

A scenic view of a forest with a large rock formation on the left side. The rock formation is a prominent feature, showing layered and textured surfaces in shades of brown and tan. To the right, a dense forest of tall, thin trees with green foliage stretches into the distance. The overall scene is bright and natural, suggesting a park or a protected area.

Kentucky Environmental Quality Commission Overview

2008 – 2014

Steve Beshear, Governor

Len Peters, Secretary

Kentucky Energy and Environment Cabinet

500 Mero, CPT 12th Floor

Frankfort, Kentucky 40601

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September 24, 2015

Dear Governor Steve Beshear, Secretary Len Peters, Members of the General Assembly, and Citizens of the Commonwealth:

The staff and members of the Environmental Quality Commission (EQC) respectfully present its annual reports for the period, 2008 – 2014. EQC's highest priorities are to promote public understanding and common sense solutions to improve and protect the environment.

Since its creation by the Legislature in 1972, the Environmental Quality Commission, a seven-member citizen advisory board, has worked to promote environmental awareness and provide opportunities to involve business, government and communities in seeking innovative and cooperative solutions to Kentucky's environmental challenges.

EQC's mission focuses on the following four priorities:

- Facilitate public understanding, discussion and resolution of environmental issues.
- Monitor environmental trends and conditions.
- Promote partnerships to improve and protect the environment.
- Increase awareness, responsibility and positive action toward a clean, healthy future.

It is critical that Kentuckians continue to be informed and allowed to inform us, of concerns which provide opportunities to find new cooperative approaches to achieve both a clean environment and a healthy economy. EQC has had many activities and accomplishments during the last six years, and through this report we hope to give you an idea of our actions, and continued efforts for the betterment of the Commonwealth community. On behalf of my fellow Commissioners past and present, I would like to thank the staff for their hard work and dedication for numerous accomplishments.

Sincerely,

A handwritten signature in black ink that reads "Stephen A. Coleman".

Stephen A. Coleman, Chairman
Kentucky Environmental Quality Commission



**2008-2014
CULMINATION VOLUME
OF
ANNUAL REPORTS**

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Kentucky State Capitol

Introduction

The Environmental Quality Commission (EQC) for 42 years has been an independent, seven-member, citizen board providing the governor and the Energy and Environment Cabinet (EEC), with citizen input on regulatory actions as well as actions necessary to improve the environment and promote a strong and sustainable economy. The seven EQC commissioners are appointed by the governor and represent various interests (business, community, government, environmental) from across the Commonwealth.

In its advisory capacity, EQC has commented and assisted in the development of proposed environmental rules, regulations, policies, plans and procedures. The EQC works to facilitate public discussion and resolution of current environmental issues; promote partnerships to protect the environment; and to increase public awareness, responsibility, and positive action toward a clean and healthy environment. Increasingly, the EQC continues its role in responding to citizen and business complaints, concerns, working within the Cabinet agencies to bring a positive resolution to these concerns.

The EQC is the only agency within the Energy and Environment Cabinet (EEC) that provides a direct link between the public and the state's environmental agencies, not specifically under the direction of the divisions. EEC division heads participate in the EQC's meetings and provide answers to citizens' questions, concerns, and assist in providing positive resolutions.

Commissions Current Staffing

EQC is currently understaffed with only the director and one part-time executive assistant. Due to continuing budget cuts and potential loss of funding even to the point of being defunded,

EQC has diminished capacity to provide in-depth research, review, analysis and adequate monitoring. As past employees left the department, no replacements were allowed. However, EQC has increased its community presence, and activities associated with public outreach while trying to maintain updates, reports and cabinet oversight assistance as mandated.



Goldenrod – Kentucky State Flower

Commission Work 2014
Presentation Synopsis to Commissioners

AREA of CONCERN ADDRESSED

Proposed Bluegrass Pipeline project public forum:

Highlights from the extensive presentation by the Bluegrass Pipeline representatives. The Bluegrass project group reported the following advantages of the pipeline

- 1500 construction jobs
- Training facilities located along the route
- Survey of land and waters along the pipeline for
 - Sensitive waterways
 - Threatened and endangered species
 - Cultural resources
 - Minimal impact
- Landowners are notified once parcels are identified
- All testing particulars were given

EQC expressed a need for an evaluation of cost/benefit; of extreme negative externalities vs. economic benefit. If neighbors were not compensated, they perceived a lack of control, thus a need for better communication.

A recommendation was developed and forwarded to the governor for Kentucky

oversight of pipelines for pipeline safety.

Impact of Energy Research and Resources on Kentucky

A presentation on the **relative cost of fossil fuels:**

- Energy efficiency and health impact studies - Kentucky Environmental Foundation.
- Decreased Solar over six years.
- No investment in wind caused a 7.79 percent cost increase.
- In a 2005 and 2010 comparison of wind power costs to electricity prices, the electricity prices rose 26.7% in the lowest 30 wind-power states.
- Natural gas prices are falling.
- No hydro capacity in Kentucky.

Areas of Concern, Planning and Priority for Division of Water (DOW)

- Kentucky is developing an agriculture nutrient reduction strategy.
- Numeric criteria on point sources only apply to 18 to 25 percent of pollutants.
- DOW goals address the following:
 - Watershed prioritization
 - Watershed load reduction
 - Effectiveness of point source permits
 - Agricultural area utilization
 - Storm water runoff and on-site (septic) systems
 - Accountability and verification measures
 - Annual reporting of implementation activities, biannual reporting of load reductions and environmental impacts
 - Work plan and schedule for numeric criteria development
- Stakeholders must decide which watersheds to prioritize.
- Floyd's Fork TMDL is an effluent dominant stream.

2014 Annual Meeting synopsis

Presenters:

Brandon Nuttall, Geologist, Kentucky Geological Survey
Tim Hubbard, Assistant Director, Division of Waste Management
Steve Remen, Executive Vice President, groSolar
Ryan Marlborough, Business Development, groSolar
Andrew Melnykovych, Director of Communications, Public Service Commission
Lee Ann Devine, Chief, U.S. Army Corps of Engineers South Regulatory Branch

Guests:

Tim Joice, Kentucky Waterways Alliance
Jerry Hardt, Kentuckians for the Commonwealth

Discussion Highlights of prior meetings and projects

- Black Leaf Chemical – completion of renovation to residential contamination – Division of Waste Management (DWM).
- Bluegrass Pipeline – meetings with community and Pipeline representatives – active interventions on the part of the Commission.
- EQC's past involvement with the regulation process and educational outreach.
- Report of funding being retained. Concerns of future funding.
- Possible recommendations on a state oversight siting committee on the pipeline – Ohio can be used as a template using their mission and expertise. They have a review committee that is made up of various groups representing the different products delivered--oil, gas, electricity. Ohio has had a siting board for pipelines for 40 years. They currently have standards on construction, reclamation, location and standards by which companies must comply.
- The Energy and Environment Cabinet has developed a work group to review oil and gas extraction in Kentucky. Recommendations are being completed for the next legislative session.

A. Fracking in Kentucky Overview

Brandon Nuttal, Kentucky Geological Survey

Nuttall: Kentucky needs a publicly accessible verification system of how oil and gas wells are constructed. Various methods were noted and their purpose. Per the Department of Transportation, this information can be found on FrucFocus.org Permeability is about flow. What chemicals are used is **proprietary** to the **companies**. Thirteen states have made reporting mandatory. No Kentucky sites are cited on the website. Reporting is not mandatory in Kentucky. Fracks are almost exclusively nitrogen--95 percent, governed under KRS 353.

Does fracking cause induced seismicity or earthquake?

A U. S. Geological Survey (USGS) study revealed in recent months in Oklahoma, many underground injection wells caused an earthquake of 5.0. They were aware of the faults when injecting them. Site characterization must be studied.

The United States Geological Survey (USGS) and National Research Council studies concluded that injection is safe and regulated properly to protect freshwater.

Kentucky is producing just less than 3 million barrels of oil per year, most coming from Eastern Kentucky. The main producing counties are Union, Henderson, Lee and Lawrence. The Oil and Gas division is the frontline enforcer of regulations. The Kentucky Geological Survey has data on wells and interactive maps.

EPA Region 4 has oversight of the UIC (Underground Injection Control) program. Kentucky has submitted an application for primacy.

Reclamation

Plugging is done under KRS 343 and involves removing all steel and equipment from the bore. Cement plugs are set at specific depths. Inspectors are familiar with all water zones. If a hole is punched in coal, gas is found. When pipes are not installed properly in a coal seam, gases escape and contaminate. In many cases, the coal itself is located at the aquifer level where fresh water is located. The coal bed methane, must ventilate, it will dissolve in the water.

The Division of Oil and Gas has no enforcement power.

B. Division of Waste Management

UPDATE: Black Leaf, Louisville

- History of site - From the 1930s through the 1950s, there was pesticide manufacturing done.
- Chemicals found – DDE, DDT, Dieldrin, lead arsenic and PAHs.
- Properties tested – 76.
- EPA cleaned 10 properties at a cost of \$425,000 removing 1,670 tons of contaminated soil.
- DWM cleaned 66 properties at a cost of \$1.6 million removing 7,300 tons of contaminated soil.
- Buildings on the site are structurally unsound.
- DWM will seek reimbursement of funds from responsible parties.

C. UPDATE: Lees Lane Landfill, Louisville:

- History of site – 40 years of accepting industrial waste on this 112-acre site. Site was originally a sand quarry located adjacent to the Riverside Gardens neighborhood. The landfill accepted waste from the Rubbertown Chemical Complex. It received attention due to methane leaks causing flash fires in water heaters in homes. The neighborhood is also bordered by the LG&E Cane Run power plant. One small portion of the landfill is capped. Several hundred drums located along the Ohio River were emptied and reburied on the site. State government installed the current gas collection system and EPA has installed air monitoring stations.
- The site was deleted from the superfund, National Priorities Lists in 1966.
- Relying on responsible parties for clean-up expenses.
- Concern now is continued emissions and access to site – hunting, ATV routes, trespassing, etc.
- Several VOCs, (volatile organic compounds) were found - benzene, butadiene, vinyl chloride, etc.
- EQC and DWM are discussing possible reuse.
- Lee's Lane Landfill predates CERCLA and RCRA laws.

D. Potential Project for Lees Lane Landfill – vendor presentation

Steve Remen, Executive Vice President, groSolar, discussed the possibility of solar panel installation placement on the property, a common practice in the Northeast. **The**

goal is to reuse parcels that are fallow.

Economic benefits:

- tax equity
- projects are set up with third-party owners
- site feasibility, design and construction, built with no capital cost
- nothing penetrates soil on the capped landfill
- beneficial use of land that has no other development potential
- maintain and capture landfill gas
- a liability becomes a benefit

Examples of other sites:

- Solar on top of wastewater treatment plant in Camden, N.J.
- Solar on top of petrochemical in Indiana in an urban industrial area.
- Solar on top of an Amish farm field in Pennsylvania whose owner hopes to return to farming.

Ryan Marlborough, Business Development, groSolar

- Use of half of the landfill's 112 acres depends on topography.
- Design considerations: load bearing, settling, system built in sections, storm water management, gas collection and ventilation.
- Solar production is 5 acres per megawatt.
- Must have Louisville Gas & Electric (LG&E) involvement to make it viable.

Factors for Kentucky Market Overview:

1. Net metering limited to 30kW.
2. Must have 10 megawatt potential to occupy 50 acres. LGE building, 640 megawatt, is small by comparison.
3. The facility would be fenced and monitored remotely.
4. Agreements on average, run 20 to 25 years

Noted: A study completed stated if one fifth of abandoned mine lands were used for solar, all of Kentucky's energy needs would be met.

E. Renewable Energy Generation and Public Service Commission

Overview of Public Service Commission

- Retail electric service is under the jurisdiction of PSC.
- PSC has no jurisdiction over TVA coops since a court case in the 1980s.
- Kentucky currently has **no rules that apply to solar power** because all fuels compete on a level playing field under Kentucky law.
- Solar power must compete on a cost basis against natural gas, coal and all else in marketplace.
- Generating capacity either through purchase, lease, or construction, in order to buy power under contract, must come through PSC with a **Certificate of Public**

Convenience and Necessity, or must demonstrate that their power generating capacity acquisition is the least cost reasonable option available to them.

- The only exception so far has been biomass--allowing Kentucky Power to purchase power from a proposed plant in Perry County which took an act of the legislature. It was a specific act that applied to that facility only.
- Utilities are **required to offer net metering to customers**--the system capacity maximum is 30 kilowatts, which is a residential rooftop array. The **excess power is carried forward to the next billing cycle**; homeowners cannot generate cash doing it. If you sell the property or shut down the solar array, any accumulated credits vaporize.
- It is strictly net metering.
- When **generating power, it runs backwards, when buying power it runs forward**. At the end of the billing period, it's forward or backward from where it started.
- There are small generator qualifying facility rules which are the same as the Federal Energy Regulatory Commission rules. These apply to co-generators and small power facilities.
- Co-generators operate with an industrial facility that produces a waste stream. Upper capacity limit is 80 megawatts and **75 percent must come from renewables--biomass or waste**.

PSC looks to the General Assembly for its authority. PSC's role is not to advocate policy. **Demand side management does not allow PSC to require utilities to engage in demand side management**. It must be at the initiation of the utility. PSC is a quasi-judicial agency. All proceedings take place under oath. PSC is not a policy making body. Commissioners are appointed by the governor and confirmed by the state Senate.

How can Solar be more competitive:

- Change legislation to require a renewable portfolio standard or give price break to solar.
- Price of renewables must come down to match coal or natural gas.
- LG&E (Louisville Gas & Electric) has to show interest in being included. Statutes have to be analyzed for alignment in consistency
- Wind power is under the siting board due to a Mason County project.

In regards to Natural Gas Liquids:

- 1) PSC has no oversight of natural gas liquids (NGL). Safety is under regulation of the Pipeline Hazardous Materials Safety Administration (PHMSA) which is a federal oversight.
- 2) FERC must approve all projects, because it takes natural gas capacity out of the sys-

tem. There is no state siting requirement at present, but any bill could mirror the process of siting carbon dioxide pipelines.

Currently, NGL pipelines have no legal status in Kentucky. They are not utilities, therefore eminent domain does not apply.

PSC governs intrastate pipelines over intrastate natural gas transmission, regulate rates, service and safety.

F. U.S. Army Corps of Engineers South Regulatory Branch Policy Overview

Mission: to protect our waters for children and protect development for the purpose of commerce and jobs and to be fair and balanced in our decisions. The only exception is Lake Cumberland thus ruled by the Nashville district. The Corps has authority under 2 sections of federal law. The first is Section 10 of Rivers and Harbors Act of 1899. It gave the Corps the authority to regulate waters. The second is Section 404 of the Clean Water Act of 1972.

The Corps regulates any structure or work that takes place in, under or over navigable water; maintain navigation on Kentucky's many navigable rivers, i.e. Kentucky River, Ohio River, Green River. These rivers are used in commerce. Therefore, the Corps protects the commerce clause of the Constitution.

Section 404 is to regulate the discharge of dredge or fill material in the waters of the United States, including wetlands. **The Corps regulates the placement of material, into waters, not removal.** Material is anything that changes the bottom geometry of water, rock, sand, soil, dams, berms, concrete, culverts, rip-rap, and sewer lines.

Waters of the United States are defined as:

- Traditional navigable water
- Interstate waters and interstate wetlands
- Other waters including intrastate, non-navigable waters with interstate/foreign commerce connections
- Impoundments of waters otherwise defined as waters of the U.S.—a lake
- Tributaries of the above
- Territorial seas
- Adjacent wetlands

Farmers receive special treatment when it comes to farm ponds. If just a bowl filled with water, it is not waters of the United States, it is isolated water. If a creek must be dammed to make the pond, it is waters of the U.S.

Kentucky has more linear streams than any other state except Alaska due to

mountain streams, etc.

MSD (Metropolitan Sewer District) regulates floodplains in Jefferson County, if there are wetlands. If you have wetlands in the floodplain, **it is regulated by the Corps.**

The **Bluegrass Pipeline** would not have prompted an Environmental Impact Study (EIS) due to the fact their operations would have had a **temporary** impact to waters/crossings, **not permanent. It takes 120 days for a non-controversial project to be permitted** but most applications are incomplete. The **Federal Energy Regulation Commission (FERC)** is out of it because it is not an energy project.

The Corps' jurisdiction is the footprint of crossings. **Natural Gas Liquids (NGL) pipelines falls into a black hole, no one regulates it in its entirety.** Their intentions were to bore under several creeks in order to avoid discharge.

The Corps has 3 kinds of permitting procedures:

1. **Individual Permits**—IPs. These are for big impact projects i.e. coal mining. It is to make sure it is the Least Environmentally Damaging Alternative (LEDPA). A public notice goes out to notify federal and state agencies and the neighbors so they can comment within 30 days. An Environmental Assessment required.
2. **Letters of Permission**—LOPs. Letters of permission are an abbreviated version of the process. It is common to use by the Transportation Cabinet.
3. **General Permits:**
 - Regional General Permits (RGPs)
 - Nationwide Permits (NWPs)

EQC Annual Meeting Discussion Review

Recommendations, discussions and planning

- Recommended an official oversight committee for pipeline installation and maintenance.
- Division of Forestry (DOF) timber theft resolution for landowner protection.
- Need delegation on solar to provide legislative support for change, to accommodate projects such as the Lees Lane Landfill.
- Environmental Justice Conference – October 30, 2015
- More inclusive in the Land, Air and Water publication other than announcing Earth Day winners.
- More discussion on climate change and legislation to open Kentucky's alternative energy sources for power generations.
- Complete EQC publications.
- Continue Black Leaf follow-up.
- Continue Lees follow-up.

Commission Work 2013
Presentation Synopsis To Commissioners

Exploration of Fracking in Kentucky

Definition of Fracking –Fracture stimulation is injecting high-pressure fluids underground to break underground rock to produce natural gas.

Conclusions:

- Need to focus on 1) oil and gas well construction and 2) domestic water supply wells
- Spill prevention control and counter measures
- Support disclosure activities at FracFocus.org
- More Enforcement from Division of Oil and Gas, and Division Of Water
- Small risk of earthquakes
- Safe Underground injection for disposal of fluids.

Environmental Mitigation Funding

The Department of Energy Development and Independence (EDI) administered the Environmental Mitigation Fund, which is a settlement of Kentucky's share of \$11.1 million given to 13 entities. Awards ranged from \$34,000 to \$3.1 million. The Mitigation fund encourages projects that produce multiple benefits towards the reduction of greenhouse gases.

Environmental Justice

EQC Executive Director gave a presentation on **Environmental Justice**. Recipients of federal aid are under scrutiny to comply with Environmental Justice under Title VI of the Civil Rights Act if applicable. Communities are changing, so evaluation of human impacts must be considered.

The overarching agency is the National Environmental Justice Advisory Council (NEJAC), Washington D.C.

Larry Taylor, Environmental Justice (EJ), coordinator for the Commonwealth, said it is the goal of the department, the Department of Environmental Protection (DEP) to incorporate EJ oversight to protect human health in all projects.

EQC made recommendation to study the EJ impact in Eastern Kentucky.

Bluegrass Pipeline Project

On Nov. 13, 2013, the Environmental Quality Commission held its quarterly public forum to address landowners' concerns regarding the proposed Bluegrass Pipeline gleaned from an Oct. 24, 2013 public forum.

Following is a summary of those concerns:

- Verification of an EIS (Environmental Impact Statement) from FERC and Corps of the entire project completed.
- Lack of state level review. Who has authority over siting and routing issues?
- A siting board with no jurisdiction over natural gas liquids pipeline is a concern
- Limited degree of authority from the Division of Water
- Limited degree of involvement under KRS 353.500; **regulations** need to be developed
- Eminent Domain authority issues
- Damage to pipeline, causing damage to landowners
- Karst topography and the effect of crossings revealed the need of a major study of this exposure
- Major leaks in other parts of the country and the damage that resulted
- Landowners feel unnecessarily pressured to sign agreements
- Landowners assessment of land characteristics not addressed

Other concerns included:

- access to property
- impact and safety
- protection and maintenance
- property values
- contractual language
- easements agreements
- monitoring, leaks and response
- health impact
- economical impacts.

These concerns and recommendations were forwarded to Bluegrass Pipeline, LLC.

Annual meeting overview:

Water Quality Update on selenium, discharges and stream designation
Division of Forestry- Impact of trees on carbon sequestration and budget cuts
Division of Air Quality trends, non-attainment, mercury and air toxics standards
Division of Waste Management, landfill and pesticide site update
EPA – Environmental Justice workshop proposed
EQC discussed review of water quality trading

Commission Work 2012
Presentation Synopsis To Commissioners

Department of Environmental Protection (DEP) update:

Since 2008 legislature and recession, the DEP has lost 32 percent of its funding in budget cuts cumulatively leaving only 23 attorneys on staff to enforce state's environmental regulations. This is **30 percent of past staffing levels**. The DEP received some financial relief from ARRA (American Recovery and Reinvestment Act) stimulus funds, rooted in energy grants via federal government. The budget has essentially flat-lined.

Maxey Flats Facility Update

The storage site for nuclear waste in Fleming County, Kentucky is safe and secure with controls in place. The next phase of the state government's long-range plan is to close the site with 30 feet of soil, a composite liner, plus a "final closure cap" to prevent any infiltration of water, to ensure permanent closure, replacing the temporary cap. This is budgeted at \$450,000.

Bluegrass Army Depot

The storage site for toxins of another type is in the Bluegrass Army Depot in Madison County's Richmond, Ky. For many decades, the Army base stored chemical weapons, such as nerve gas, leftover from World War II. The U.S. Department of Defense is close to beginning the process of turning the chemical weapons into brine. The plant is being built that will destroy the chemical weapons that are there.

Division of Water (DOW)

The largest budget impacts are comparable to the mid1990s. DOW must be creative in maintaining its core services. Heavy focus is on enforcement, permitting, compliance and monitoring. Anything ancillary was sacrificed. Turnover among DEP personnel is 10 percent.

Some of DOW core functions include permit issuances, water and sewer line extensions. The numbers of investigations are down but core commitments are being met. \$2.5 million in civil penalties have been accessed in coal mining issues alone.

DEP requested EQC support in the legislature. EQC needs to see the Maxey Flats project completed.

DEP does not have the authority to take restricted fund dollars, the legislature does. DEP is overmatched in federally funded dollars and federal dollars are on the decline. General funds must be used to run the federal programs to keep afloat.

Department of Natural Resource (DNR) Update:

There are 760 positions in the DNR department statewide. Of DNR's 8 divisions, 4 are coal mining related divisions. Coal mining consumes the bulk of the activity in the department. Most of the work in DNR is about mine permits, safety and licenses. This affects the quality of life for all Kentuckians. Non-mining divisions are oil and gas, forestry and conservation.

Proposed reductions at a glance:

1. Abandoned Mine Lands could face cuts up to 8.4 percent. One division is 100 percent federally funded through fees on coal production, with a 25 percent increase of up to \$47 million. All money goes to reclaim abandoned mines statewide.
2. DNR has experienced a 25 percent cumulative loss of budget over the past four years. All growth was denied, therefore must go back to baseline services.
3. Mine permit fees: Funds dropped tremendously. The General Assembly made up the difference with increased permit fees, so permits could function on restricted funds. That's one way restricted funds can take the place of general funds, but it takes statutory approval in most cases.
4. Mine safety inspection and licensing—the general fund dollars increased. The agriculture conservation budget was severely cut.

DNR returned as much as \$800,000 of federal money, due to lack of staff to administer it.

In Forestry, response to wildfires and inspections were limited.

Mining divisions spared cuts in permits (OSML). **The mine mapping GIS is currently online and accessible to the public.** History of all old coalfields can be accessed, all 73,000 of them. GIS is useful to city governments in land use, planning and developing.

There is better enforcement of flyrock incidents in mining, This branch only monitors flyrock. The **Division of Mine Permits** has a small amount of backlog—1 percent. All paperwork is reviewed electronically.

Reclamation: The performance bonding program must be overhauled, the amount is insufficient. A bond pool needs statutory change. When inspections/mining permits, are down, industry compliance suffers. Two or three dozen emergencies were inherited from Office of surface Mining (OSM). This can populate another office in Eastern Kentucky.

Public Concerns and Comment

A. Illegal Timber Theft

Nina Cornett of Blackey, Kentucky testified that in Breathitt County, 200 acres of trees were stolen, to the tune of a \$400,000 loss. Sheriffs and prosecutors never bring

cases due to lack of convictions. Victims are left with civil suits. Over the years the system has come to incentivize the victimization because timber theft laws are weak in Kentucky. **Under the federal Clean Water Act, all are charged to keep silt out of the water.** Thieves don't care about rules, raw roads or foot-deep ruts that cause erosion, or head-high piles of debris. There is fuel left behind big enough for a large bonfire as victims try to deal with debris left after a theft.

Fire endangers victims and neighbors. Landscape after a timber theft looks like a warzone, the root systems of stolen trees die, therefore there is no take-up of run-off water in a hard rain. The air is worse. **Lost trees mean lost carbon credits to landowners and to the state.** Also lost: money coming into Kentucky that could be taxed. **Animal habitat is also lost.** In 1920, Kentucky was clear cut and rainfall fell to 30 inches. State Representative Leslie Combs has introduced **HCR 64 to introduce a study group** on the matter.

Rep. Leslie Combs of Harlan.

Many legislators are affected personally by timber theft. A task force for the purpose of developing a meaningful criminal and legal side needs to be developed with the goal to penalize those who commit the crime of timber theft.

Hugh Archer of Kentucky Woodland Owners Association testified that thieves target old-growth trees. Even trees in the State Nature Preserve system, such as Blanton Forest, are not safe. A 70-year-old crop of trees were stolen for the purposes of wood trim. Thieves sell stolen trees that are then turned into veneer. The number of state foresters is at a 100-year low, enforcement must be at a local level. **Stolen trees are worth thousands of dollars each.**

“In Madison County, Kentucky, at Silver Creek around Christmas 2007, a landowner wished to sell 20 acres of oak in order not to be forced to sell his cattle. He planned to use the money from the sale of his trees to send his children to college, but a thief cut the trees down and stole them, his investment was lost”, says Archer.

Cornett: The matter is not usually a boundary dispute. Thieves will take the stolen trees over the mountains and out of the back of a given forest, in a drainage area, in order to avoid detection. In Perry County, 2 people have been murdered over this issue.

Archer: The Blanton Forest, the 13th largest old-growth forest in the United States, experienced timber theft when 44 acres of 300-year-old trees were stolen.

Cornett: The Kentucky Division of Forestry has no jurisdiction in these matters. **Kentucky has no office for timber theft**, therefore the matter is left in the hands of local sheriffs. The **state of Tennessee, by contrast, has a timber theft unit in its Department of Agriculture.** Is there a way to recover funds? The task force proposed by Combs will be tasked with figuring this out.

Cornett introduced a resolution asking EQC to support Rep. Leslie Combs's effort to introduce a task force to study the issue of timber theft.

EQC agreed and voted to support the resolution.

B. Total Maximum Daily Load

Floyds Fork Environmental Association testified on TMDL (Total Maximum Daily Load) at the Floyds Fork watershed.

It was suggested that there be a meeting between EPA and EQC to discuss the lack of community friendly language in public hearings to discuss poor water quality. Jefferson County will invest millions of dollars, the community must be able to understand it.

Additional Issues brought before the Commission

1. OSRW designation – streams
2. New national EPA water quality standards for acrolein and phenol
3. A proposed eutrication definition
4. Need for information **prior** to designation of waters to guide decision-making
5. Recommendations:
 - a. TMDL's written in understandable language for the public
 - b. Implementation cost included
 - c. Treat TMDL's like regulations
 - d. More public comments
6. Overview of NPS management plan history and goals, and Brownfields HB 465
7. DEP - Pending or current Bills that impact the Cabinet were discussed
8. Mining - New substance abuse procedures, their impacts and improvement rates. HB 385
9. Overview on issues affecting the Black Leaf Chemical facility and Lees Lane Landfill, Jefferson County

Division of Water

1. Triennial Review - There are thirteen candidate streams or segments planned for designation of OSRW (Outstanding State Resource Waters).
Revising Section 8 of 10:031 permissible and automatic inclusion clauses for outstanding state resources waters.

2. New EPA national water quality standards for two chemicals: acrolein, a new human criteria (water + organisms); and phenol.

3. In 10:031, section 1, updating nutrient criterion, more inclusive language instead of hindering it on reservoirs and streams for all water bodies. It will be clarified along with the definition of eutrication.

****EQC suggested that the definition on eutrophication is stronger than it needs to be.**

Goals for the Floyd's Fork Stakeholder process

- Engage stakeholders to develop a community-driven engagement process
- Identify stakeholder perspectives about possible management strategies for the Floyd's Fork Watershed
- Provide community members with opportunities to evaluate these strategies until a working document is developed

Future efforts to reduce nonpoint source pollution in the Floyd's Fork watershed as a result of the Nutrient TMDL development process will be driven by watershed stakeholders.

Overview of Stakeholder Engagement Process:

Information gathered from the stakeholder interviews, focus group, and public information meetings will be disseminated through a Public Strategy Evaluation Meeting. Final report completed July 2013.

The TMDL is being developed for the entire Floyds Fork watershed. It would be applicable to the entire watershed.

5. Nonpoint Source (NPS) Management Plan in review

History and Purpose:

- *The Nonpoint Source Management Plan (NPS)* is required by the Federal Clean Water Act Section 319(b) – State governments must have a NPS Management Program - 319(h) is the funding mechanism for implementation under the Clean Water Act. NPS Management Plan will have a 5-year lifespan, from 2012 – 2017.

Goals of 2012 NPS Management Plan To quantify daily work that the Kentucky Division of Water and project partners are performing, to address nonpoint pollution in Kentucky.

Why the NPS Management Plan is important It guides the Kentucky Division of Water's nonpoint source management plan program for the next five years by setting short and long-term goals and objectives.

The plan is broken down into functional areas:

- Agriculture
- Forestry
- On-site wastewater

- Developed lands
- Recreation
- Resource extraction
- Groundwater
- Water quantity
- Education/outreach
- Riparian or stream modification, and
- Protection of Healthy Watersheds. “It is cheaper to protect healthy water than repair impaired water bodies.”

The Kentucky Division of Water’s nonpoint source management plan program is working to reduce nonpoint pollution in Kentucky’s water bodies.

The plan is available on the Division of Water website.- water.ky.gov

6. Brownfields

Background and Position

A brownfield is defined as any property not used adequately for its intended purpose due to contamination. It is estimated that there are 8,000 brownfields in Kentucky, small and mostly rural, i.e., small gas stations and dry cleaners.

Division of Waste Management reviews all technical plans submitted related to remediation. The Division of Compliance Assistance is an outreach arm to communities and landowners.

Concerns/complications limiting clean-up and use of brownfields properties include:

1. Greenfields
2. Liability concerns
3. Cost of clean-up (can be extensive or unknown)
4. Ability to borrow money
5. Future vision

In the last decade, state government has been more aggressive in pursuing federal funds for brownfield reclamation. **On technical assistance, more than 60 on-site assessments on behalf of communities have been completed. Federal dollars were used to eliminate expenses.**

Since 2007, the **Division of Compliance Assistance** helped secure \$6.5 million for communities. Every year, the EPA offers about \$80 million nationwide to communities to help address brownfields. **Kentucky is first in the EPA’s Region 4, in monies obtained.**

Progress:

- Revised cleanup standards
- Technical assistance, state and federal resources
- Grant training
- Visioning sessions
- Tax credits, volunteer parties who clean up can be reimbursed up to \$150,000 for clean-up, or absolved of state property tax for 3 years
- Bonafide Federal Prospective Purchaser (BFPP), a liability defense

The concept of BFPP - If you didn't cause the problem/pollution release, you have a defense. It's not a great level of assurance, it just means there are tools with which to work.

HB 465 is the only bill pursued aggressively in the legislative session and it is related to brownfield revitalization.

The primary goal of House Bill 465 is to increase certainty regarding future liability. It passed unanimously in the House and Senate.

Objective 1 of HB 465: Maintain existing clean-up standards

- Corrective action requirements remain the same.
"It's not an effort to reduce clean-up standards in Kentucky; it is a risk-based approach that is reasonable. It did not remove any responsibility from EEC, or liability for anyone responsible for a pollution release", Division of Waste Management.
- Parties that caused the release remain responsible for the release.

Objective 2 of HB 465: Provide liability assurances for innocent parties that purchase brownfields. To qualify:

- The party must meet the same criteria as for tax credits.
- The Energy Cabinet must OK party's proposed land use plan
- The party must provide access if clean-up or monitoring actions are needed

Objective 3: Clarify existing Underground Storage Tank liability:

UST has its own state-funded insurance program and clean-up standards unique to that program.

- Kentucky Revised Statute 224.01-400 and Kentucky Revised Statute 224.01-405 clean-up standards do not apply to Underground Storage Tanks (USTs)
- Division of Waste Management will modify its "No Further Action" letters. It is of great assistance to banks and landowners.

7. Substance Abuse in Mining Operations

Office of Mine Safety and Licensing:

Kentucky is a leader in eliminating substance abuse among miners. State government established a **Mine Substance Abuse Task Force** in 2004 to address increasing concerns.

In the **December 2005 final report**, the following recommendations were made:

- Substance and alcohol testing for miners
- Initial alcohol and substance abuse education and training for new and experienced miners
- Voluntary employee assistance program development
- Individuals required to demonstrate, by submitting to a drug test, that they are drug and alcohol free, prior to receiving initial miner certification. Violation of drug-free statutes could result in possible probation, suspension or revocation of certification
- Authority for state government to conduct post-accident drug testing

Summary of activity/enactments on the topic in 2006 i.e. Drug Free Certification of Miners:

The General Assembly enacted *House Bill 207* in its **2006 session and thereby established the nation's first program to ensure miners were drug-free** as part of their certification. The program became effective July 12, 2006 and required that certified miners be reported to the Office of Mine Safety when the following apply:

- Positive drug/alcohol tests in violation of employer drug policies
- Refusal to take drug/alcohol tests; and
- Positive drug/alcohol tests following employer-sponsored rehabilitation.

Three levels of responses apply: **Probation, Suspension and Revocation**. Miners who want to appeal suspensions receive due process hearings before the Mine Safety Review Commission.

Agreements:

- Required clean drug tests and drug abuse evaluation prior to reinstatement
- Required periodic drug/alcohol testing, as well as counseling, if recommended, and
- Sanctions for failure to meet agreement

Impacts and observations on the results:

- 1,575 certified miners have been reported to OMSL for violating the drug-free status of their certifications and have received sanctions.
- Increased workloads of OMSL, Office of General Counsel and the Mine Safety Review Commission due to sanctions.
- Twenty- three percent of miners sanctioned have regained some or all of their Certifications.
- Eleven percent has provided evidence that support rescission of suspension.
- Forty-five percent of miners reported through the process, fail to retain certification.
- The majority of reports from licensees are for positive tests, involving the abuse of prescription drugs.
- Increased use of synthetic drugs such as bath salts and K-2 are creating issues for employers.
- The program does not deal quickly with miners reported from other states and unlicensed mines.

- The 10-day retake on pre-cert testing has created opportunities to abuse the system.

HB 385 represents improvements in the drug-free workplace efforts

1. It allows Kentucky to quickly address reported violations from states with reciprocal certification agreements and non-licensed mines;
2. It treats those individuals reported by licensees and those who fail pre-certification tests in the same manner;
3. It provides treatment for miners reported for the first time, allowing certificates to be reinstated following an evaluation for substance abuse; the completion of a treatment program and a clean drug test, in lieu of an appeal or revocation.

Uncertified miners cannot be hired

In the Kentucky Office of Mine Safety and Licensing, foremen and operations officers are taught and trained on the job in every district. May of 2006 was catastrophic due to deaths of miners.

EQC Annual Meeting Discussion in Review:

- Website development and impact.
- Coal resources – demand is going down. No increase in the foreseeable future.
- Pockets of unemployment statewide.
- Outstanding recommendation on Pike County Geographic Information System (GIS) to be developed and submitted.
- Additional section to the EQC publication - Environment Law
- Development of water quality standards – type of assessments
- Biennial 305b report
- Total Maximum Daily Load (TMDL) - sources identified. The biggest impairments are pathogens, sediment and nutrients

Additional EQC Actions

Pill Bill review revisited and discussed. No action taken.

Floyds Fork **recommendations** submitted to EQC by the Floyd's Fork Association

1. Public representation and inclusion – public awareness campaign
2. Public friendly TMDL report
3. Public funds accountability
4. DOW to list criteria for how changes will be made
5. Kentucky Geologic Survey should be contacted for karst information and groundwater calculations
6. EQC to facilitate open dialogue
7. A request to change the 900 page document 30-day comment period to 60 days.

Recommendations submitted from the Floyd's Fork Association were forwarded to the Division of Water from the Floyds Fork Association for review.

Discussed Cap and trade - an optional implementation tool once TMDL is in place

EQC to help educate the public, summarizing issues, increasing community involvement.

Review 2.5 year lifecycle of the project and summarize, to develop an update every six months, integrating HB 26.



Cumberland Falls

Commission Works 2011
Presentation Synopsis to Commissioners

AREAS of CONCERN ADDRESSED

Forestry Assessment – The 2008 Farm Bill required states to develop a statewide assessment of forest resources, which must include:

- Conditions and trends
- Threats and resources to conserve, enhance and maintain
- Priority areas
- Multi-State priority areas

Discussion included

- Long-term statewide strategy and assessment
- Top five Issues Identified by Kentuckians
- Trees and water quality and quantity
- Direct threats and contributing factors to water quality and quantity
- A five year plan - Goals

2010 May and June Flood Summary:

The Division of Water provided an overview of the May and July 2010 Flood Summary. A Strong weather system brought severe storms, resulted in major flooding, mudslides and tornadoes. Damage was so extensive, request for federal assistance brought a declaration of a federal emergency.

- A request was made from the Kentucky Council for Dam Safety asking for a comprehensive independent inspection of Dix Dam as a condition for approval of the ongoing acquisition of KU/LGE by Pennsylvania Power and Light from the international consortium, E. ON. The organization was concerned about the integrity and safety of the 85 year old Dix Dam, an integral component of the ownership transfer.
- Types of FEMA assistance
- The May drinking water systems

Public comments: Guy Vasant

Mr. Vasant, Kentucky Council for Dam Safety, asked for support on requesting a comprehensive independent inspection on Dix Dam as a condition for approval of the acquisition of KU/LGE by Pennsylvania Power and light, from the International Consortium E. ON.

DEP discussed Federal EPA regulatory issues, updates and revision:

- Regulation of Coal
- RCRA – new requirements for ash ponds and ash landfills
- Green House Gas Emissions
- NAAQS – development for DAQ

EQC on the Open Meetings Act

A review of the Open Meetings Act. The goal of the Act is to ensure that public business isn't conducted in private.

EQC commissioners revisited the mandate and discussed the need for increased usage of surveys, physical meetings at community colleges, increased engagement with communities, groups and residents, and increased farming issues oversight.

Public Service Commission – Clarifications:

The PSC regulates rates and service distribution of:

- Natural gas systems and interstate transmission pipelines
- Telecommunications
- Electricity
- Sewer
- Water

There are approximately 1,550 regulated utilities. PSC is attached to the Energy and Environment Cabinet administratively. Every regulated utility must file their gross inter/intrastate receipts by June 1st of each year.

EQC annual meeting discussion:

Increase publicizing of meetings
Review effectiveness of the videoconferences
Stories we hear needs to be told to the public
Format towards more conversation style
Options: U-tube Gov 2.0, Green TV, etc.
Need to look at specific trends
Need to review recommendations with the Secretary

Commission Work 2010

Presentation Synopsis to Commissioners

Policy Initiatives and Results

EQC recommendations:

- Stronger testing and closer monitoring of Mercury recommendations - review
- Initiated videoconferencing at six sites around the Commonwealth for ease of public participation: University of Louisville, Pikeville College, Western Kentucky University, Eastern Kentucky University, Morehead State University and Kentucky State University.
- Results - decreased travel expense for cabinet personnel and increased Opportunity for residents across the Commonwealth.
- Energy Plan - recommended stronger emphasis on alternative fuel and biomass products
- Cabinet developed a biomass committee resulting in a report to support biomass efforts with publications for referencing.

Legislative Initiatives: EQC collectively recommended the adoption of 38 regulations after comments and changes in the Divisions of Water and Air Quality.

DNR requested EQC support on collection of water quality data, enforcement, enhancement on Kentucky's forest assessment, and control of oil and gas well drilling impacts, electronic data acquisition and public access, and an increase in legal staff.

EQC Recommendations:

- To provide a statewide strategic plan on GIS importance.
- For LIDAR coverage support for multiple agencies.
- To provide more focus on public information access
- To meet the future needs for the research community at the university level using remote sensing and technology sources.
- To develop a strategic process at a high level that would include the community
- Letter to Finance Secretary regarding progress on State Green Building Standards

Approved Statements of Considerations for the Kentucky Division for Air Quality for the following administrative regulations: 401 KAR 51:001, 41 KAR 51:017. 41 KAR 51:052.

Updates by Kentucky Divisions

DEP, DNR, DEDI, DOW, DWM, Ky. Dept. of Education, Warren County Schools and US Building Council

DEP Updates - discussed its primary responsibilities, its staffing and activities and core functions.

Old & New Problems:

- Resolving water quality impairments (ex., nutrients and nutrient standards)
- Increased Federal EPA emphasis on coal mining, coal combustion wastes, ash ponds, steam electric power plants
- Maintenance and replacement of aging infrastructure of water, sewer, and dams

General Fund Reduction Impacts:

- Loss of over 100 positions. DEP's FY06 cap was 863. Currently 745 positions filled of 774 funded.
- DEP's ability to permit, inspect, enforce and monitor mandated activities.
- Forced to use restricted fund dollars to fund minimum levels of personnel for program implementation, instead of intended purposes (cleanups of impacted sites).

DEP Strategies for Coping with Budget Reductions

- Increased environmental permits, certifications, and licenses fees.
- Substituted state general fund sources with restricted fund sources.
- Reduced most out-of-state and some in-state travel funded with state general funds.
- Diminished motor pool for staff in Frankfort – 28 vehicles sent to surplus for

- sale.
- Delayed or eliminated computer equipment replacements.

U.S. EPA – Regulation of Coal

- Unprecedented federal EPA regulatory actions:
 - CAA (Clean Air Act) – Revision of NAAQS (National Ambient Air Quality Standards) for Ozone and others. New regulation on GHG's (Green House Gas). KY Climate Action Plan. PM2.5 Surrogacy policy. Redefine the source litigation.
 - CWA (Clean Water Act) – Revision of Effluent Guidelines for Steam Electric. Revision of 316(b) covering water intake requirements. Significant new requirements for Appalachian coal mining and SMCRA (Surface Mining Control & Reclamation Act) Revision to anti-degradation requirements.
 - RCRA (Resource Conservation and Recovery Act) – Evaluation and development of new requirements for ash ponds and ash landfills – CCW (Coal Combustion Waste classification and structural integrity requirements.

DNR – Department of Natural Resources Ongoing Initiatives:

- Flyrock reduction
- Use of ARRA funding for multi-agency flood control projects in Fleming and Todd counties.
- Assumption of Class II Underground Injection Control primacy from EPA
- OMSL (Office of Mine Safety and Licensing) mine inspection / mine rescue training
- Reduction of mine permitting delinquencies
- CHIA (Cumulative Hydrologic Impact Assessment) Implementations
- FPOP (Fill Placement Optimization Process) Implementations
- Utilization of Increased AML funding
- Funding has more than doubled in the past several years. AML (Abandoned Mine Lands) has increased staff, used more contractors to design projects and provided additional guidance on project design.

HB 283: Increased mine permit fees above the flat \$375 established in 1982.

HB 268: Increased training requirement for blasters license renewal from 16 hours every 3 years to 8 hours annually (24 hours/3 years). Also, increased mining subsidence insurance from \$100,000 to \$300,000 per structure.

HB 215: Allows Division of Mine Reclamation and Enforcement to send Notices of Noncompliance and Cessation Orders via electronic certified mail.

New Initiatives:

- Memorandum Of Understanding (MOU) with Emergency Operations Center (EOC) to provide cave divers for mine rescue.
- New database of miners with pending MSRC (Mine Safety Review Commission) sanctions.

- Assumptions of AML Emergency Program from OSM (Office of Surface Mining).
- Commissioner's outreach to citizens' groups.
- Electronic data submittal (partnership with Department of Environmental Protection).
- Revision of oil and gas regulations.
- Mississippi River Basin Initiative (Division of Conservation).
- Multi-partner study designed to document the effectiveness of carefully monitoring conservation practices at improving downstream water quality by reducing nutrients, soil erosion and stream sedimentation
- Implementation of Kentucky Assessment of Statewide Forest Resources Strategy.
- Implementation of USFS approved Kentucky Assessment of Statewide Forest Resources strategy for program development and delivery.
- Federally funded Southern Appalachian Mixed Mesophytic Initiative (SAMMI).
- Southern Appalachian Mixed Mesophytic Initiative.

Federal Developments:

- EPA Involvement in coal mine permitting
- Interagency coordination (Federal and State)
- SMCRA Stream Buffer Zone Rule developments

Budget Challenges: Budget cuts and its impacts

Opportunities for EQC Support: Activities that will benefit Kentucky's Department of Natural Resources:

- Collection of water quality data to identify trends, problems, valuable resources.
- Enforcement
- Enhancement of Kentucky's forest, soil and water resources through stewardship and best management practices.
- Assessment and control of oil and gas well drilling impacts
- Electronic data acquisition and storage with public access
- Increase in Cabinet legal staff.
- Return to a comprehensive "State of the Environment" assessment that tracks trends in Kentucky's environmental quality.

DOW Updates:

- May 3, 2010 - governor submitted a request for a Presidential Declaration of Disaster for damages from flooding, high winds and landslides:
- Individual assistance counties: 61
- Public assistance counties: 72
- All counties are eligible for the Hazard Mitigation Grant Program (HMGP); except for sanctioned counties and communities

Drinking Water:

- 46 public water systems issued a Boiled Water Advisory (BWA).
- Kentucky had 300,000 people affected by flooding issues at public water Systems with no water outages reported.

Wastewater:

- 86 systems reported bypasses and overflows
- 19 systems reported being flooded

Dam Failures:

- Dam failures are always a concern associated with a major precipitation event.

DOW discussed programs to address risk reduction:

Kentucky Status of Participation in the National Flood Insurance Program (NFIP):

- Number of Participating Communities: 337
- Participating Cities: 226
- Total Coverage: \$3,005,811,100
- Total Paid (since 1978): \$233,355,693

DWM Updates:

Program Areas:

- Operational Compliance – leak prevention
- Assessment and Cleanup
- Reimbursement – PSTEAF (Petroleum Storage Tank Environmental Assurance Fund) – financial assurance mechanism that provides for the reimbursement of corrective action costs to eligible tank owners.
- 49,398 registered UST's (Underground Storage Tank) in Kentucky since inception of program in 1985, 37,780 UST's permanently closed, 11,623 active UST's at 3,846 facilities, 139 facilities are undergoing closure, 1,460 are undergoing site investigation, 377 are undergoing corrective action

Incentives for Regulation Development

UST (Underground Storage Tanks) Program Outreach

- New effort to establish a meaningful line of communication with tank owners and contractors
- Quarterly publications covers all areas of the UST Program
- Component of Web site designed for the specific needs of UST Contractors

The Division of Waste Management established a **Vapor Intrusion Workgroup** to develop procedures to assess and abate impacts for multiple programs.

ARRA UST Grant – KY UST Program received a \$4.1 million ARRA grant for oversight of assessments and position authorization.

Facilities Management for the Kentucky Green Schools K-12:

In referencing **HB 2 all school districts, to become a part of the Kentucky Environmental Education Project (KEEP) program.**

SB132 provides the standard for design and construction for modification.

Kentucky Carbon Footprint and EPA regulations:

E.ON, US, VP discussed **Kentucky's carbon footprint** and where it leads.

- Renewable Energy
- Transmission Grid
- Carbon Legislation or EPA Regulation
- Efficient Use of Electricity

Impacts of the Demand Conservation program, helps reduce the need for generating electricity at peak times. (www.eon-us.com)

Past successes, future challenges

- CO2 emissions is a 100 times larger issue than SO2/NOx
- 95 percent of electricity in Kentucky comes from coal-fired power plants.
- Renewable Portfolio Standards (RPS) should be considered in the context of national or regional greenhouse restrictions.

Energy Consideration – hydro

- Annual availability equivalent is up to 40 percent of continuous maximum capability
- Many legal/regulatory entities involved with different missions – recreation, transportation, nature preserves
- Low operating cost – “no fuel”
- Most hydro locations are already being used

Energy Considerations – wind, solar, and geothermal

Currently not optional

Energy Consideration – biomass

Governor's Biomass Task Force

- Meet RPS requirements with “in state” resources
- Co-fire biomass with coal
- 15 million tons of biomass combustion for 12% RPS
- Supply infrastructure and sustainability

Energy Consideration - Nuclear

- Zero-carbon option
- Enormous investment of time and money
- Critical that there be a strong public and political consensus
- Disposal still an issue
- Nuclear is a potential long-term solution for Kentucky

Energy Consideration – coal

- One of the most widely-used fuels for electrical generation – 90 percent

- availability
- 50% of U.S. power produced today
- 95% of KY's power produced today
- One of the largest fixed-source producers of CO₂
- Relatively low transportation costs (river barge)

Carbon capture: What's involved

- 3 technology paths for capture – post-combustion, pre-combustion, and oxy-fuel combustion
- Promising options, but no large-scale commercial application yet
- E.ON U.S. involved in post and pre-combustion R&D

Carbon capture & sequestration – What's involved

- “Bury” the problem
- Deep underground wells – depleted oil fields
- Significant investments in new technology, pumping systems
- Promising option, but no large-scale commercial application yet
- “NUMBY” (Not under my back yard)

Costs of transmission

- Current grid is stretched – would require major new construction at large capital cost
- Risks of over-reliance on single highway (Canadian blackout)
- Development/approval time
- NIMBY (Not in my back yard)

Carbon legislation or EPA regulation

Carefully crafted, comprehensive legislation is a more effective option for controlling greenhouse gas emissions than piece-meal EPA regulation.

EPA regulation via the Clean Air Act would:

- Utilize low threshold levels for applicable entities
- Establish a significant number of non-attainment areas
- Regulate an extremely high-volume pollutant with no commercial technology control available

American Clean Energy and Security Act of 2009

- Mandates a 17percent reduction in greenhouse gases by 2020 and 83 percent By 2050 from 2005 levels.
- Senate did not advance similar bill.
- Copenhagen commitments were based on the House bill targets.

To further mitigate costs to our customers, additional elements E.ON U.S. would like to see included in the bill are:

- Modified greenhouse gas reduction targets and timetables.

- Inclusion of the price “ceiling” on emission allowance costs.
- Extension of the phase-out period for allocation of allowances.
- Preempt inappropriate EPA regulations under the CAA.

Reducing demand – the challenge

- More than a 15 percent reduction in demand is a challenge.
- Unprecedented consumer commitment to energy efficiency.
- Commitment to “smart grid”
- Less coal in total generation mix, less exposure to carbon tax, but high cost of purchased or developed renewable power sources.

Energy Efficiency Initiatives

- E.ON U.S. is investing more than \$25 million in energy efficiency programs annually, at least \$182 million over the life of the program.
- Expected to reduce the need for additional generation by more than 500 megawatts.
- Conserve energy during heavy demand
- Smart meter pilot program: helps customers manage usage

Additional EQC Action and Discussion:

- Acknowledgement of DNR’s EQC recommendations
- Develop a date retrieval system
- GIS Letter to be completed and forwarded to the Governor, Secretary of Finance and EEC
- State of the Environment revisions
- Become a part of regulation development
- Letter of acknowledgement of budget constraints in regards to statutory responsibility
- Review significant EPA changes that affect state regulatory rules
- Review how the state can help cities
- Recycling
- Sustainable Farming
- Proposed website addition using the EPA site as a template for regulations

To review the earlier works of the commission, EQC Annual Commission Synopsis reports for 2008 and 2009 can be found in Appendix I.



Natural Bridge

Environmental Quality Commission Annual Earth Day Celebration and Awards Presentations

Annual Earth Day awards are given to recognize individuals and organizations for their extraordinary efforts to enhance and improve environmental quality. Eight recognition awards, one Lifetime Achievement and one Public Service award are presented. Information on the nomination process and the Earth Day awardees can be found on the EQC website, www.eqc.ky.gov .

The Earth Day celebration and award ceremony are held annually at the Berry Hill Mansion, Frankfort, Kentucky. Following are the recipients and speakers.

2014 Presenter and Awardees

**Heather McTeer-Toney, Administrator
U.S. EPA, Region 4**

Teena Halbig and Sheron Lear – formed the Floyds Fork Environmental Association over 22 years ago for the oversight and cleanup of Floyds Fork creek.

Councilwoman Tina Ward-Pugh, District 9, Louisville – developed a website called Green Triangle; solved drainage problems; created a community garden and tree canopy master plan for her district.

The Green Institute, Louisville, provides a 12-week course for business and community leaders that include creating rain gardens; planting trees and developing a neighborhood weatherization squad.

Leslie Preston Meredith, a science and social studies teacher at West Hardin Middle School in Cecilia, Ky., runs the school's Green Club.

Terry Cook - Director, Nature Conservancy of Kentucky. Advocate for stronger conservation programs for landowners.

The Bluegrass Youth Sustainability Council - High school student leaders from both private and public schools in Lexington designed, maintained and developed curriculum for rain gardens.

Karin Ceralde, a biological science teacher in collaboration with the National Audubon Society, collected data on wild birds, to protect them and their environment.

The DuPont-Louisville Works Plant, located in West Louisville's Rubbertown area, in 2012 reduced the quantity of hazardous waste generated by 50 percent.

The Lifetime Achievement Award

Gordon Garner devoted his career to the engineering and design of public works. As executive director of the Metropolitan Sewer District for 18 years, Garner oversaw a sewer expansion program, adding up to 5,000 new customers each year.

The Public Service Award

Kurt Mason with the Natural Resources Conservation Service is an advocate for land preservation and environmental education. He uses his expertise to reduce harmful runoff in Beargrass Creek in Louisville. Through workshops and forums he has influenced decision makers to improve water quality.

2013 Presenter and Awardees

Sarah Lynn Cunningham, Environmental Engineer
Teacher, Green Energy and Sustainable Design, University of Louisville

Tony Powell, Independence - As a member of the Kentucky River Watershed Watch in Grant County, more than 57 septic systems have been repaired or replaced in the Ten Mile Creek sub watershed.

Watershed Watch in Kentucky, Watershed Watch offers training to citizens on how to take quality water samples to be analyzed by professional labs.

River Fields, Louisville – With over 2,200 acres preserved through conservation easements, this 50 year old nonprofit land trust organization's mission is to protect and

preserve the natural and cultural resources along the Ohio River corridor.

Steve Coleman, Frankfort, Conserving prime farm land with programs such as with the Kentucky Soil Erosion and Water Quality Cost Share program, landowners learn how to preserve nutrients in the soil and reduce harmful runoff.

DuPont Louisville Works mitigated the effects of FREON by lowering HFC-23 emissions by 43 percent through improved equipment efficiency, producing less greenhouse gas per ton.

Smithfield Packing Plant, Middlesboro - Increased recycling products from 2 tons per month to 37 tons per month by increased recycling of products.

Kentucky State University, The Green Society, Frankfort - A student environmental club composed of science majors, whose focus is KSU sustainability, removed 48,000 pounds of electronic waste from campus.

Lifetime Achievement Award

Lee Andrews, Frankfort, created the Kentucky Aquatic Resources Fund, and Indiana Bat Conservation Fund, which directs funding to priority aquatics.

Public Service Award

Berea Solar Farm in Kentucky is a large, single-solar electric installation on the Berea Municipal Utilities property. Individuals may lease photovoltaic solar panels and the power generated by their leased panels is credited back to their own individual utility bills.

2012 Presenter and Awardees

Bobbie Ann Mason, Writer
Professor
Pulitzer prize finalist
Guggenheim Fellow

City of Greenville – Residents of Greenville developed a 12-acre park, now known as the Brizendine Brothers, in the city's business district. It provides an outdoor classroom and a preserve for wildlife habitat.

John Gagel cleaned up Cane Run Creek, which runs through Lexmark's Shady brook Park and planted native species along its banks.

Larry Griffin, International Paper Inc., Henderson Mill – The Henderson Mill manufactures 100 percent recycled containerboard for corrugated boxes.

Richardsville Elementary School, Bowling Green in Warren County – Claimed the nation’s first public school designed to be net zero located in Bowling Green.

Kentucky Division of Forestry (KDF) – Established by the Kentucky General Assembly in 1912, the Division of Forestry provides protection from wildfire, disease and invasive Plants.

American Synthetic Rubber Co. - The manufacturer recycles or reuses more than 98 percent of its waste; developed a 55-acre landfill into a Certified Wildlife Habitat in 2009.

Robert and Adriana Lynch of Whitley County planted 4,000 hardwood trees to prevent erosion on their farm. To boost the bee population, they gave seedlings and honey bee trees away to encourage others.

Marshall County Conservation District, for five years has provided free seedlings and energy saving light bulbs for those who sign energy conservation pledges.

Lifetime Achievement Award

Dean and Nina Cornett of Letcher County cleaned up a one-acre dump and turned it into a park, also chaired clean-up efforts to remove 100 tons of trash.

The Public Service Award

Floyd County Conservation District. Since 1950, the Floyd County Conservation District employs two full-time employees that provide technical expertise to local groups and landowners to implement best management practices.

2011 Presenter and Awardees

Gwen Keyes Fleming, Administrator
U.S. EPA, Region 4

Bracken County Conservation District – Roll-off dumpsters were placed throughout the county for citizens to place unwanted items, reaping nearly 112 tons of garbage.

Candace Wells, a senior at Eminence Independent Schools, spreads the word with classmates about keeping the environment free of trash and the advantages of going green.

William Neal Cassity, Jessamine Judge/Executive, is a charter member of the Bluegrass Regional Recycling Corp. One year, the county cleaned-up more than 1,100 tons of waste in a seven-day period.

Green Castle Baptist Church, Jefferson County received the Energy Star Certification

from the US Environmental Protection Agency. The 37,000-square-foot facility reduced their energy bill to approximately \$2,600 per month.

Bridgeport Christian Church, Franklin County, recognized for its formation of a “Green Team” created as a recycling program. They installed programmable thermostats and created an environmental education area.

Randall Napier, a student at Eastern Kentucky University, Corbin Campus - through a Kentucky PRIDE grant he supplied the campus with recycling receptacles; created the first Kentucky PRIDE Club.

Marvin Lee Bryant Jr. is responsible for the planting of about 30,000 trees and shrubs, improving mined land in Whitley County. He founded the Cumberland River Reclamation Project.

Woodford County Conservation District completed Phase I of its “Going Green Project” by installing occupancy sensors, switching out T-12 lamps with fewer, more energy efficient T-8 lamps. Expected annual savings, \$1,600 on utility bills.

Public Service Award

J.R. Williamson of Scott County founded the Solid Waste Coordinators of Kentucky, an organization that encourages counties to work together to solve solid waste issues.

Lifetime Achievement Award

Dr. Lee Dew - Since 1969, he has been involved in the environmental preservation movement. Through the years, Dr. Dew, helped spur recycling in Owensboro

2010 Presenter and Awardees

**Tom Fitzgerald, Director
Kentucky Resource Council**

Campbell County Conservation District, for efforts to promote agricultural land conservation by conducting a “Cost of Community Services” study.

Christopher Gray Sr.—for turning Marvel Golf Club near Benton, KY, into the most environmentally responsible golf facility in the state.

Mill Creek Restoration Team—a group of professionals that are restoring Mill Creek in Fayette County. The results of their work allow for professional development activities for teachers, field days for students and a restored stream for the public.

Millie and Frank Anderson—for utilizing best management practices on their 125-acre farm in Scott County.

Save Kentucky's Hemlocks—a partnership of citizens, nonprofits and government agencies working together to save eastern hemlocks from the impacts of Hemlock Woolly Adelgid. More than 15,000 trees have been treated.

Bernheim Arboretum and Research Forest—for building ecology and sustainability into its educational programs those are available throughout the year.

A.L. Sinclair—of Adair County worked tirelessly to improve his community's environment through recycling and roadside cleanup initiatives.

Sandy Whitaker—of the Rockcastle County Conservation District has been given credit for being 'the main force' behind the district's environmental accomplishments.

Lifetime Achievement Award

Mary Dickey—solid waste coordinator for Boone County.

Public Service Award

Karen Reagor—state coordinator of the Kentucky National Energy Education Development

2009 Presenter and Awardees

**Stan Meiberg, Acting Administrator
USEPA, Region 4**

Ted Withrow, Morehead. His efforts have resulted in four communities with new municipal sewers.

Sue Anne Salmon, Madisonville. An investigative reporter in Whitesburg, who wrote about Appalachia, coal mining, coal miners and their families, and the environmental impact of that industry.

Cromer Ridge Team, Winchester. To restore more than 8,000 acres of public and private land they reduced sediment yield in the river by roughly 9,000 tons per year.

Kentucky Sustainability Institute, Lexington, teaches leaders and citizens about sustainable development techniques. They developed curriculum and materials for training including a "green" dictionary.

The Lexington-Fayette Urban County Government's Waste Buster Program is

sponsored by Lexington's local government and managed by Bluegrass PRIDE. More than 140 businesses, 70 schools and 50 apartment complexes are now participants.

The Kentucky Derby Festival of Louisville made a new biodegradable "Go Green" pin from corn oil, with packaging made from recycled plastic Pegasus pins.

Mark Jacobs of Petersburg, Executive director of Wildlife Conservation Kentucky Inc., restored a 165-acre park by implementing a program to remove non-native invasive plant species adding 40 acres of native grasses and 5,000 native trees.

Public Service Award

Don Dott, executive director of the Kentucky State Nature Preserves Commission (KSNPC) and president of the Kentucky Natural Lands Trust. Dott, an attorney, has headed the KSNPC since 1998.

Lifetime Achievement Award

Revis "Reb" Stacey of Williamstown. In 1968, Stacey using his own money to restore over 700 acres of forestland in Grant County created a Wildlife Center to help teach young people about the importance of the forest and its vulnerability.

2008 Presenter and Awardees

Len Peters, Secretary
Kentucky Energy and Environment Cabinet

Chris Baker and the Kenton County School District's Energy "WISE" program for its comprehensive effort to educate students, teachers and other staff members about energy conservation.

Water Pioneers Water Quality Program, for sponsoring a week-long, in-depth study of Appalachian watersheds for rising high school sophomores enrolled in the University of Kentucky's (UK) Robinson Scholars Program.

Sara Johns, Shelby County, for her volunteer work at Red Orchard Park in Shelby County.

The Bluegrass Partnership for a Green Community, in the 2006 and 2007 U.S. Conference of Mayors' City Recycling Challenge, 13.7 million cans were collected in Fayette County for recycling.

Dr. Joe Baust, Murray State University, for his efforts and accomplishments in improving environmental education on the local, national and international levels.

Mike Davis, for his distinguished service as head of Fort Campbell's environmental division.

Harlan County Conservation District, for establishing an appliance buyback program that rid the county of more than 3,000 old appliances, and litter cleanup activities with the Boy Scouts.

Dara Moran, Fallsburg School, Lawrence County, for her commitment and enthusiasm in teaching students about the environment.

Public Service Award

Judith Petersen, of Greensburg - A former employee of the Environmental and Public Protection Cabinet, now executive director of the Kentucky Waterways Alliance.

Lifetime Achievement

Betsy Bennett, of Louisville, longtime advocate of clean air and water and the preservation of Kentucky's natural resources.

APPENDIX I

2008 Vision for the Cabinet **Len Peters, Secretary**

The Cabinet Vision is to include carbon reduction, legislation to address climate change advancing state energy projects, renewable reliability, new technology usage to maintain open dialogue with the governor and the Environmental Quality Commission.



2008 Presentation Synopsis to Commissioners

Division of Water - regulatory briefings. - All surrounding states charge fees for 401 certification. The KPDES sets fees to partially cover the cost of implementing the certification program. **EQC was asked to draft a recommendation supporting higher fees.**

**EQC recommendation: DOW research on how Ohio handles public notice for their emergency regulation.

Changes to 401 KAR 5:026 for water quality standards include 233 outstanding state resource waters, with nine listed as threatened and endangered species.

Division of GIS - user needs for increased model use - improved modeling efficiency and consistency, and modeler training.

Department of Natural Resource Impacts

Programs saving cost: The Surface Mining Law and The Abandoned Mine-land program.

Programs reducing cost: inspection capacity, computer access at mining sites, electronic postage service, electronic permit application, positions' reduction.

Loss of funds from the state means loss of funds from the federal government due to the match requirement. There are operators mining under multiple permits that need more scrutiny. The department lost 52 retirees. Original contour rules in mountaintop removal are being enforced.

****EQC recommendation:** *DNR (Department of Natural Resources) and DEP* - work together to make sure AML lines are put in areas where they are needed.

EQC questions the default use classifications being removed and the methyl mercury criteria.

Division of Waste Management (DWM) discussed changes made to 12 Hazardous Waste regulations.

****EQC recommendation:** *DWM* - reconsider the definition of “substantial business relationship”, as the current definition requires the relationship to be demonstrated to the satisfaction of the cabinet.

Department of Air Quality (DAQ) discussed major revisions on the Transportation Conformity Rule to include consultation procedures, Attainment Status Designations and Ambient Air Quality Standards, and the Repeal of 401 KAR 60:020.

****EQC recommendation:** County officials need to be made aware of the changing nonattainment rules.

Public comment:

Scholarship

Kentucky Resource Council concerns– The Kentucky Transportation Center has extensive scholarship monies while the Kentucky Energy and Environment cabinet has little.

Mercury

Tim Guilfoile – Mercury is a neurotoxin. He recommended that Kentucky mandate total mercury control measures, asked EQC to take a position on mercury.

Duke Energy - Mercury emissions from Kentucky’s coal fired power plants have been decreasing since 1990 and will continue despite the Clean Air Mercury Rule being vacated and Kentucky subsequently repealing the state program. Vendors are producing more ways to control mercury emissions from utility boilers, but none have yet emerged as commercially available for large scale operations over long periods.

Pat Banks – Many people do not believe the fish they catch can be contaminated. Mercury causes health problems, especially for children.

EQC was asked to help with prevention.

Kentucky Environmental Foundation – Concerns about exposure from the East Kentucky Power Coal’s proposed Smith Power plant and its impacts. A report called “A Portfolio of Energy and Efficiency” that discusses small amounts of mercury exposure and its damage was highlighted. EQC was asked to call for safer, cleaner solutions to mercury polluting coal fired power plants.

KEF is against the Smith Coal fired Power Plant. Reason being, it is economically unsound since coal is getting more costly. Kentucky does not need more pollutants in its water and air, especially mercury. Studies show the closer children live to the plants, the more harm is done.

EQC was asked to help prevent further exposure.

Sierra Club

Mercury burned at power plants releases mercury into the air falling in rain and entering rivers and streams. Mercury causes cognitive and developmental damage. Middle aged men with high levels of mercury are more susceptible to coronary heart disease. We need strong enforcement of the Clean Air Act to protect Kentuckians.

Adventure Tourism:

Sierra Club: The issue of ATV trails has been connected with promotion of Mountain Top Removal (MTR), using this as a reasonable use of the land depending on circumstances. There is no foundation for claims that more MTR needs to be done for the sake of building ATV trails.

2009 Presentation Synopsis and recommendations to Commissioners:

Governor’s Energy Plan –

Nineteen speakers – Concerns:

- Surface mining should only be done in a responsible manner
- Energy plan should include discussion on climate change.
- Recommend the Governor revise the energy plan to focus on efficiency and alternative energy.
- EQC was asked to recommend the energy plan be returned and the Cabinet asked to take into account environmentalist, energy efficiency and renewable energy.
- Recommended that funds and incentives for a comprehensive effort to encourage solar energy.
- The Energy Plan is more focused on sustaining coal technology instead of serving Kentucky’s best interest.
- EQC was asked to recommend that the plan be reworked to be more balanced to make sure we have a smaller carbon footprint.

- Nuclear energy was recommended because of its positive affect in the air and its opportunity to create thousands of jobs.
- Coal fields are promised wealth, but wealth doesn't come to the people.
- The energy plan does not address the needs of Kentucky's low income families.
- Tax dollars should not subsidize the coal industry.
- Less than 3 percent of eastern Kentucky is renewable. The water has over 300 times the allowable amount of arsenic.
- Coal should become a thing of the past.

GIS (Geological Information System)

KLS (Kentucky Landscape Snapshot):

- ❖ No comprehensive picture of the forest, urban and rural landscape.
- ❖ No baseline to measure Kentucky's changing landscape.
- ❖ No geographic information input for future land planning.

MTR (Mountain Top Removal) updates

Permitting applications will be scrutinized more closely and must meet all permit requirements

Kentucky Energy Cabinet Divisions:

DEP challenges and concerns:

- Staff training
- Loss of basic program support services,

DMRE - (Division of Mine Reclamation) Division cuts, positions, and vacancies are of concern. Need new initiatives

OMSL - (Office of Surface Mining) The Drug and Alcohol testing program requires coal miners to provide proof of their drug and alcohol free status.

DAML – (Division of Abandoned Mine Land) the emergency program takes away funding for waterlines.

The Chemical Weapons Working Group update of the Bluegrass Army Depot (BGAD) presented a facility overview. The weapons demilitarization facility is currently under construction and is expected to begin processing weapons around 2016 until closure around 2025.

BGAD is currently permitted under a Resource Conservation and Recovery Act (RCRA) Part B storage permit. This permit is divided into the non-chemical storage and chemical storage sections, which allow for the storage of the chemical weapons and other wastes until demilitarization is completed. Air monitoring is conducted as required

by RCRA regulations. KDEP is involved regularly with BGAD via the permitting process, facility inspections and leaker response activities.

Division of Waste Management discussed the establishment of weapons as hazardous waste, nerve agents in rockets, blister and nerve agents in projectiles, and nerve agents in DOT shipping bottles. Energetics includes bursters, propellants, and fuzes.

EQC Discussion - HB 1 from the 2007 special session:

1. **Section 31** concerns energy saving measures. It encourages the Finance and Administration Cabinet to utilize the Green Globe rating system in the design, construction and operation of state buildings and incorporate Energy Star products into state procurements.
2. **Section 33** requires reporting to LRC on improvements in energy efficiency through use of LEED, the Green Globe rating system, Energy Star, or guaranteed energy savings performance contracts.
3. **Section 34** requires the Finance and Administration Cabinet to develop a strategy to replace at least 50 percent of state owned passenger vehicles and light duty trucks managed by the Division of Fleet Management with specifically identified energy efficient vehicles.
4. **Section 47** creates the Kentucky Alternative Fuel and Renewable Energy Fund.
5. **Section 48** creates a program to provide funding for Kentucky based companies to undertake research and development and commercialization work in the area of alternative fuels and renewable energy.
6. **Section 55** establishes a collaborative to develop a plan for the creation of the Center for Renewable Energy Research and Environmental Stewardship.

Deputy Secretary of Finance & Administration discussed House Bill 2 as it relates to state government real estate, fleet and state owned vehicles.

Public comments:

Specific recommendations requested

Stephan Sanders from the Appalachian Citizens Law Center, Inc. wanted to:

1. Ensure that HB 104, the Stream Saver Bill receive a full hearing during the legislative session
2. Determine the progress in the development of the 303(d) listing or TMDL development. The state reported in 2004 that 87 percent of the Big Sandy was too impaired to meet Kentucky's minimum aquatic life use standard.

Mike Hannon on behalf of the Kentucky Environment Fund (KEF) discussed mercury threats in central and eastern Kentucky and its health impacts.

EQC requests:

1. Support programs
2. Call for safer, cleaner energy solutions to mercury polluting coal fired power plants

Rick Clewett from the Sierra Club recommended:

1. Current regulations governing surface mining be strictly enforced
2. Strengthen the state laws and regulations governing blasting and ensure that those **improved** laws and regulations are seriously and consistently enforced.

Wallace McMullen, Greater Louisville Sierra Club, asked that the Governor and the Cabinet revise the focus of the energy plan on efficiency programs and rapidly developing renewable energy in the Commonwealth.

Elizabeth Crowe, Kentucky Environmental Foundation

Community leaders and Non-Governmental Organizations (NGO's) as well as health professionals and environmental advocates should be an integral part of the design and implementation of any energy strategy. A moratorium should be placed on new coal while investment dollars are poured into conservation, energy efficiency and renewable energy programs.

Kentucky League of Woman encouraged EQC to look at damage from coal usage and viable alternatives for the environment and the economy.

Kentuckians for the Commonwealth (KFTC)

Several states have eliminated their projected growth in demand completely through sustained efforts to improve energy efficiency. Kentucky should provide direct assistance to families for weatherizing homes and apartments.

Andy MacDonald

The Governor's Plan Strategy's overall targets for renewable energy production are too modest when viewed in the context of climate change and the real possibilities that are available. With a willingness to look beyond Kentucky's borders for sources of renewable energy, especially wind, we discover greatly increased potentials for meeting our future energy needs with carbon-free, low-cost energy. Greater use of mass transit and strategies to reduce the use of cars need more attention.

Clarence Hixson

A responsible coal policy would increase coal severance to 25 percent or more and devote millions to planning and construction of inner urban transportation, and residential energy.

APPENDIX II

April 2009

**Special Meeting
Of
The Environmental Quality Commission**

Agenda

Informational/educational session on Renewable energy feasibility for the Commonwealth.

300 Fair Oaks Lane, Frankfort, KY 40601

Speakers in the order of presentations:

**Andy McDonald,
Director, Ky. Solar Partnership**

**Robert Ukeiley,
Environmental Atty., Berea, Ky.**

**David Brown Kinloch,
President/CEO of Lock 7 Hydro partners**

**James Bush,
Energy and Environment Energy**

**Don Challman,
Associate Director & General Mgr. of the University of Ky. Center for Applied
Energy Research**

**Leah MacSwords
Director, Division of Forestry**

Highlights of Presentations

Solar

Barriers are high capital cost, no long term commitment. There is a need for long term commitment by the state. Thirteen hundred sixty four megawatts of solar energy by 2020 will generate about 2 percent of annual electrical generation for consumption, using information from 2006 with 2 percent of electricity consumption. Solar portable tanks and water systems have about a 40 year lifespan.

One of the largest barriers to solar is the high capital cost. However; consumers are not paying the capital cost of power plants presently. Other states that have climate similar to Kentucky are using solar energy. Twenty four hundred kw hours are saved over a year.

Potential job creation is possible; however there is a need for long term commitment by the state and utilities to create a solar energy industry with incentive options and policy options. There are challenges for both the consumer and industry.

Wind

Wind data is being established for other states but not Kentucky. Top states for wind-energy potential factoring in environmental and land use exclusions are: N. Dakota, Wyoming, S. Dakota, Iowa, Kansas, Oklahoma and Texas. Kentucky has no wind generated power even though its neighbors, Tenn., Ill, Ind., and WVa. have it. High voltage lines can transport wind energy.

Articles were presented regarding North Dakota's Wind Farm output in regards to the Rugby Project which could produce enough electricity to power almost 11,000 homes. Iowa, Michigan and Indiana were also mentioned.

Wind data is being established for other states, but not Kentucky.

Hydro

Hydropower provides 90 percent of all renewable power, 24 percent of the world's electricity and 7 percent of electricity in the U.S. There are over 2000 hydroelectric plants in the U.S. Only 3 percent of dams in the U.S. have hydropower. Kentucky has 887 MW of potential hydro energy usage at 39 non-hydro dams.

Signed into law under the past administration, Kentucky provisions mandated that the River Authority's mission was to develop hydroelectric resources. There are 29 potential hydro-electric sites in Kentucky. The Lock 7 Hydro plant is a low impact hydro plant. Kentucky has the second highest number of stream dams.

- Hydropower provides 90 percent of all renewable power, 24 percent of the world's electricity and 7 percent of electricity in the U.S.
- Signed into law the Kentucky provision mandating the River Authority's mission

to develop hydroelectric resources.

Obstacles to hydro are drought and regulatory issues. Per discussion these regulatory obstacles need to be challenged. Utilities need to do a smart grid for possible renewable alternatives. Another obstacle is finding the equipment to handle renewable energy production and development

Climate Change Challenges

- Declining water supplies as snow and ice caps disappear
- Rising sea levels
- Increasing droughts and food
- More hurricanes and storms
- Threat to food
- Disease
- Reduced biodiversity and habitat
- Carbon sequestration
- Not enough wind, hydro and geothermal sources
- Biomass – transportation and land use expense
- Solar – land use - capital cost and storage
- Nuclear – expense, politically taboo, waste, proliferation requires continuously building new reactors
- Learning curve must include other energy sources than coal

Biomass

Wood - Positive attributes

- Available wood
- Carbon capture issues identified
- Some power plants use wood
- Biomass – landfill gas. Five landfill gas plants have been installed in Kentucky.
- Main obstacle for alternatives such as this are permits.

Barriers

- High capital cost
- Limited shelf life
- Federal definition of biomass eliminates wood from grants
- Planting limitations
- Controversial government usage
- Public perception barrier to cutting trees
- Ecological disadvantage – changing natural habitat
- Wood waste being used by owners for chips and other needs in-house.
- No surplus of wood waste in Kentucky.

Barriers that apply to all energy prospects

- ✓ It must have proven technology for buy-in from investors.
- ✓ It needs to have an agency or broker that can get the fuels to the producer.
- ✓ Useful technology needs to be deployed or developed.
- ✓ It is market driven.

Renewable obstacles

Solar – no sun

Hydro -water drought

Wind – control

Nuclear - supply of uranium

Energy usage will double in 40 years

APPENDIX III

EQC Kentucky Revised Statute (KRS)

Under KRS 224.100 et seq. the Kentucky Environmental Quality Commission (EQC) is a seven-member citizen advisory board that works diligently to strengthen the public's role in solving environmental problems in our communities and the state.

The commission was created under state law KRS with a mission to:

- facilitate public discussion and resolution of environmental issues;
- promote partnerships to protect the environment for future generations;
- and
- serve as an advisory board to the governor and other state officials on environmental matters.

KRS 224.01-110 Powers and duties of commission.

The Environmental Quality Commission shall have the power, duty and authority to:

- (1) Establish such advisory committees as may be necessary and convenient.
- (2) Advise the secretary on any matter within his responsibility which it deems necessary.
- (3) Advise the Governor on any matter covered by the provisions of this chapter.
- (4) Serve as a working public forum for the exchange of views, concerns, ideas, information, and recommendations relating to the quality of the natural environment.
- (5) Recommend adoption or rejection by a majority of its membership present and voting of any proposal by the cabinet to adopt, modify or revoke:
 - (a) Any positions proposed to be taken by the cabinet on behalf of the state before interstate and federal agencies or federal legislative bodies on matters relating to or affecting the quality of the environment of the state;

b) Any rule or regulation pertaining to the procedural aspects of hearings, appeals, the filing of reports, the issuance of orders, the issuance of permits, and the application for and the granting of exemptions; or

c) Any procedures for the financial assistance grants proposed to be given to municipal, regional, county, or state organizations for environmental purposes.

(6) Recommend adoption or rejection after public hearing by a majority of its membership present and voting of any proposal by the cabinet to adopt, modify, or revoke:

(a) Any comprehensive environment quality plan, program or policy proposed for adoption as a state plan or policy pertaining to an environmental management activity; or

(b) Any rule or regulation pertaining to the prevention, abatement, and control of existing or threatened air or water pollution, disposal of waste, control of noise, or the use of air, land, or water resources, or strip mining and reclamation.

(7) Establish an advisory committee on noise control, which shall consist of a sound engineer, an audiologist, and one (1) representative from each of the following: transportation industry, manufacturing industry, labor, citizenry, and the General Assembly. Such members shall be appointed with the approval of the secretary, who shall be an ex officio member.

Effective: July 13, 1984

History: Amended 1984 Ky. Acts ch. 111, sec. 184, effective July 13, 1984. -- Amended 1978 Ky. Acts ch. 113, sec. 5, effective June 17, 1978. -- Amended 1974 Ky. Acts ch. 74, Art. III, secs. 1 and 13(2), effective June 21, 1974; and ch. 99, sec. 21, effective June 21, 1974. -- Created 1972 (1st Extra. Sess.) Ky. Acts ch. 3, sec. 5, effective January 1, 1973.

Formerly codified as KRS 224.045

Section I

The commission shall hold regular meetings at least once in every three (3) months, the time and place of which shall be determined by the commission. Special meetings may be called by the chairman or by three (3) members of the commission by delivery to each member of the commission of a written notice thereof at least five (5) days in advance of the date of any such meeting. Four (4) members of the commission shall constitute a quorum at any meeting. The commission shall establish bylaws for the conduct of its meeting and shall keep an accurate record of all its proceeds.

Overview

Special Meetings

MEETINGS

Section 1

1) A special meeting of the Commission may be called by the Chair, or at the request of the Executive Director, or a majority of the members or a quorum.

2) The commission shall provide written notice of the special meeting. The notice shall consist of the date, time, and place of the special meeting and the agenda. Discussions and action at the meeting shall be limited to items listed on the agenda in the notice.

224.1-100 Environmental Quality Commission: Membership, terms, compensation, officers, meetings.

(1) *There is hereby created the Environmental Quality Commission which shall consist of seven (7) members appointed by the Governor.*

(2) *All members of the commission shall be citizens eligible to vote in elections in this Commonwealth. At all times a majority of the commission shall meet the requirements of KRS 224.1-105, and "person" as used in KRS 224.1-105, shall relate to a majority of the members of the commission.*

(3) *Of the seven (7) members of the commission first to be appointed, one (1) shall be appointed for a term of one (1) year; two (2) for a term of two (2) years; two (2) for a term of three (3) years; and two (2) for a term of four (4) years, beginning on January 1, 1973. Thereafter, all appointments shall be made for terms of four (4) years beginning on the first day of January of the year in which the appointment is made. Each of the appointed members of the commission shall hold office for the term for which he was appointed and until his successor shall have been appointed and taken office in his stead or until he shall resign or be removed in a manner provided by law.*

(4) *Any vacancy in an unexpired term shall be filled for the unexpired portion of the term in the same manner as the original appointment to that term.*

(5) *Members of the commission shall receive twenty-five dollars (\$25) per day for each meeting attended and may be reimbursed for actual and necessary expenses incurred in the performance of official duties.*

(6) *The commission shall select one (1) of its members as chairman, another as vice chairman, and another as secretary at its first regular meeting in the calendar year.*

(7) *Staff services for the commission shall be performed, insofar as practicable, by personnel of the cabinet.*

(8) *The commission may request and receive the assistance of any state or municipal educational institution, experiment station, laboratory, or other agency when it is deemed necessary or beneficial by the commission in the performance of its duties.*

(9) *The commission shall hold regular meetings at least once in every three (3) months, the time and place of which shall be determined by the commission. Special meetings may be called by the chairman or by three (3) members of the commission by delivery to each member of the commission of a written notice thereof at least five (5) days in advance of the date of any such meeting.*

Four (4) members of the commission shall constitute a quorum at any meeting. he commission shall establish bylaws for the conduct of its meeting and shall keep an accurate record of all its proceedings.

Effective: June 17, 1978

History: Amended 1978 Ky. Acts ch. 154, sec. 20, effective June 17, 1978. -- Created 1972 (1st Extra. Sess.) Ky. Acts ch. 3, sec. 4, effective January 1, 1973.

KRS 224.01-100 formerly codified as KRS 224.041.

Formerly codified as KRS 224.01-100.

ENVIRONMENTAL QUALITY COMMISSION BYLAWS

Duties of the Commission

ARTICLE IV

The duties of the EQC as stated in KRS 224.01-110 are:

- 1) *Establish such advisory committees as may be necessary and convenient.*
- 2) *Advise the secretary on any matter within his responsibility which it deems necessary.*
- 3) *Advise the Governor on any matter covered by the provisions of this chapter.*
- 4) *Serve as a working public forum for the exchange of views, concerns, ideas, information, and recommendations relating to the quality of the natural environment.*
- 5) *Recommend adoption or rejection by the a majority of its members present and voting of any proposal by the cabinet to adopt, modify or revoke:*
 - a) *Any positions proposed to be taken by the cabinet on behalf of the state before interstate and federal agencies or federal legislative bodies on matters relating to or affecting the quality of the environment of the state;*
 - b) *Any rule or regulation pertaining to the procedural aspects of hearings, appeals, the filing of reports, the issuance of orders, the issuance of permits, and the application for and the granting of exemptions; or*
 - c) *Any procedures for the financial assistance grants proposed to be given to municipal, regional, county or state organizations for environmental purposes.*
- 6) *Recommend adoption or rejection after public hearing by a majority of its membership present and voting of any proposal by the cabinet to adopt, modify, or revoke:*
 - a) *Any comprehensive environment quality plan, program or policy proposed for adoption as a state plan or policy pertaining to an environmental management activity; or*
 - b) *Any rule or regulation pertaining to the prevention, abatement and control of existing or threatened air or water pollution, disposal of waste., control of noise, or the use of air, land, or water resources, or strip mining and reclamation.*

7) *Establish an advisory committee on noise control, which consist of a sound engineer, an audiologist, and one (1) representative from each of the following: transportation, industry, manufacturing industry, labor, citizenry, and the General Assembly. Such members shall be appointed with the approval of the Secretary, who shall be an ex officio member*

Duties of the Commission
ARTICLE VI

Section 1

The Commission shall submit annual report to the Governor summarizing the Commission's activities during the preceding fiscal year and making such recommendations as the Commission deems appropriate.

Section

The Commission shall recommend subjects for consideration and initiate studies, with action to be implemented by the Commission.

Section 3

The commission may request and receive the assistance of any state or municipal educational institution, experiment station, laboratory, or other agency when it is deemed necessary or beneficial by the commission in the performance of its duties.

Section 4

It is the responsibility of the commission to make recommendations to the Governor and legislators and to promote legislative action.

Section 5

In the event the Chair and Vice-Chair are both unable to preside, or a quorum of the Commission shall elect a temporary Chair.

Glossary

A

AML..... Abandoned Mine Lands
ARRA..... American Recovery and Reinvestment Act

C

CAA..... Clean Air Act
CERCLA..... Comprehensive Environmental Response, Compensation and Liability Act
CHIA..... Cumulative Hydrologic Impact Assessment
CCW..... Coal Combustion Waste
CWA..... Clean Water Act
CO₂..... Carbon Dioxide

D

DAQ..... Division for Air Quality
DEDI..... Department of Energy Development and Independence
DEP..... Department of Environmental Protection
DDE..... Dichlorodiphenyldichloroethylene (Pesticide)
DDT..... Dichlorodiphenyltrichloroethane (Pesticide)
DMP..... Division of Mine Permits
DNR..... Department of Natural Resources
DOCA..... Division of Compliance Assistance
DOF..... Division of Forestry
DOW..... Division of Water
DWM..... Division of Waste Management

E

EEC..... Energy and Environment Cabinet
EIS..... Environmental Impact Study
EJ..... Environmental Justice
EQC..... Environmental Quality Commission
EPA..... Environmental Protection Agency

F

FEMA..... Federal Emergency Management Agency
FPOP..... Fill Placement Optimization Process

G

GHG..... Green House Gas
GIS..... Geographic Information System

H

HB..... House Bill

K

KAR..... Kentucky Administrative Regulation
KDF..... Kentucky Division of Forestry
KEEP..... Kentucky Education Environmental Project
KEF..... Kentucky Environmental Foundation
KGS..... Kentucky Geological Survey
KRS..... Kentucky Revised Statutes
KU/LGE..... Kentucky Utility/Louisville Gas & Electric

L

LEED..... Leadership in Energy and Environmental Design

LGE/LG&E..... Louisville Gas and Electric
LIDAR..... Light Detection and Ranging

M

MOU..... Memorandum of Understanding
MSD..... Metropolitan Sewer District
MSRC..... Mine Safety Review Commission

N

NAAQS..... National Ambient Air Quality Standards
NEJAC..... National Environmental Justice Advisory Council
NFIA..... National Flood Insurance Plan
NGL..... Natural Gas Liquids
NGO..... Non- Government Organization
NIMBY..... Not in my backyard
NO_x..... Nitrogen Oxide
NPS..... Nonpoint Source Management Plan
NRC..... National Resource Council
NRCS..... National Resource Conservation Service
NUMBY..... Not under my backyard

O

OSM.....Office of Surface Mining
OSML.....Office of Mine Safety and Licensing
OSRW..... Outstanding State Resource Waters

P

PM..... Particulate Matter
PHMSA..... Pipeline Hazardous Materials Safety Administration
PSC..... Public Service Commission
PSTEAF..... Petroleum Storage Tank Environmental Assurance Fund

R

RCRA.....Resource Conservation and Recovery Act
RPS..... Renewal Portfolio Standard

S

SAMMI..... Southern Appalachian Mixed Mesophytic Initiative
SMCRA..... Surface Mining Control & Reclamation Act
SO₂..... Sulfur Dioxide

T

TMDL..... Total Maximum Daily Load
TVA..... Tennessee Valley Authority

U

UIC..... Underground Injection Control
USGS..... United States Geological Survey
UST..... Underground Storage Tank

V

VOC's..... Volatile Organic Compounds

For more information visit our

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