Duke Energy Overview - Today

- 5 states: NC, SC, OH, KY, IN
- 28,000 MW of generating capacity
- 500,000 retail gas customers
- 47,000 square miles of service area
- 4.0 million retail electric customers
- Duke / Progress merger - double in size to the largest U.S. utility
Fact: We are in a rising price environment

- Shaping and adapting to climate change legislation
- Applying new equipment to meet environmental requirements
- Construction of new generation, especially nuclear
- Meeting Sustainability objectives
- Advancing Renewables
- Delivering on Energy Efficiency
- Investment in the development and deployment of Smart Grid
Some Impediments to Energy Efficiency Investment

- Limited capital available… especially in these difficult economic times
- Production investments taking precedence or perceived as more valuable
- Short-term focus
- Low risk of EE investments not accounted for in business cases
- Detailed assessments are generally required to identify opportunities with complex manufacturing systems
- Limited availability and/or capability of customer personnel
- Resistance to change
- Trust
- Perception that everything possible has been done
Research indicates difficulty in generalizing industrial savings potential as opportunities are very site specific. Assessment required.

- 5% to 15%: retro-commissioning, equipment upgrades
  - Many reports suggest around 10% McKinsey, EPRI, ACEEE

- 10% to 20%: better control, process optimization, behavioral changes

- 10% to 20%: natural gas savings – steam, process heating

- 5% to 15%: capacity savings from Demand Response

- Wild Cards: Rate Increases, Time-Based Pricing, Smart Grid
Strategic Vision: “Energy Optimization”

Today
- Analytics & Assessment
- Retro Commission & Facility Improvements
- Equipment Replacement
- Energy Management System

Opportunity Spectrum
- Automated Energy Policies & Improvements
- Demand Response

Smart Grid Future
- Renewables / Energy Storage
- Asset Ownership / Services

Create Market NOW / Measures
- 8-12% Energy Savings
- 2-3% Energy Savings
- 10-20% Energy Savings
- 5-15% Capacity Savings

Value – All Market Participants

Operational Market / Optimized Facilities
- Automated Energy Policies & Improvements
- Demand Response

Smart Grid Future
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Assessments

Online Energy Assessment
• Basic assessment available through the Business Services Newsline
• Helpful articles specific to your input and industry

Offsite Energy Assessment
• High level one on one assessment via conference call
  • Approximately 1-2 hours
  • Report identifying “excellent, good, fair” energy efficiency opportunities

On-site Energy Assessment
• Comprehensive assessment conducted at the facility with independent assessor
  • Typically 1-2 days to complete
  • Duke Energy shares the cost, paying 50% (approximately $3000)
  • Detailed report identifying efficiency opportunities and next steps

Smart$aver
Prescriptive Incentives
• 270+ measures w/ pre-defined incentives
• Lighting, HVAC (Space Conditioning, Process), Motors / Pumps / Variable Speed Drives, Food Service, Process Equipment
• 2 year simple payback goal

Smart$aver
Custom Incentives
• Projects not covered by prescriptive incentives
• Nominated by customers
• Innovative solutions

PowerShare
Demand Response
• “Sell” capacity and energy back to utility
• $ / kw per month for curtailable capacity
• Voluntary energy credit option
• Call Option - # events, notification, credits, risk

Other Resources
• Utility Seminars - ex: “Blueprint for Energy Savings”
• Department of Energy / Industrial Technologies Program: http://www1.eere.energy.gov/industry/
  • State Energy Offices – Programs, Funding
    • www.duke-energy.com
Resource to Locate Federal, State and Utility Funding

www.dsireusa.org
Energy Efficiency Bill Impact

Illustrative Example

10 Year NPV Bill Savings ($1000s)

- Do Nothing
  - Equivalent Generation: -$117
  - EE Rider: -$73

- Participate
  - w/ SmartSaver EE Incentives: +$718
  - PowerShare Demand Response: +$955

Total EE Savings: $1,673

Example: Lighting, High Efficiency Motors, Controls, PowerShare
**Example Projects w/ Incentives**

### Energy Management Controls
- Temperature set-point limits
- Unoccupied setbacks
- Central EMS portal & control
- 500,000+ kWh Impact; 200+ Peak kW Impact
- Customer Cost: $135,000
- Estimated Annual Customer Savings: $46,000
- Custom Incentive: $68,000
- Simple Payback with Incentive: 1.5 Years

### Electric Boiler and Humidification
- Boiler right sizing
- Ultrasonic humidifiers
- Customer Cost: $200,000
- Estimated Annual Customer Savings: $50,000
- Custom Incentive: $28,000
- Simple Payback with Incentive: <3.5 Years
The “Energy Service Marketplace” - where buyers and sellers exchange value.
Each participant contributes such that the overall value is created.
When Alliances are developed, then value can be maximized for all.