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### Catalog of State GHG Reduction Policy Actions Cross-Cutting Issues (CCI)

A catalog of state-level, greenhouse gas (GHG)–reducing actions and policy options prepared by the Center for Climate Strategies (CCS) and the Kentucky Climate Action Plan Council, based on actions undertaken or considered in state-wide climate change action plans by multi-stakeholder groups in a wide cross-section of U.S. states and by state, local, and private participants.

#### Key to Future Rankings of Options in the Tables That Follow:

Potential GHG Emission Reductions <sup>1</sup>	Potential Cost or Cost Savings <sup>1, 2</sup>
<b>High (H):</b> At least 1.0 million metric tons (MMt) carbon dioxide equivalent (CO <sub>2</sub> e) per year by 2020	<b>High (H):</b> \$50 per metric ton CO <sub>2</sub> e (tCO <sub>2</sub> e) or above
<b>Medium (M):</b> From 0.1 to 1.0 MMtCO <sub>2</sub> e per year by 2020	<b>Medium (M):</b> \$5 to \$50/tCO <sub>2</sub> e
<b>Low (L):</b> Less than 0.1 MMtCO <sub>2</sub> e per year by 2020, or 1 MMtCO <sub>2</sub> e by 2050	<b>Low (L):</b> Less than \$5/tCO <sub>2</sub> e
<b>Uncertain (U):</b> Not able to estimate at this time	<b>Uncertain (U):</b> Not able to estimate at this time
<sup>1</sup> Several measures may overlap in terms of emission reductions and/or cost impacts. Estimates assume measures would be implemented independently of other measures. <sup>2</sup> Costs are denoted by a positive number. Cost savings (i.e., “negative costs”) are denoted by a negative number.	

Note: Cross-Cutting policies are not analyzed for GHG reduction potential or costs per ton.

#### Definition of “Priorities for Analysis”:

- **High:** High-priority options will be analyzed first.
- **Medium:** Medium-priority options will be analyzed next, time and resources permitting.

- **Low:** Low-priority options will be analyzed last, time and resources permitting.

***Important Note: The state actions are numbered in this catalog solely for convenience in referencing them. Their numbers do NOT reflect a ranking or prioritization of the actions.***

**Cross-Cutting Issues (CCI)**

*Note that this listing will be developed more fully during the CCI Technical Work Group (TWG) process. TWG members are encouraged to provide input on policies and programs in place in Kentucky to assist in defining baselines. The “Notes” column should be used to record recently enacted policies and programs in Kentucky relevant to state actions in the catalog.*

Option No.	Greenhouse Gas (GHG) Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Externalities, Feasibility Considerations	Priority for Analysis	Notes / Related Actions in Kentucky
<b>CCI-1</b>	<b>GREENHOUSE GAS INVENTORIES FORECASTS, REPORTING &amp; REGISTRY</b>					
1.1	Establish GHG emissions inventory function			Usually run by state, e.g., covering 20-year period, in 5-year increments.	H-1 M-1 L-2 <b>Tier 2</b>	Some local governments (e.g., Lexington and Louisville) have developed or are planning to develop GHG inventories. Lexington is following the ICLEI (Local Governments for Sustainability) protocol for GHG inventories, which is expected to be completed in the late spring of 2010. Consolidate into CCI-1.3.
1.2	Establish GHG emissions forecasting function			Same as above.	H-1 M-1 L-2 <b>Tier 2</b>	Consolidate into CCI-1.3.

Option No.	Greenhouse Gas (GHG) Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Externalities, Feasibility Considerations	Priority for Analysis	Notes / Related Actions in Kentucky
1.3	Establish GHG emissions inventory and forecasting function (utilizing a GHG emissions reporting program that applies data collected by the federal government under the mandatory reporting rule) that does not limit the development of local inventories (developed in coordination with federal and state activities) and join or establish GHG emissions reduction registry for oversight and comparison with other states.			Usually run by state, e.g., covering 20-year period, in 5-year increments. Cover all emissions or specific sectors of GHGs. Coordinate with federal efforts. Majority of U.S. states are in a climate registry. Useful for cap-and-trade accounting.	H-3 M-3 L-1 <b>Tier 1</b>	Consolidation of CCI-1, 2, & 3.  Some local governments (e.g., Lexington and Louisville) have developed or are planning to develop GHG inventories. Lexington is following the ICLEI (Local Governments for Sustainability) protocol for GHG inventories, which is expected to be completed in the late spring of 2010. Kentucky is a member of The Climate Registry.
<b>CCI-2</b>	<b>GREENHOUSE GAS REPORTING</b>					
2.1	Establish or adopt a GHG emissions reporting program			Cover all emissions or specific sectors of GHGs. Coordinate with federal efforts.	H-2 M-1 L-1 <b>Tier 1</b>	Consolidate into CCI-1.3.
<b>CCI-3</b>	<b>GREENHOUSE GAS REGISTRY</b>					
3.1	Establish or participate in a GHG emissions reduction registry			Majority of U.S. states are in a climate registry. Useful for cap-and-trade accounting.	H-3 L-1 <b>Tier 1</b>	Kentucky is a member of The Climate Registry.  Consolidate into CCI-1.3.
<b>CCI-4</b>	<b>PUBLIC EDUCATION AND OUTREACH</b>					
4.1	Efforts targeting state employees and activities			See CCI-7, below, State Lead by Example.	H-1 M-1 L-2 <b>Tier 2</b>	Consolidate into 4.12.

Option No.	Greenhouse Gas (GHG) Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Externalities, Feasibility Considerations	Priority for Analysis	Notes / Related Actions in Kentucky
4.2	Efforts targeting policymakers (e.g., legislators, regulators, executive branch, agencies)				H-2 M-1 L-1 <b>Tier 2</b>	Consolidate into 4.12.
4.3	Efforts targeting future generations (primary, secondary, and post-secondary curricula; professional licensing programs, etc.)			Focus on sustainability and reducing consumption. Emulate “best practices” in schools.	H-1 M-1 L-2 <b>Tier 2</b>	Consolidate into 4.12.
4.4	Efforts targeting community leaders and community-based organizations			Focus on reducing consumption and encouraging sustainability.	H-1 M-2 L-1 <b>Tier 2</b>	Consolidate into 4.12.
4.5	Efforts targeting the general public			Citizen voluntary efforts to reduce emissions by participation in organized programs.	H-1 M-2 L-1 <b>Tier 2</b>	Consolidate into 4.12.
4.6	Efforts targeting industrial and economic sectors			Focus on sustainability and reducing consumption.	H-2 L-2 <b>Tier 2</b>	Consolidate into 4.12.
4.7	Create outreach coordinator(s) position(s)				M-3 L-4 <b>Tier 3</b>	
4.8	Fund climate change and solution research at academic institutions				H-4 M-2 L-1 <b>Tier 1</b>	Change verb to “fund” from “encourage.”
4.9	Commission study of implications of market-based systems to manage GHG emissions			Effects on state of cap-and-trade, carbon taxes, cap-and-dividend.	H-1 M-1 L-2 <b>Tier 2</b>	Consolidate with 12.1, 12.2, and 4.9 at new 12.3.

Option No.	Greenhouse Gas (GHG) Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Externalities, Feasibility Considerations	Priority for Analysis	Notes / Related Actions in Kentucky
4.10	Efforts targeting carbon capture, transport, and geological storage				L-4 <b>Tier 3</b>	Consolidate into 4.12.
4.11	Fund energy and environmental education and solution research				H-1 M-5 L-1 <b>Tier 2</b>	Change verb to “fund” from “encourage.”
4.12	Implement a comprehensive public education and outreach process on climate change actions and mitigation (carbon capture and transport, geologic storage, and reduction and efficiency goals for Kentucky) that targets stakeholders (policy makers, community leaders and groups, industries, and educational sectors)				H-5 M-2 <b>Tier 1</b>	Consolidation of 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, and 4.10
<b>CCI-5</b>	<b>ADAPTATION AND VULNERABILITY</b>					
5.1	Develop a state climate change adaptation plan			Hydrologic cycle and water concerns a key driver.	H-2 M-1 L-1 <b>Tier 2</b>	Consolidate into 5.3.
5.2	Conduct a state climate change vulnerability assessment			11 categories are recommended for assessment. Suggest deletion, as the 11 categories are not described. Allow process to determine categories.	H-1 M-2 L-1 <b>Tier 2</b>	Consolidate into 5.3.

Option No.	Greenhouse Gas (GHG) Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Externalities, Feasibility Considerations	Priority for Analysis	Notes / Related Actions in Kentucky
5.3	Develop a state climate change adaptation plan & vulnerability assessment			Hydrologic cycle and water concerns a key driver for adaptation plan.	H-6 L-1 <b>Tier 1</b>	Consolidation of 5.1 and 5.2.
<b>CCI-6</b>	<b>STATEWIDE GHG EMISSION REDUCTION, ENERGY INTENSITY, AND ENERGY EFFICIENCY GOALS OR TARGETS</b>					
6.1	Establish goals or targets for statewide GHG emission reductions				H-3 L-1 <b>Tier 1</b>	Consolidate in 6.3.
6.2	Establish goals or targets for statewide GHG energy intensity and energy efficiency			Take into account short- and long-term GHG goals established by local governments.	H-3 L-1 <b>Tier 1</b>	Consolidate in 6.3.
6.3	Conduct a broad stakeholder and public process to develop state GHG emission reduction, energy intensity, and energy efficiency goals			This policy needs to consider what causes GHG emissions and climate change.	H-6 L-1 <b>Tier 1</b>	Consolidation of 6.1 and 6.2. Developed following stakeholder process.
<b>CCI-7</b>	<b>STATE, LOCAL, AND TRIBAL GOVERNMENT GHG EMISSION REDUCTION, ENERGY INTENSITY, AND ENERGY EFFICIENCY ACTIVITIES (LEAD BY EXAMPLE)<sup>1</sup></b>					
7.1	Establish goals or targets for reducing GHGs from state-owned or -operated sources				M-3 L-1 <b>Tier 2</b>	Consolidate 7.1, 7.10, and 7.11 in new 7.14.
7.2	Assign or create a multi-agency body to oversee ongoing state climate efforts.			(Local government can replicate state approaches.)	H-1 M-1 L-2 <b>Tier 2</b>	Consolidate 7.2, 7.3, and 7.13 in new 7.15.
7.3	Monitor state's own GHG emissions at agency level and require annual agency-specific reports on GHG reduction progress				M-3 L-1 <b>Tier 2</b>	Consolidate 7.2, 7.3, and 7.13 in new 7.15.

<sup>1</sup> All of the policy options under CCI-7 are intended to consider energy intensity and energy efficiency targets, as well as GHG emission reduction targets.

Option No.	Greenhouse Gas (GHG) Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Externalities, Feasibility Considerations	Priority for Analysis	Notes / Related Actions in Kentucky
7.4	Require inclusion of GHG emission impacts in Environmental Impact Assessments				H-1 L-3 <b>Tier 3</b>	Unclear as to what assessments would be subject to this requirement. Recommend deletion.
7.5	Require programs funded with state bonding to meet energy efficiency and energy intensity targets				H-1 M-1 L-2 <b>Tier 2</b>	Consolidate 7.5 and 7.6 in new 7.16.
7.6	Require projects funded with state bonding to be climate-neutral			(Can be part of RCI.)	M-2 L-2 <b>Tier 2</b>	Consolidate 7.5 and 7.6 in new 7.16.
7.7	Join the Chicago Climate Exchange (CCX) (committing to reducing the state's own GHG emissions)				H-1 M-2 L-1 <b>Tier 2</b>	Consolidate 7.7, 7.8, and 7.9 in new 7.17.
7.8	Join a regional climate action group (such as WCI, RGGI, MGA)				M-2 L-2 <b>Tier 3</b>	Delete—WCI, RGGI, and MGA regional interests are not the same as those of Kentucky and other coal-burning states. Also these states are not contiguous to Kentucky.

Option No.	Greenhouse Gas (GHG) Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Externalities, Feasibility Considerations	Priority for Analysis	Notes / Related Actions in Kentucky
7.9	Consider forming a consortium of like and/or neighboring states to pool their resources and interests in meeting regulations for GHG emission reduction, energy intensity, and energy efficiency				M-1 L-3 <b>Tier 3</b>	Consolidate 7.7, 7.8, and 7.9 in new 7.17.
7.10	Encourage and incentivize energy-saving actions in state operations and facilities			Energy audits; energy efficiencies; solicit employee involvement and ideas.	H-1 M-2 L-1 <b>Tier 2</b>	Consolidate 7.1, 7.10, and 7.11 in new 7.14.
7.11	Encourage transportation options that reduce GHG emissions in state fleets			State fleet of LCVs; reduce VMT; extensive commuter options and incentives; teleconferencing.	H-2 M-1 L-1 <b>Tier 1</b>	Consolidate 7.1, 7.10, and 7.11 in new 7.14.
7.12	Develop environmentally friendly purchasing programs				H-2 M-1 L-4 <b>Tier 2</b>	
7.13	Assign or establish an entity to coordinate state efforts to address climate change				H-1 M-1 L-2 <b>Tier 2</b>	Consolidate 7.2, 7.3, and 7.13 in new 7.15.
7.14	Establish goals or targets and incentivize energy-saving actions and other strategies for reducing GHGs from state-owned or -operated sources, including: facilities & fleets			Energy audits; energy efficiencies; solicit employee involvement and ideas. State fleet of LCVs; reduce VMT; extensive commuter options and incentives; teleconferencing	H-6 M-1 <b>Tier 1</b>	Consolidation of 7.1, 7.10, and 7.11.

Option No.	Greenhouse Gas (GHG) Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Externalities, Feasibility Considerations	Priority for Analysis	Notes / Related Actions in Kentucky
7.15	Assign or create a multi-agency body to oversee and coordinate ongoing state climate efforts. A key role of this agency will be to Monitor state's own GHG emissions at the agency level and require annual agency-specific reports on GHG reduction progress.			(Local government can replicate state approaches.)	H-3 M-2 L-2 <b>Tier 1</b>	Consolidation of 7.2, 7.3, and 7.13.
7.16	Require programs funded with state bonding to meet energy efficiency and energy intensity targets and for projects to be climate neutral			(Can be part of RCI.)	H-1 M-4 L-2 <b>Tier 2</b>	Consolidation of 7.5 and 7.6.
7.17	Form a regional climate action group or consortium similar to WCI, RGGI, MGA, with other surrounding coal states to pool resources and interests in meeting regulations for GHG emission reduction, energy intensity, and energy efficiency.			Kentucky and other states interests should be aligned with regard to solutions to lower GHG emissions, such as CO <sub>2</sub> sequestering and storage.	H-2 M-3 L-2 <b>Tier 2</b>	Consolidation of 7.7, 7.8, and 7.9.  Suggest deletion of groups inappropriate for Kentucky.
<b>CCI-8</b>	<b>LOCAL GHG REDUCTION, ENERGY INTENSITY, AND ENERGY EFFICIENCY ACTIONS<sup>2</sup></b>					
8.1	Encourage local governments and regional associations to develop their own comprehensive climate action plans and strategies			Set goals; encourage participation; include adaptation strategies.	H-1 M-1 L-1 <b>Tier 2</b>	Consolidate 8.1, 8.2, 8.4, and 8.5 in new 8.7.

<sup>2</sup> All of the policy options under CCI-8 are intended to consider energy intensity and energy efficiency targets, as well as GHG emission reduction targets.

Option No.	Greenhouse Gas (GHG) Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Externalities, Feasibility Considerations	Priority for Analysis	Notes / Related Actions in Kentucky
8.2	Implement a statewide program to encourage and structure voluntary individual actions to reduce GHGs				H-1 L-2 <b>Tier 2</b>	Consolidate 8.1, 8.2, 8.4, and 8.5 in new 8.7.
8.4	Encourage local governments and regional associations to develop their own comprehensive efficiency and carbon intensity targets and strategies				H-1 M-1 L-1 <b>Tier 2</b>	Consolidate 8.1, 8.2, 8.4, and 8.5 in new 8.7.
8.5	Implement a statewide program to encourage and structure voluntary individual actions to improve efficiency and carbon intensity				H-1 L-2 <b>Tier 2</b>	Consolidate 8.1, 8.2, 8.4, and 8.5 in new 8.7.
8.6	Establish public-private partnerships to seek (investment capital and philanthropic) funding for improving energy efficiency and carbon intensity to minimize impacts on Kentucky's economy				H-3 M-3 L-1 <b>Tier 1</b>	

Option No.	Greenhouse Gas (GHG) Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Externalities, Feasibility Considerations	Priority for Analysis	Notes / Related Actions in Kentucky
8.7	Develop a “tool kit” available to local governments, institutions and individuals that identifies procedures for establishing climate action plans and actions to identify, understand and improve energy intensity, GHG emissions and energy efficiency			Development of the tool kit allows communities and organizations to develop consistent approaches to the issues without mandating efforts that are likely not funded.	H-4 M-2 L-1 <b>Tier 1</b>	Consolidation of 8.1, 8.2, 8.4, and 8.5.
<b>CCI-9</b>	<b>FINANCIAL POLICIES</b>					
9.1	Develop funding approaches to help pay for climate strategies				H-4 M-3 <b>Tier 1</b>	
<b>CCI-10</b>	<b>CLIMATE-RELATED INVESTMENT AND BUSINESS-TO-BUSINESS ENGAGEMENT</b>					
10.1	Encourage formulation of a business-oriented entity to promote private-sector climate protection				H-1 M-4 L-2 <b>Tier 2</b>	
<b>CCI-11</b>	<b>DEDICATE GREATER PUBLIC INVESTMENT IN CLIMATE DATA AND ANALYSIS</b>					
11.1	Identify resources for climate-related data collection and analysis				M-3 L-4 <b>Tier 2</b>	

Option No.	Greenhouse Gas (GHG) Reduction Policy Option	Potential GHG Emissions Reduction	Cost per Ton	Externalities, Feasibility Considerations	Priority for Analysis	Notes / Related Actions in Kentucky
<b>CCI-12</b>	<b>CONDUCT AN IMPACT ANALYSIS OF FEDERAL CARBON CONSTRAINTS ON KENTUCKY</b>					
12.1	Conduct a state vulnerability assessment for carbon constraints from federal actions			Federal legislation to reduce GHG emissions could adversely affect coal production and the state or regional economy. Need to fully assess the nature and duration of this potential vulnerability.	M-2 L-1 <b>Tier 2</b>	Consolidate 12.1 and 12.2 in new 12.3.
12.2	Develop a state mitigation adaptation plan in response to federal carbon constraints				M-2 L-1 <b>Tier 2</b>	Consolidate 12.1 and 12.2 in new 12.3.
12.3	Conduct a state vulnerability assessment for carbon constraints from federal actions and develop a plan to mitigate negative effects and adapt to limitations and impact. Include market-based systems to manage GHG emissions.			Federal legislation to reduce GHG emissions could adversely affect coal production and the state or regional economy. Need to fully assess the nature and duration of this potential vulnerability and develop a state mitigation and adaptation plan. Include the effect on KY of cap-and-trade, carbon taxes, or cap-and-dividend approaches.	H-6 M-1 <b>Tier 1</b>	Consolidation of 4.9, 12.1, and 12.2.

CCI = Cross-Cutting Issues; CCX = Chicago Climate Exchange; CO<sub>2</sub> = carbon dioxide; GHG = greenhouse gas; LCVs = low-carbon vehicles; MGA = Midwestern Governors Accord; RCI = Residential, Commercial, and Industrial; RGGI = Regional Greenhouse Gas Initiative; TWG = Technical Work Group; VMT = vehicle miles traveled; WCI = Western Climate Initiative.