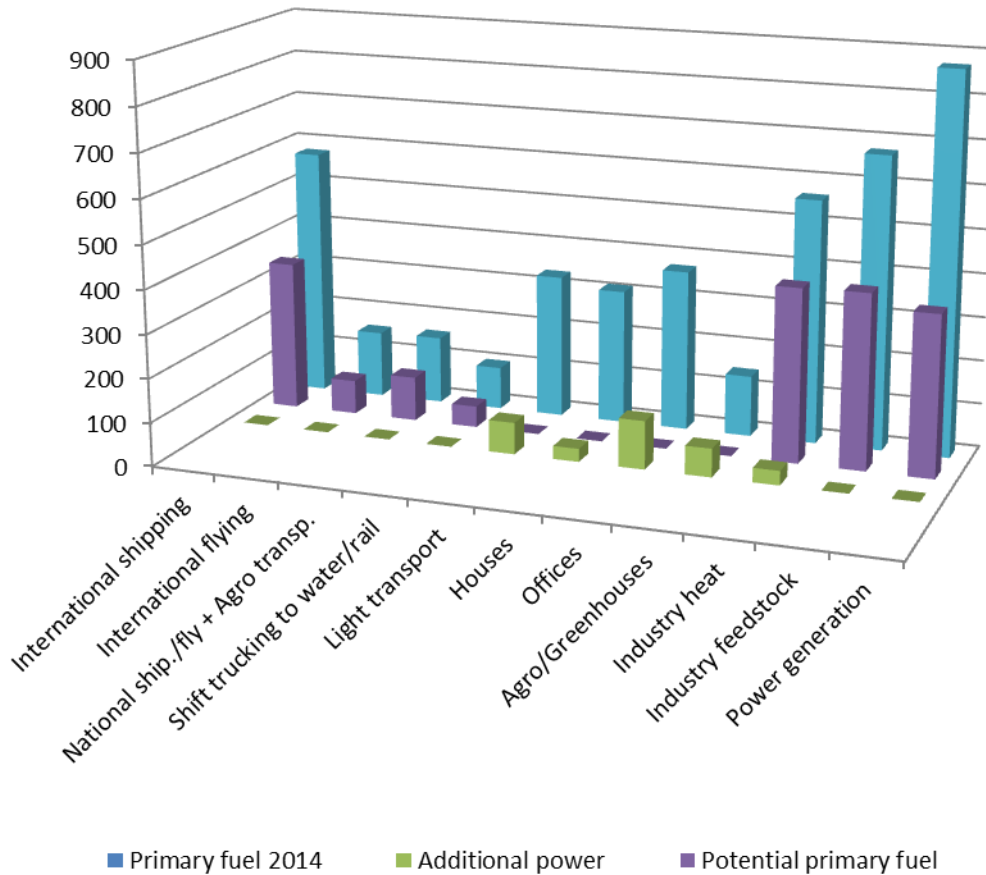
## 2. Improve conversion efficiencies with a given technology / energy carrier (inc. transportation losses)

- e.g. move from conventional gas to condensing boilers, improve efficiency of motor engines

## 3. Move to new technology / energy carrier

- e.g. from conventional coal-fired power plant to gas-fired CCGT / CHP
- next phase is more likely to be in **direction of electrification** (heat pumps and electric vehicles)

# Dutch Association of Engineers concept to halve primary energy demand by electrification



- Further insulation and seasonal storage of heat
- 100% electrification of light transport
- Use of low-temperature heat
- Extensive use of CHP with virtually no discharge with cooling water
- Entails 77% increase of power demand

# Three essential requirements from government to achieve optimal results from energy efficiency

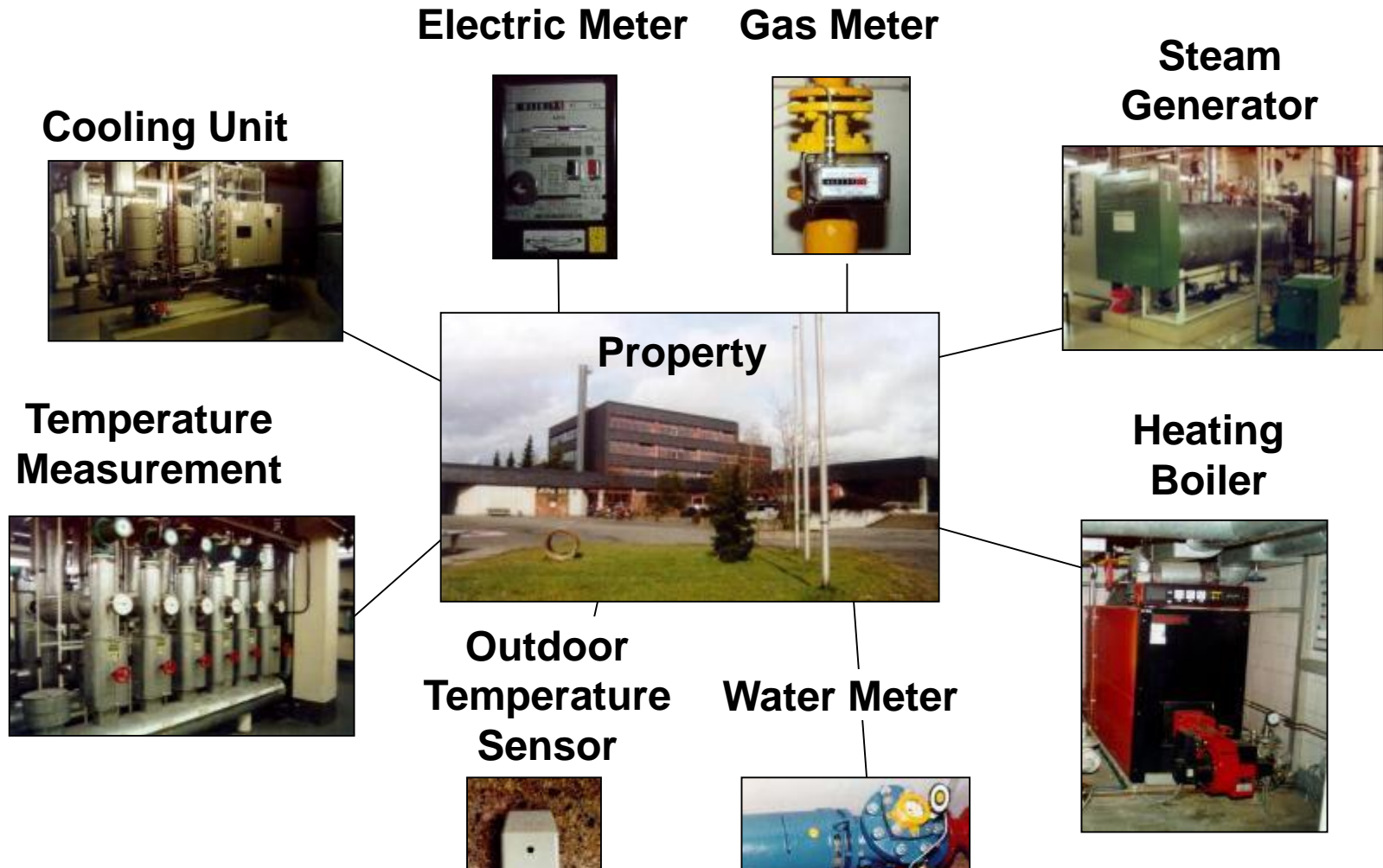
- 1. Spending money effectively on efficiency and monitor results**
  - Apply cost-benefit analysis in planning fund allocation
- 2. Comprehensive statistics providing transparency of where potential lies - inventory of energy plants by type, age and usage**
  - UK and US in different ways are leading examples
  - Monitor spending of money versus results achieved
- 3. Pricing structure and taxation of energy carriers to be coherent with policy and provide basis for cheapest long-term decarbonisation**
  - Taxation of individual energy carriers is arbitrary
  - End-consumer price-structure (fixed / variable) also needs attention

# The changing utility model - from commodity sales to integrated energy services...

Concept	Value for customer	Value for supplier
<b>Energy Efficiency Obligation</b>	Reduced energy costs and better value for money	Loss in commodity sales
<b>Distributed Energy Resources</b>	On-site generation of green energy	Revenue streams from new sources
<b>Integrated Energy Services</b>	One-stop point of contact	Longer-term, high-value customer relationships
<b>Use of Demand Data through Smart Meters and more</b>	Further optimisation and adaption of energy use to suit lifestyle	Maximise cross-sell and up-sell opportunities

- Challenge for utilities is to become the best integrated service providers and replace some of lost commodity revenue from new services
- Regulatory regime needs to ensure level playing field and basis for sound financing of natural monopoly elements

# ... entails comprehensive data monitoring for business to optimise energy usage...





# ... and a comprehensive energy contracting service from finance to maintenance.



## Financing

Investment financing through RWE  
→ Your liquidity gain



## Planning

Planning of the facility  
→ Your time saving



## Installation

Installation and commissioning of the facility  
→ Possible cooperation with partners you prefer



## Maintenance

Maintenance of the facility on highest level of efficiency  
→ Makes your operating expenses projectable

**RWE Contracting** is more than an alternative way to finance facilities. We offer flexibility for fuels and duration, for technology that is applied, for the planning process and the choice of the primary power supplier.

THANK YOU VERY MUCH  
FOR YOUR ATTENTION

Graham.Weale@RWE.com





# RALPH CAVANAGH

*Co-Director, Energy Program*

*Natural Resources Defense Council (NRDC)*

@NRDC





# SENATOR JEANNE SHAHEEN

*(D-NH)*

*U.S. Senate*

@JeanneShaheen





# OPENING PLENARY SESSION

*Shaping the Utility of the Future: How Can Energy Efficiency Benefit the Changing Utility Model?*

