U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Stimulating Energy Efficiency in Kentucky: An Implementation Model for States

April 24th, 2014

DOE's State and Local Technical Assistance Team

Agenda

- Introduction to WIP's State & Local Technical Assistance Resources – Molly Lunn, U.S. DOE
- State Energy Program Competitive Awards – Amy Royden-Bloom, U.S. DOE
- SEE KY – Lee Colton & Greg Guess, Kentucky's Department for Energy Development and Independence
- Q&A – Mona Khalil, U.S. DOE

DOE's State & Local Technical Assistance

Priority Area: Program & Policy Design and Implementation

- **Trainings & Peer Exchange**
  - DOE's Better Buildings Summit
    www.eere.energy.gov/buildings/betterbuildings/summit/
  - Upcoming Webinars:
    - On-Bill Financing: National Landscape and Key Program Design Considerations for Administrators & Policymakers, May TBD

    www.eere.energy.gov/wip/solutioncenter/wip_events.html
- **Resources**
  - State & Local Implementation Models
    www.eere.energy.gov/challenge/implementation-model
    (Dedicated *State & Local Solution Center* page later this year)
  - ACEEE State Energy Efficiency Policy
    www.aceee.org/sector/state-policy
  - State & Local Energy Efficiency Action Network
    www.eere.energy.gov/seeaction/
  - Updated State & Local Solution Center resource portal for policies & programs coming June 2014

How to Tap into These and Other TAP Offerings

- Visit the ***State & Local Solution Center***
  www.eere.energy.gov/wip/solutioncenter/

- Submit an ***application*** for assistance
  www.eere.energy.gov/wip/solutioncenter/technical_assistance.html

- Sign up for ***State & Local Technical Assistance Alerts***, for updates on our latest and greatest
  TechnicalAssistanceProgram@ee.doe.gov

STATE ENERGY PROGRAM (SEP) COMPETITIVE AWARDS

Amy Royden-Bloom

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SEP Competitive Awards: A New Opportunity

- SEP competitive awards allow DOE and State partners to invest in high value projects to advance State-level energy efficiency policy initiatives
- Projects yield models that can be replicated across the U.S., supporting our shared goal of saving energy
- **Area 2 Stimulating Energy Efficiency Action**: Develop high-impact policy and program frameworks to support investment in energy efficiency and increase energy savings
- FY 2014 Funding Opportunity Announcement Notice of Intent: http://www.energy.gov/eere/wipo/downloads/fiscal-year-2014-competitive-financial-assistance-awards
- SEP Competitive Website: http://www.energy.gov/eere/wipo/state-energy-program-competitive-financial-assistance-program

Achieving Voluntary Efficiency Goals: The Kentucky Approach

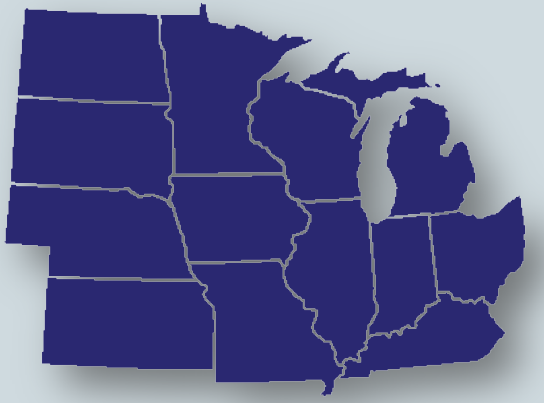
8

Greg Guess
Lee Colten
Kentucky Department for Energy Development & Independence

April 24, 2014

Cooperative Agreement with DOE

- Partnership:
  - Initiative funded by Cooperative Agreement with US DOE
  - ACEEE
  - Kentucky Department for Energy Development & Independence
  - Midwest Energy Efficiency Alliance – regional contractor
    - SMG – Kentucky subcontractor



Stimulating Energy Efficiency in Kentucky

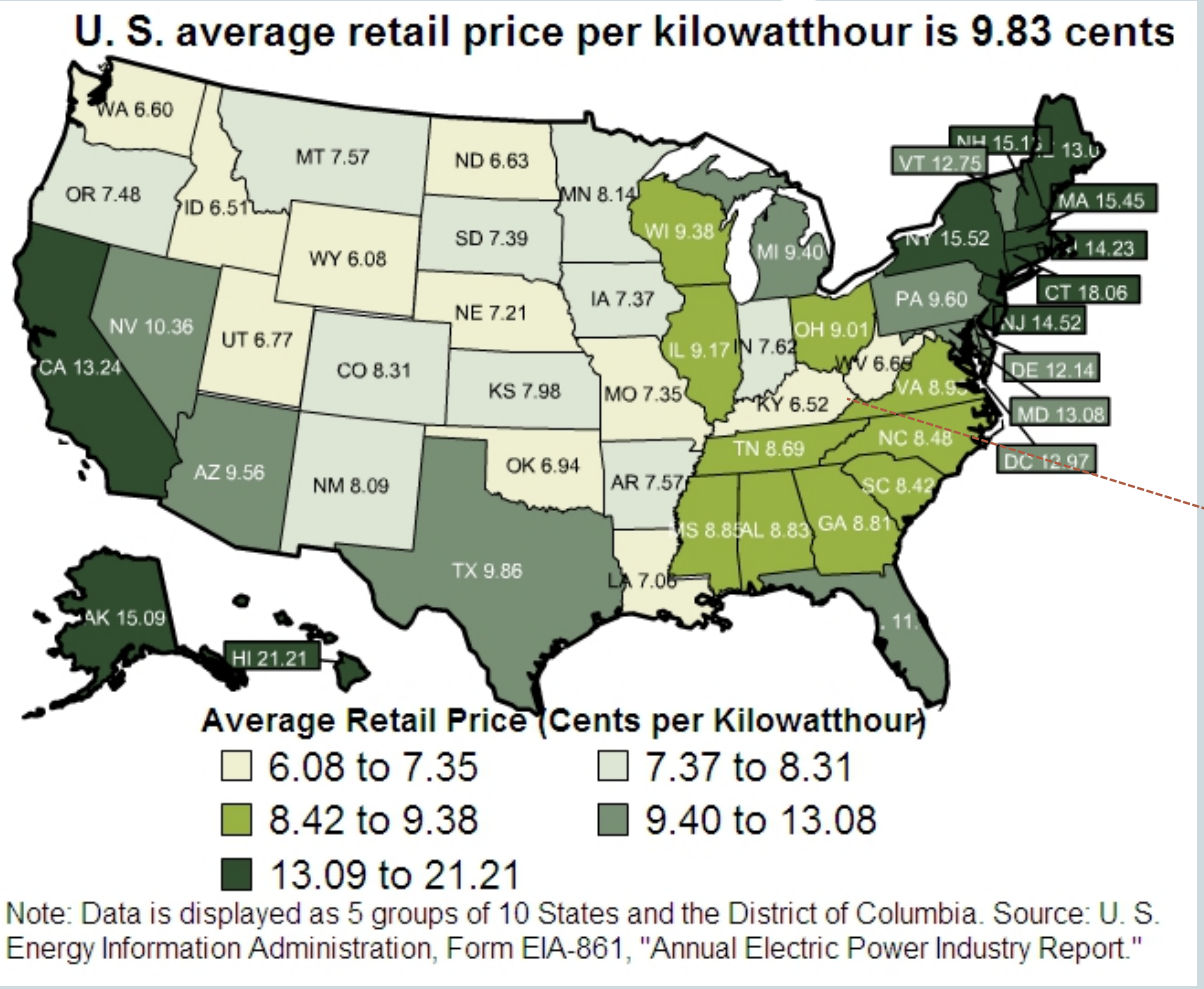
Overview

- SEE KY project
- KY's energy landscape and regulatory framework
- Stakeholder process and best practices
- The Action Plan
- Implementation status
- Measuring utility progress

The SEE KY Objective

- Started in early 2010 to achieve Kentucky's energy goals
- Governor Steve Beshear 's 2008 ***7-Point Strategy for Energy Independence*** identified EE as:
  - the "*fastest, cleanest, most cost-effective and most secure way to meet Kentucky's growing energy demands*"
- Governor set goal to offset cumulative 16% of Kentucky's projected 2025 total energy demand through natural gas and electric energy efficiency → will be achieved via **ramp up to 1% annual savings**
- DEDI launched SEE KY to devise a way to achieve this goal, and in process bring widespread attention to the efficiency strides made to date
- **Method** - Comprehensive **2-year stakeholder process**
  - MEEA hired to run process and identify realistic, achievable program and policy options to meet Kentucky's EE goals

Kentucky Average Electricity Prices are Among the Nation's Lowest



Note: Data is displayed as 5 groups of 10 States and the District of Columbia. Source: U. S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report."

KY: statewide average of 7.11 cents/ kWh (2011)

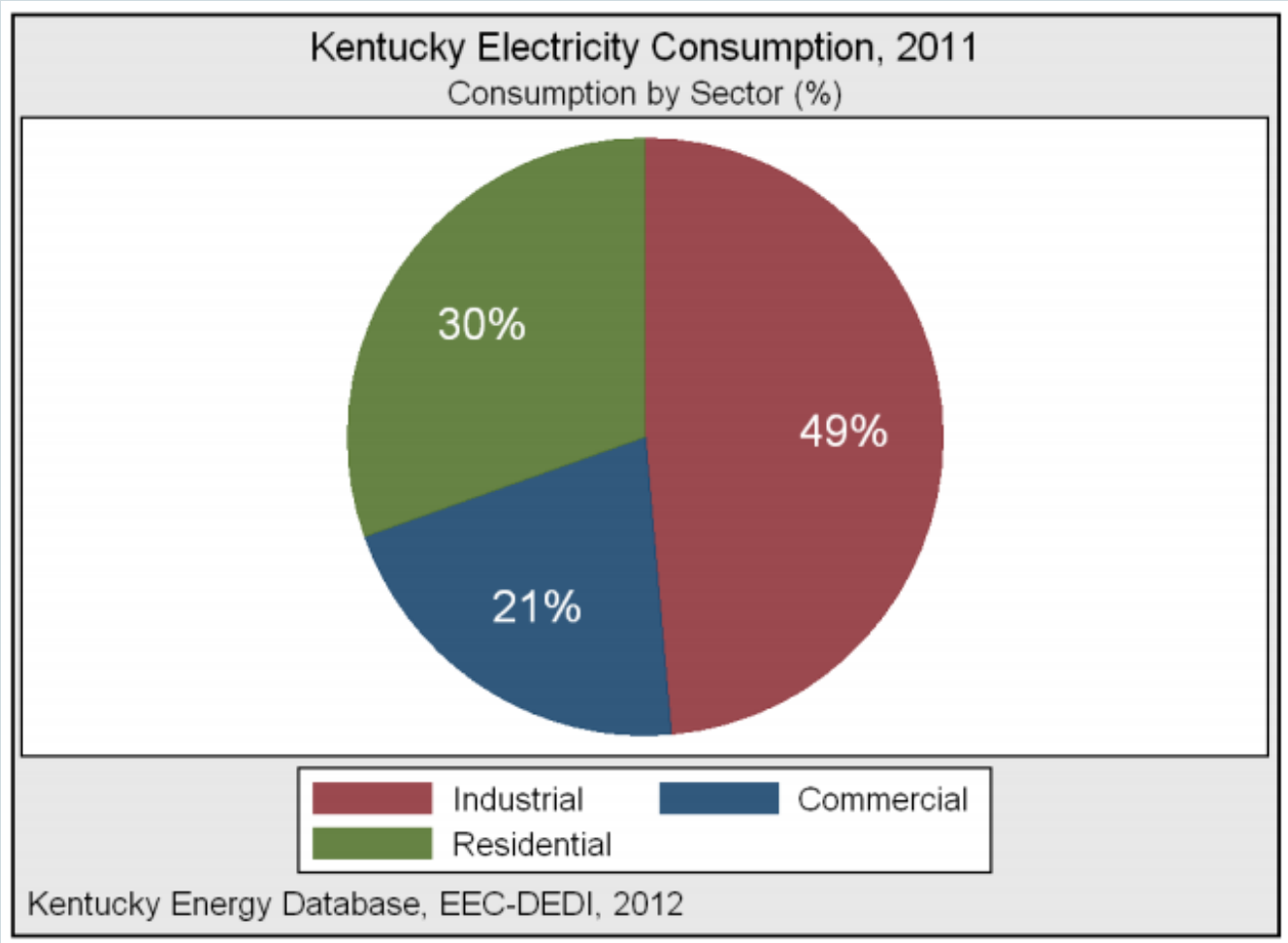
Kentucky Electricity Per Capita Sales & Rates Comparison (2013)

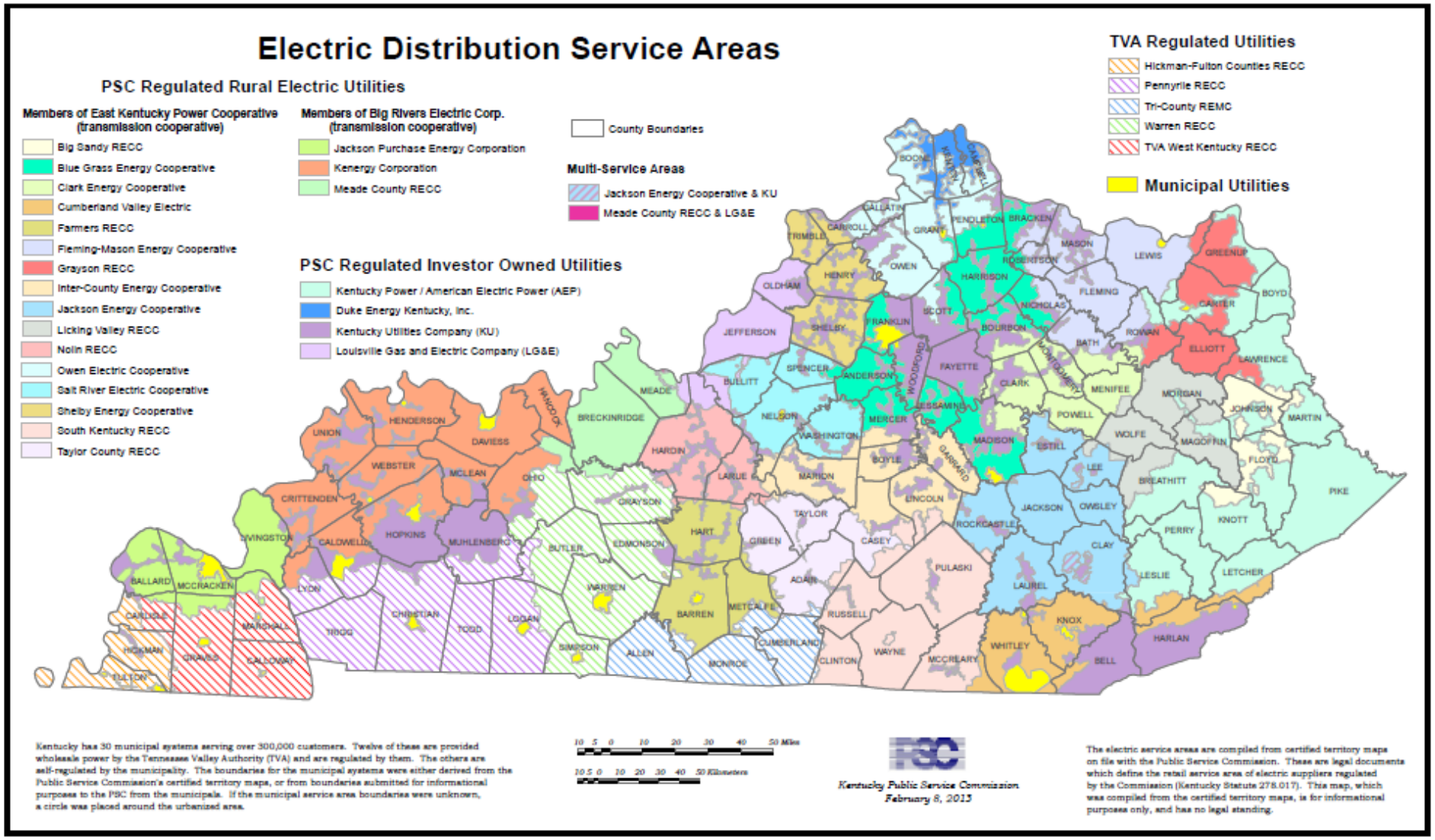
Residential	Commercial	Industrial	R,C,I Sectors Total
Sales: 10th highest	Sales: 17th highest	Sales: 2nd highest	Total Sales: 3rd highest
Price: 8th lowest	Price: 14th lowest	Price: 4th lowest	Wgt Avg Price: 2nd lowest

Out of 50 States plus District of Columbia

Source: Form EIA-826 (annual data, 2013)

Kentucky's High Industrial Energy Use




Electric Distribution Service Areas
PSC Regulated Rural Electric Utilities
Members of East Kentucky Power Cooperative (transmission cooperative)
Big Sandy RECC
Blue Grass Energy Cooperative
Clark Energy Cooperative
Cumberland Valley Electric
Farmers RECC
Fleming-Mason Energy Cooperative
Grayson RECC
Inter-County Energy Cooperative
Jackson Energy Cooperative
Licking Valley RECC
Nolin RECC
Owen Electric Cooperative
Salt River Electric Cooperative
Shelby Energy Cooperative
South Kentucky RECC
Taylor County RECC
Members of Big Rivers Electric Corp. (transmission cooperative)
Jackson Purchase Energy Corporation
Kenergy Corporation
Meade County RECC
County Boundaries
Multi-Service Areas
Jackson Energy Cooperative & KU
Meade County RECC & LG&E
PSC Regulated Investor Owned Utilities
Kentucky Power / American Electric Power (AEP)
Duke Energy Kentucky, Inc.
Kentucky Utilities Company (KU)
Louisville Gas and Electric Company (LG&E)
TVA Regulated Utilities
Hickman-Fulton Counties RECC
Pennyrile RECC
Tri-County REMC
Warren RECC
TVA West Kentucky RECC
Municipal Utilities
Kentucky has 30 municipal systems serving over 300,000 customers. Twelve of these are provided wholesale power by the Tennessee Valley Authority (TVA) and are regulated by them. The others are self-regulated by the municipality. The boundaries for the municipal systems were either derived from the Public Service Commission's certified territory maps, or from boundaries submitted for informational purposes to the PSC from the municipals. If the municipal service area boundaries were unknown, a circle was placed around the urbanized area.
10 5 0 10 20 30 40 50 Miles
10.5 0 10 20 30 40 50 Kilometers
Kentucky Public Service Commission
February 8, 2013
The electric service areas are compiled from certified territory maps on file with the Public Service Commission. These are legal documents which define the retail service areas of electric suppliers regulated by the Commission (Kentucky Statute 278.017). This map, which was compiled from the certified territory maps, is for informational purposes only, and has no legal standing.

Implementation Model

- Goal: Develop strategy to further Governor's 2008 7-Point Energy Strategy – 18% efficiency by 2025
- Barrier: Lack of consensus on policies and programs to achieve goal.
- Solution: Extensive stakeholder process, with heavy 1-on-1 meetings/relationship building.
- Outcome: SEE KY Action Plan with 27 Action Items and recommendations.

KY's Efficiency Policy Framework

- **1990 - Integrated Resource Planning** (807 KAR 5:058)
  - Utility's plans for efficiency improvements at existing facilities, and new DSM, conservation, and load management programs
- **1994 - Kentucky's DSM Statute** (KRS 278.285)
  - Program cost recovery
  - Lost revenue adjustment
  - Incentives
- **2007 and 2008-Incentives for Energy Independence Act** (HB 1 and HB 2)
  - **HB 1** (2007) - Sales tax credit for equipment purchases resulting in 15% reduction in energy usage
    - $80 million bond pool for EE projects in schools and public buildings
    - Directed PSC to report on how DSM statute has been implemented to date
  - **HB 2** (2008) – Tax credits for EE investments in residential and commercial property
- **2008 - Gov's Energy Strategy**
- **2008 – 2011 - Significant investments** already happening in EE
  - Kentucky's total utility EE program budget of $2.2 million reported in 2008, increased to over $45 million in 2012

Process: 1. Internal project team

- Kentucky Dept. for Energy Development & Independence – project coordination; stakeholder engagement; policy direction
- US DOE Technical Assistance and ACEEE – development of technical/economic resource potential
- Midwest Energy Efficiency Alliance – and SMG (Kentucky subcontractor) – research and analysis; logistics; meeting facilitation; document preparation; technical assistance

Process: 2. Identify Best Practices

- MEEA and ACEEE – identify and compile best practices from other states
  - MEEA: Survey of DSM programs in other states, cost effectiveness, regulatory context, etc.
  - ACEEE:
    - Consumption and prices forecast
    - Other state's utility program portfolio assessment
    - Efficiency cost-effective resource assessment
    - Kentucky's utility program portfolio assessment

Process: 3. Stakeholder Engagement

→ Consisted of two phases:

Phase One (Feb 2011-2013)

- Achieve consensus on most effective ways to capitalize on significant potential for EE and reach statewide energy savings goals
- 10 months of one-on-one meetings, followed by a 3-meeting series of collaborative sessions
- 100+ Stakeholders included:
  - Utilities; Manufacturers and industrials;
  - Commercial energy consumers and local business chambers and trade orgs;
  - Housing associations and advocates;
  - Local agriculture and environmental reps
  - The AG's office; PSC; Legislators

Phase Two (2013-2015)

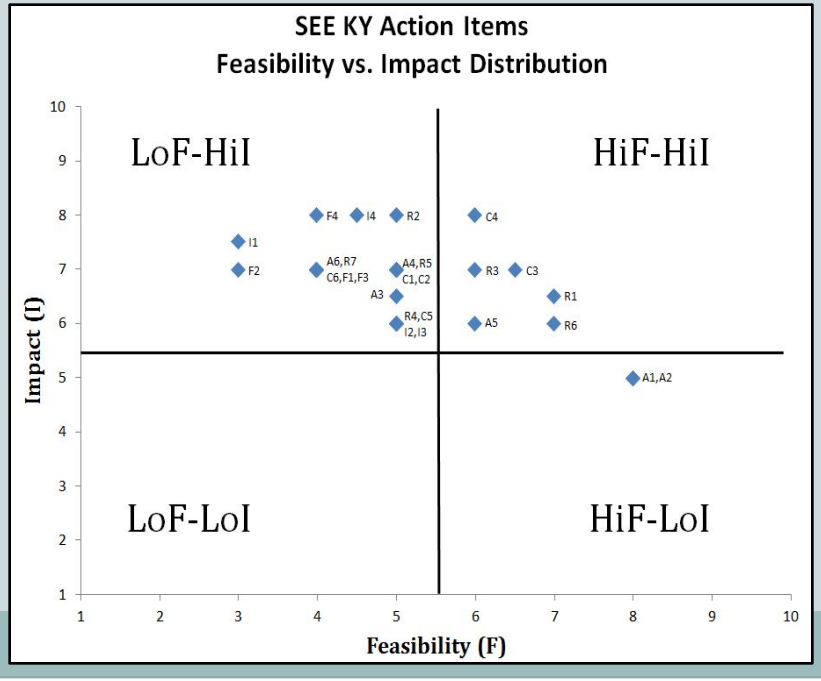
- Action Plan release
- Implementation of some near-term actions, with many more on deck

Stakeholder Best Practices

- Identified and engaged **diverse stakeholders** from EE community
- Hired local "**boots on the ground**," demonstrated understanding of Kentucky
- Ensured that stakeholder positions were **fully heard**
- **Extensive 1-on-1 discussions**
- Focused on **voluntary measures**
- Shared best practices, but only where **pragmatic**

Process: 4. Develop Recommendations

- After 9-month 1-on-1 process, list of "Key Findings" developed
- Series of 3 larger stakeholder meetings
- Narrowed high-ranking Action Items



The Action Plan

- 27 Action Items
- Organized by sector and time frames
  - Short-, near-, and long-term
- Each Action Item includes
  - Background
  - Implementation plan – who/what
- Current status

Process: 5. Implementation

- Identify key stakeholders willing to champion issue
- Convene workgroups
- Follow-through
- Iterative, on-going process

The Action Plan: All Sectors

Short-term

- Measure statewide EE targets using **electric utility data** reported voluntarily to DEDI
  - Entering year two of voluntary data collection from utilities
- Create a **peer exchange** mechanism specifically for gas and electric utilities to share information, experiences and best practices
  - Transitioning to more utility-friendly setting for peer exchange

Near-term

- Focus on **robust education and training** programs tailored to each consumer sector
- Convene a work group to evaluate effects of **utility rate design** on efficiency incentives
  - Owen RECC was successful in getting PSC approval for alternative rate design – others following suit

Long-term

- Assist Kentucky's governmental and **municipal utilities** to develop a voluntary suite of energy efficiency programs

DEDI

The Action Plan: Residential

Short-term

- Support **Kentucky Home Performance** to increase market penetration
  - KHP currently on $3 million state funding; new WHEEL loan program

Near-term

- Improve residential housing stock via utility and community-sponsored **weatherization**
  - Discussions still underway

Long-term

- Improve the EE of residential buildings through consistent implementation of **residential building energy codes**
  - Have begun discussions for utility-funded code compliance activities
- Increase innovative efficiency financing options, such as **on-bill financing**
  - MACED operating on $300,000 state funding to expand program
- Provide incentives for EE retrofits in **residential rental property**
  - Legislation to double tax credits failed to move in legislature
- Develop advisory group to address options for improving the EE of **manufactured homes** in Kentucky
  - Legislation to double tax credits file in 2014 session

Legislative Recommendation

- Expand existing state-level **EE incentives** for the residential sector
  - Legislation to double tax credits failed to move in legislature

The Action Plan: Commercial

Near-term

- Expand access to low-cost EE financing for private **commercial buildings**
  - PACE legislation filed in 2014 session
- Recapitalize the **Kentucky Green Bank** for public buildings
- Promote EE via a "**lead by example**" approach to state-owned facilities
  - CEMCS, High Performance Schools, Green Bank

Long-term

- Improve the EE of commercial buildings through consistent implementation of **commercial building energy codes**
  - Have begun discussions for utility-funded code compliance activities; adopted 2010 ASHRAE 90.1
- Devise creative EE incentives for **commercial rental property**

Legislative Recommendation

- Expand state-level **EE incentives** for the commercial sector
  - Legislation to double tax credits failed to move in legislature

The Action Plan: Industrial

Near-term

- Establish a **revolving loan fund** for industrial EE improvements
- Convene a work group to discuss the application of Kentucky's **industrial opt-out provision**
  - Discussions with industry and PSC underway

Long-term

- Encourage Kentucky's industries to voluntarily share EE **performance data and best practices**

Legislative Recommendation

- Expand existing **state-level incentives** to encourage industrial investment in efficiency
  - Industrial revenue bonds for small-to-medium sized industries

Process: Measuring Success

- DSM Data Reporting:
  - Where are we going?
  - Where have we been?

Where are we going?

DOE Grant and Governor's 7 Point Strategy

- **GOVERNOR'S GOAL** (7 Point Strategy) – "Energy efficiency will offset at least 18 percent of Kentucky's projected 2025 energy demand."
  - To achieve this a "combination of both utility-sponsored and non-utility-sponsored energy efficiency programs will be developed and implemented." See Energy Strategy, p. 7 (http://eec.ky.gov/Documents/Kentucky%20Energy%20Strategy.pdf)

- **REQUIREMENT OF GRANT** – DOE is seeking states to achieve an annual minimum target electricity savings of 1 percent through energy efficiency.

Measuring Progress Towards Governor's Goal

Goal is

- Statewide – not utility-specific
- Aspirational – not mandate

Measuring Progress Towards Governor's Goal

Calendar Year	Incremental Electric Consumption Reduction	Cumulative Electric Consumption Reduction
2012	0.2%	0.2%
2013	0.3%	0.5%
2014	0.5%	1%
2015	1%	2%
2016	1%	3%
2017	1%	4%
2018	1%	5%
2019	1%	6%
2020	1%	7%
2021	1%	8%
2022	1%	9%
2023	1%	10%
2024	1%	11%
2025	1%	12%

Note – Natural gas consumption reductions will be added to make up the remainder of 2025 goal.

Standard Data Reporting: Purpose

- Measure progress toward Gov's EE goals, provide talking points for Gov and state officials
- Demonstrate at state level, and nationally, the success of Kentucky's programs, one of leaders in Southeast region
- Demonstrate and document the positive performance of the utilities with respect to wise use of ratepayers funds and benefits they provide to Kentucky and their customers
- Sharing of best practices, performance and support reasonable, fact-based planning towards future goals
- Provide for collaborative reporting structure

Method for Measuring Goal

- Annual target ramps up gradually to cumulative reduction by the end of 2025
- First measured year will be 2012
- Baseline – Expressed as average of energy consumption from prior three-year period
- Measuring annual goal – calculated as percentage of current year's cumulative energy savings to Baseline (3-year average) in MWh
- May track natural gas consumption, but no NG-specific goal
- Cumulative values back to life of program or measure – whichever is shorter

Standard Data Reporting

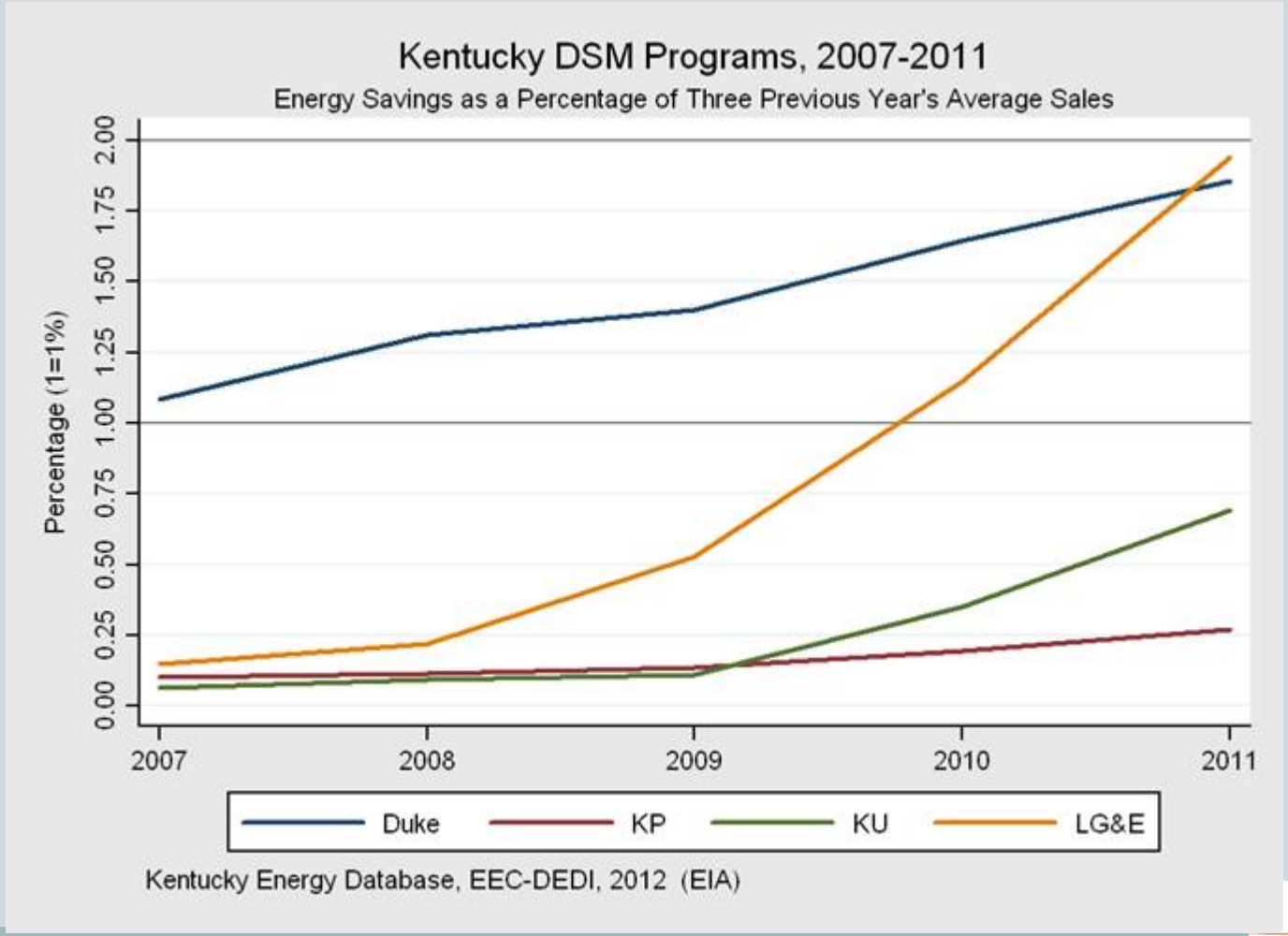
- Reporting is voluntary
- DEDI will be repository of data
- DEDI will analyze and report summaries of data
- First year to evaluate was 2012, against 2009-2011 baseline average
- Information to be reported will include:
  - Basic utility information
  - Annual utility data
  - Programs
  - Program metrics/performance

Who's agreed to report?

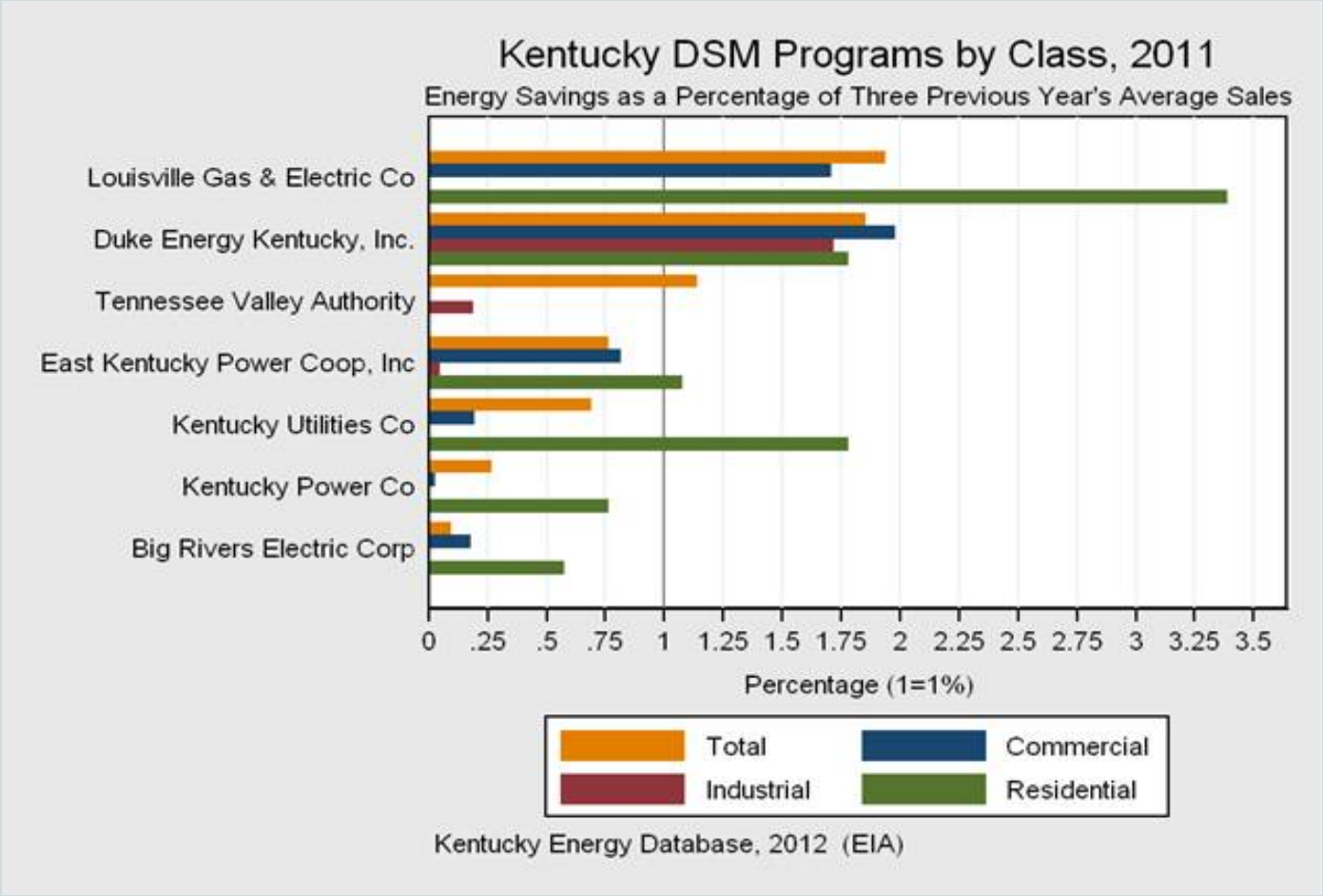
- Kentucky Power (American Electric Power)
- Duke Energy Kentucky
- East Kentucky Power Coop – aggregate of all coops
- Louisville Gas & Electric / Kentucky Utilities
- Tennessee Valley Authority – aggregate of all coops
- Big Rivers Electric Coop
- Data collected will cover ~83% of energy consumers statewide
  - As of 2005, jurisdictional utilities served ~1.8M customers and non-jurisdictional (TVA and municipal) served about 375,000

Where have we been?

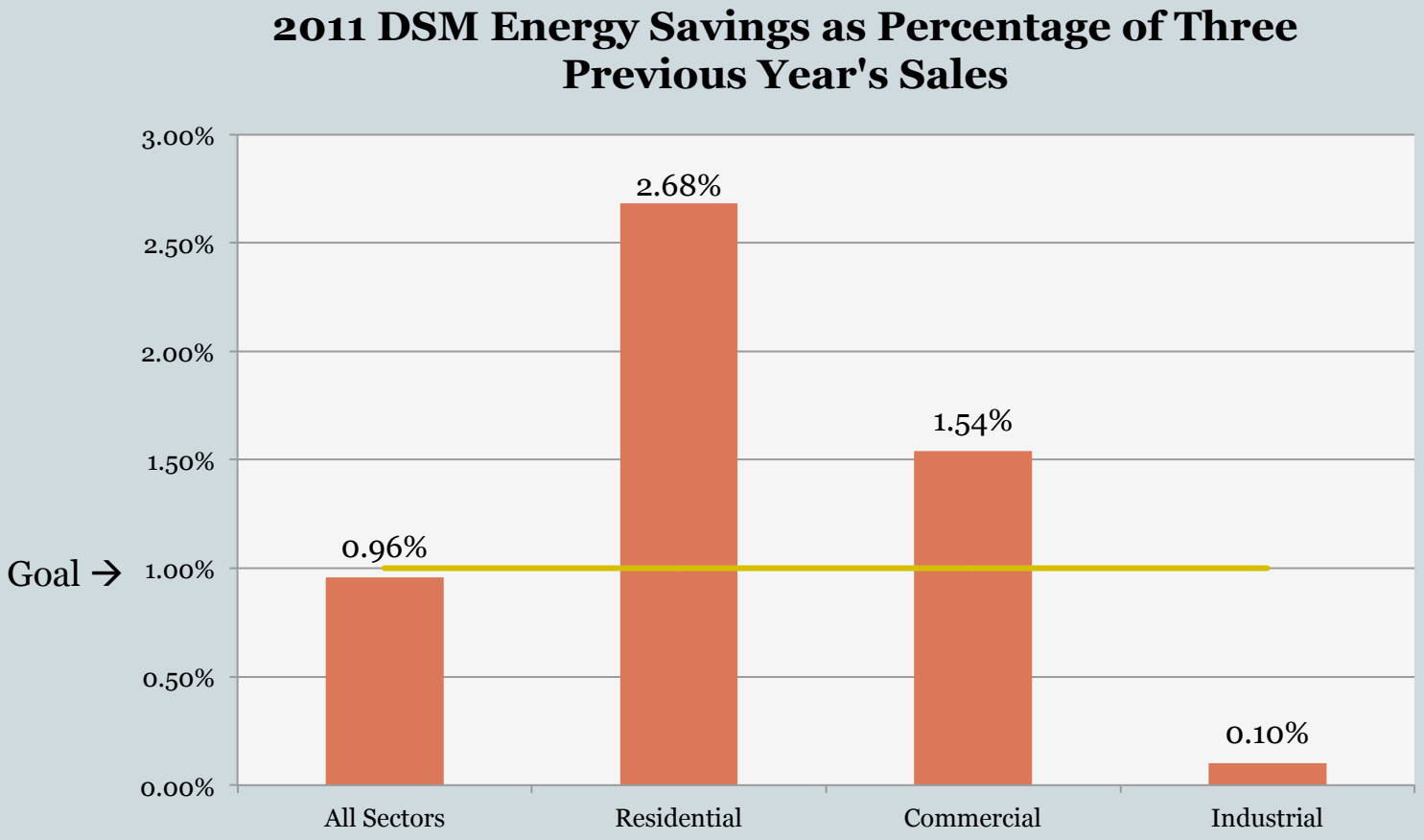
Efficiency as Percent of Sales – All Utilities/All Sectors/Time Series



Efficiency as Percent of Sales – All Utilities/All Sectors/2011



Efficiency as Percent of Sales – All Utilities/All Sectors/2011



Kentucky Energy Database, EEC-DEDI, 2012 (EIA)

Reporting Summary

Utility	Residential Data	Commercial Data	Industrial Data	Reporting Period	Year 1 Report Date	Report Date After Year 1	Net vs. Gross Energy Savings*
LG&E/ KU	✓	✓	N/A	Calendar Year	April 30	April 30	Net
Duke	✓	✓	N/A*	State Fiscal Year (July 1 to June 30)	April 30	Dec. 31	Net
KP (AEP)	✓	✓	N/A	Calendar Year	April 30	April 30	Net
EKPC	✓	✓	✓	Calendar Year	April 30	April 30	Net
TVA	✓	✓	N/A	Fed. Fiscal Year (Oct. 1 to Sept. 30)	April 30	Dec. 31	Gross
Big Rivers	✓	✓	N/A	Calendar Year	April 30	April 30	Net
Municipal Utilities							

Going forward… / Lessons learned…

- Utilities with differing data histories
- While most utilities will report **net** energy savings, TVA will report **gross**
- All data in – some utilities followed template, some didn't. And template had to adapt
- Even if you define terms in advance, you will refine them as you go. Communication of some terms a challenge, e.g. cumulative energy savings
- Results are promising

Questions/Comments?

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Division of Efficiency and Conservation
Department for Energy Development and Independence
502-564-7192

Questions?

Please join us for the next webinar:

On-Bill Financing: National Landscape and Key Program Design Considerations for Administrators & Policymakers

May TBD

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