



CHP Work Group Meeting No. 5
December 11, 2014, 9:30am to 11:00am
KY Department for Environmental Protection
300 Fair Oaks Lane, Frankfort, KY, RM 301D

Agenda:

- 5 min - Welcome and Introductions -**Greg Higdon**
- 30 min – Air Quality Environmental Regulation Update -**John Lyons**
- 10 min - 2014 Recap/Action Plan Status – **DEDI**
- 10 min - Workshop Feedback (Presentations on Website) – **KPPC**
- 2015 Activities
 - 10 min - Upcoming Webinar – **KPPC**
 - 5 min - Spring Networking Event/CHP Demonstration – **KPPC**
 - 5 min - Targeted Outreach/Energy Conference –**KAM**
 - 5 min - CHP Screenings – **KPPC/CHP TAP**
 - 5 min - 2015 Meetings/Strategy –**DEDI**
- Action Item Recap, Well wishes, and thanks for past and continued support – **KAM**



THE CABINET'S PERSPECTIVE ON THE CLEAN POWER PLAN

Presented by

John S. Lyons

Kentucky Energy and Environment Cabinet

CHP Workgroup

December 11, 2014

Important Dates

- **June 1, 2014** – Proposed rules for existing sources (under Clean Air Act Sections 111(d)) and modified sources (under 111(b)) issued
- **October 16, 2014** – Comments were due on 111(b) Modified and Reconstructed
- **December 1, 2014** – Comments were due on 111(d)
- **June 1, 2015** – Issue final rules for new, M & R and existing sources
- **June 30, 2016** – Deadline for states to submit section 111(d) implementation plans for existing sources

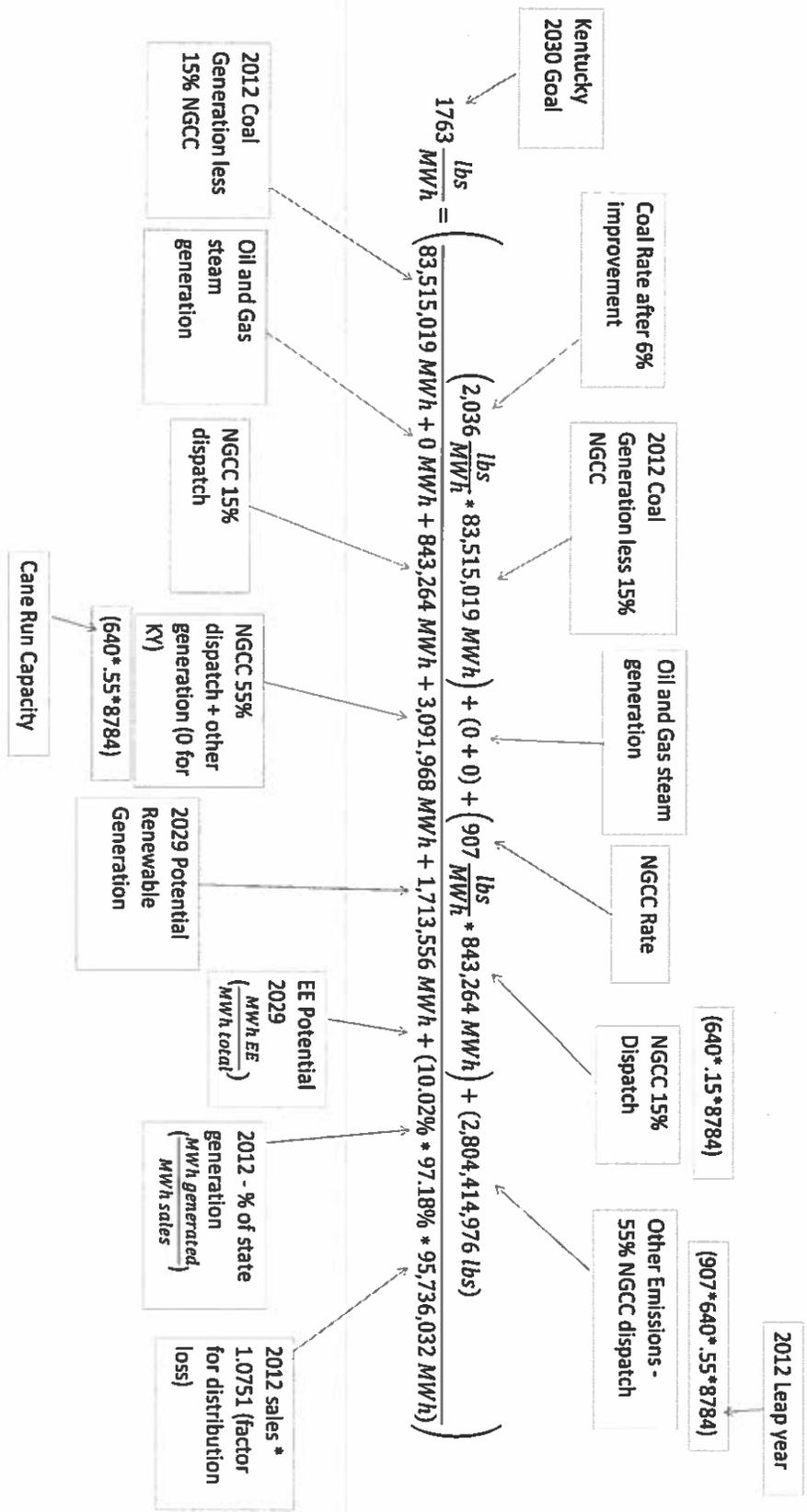
Greenhouse Gas Proposed Rules

Proposed Rule for New Sources under CAA Section 111(b)	Proposed Rule for Existing Sources under CAA Section 111(d)
<p>Issued Sept. 20, 2013. Published January 8, 2014.</p>	<p>Issued June 2, 2014. Published June 18, 2014.</p>
<p>Sets limits (NSPS) for natural gas-fired power plants at 1,000 lbsCO₂/MWh & for coal at 1,100 lbsCO₂/MWh.</p>	<p>Establishes state-specific CO₂ intensities.</p>
<p>Requires partial CCS for coal to meet the standard.</p>	<p>Provides multiple pathways for compliance.</p>
<p>Command and control rule; states adopt the rule.</p>	<p>States will establish implementation plans, working with stakeholders and legislature.</p>

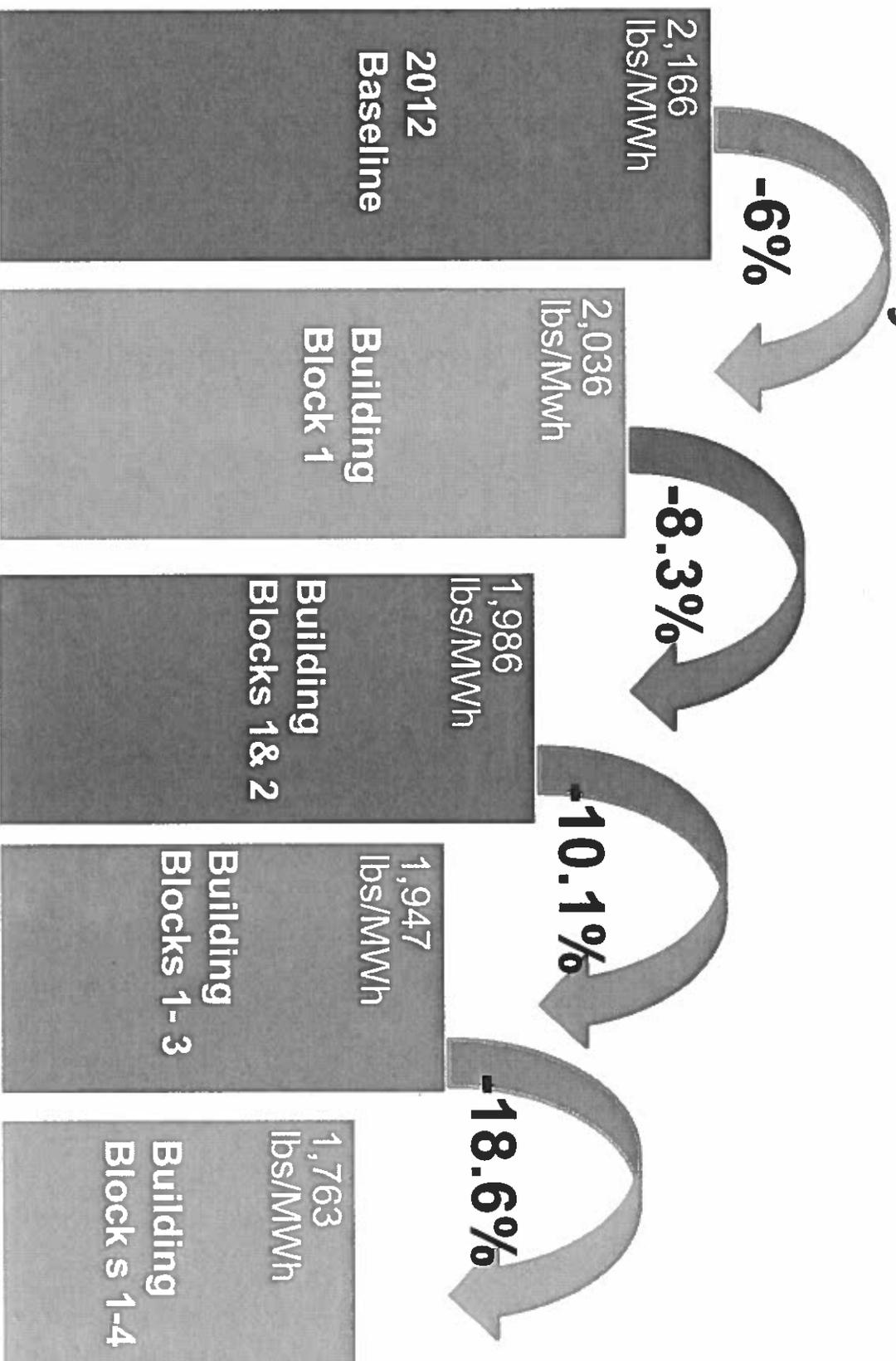
Features of Proposed 111(d) Existing Source Rule

- Emissions targets vary among the states, reflecting existing fleet mix and other factors.
- Targets set using a combination of efficiency gains at the power plant, raising capacity of existing NGCC, renewables/nuclear and energy efficiency.
- Proposed Kentucky Statewide Fleet Average:
 - 1844 lbsCO₂/MWh – Interim Goal 2020-2029
 - 1763 lbsCO₂/MWh – Final Goal 2030
- The rule also establishes guidelines for states to follow in developing their plans.
- Allows a range of options (including multi-state approaches; energy efficiency; and fuel switching such as natural gas, nuclear, and renewables) for compliance.

Kentucky 111(d) 2030 Goal Calculation

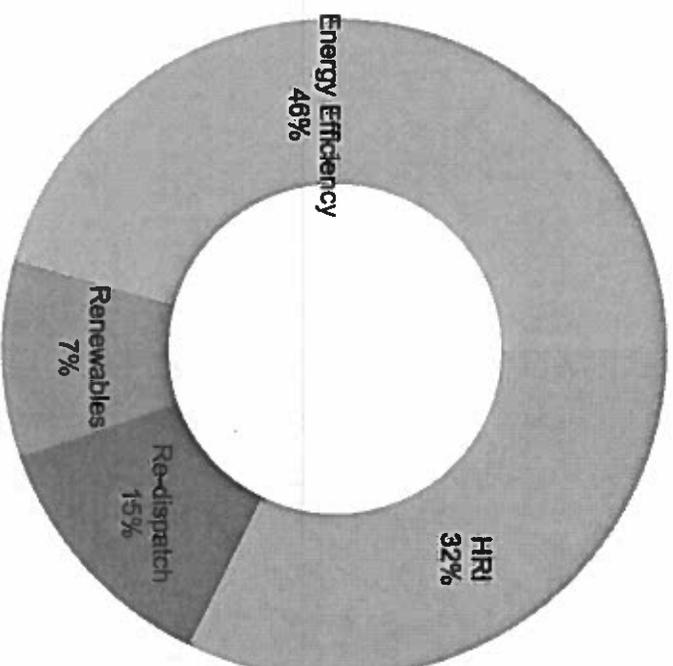


Kentucky Rate Reductions from 2012



Breakdown of the Building Block Reductions

2166 lbs/MWh - 403 lbs/MWh = 1763 lbs/MWh



111(d) Comment Topics

- Economic Implications and Impacts
- Meeting Kentucky's State-Specific Goal
- Needed Clarification of Rule Components
- Unintended Consequences
- Needed Flexibility
- Notice of Data Availability (NODA)

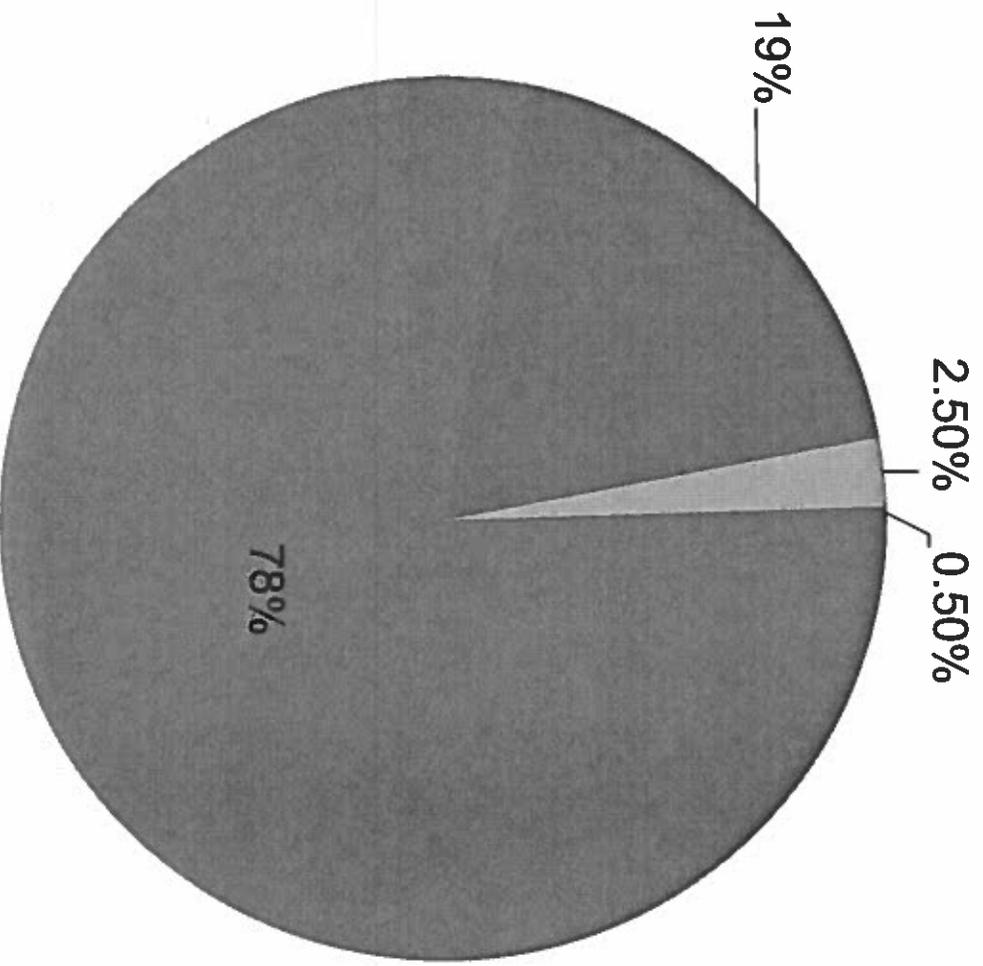
CHP's Role in the Clean Power Plan

- Is CHP renewable energy or energy efficiency? Both?
- How was existing CHP factored into Kentucky's target?
- How can CHP be used for compliance strategies?
- Is CHP practical for a compliance plan?

HB 388

- Unanimously passed during the 2014 General Session
- Limits state plan to cost-effective efficiency gains at the plant (e.g. turbine or boiler upgrades)
- Prohibits fuel switching
- Prohibits co-firing other fuels with coal
- Prohibits limiting utilization of the EGU
- Requires separate coal and natural gas categories

Kentucky's Projected Electricity Generation in 2020 Post-MATS w/o GHG regulations



Avg. fleet emissions rate
will be approximately
1,890 lbsCO₂/MWh

- Coal
- Natural Gas
- Hydro
- Biomass

What's Next?

- We need to consider next steps.
- When do we start discussing compliance strategies?
- Do we even have opportunity for compliance strategies beyond HB388?
- Final rule is due June 30, 2015.
- Need to continue dialogue with stakeholders.

Thank You

John S. Lyons

Assistant Secretary for Climate Policy

Kentucky Energy and Environment Cabinet

john.lyons@ky.gov

502-564-3350

www.eec.ky.gov





Combined Heat and Power Work Group 5
December 11, 2014



**2014 Recap, Action Plan Status, and
Upcoming Activities**

**KY Department for Energy
Development and Independence**

Bill Lunsford, Engineer
Division of Efficiency & Conservation

State Energy Office

Kentucky Department for Energy Development and Independence



The Department for Energy Development and Independence's mission is to improve the quality and security of life for all Kentuckians by creating efficient, sustainable energy solutions and strategies; by protecting the environment; and by creating a base for strong economic growth.

The Stakeholder Process

- 5 Bi-monthly Work Group Meetings
- 18 Sub-committee Meetings
- 4 Steering Committee Meetings
- Bi-weekly Grant Partner Calls

CHP facilities visited by one or more grant partners:

- ❖ Fort Knox
- ❖ Owensboro Grain
- ❖ Young Manufacturing
- ❖ Perdue

Conferences and Briefings

- ❖ May - KAM Energy Conference
- ❖ August - Local Governments Conference
- ❖ Marketed Workshops in October at:
 - Innovation Conference
 - Governor’s Conference on Energy and the Environment
- ❖ CHP-Related Briefings
 - June - Owensboro Grain (KAM executive briefing)
 - September - Public Service Commission
 - October - CRRERES Board

Publications

- ❖ **KAM “The Goods”**
 - 2 CHP articles including a CHP Overview and Reciprocating Engine Systems
- ❖ **The Lane Report**
 - Overview of the CHP activities in Kentucky
- ❖ **Land Air and Water**
 - Project spotlights including Young Mfg and Domtar
- ❖ **EEC Press Release**
 - Kentucky grant award information
- ❖ **Website**
 - Stakeholder activity and reference information - Ongoing

Heat Maps - Workshops

- Marketed via mailings, mass e-mail, and social media
- Locations chosen by analyzing heat maps
- ❖ Richmond and Bowling Green
- ❖ Packed with content – (Presentations posted to website)

Action Plan Status

- **Reflects where we have been, where we are, where we want to go**
- **2014 CHP Partnership activities**
- **Goal is to distribute draft in December, or directly after the holidays**
- **We would like feedback before publishing the final version**
- **Proposed actions support a sustained effort**
 - Finding instances where a good business case can be made
 - Set the stage for CHP market transformation as the drivers evolve
 - Support infrastructure able to provide CHP products/services
 - Provide continued education/outreach and technical assistance
 - Support proposed legislation favorable to CHP

Action Items and Sub-committee Discussions

- Permitting** – Guidance to be posted
- Interconnection** – Process Planning Guide TBD
- Heat Loads** – References available
- Reliability** - References available
- Maintenance** – Presentations on web
- Ref. Guide** – Will be posted
- Vendor List** – Will be posted
- Natural Gas Outlook** – Fellon McCord Presentation
- Utility Rates** – Presentation posted
- Financing Methods** – Will Post Briefing Sheet
- Pending Legislation** – Ongoing Support

Upcoming Events

- Webinar (January End?)
 - KPPC will update
- CHP Site Visit (March/April)
 - Details will be sent to group as available
- 2015 KAM Energy Conference (May 13/14)
 - KAM will provide more details
- Targeted outreach to facilities that may be able to benefit from CHP
 - Strategies are being developed in conjunction with Grant Partners, CHP TAP, DOE
- CHP Screenings
 - Goals to conduct a number of screenings for 2015

2015 Reminders and Requests

- Grant Partners will keep the work group informed of any upcoming activities
- Please pass along commercial/industrial contacts that may be interested in CHP technical assistance, or screening – no obligations (provide utility data, answer a questionnaire etc.)
- Please provide feedback when draft CHP action plan is distributed
- We will plan for fewer meetings, but continued 2-way communication



CHP

**Combined Heat & Power
in Kentucky**

CHP Work Group 5

**Frankfort, KY
December 11, 2014**

Thank You!

<http://energy.ky.gov/Programs/Pages/chp.aspx>

Greg Guess (DEDI) – Director

Greg.Guess@ky.gov

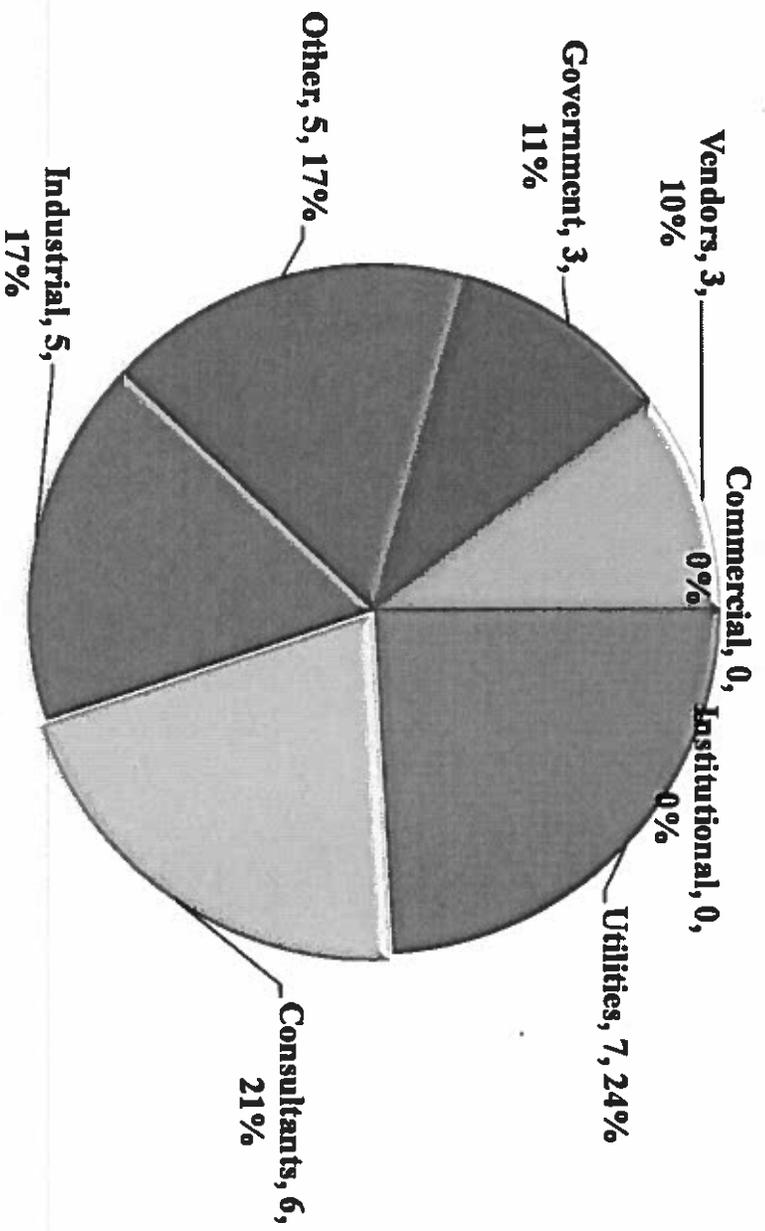
Lee Colten (DEDI) – Assistant Director

Lee.Colten@ky.gov

Bill Lunsford (DEDI) - Engineer

Bill.Lunsford@ky.gov

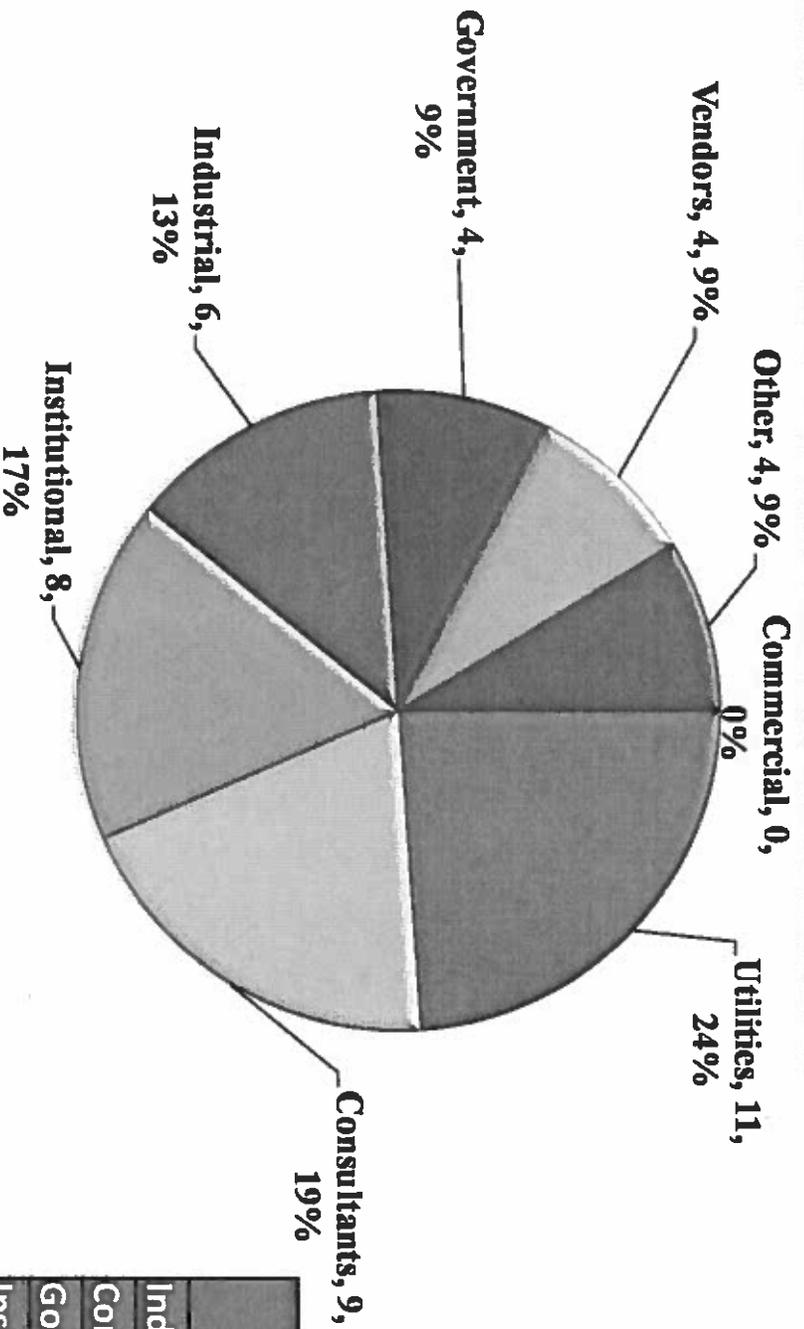
CHP Workshop-Bowling Green



	Bowling Green	
	Registered	Attended
Industrial	5	5
Commerc	0	0
Govermmi	3	3
Institution	0	0
Vendors	3	3
Consultan	6	6
Utilities	9	8
Other	5	4
Total	30	29



CHP Workshop-Richmond



	Richmond	
	Registered	Attended
Industrial	10	6
Commercial	0	0
Government	2	4
Institutional	9	8
Vendors	5	4
Consultants	9	9
Utilities	12	11
Other	4	4
Total	51	46



Workshop Outcome

Two CHP screening inquiries

Industrial (Bowling Green)

Institutional (Richmond)



Workshop Feedback

Questions that were left unanswered include:

Understanding power purchase agreements

Maybe for future CHP Workshops, could show lessons learned, issues on a CHP project

Suggested discussion topics for the upcoming webinar and on-site demonstration visit are:

PJ economics. Real Projects with real dollar values

3 Great Current Case Studies



Workshop Feedback

I would like to learn more about:
Natural gas fuel cells
Selling CHP electric on the local utility grid
Is KY Administration on board with CHP and willing to help remove the obstacles to successful implementation in KY?
Actual economics, some projects presentation but economics; cost of engines, interconnect, chillers, etc. not explained or provided
Power Purchase agreements
CHP Life Cycle Analysis
CHP Incentives



2015 Activities

- **Webinar January 29 (tentative)**
- **Site visits week of March 23**
 - Owensboro Grain
 - Domtar?



Webinar Topic Suggestions?

- **So far--**
 - Permitting Process
 - Screening Process
 - Power Purchase Agreements
- **??????**



