

Chapter 3

Cross-Cutting Issues

Overview of Cross-Cutting Issues

Some issues relating to climate policy cut across multiple, or even all, sectors. The Arkansas Governor's Commission on Global Warming (GCGW) addressed such issues explicitly in a separate Cross-Cutting Issues (CC) Technical Work Group (TWG). Cross-cutting recommendations typically encourage, enable, or otherwise support emission mitigation activities and/or other climate actions. The types of policies considered for this sector are not readily quantifiable in terms of greenhouse gas (GHG) reductions and costs or cost savings. Nonetheless, if successfully implemented, they would most likely contribute to GHG emission reductions and implementation of the GCGW's policy recommendations described in Chapters 4–7 of this report.

The CC TWG developed recommendations for 11 policies (see Table 3-1) that were then reviewed, revised, and ultimately adopted by the GCGW members present and voting. Ten of the recommendations are focused on enabling GHG emission reductions and mitigation activities, while one (CC-9 [Adaptation and Vulnerability]) addresses adaptation to the changes expected from the effects of GHGs that will remain in the atmosphere for decades.

Key Challenges and Opportunities

In fulfilling one of its requirements under Arkansas Act 696, the GCGW recommends that by 2009 Arkansas adopt a statewide, economy-wide global warming pollutant reduction goal to reduce the state's gross GHG emissions below 2000 levels by 20% by 2020, 35% by 2025, and 50% by 2035. The GCGW based its recommendations on its review of the potential overall emission reduction estimates (as compared to the GHG emissions inventory and forecast) for 31 of 54 policy recommendations for which emission reductions were quantified, and its review of goals and targets adopted by several other states. While 23 other of the GCGW's policy recommendations were not readily quantifiable, some of them would most likely achieve additional reductions, including several of the CC policy recommendations. In addition, emerging technologies may hold the potential to reduce emissions even further.

An opportunity and a challenge is for Arkansas to establish the Arkansas Climate Change Center (CC-9) to (1) collect and analyze data to monitor the effects of climate change in the state, and (2) develop a plan to manage the projected impacts of climate change on the state and reduce the state's contribution to GHGs. In addition, the vision for the Center is to attract leading researchers, scientists, economists, and policy analysts to support implementation of six other CC policy recommendations (i.e., CC-3, CC-4, CC-7, CC-8, CC-10, and CC-11). The Center could provide a significant coordination role with state and local governments, nongovernmental organizations (NGOs), and the private sector to avoid duplication of effort, along with the research support needed to enable decision making on how best to implement policies to mitigate GHG emissions as Arkansas works to achieve the recommended global warming pollutant reduction goals. The GCGW recommends that the Governor's Office seek government and private funding to support establishment of the Center as soon as possible. Until the Center is

established, the GCGW recommends that the state decide on the appropriate lead agency or agencies for implementing the GCGW-recommended CC policies.

Table 3-1. Cross-Cutting Issues Policy Recommendations

No.	Policy Recommendation	GHG Reductions (MMtCO ₂ e)			Net Present Value 2009–2025 (Million \$)	Cost-Effectiveness (\$/tCO ₂ e)	Level of Support
		2015	2025	Total 2009–2025			
CC-1 [†]	Greenhouse Gas Inventories and Forecasts	<i>Not Quantified</i>					Unanimous
CC-2 [‡]	State Greenhouse Gas Reporting and Registry	<i>Not Quantified</i>					Unanimous
CC-3 [‡]	Statewide Greenhouse Gas Reduction Goals or Targets	<i>Not Quantified</i>					Super Majority (3 objections)
CC-4*	The State's Own Greenhouse Gas Emissions (Lead by Example)	<i>Not Quantified</i>					Unanimous
CC-5*	Comprehensive Local Government Climate Action Plans	<i>Not Quantified</i>					Super Majority (1 objection)
CC-6*	State Climate Public Education and Outreach	<i>Not Quantified</i>					Super Majority (1 objection)
CC-7 [‡]	Optimizing Best Scale-of-Reduction Policies	<i>Not Quantified</i>					Unanimous
CC-8 [†]	Creative Financial Mechanisms	<i>Not Quantified</i>					Super Majority (1 objection)
CC-9*	Adaptation and Vulnerability	<i>Not Quantified</i>					Super Majority (1 objection)
CC-10 [†]	Climate Change-Related Economic Development	<i>Not Quantified</i>					Unanimous
CC-11 [†]	Regulatory Realignment in Government To Encourage Constructive Climate Action	<i>Not Quantified</i>					Super Majority (2 objections)

GHG = greenhouse gas; MMtCO₂e = million metric tons of carbon dioxide equivalent; \$/tCO₂e = dollars per metric ton of carbon dioxide equivalent.

The numbering used to denote the above policy recommendations is for reference purposes only; it does not reflect prioritization among these important policy recommendations.

* The GCGW approved this option at Meeting #8 (July 31, 2008); 19 members present and voting (two by phone).

† The GCGW approved this option at Meeting #10 (September 25, 2008); 21 members present and voting (none by phone).

Establishing a GHG inventory and forecast function within state government is an essential element of understanding where emission reduction opportunities lie, identifying what emission trends are developing, and tracking the effectiveness of policies that the state adopts and implements to reduce GHG emissions. The preparation of periodic inventories and forecasts will most likely require additional resources. These resources are minimized, but not eliminated by, adding implementation of this recommendation to the existing emissions inventory duties of the Arkansas Department of Environmental Quality (ADEQ).

Opportunities exist for sources of GHG emissions in Arkansas to participate in a GHG registry to identify emission reduction opportunities, reduce risks, and potentially develop revenue associated with possible future GHG mandates by developing the required infrastructure in advance for documenting GHG reduction credits. Tracking and reporting GHG emissions can also help in the implementation of periodic state GHG inventories. Thus, the GCGW includes a recommendation for all sources of GHG emissions in Arkansas (including state government agencies) to voluntarily participate in a GHG reduction registry.

To support this policy, the GCGW recommends that the state join a registry as a member organization to develop knowledge of the reporting mechanism, reporting costs, registry requirements, and resource demands to inform Arkansas' sources of GHG emissions. Should the state join The Climate Registry as a member organization, along with 39 other U.S. states, the Governor's Office [Should governor's office be initially capitalized?] and The Climate Registry will need to consult on the per-capita-based membership fee.

The GCGW acknowledges that implementation of some of its recommendations will require additional up-front investment of resources, as well as identifying mechanisms that will save energy and money, create "green" jobs, and consider regional approaches for Arkansas. To address these concerns, the GCGW has included recommendations to identify and implement creative financial mechanisms (CC-8), provide climate change-related economic development opportunities (CC-10), and optimize best scale-of-reduction policies (CC-7). For CC-8, the GCGW recommends that the state legislature establish a board to identify and procure funding from a broad range of sources to support implementation of this policy recommendation, with a goal to establish funding for this policy by mid-2009. For CC-10, the GCGW recommends that the state legislature allocate basic seed money by the end of the 2009 legislative session to facilitate implementation of this policy.

Ultimately, many strategies for reducing GHG emissions will need to be developed and implemented by local communities. Thus, the GCGW has included in its set of CC recommendations a policy to encourage and support local governments and communities to develop plans to address GHG emissions. In so doing, the GCGW recommends that the state (1) provide resources and materials to educate community planning and zoning officials about climate change, impacts, and opportunities; and (2) identify and work with local government leaders, model municipalities, and community-based organizations that have expertise or interest in climate-related issues to build local community capacity to mitigate GHG emissions.

Public education and outreach will be the foundation for the long-term success of many efforts to reduce GHGs. The GCGW recommends that the Governor form a climate literacy education and outreach committee (coordinated by ADEQ and supported by outreach coordinators from all state agencies) to educate the public and other audiences regarding the state's climate change action plan and associated policies, and to oversee outreach activities.

Finally, the GCGW has included recommendations for two policies providing the state the opportunity to "lead by example." One policy (CC-4) calls for state and local government operations and school districts (including universities) to establish GHG reduction targets consistent with the GHG emission reduction levels that the GCGW recommends for statewide GHG reduction goals or targets. Implementation of this policy will be helpful in setting an

example for NGOs, while identifying opportunities for reducing energy costs. The second policy (CC-11) calls for the Governor to conduct a review of state policies and regulations to identify opportunities for realigning them to remove impediments to climate-friendly options. It also recommends that state agencies identify opportunities to utilize incentives to minimize the carbon footprint of state government, as well as entities affected by state government regulations and policies (e.g., local governments and the private sector).

Overview of Policy Recommendations and Estimated Impacts

Cross-cutting issues include policies that apply across the board to all sectors and activities. Cross-cutting recommendations typically encourage, enable, or otherwise support emission mitigation activities and/or other climate actions. The GCGW recommends that 11 such policies be adopted and implemented by Arkansas. All are enabling policies that are not quantified in terms of tons of GHG reduction or costs.

Detailed descriptions of the individual CC policy recommendations as presented to and approved by the GCGW can be found in Appendix F of this report.

Cross-Cutting Issues Policy Descriptions

CC-1. Greenhouse Gas Inventories and Forecasts

Greenhouse gas emission inventories and forecasts are essential to understanding the magnitude of all emission sources and sinks (both natural and those resulting from human endeavors), the relative contribution of various types of emission sources and sinks to total emissions, and the factors that affect trends over time. Inventories and forecasts help to inform state leaders and the public on statewide trends, opportunities for mitigating emissions or enhancing sinks, and verifying GHG reductions associated with implementation of the GCGW's policy recommendations.

The GCGW recommends that the state develop an inventory and forecast system that is aligned with national protocols and tailored to specific emissions/sinks found in Arkansas. In so doing, the state should coordinate with the U.S. Environmental Protection Agency (EPA) on the development of a mandatory federal GHG reporting rule. In addition, the GCGW recommends that the state refine the GHG inventory for previous and current time periods, as needed, to support implementation of the policy recommendations by the GCGW, until the EPA reporting requirements on GHG emission inventories and forecasts become clear. The state should develop a benchmark emissions estimate and associated gap analysis for all years, and identify missing data and/or additional information required. The inventory and forecast function should be integrated with existing related functions, such as those carried out by ADEQ, which develops inventories for the criteria air pollutants.

CC-2. State Greenhouse Gas Reporting and Registry

Greenhouse gas reporting reflects the measurement and reporting of GHG emissions to support both goal development and tracking and management of emissions. GHG reporting can help sources identify emission reduction opportunities, reduce risks, and potentially develop revenue associated with possible future GHG mandates by developing the required infrastructure in advance. Tracking and reporting GHG emissions can also help in the implementation of periodic state GHG inventories.

GHG reporting is a precursor for sources of GHG emissions to participate in GHG reduction programs, opportunities for recognition, and a GHG emission reduction registry, as well as to secure "baseline protection" (i.e., credit for early reductions). A GHG registry enables recording of GHG emission reductions in a central repository with "transaction ledger" capacity to support tracking, management, and "ownership" of emission reductions; establish baseline protection; enable recognition of environmental leadership; and/or provide a mechanism for regional, multistate, and cross-border cooperation. Properly designed registry structures also provide a foundation for possible future trading programs.

The GCGW recommends that the state participate in a nationally recognized, voluntary reporting and registry program (e.g., The Climate Registry) to develop knowledge of the reporting mechanism, reporting costs, registry requirements, and resource demands. To the extent that Arkansas' needs may not be fully met by a national reporting and registry program for sources or sinks/offsets (e.g., the agricultural and forestry sectors) that are specific to Arkansas, the state should consider developing supplemental or ancillary registry capacity or opportunities to enable their participation in a registry.

The GCGW also recommends that state government entities join a registry as an emissions reporter to register its own emission reductions, and facilitate and encourage voluntary participation in a reporting and a registry program by other public and private entities (e.g., local governments, academic and nonprofit institutions, and businesses and regulated industries). The state should make every effort to avoid duplication of reporting requirements on owners or operators of emission sources or sinks by relying on the use of data that emission sources already report under existing state and federal programs, and should seek opportunities to participate with the EPA in developing federal requirements for reporting GHG emissions.

CC-3. Statewide Greenhouse Gas Reduction Goals or Targets

Section 5 (Purpose and duties) of Arkansas Act 696 requires the GCGW to set forth a global warming pollutant reduction goal based on the GCGW's evaluation of the current global warming data, the assessment of global warming mitigation strategies, and the available global warming pollutant reduction strategies.¹ Consistent with this charge, the establishment of a statewide goal or target can provide vision and direction, a framework within which implementation of GCGW policy recommendations can proceed effectively, and a basis of comparison for periodic assessments of progress. Greenhouse gas reduction goals or targets recommended by the GCGW should be consistent with the parallel goal of an efficient, robust Arkansas economy.

The GCGW recommends that Arkansas establish a statewide, economy-wide goal to reduce the state's gross GHG emissions below 2000 levels by 20% by 2020, 35% by 2025, and 50% by 2035. These goals should be adopted by the state by 2009. The GCGW recommends that the Arkansas Climate Change Center prepare a report to the Governor and the state legislature once every 2 years on the state's progress toward achieving the statewide GHG reduction goal, in coordination with ADEQ and other state agencies, as appropriate. This report should address each sector's progress toward reducing GHG emissions; identify the contribution of each sector's emissions (as noted in the GHG inventory and forecast report) toward achieving the statewide goal; and specify future actions and resource needs.

¹ State of Arkansas, 86th General Assembly, Regular Session, 2007. "Act 696: An Act to Establish the Governor's Commission on Global Warming; to Direct the Commission to Study Issues Related to Global Warming and the Emerging Carbon Market; to Establish a Global Warming Pollutant Reduction Goal and Comprehensive Strategic Plan; and for Other Purposes." Available at: <http://www.arkleg.state.ar.us/ftp/root/acts/2007/public/act696.pdf>.

CC-4. The State's Own Greenhouse Gas Emissions (Lead by Example)

As a "lead by example" policy, the GCGW recommends that state and local government operations and school districts (including universities) begin immediately to establish GHG reduction targets consistent with the GHG emission reduction levels that the GCGW recommends for statewide GHG reduction goals or targets. Establishing these targets will be helpful in setting an example for NGOs, and will help agencies to focus on doing the necessary analysis.

Reductions should be reported at the agency level. Thus, state and local government agencies or departments would first need to develop agency- or department-specific GHG emissions inventory data, ideally building on existing energy use reporting data. This would become the baseline data for ongoing emission reduction activities and measurement, which could be included in annual reporting for all entities. Agency and/or department reports would be aggregated into a summary report reflecting state GHG emissions.

The Arkansas Climate Change Center should oversee the ongoing climate efforts of the state government's agencies or departments; review their performance; and provide direction, guidance, resources, shared approaches, and recognition to agencies or departments and their employees working to reduce the state government's GHG emissions.

CC-5. Comprehensive Local Government Climate Action Plans

"Think globally, act locally" is the refrain often heard to bring action to bear on environmental issues within the average individual's ability. Similarly, local government actions on climate change issues will be a keystone for achieving state and federal climate action goals. No single approach can be universally applied at the local level; however, local communities are often the incubators for new approaches that can be further developed and applied on a larger level. Local governments will report on progress on climate change issues and will provide innovative, multisector solutions that will be shared with others through a clearinghouse or other mechanisms. Arkansas will provide encouragement and assistance to local jurisdictions to sustain global warming objectives.

Beginning in 2009, the GCGW recommends that Arkansas provide resources and materials to educate community planning and zoning officials about climate change, impacts, and opportunities. Regional meetings will be conducted to train local officials, discuss the state's global warming program, and review other jurisdictions' approaches and lessons learned, to emphasize assistance and resources and to underscore the value of collaboration.

A key initial goal of this recommendation is for Arkansas to identify and work with local government leaders, model municipalities, and community-based organizations that have expertise or interest in climate-related issues to build local capacity for developing and implementing local efforts to mitigate GHG emissions. The state will host events periodically that focus on leading by example, sharing specifics on lessons learned and opportunities, and illustrating financial investments and payback, co-benefits, etc. Development and implementation of local plans will help Arkansas achieve its statewide GHG emission reduction

goals. If local governments include energy efficiency and renewable and clean energy actions in their plans, these actions have multiple benefits, including saving money, creating jobs, promoting sustainable growth, and reducing emissions of GHGs and other air pollutants.

CC-6. State Climate Public Education and Outreach

The key for long-term success of Arkansas' strategies for addressing climate change lies with increasing the awareness of the issue, as well as the societal costs of and benefits from adopting new policies and/or goals. Education of Arkansas' citizens, business leaders, and policymakers is integral to the successful implementation of changes to mitigate the effects of climate change on the state's environment, economy, and lifestyle. Outreach will extend Arkansans' personal and cooperative commitment to mitigate the effects of climate change to all sectors of endeavor, as well as to future generations.

Starting in 2009, the GCGW recommends that Arkansas develop climate change educational and outreach objectives for implementation in 2010 for the following target audiences:

- **State Executive Agencies**—The Governor should form a climate literacy education and outreach committee (coordinated by ADEQ) to educate the public and other audiences regarding the state's climate change action plan and associated policies, and to oversee outreach activities. The committee should consist of appointed members, and should be supported by outreach coordinators from relevant state agencies (energy supply, forestry, agriculture, etc.).
- **General Public**—Arkansas should increase the public's awareness of and engagement in climate change actions in their personal and professional lives.
- **Future Generations**—Arkansas should integrate climate change into educational curricula, post-secondary degree programs, and professional licensing to address the multidisciplinary approach to reduce adverse climate change effects.

Climate literacy education and outreach would utilize the same practices as existing ADEQ practices. ADEQ has an established network for education and outreach for issues similar to climate literacy (e.g., pollution prevention, clean air). The education and outreach program would include aspects of global warming actions developed from other sectors (i.e., forestry, energy supply, agriculture). Collaboration with NGOs will facilitate public education and outreach, and ensure that climate education is coordinated enough to be broadly effective.

CC-7. Optimizing Best Scale-of-Reduction Policies

This policy recommends that Arkansas, through the assistance of the Climate Change Center, investigate optimization of scale for each specific GHG reduction considered by the state, and report its findings annually. These investigations should include interstate and regional opportunities that optimize GHG reductions. For the purpose of this policy recommendation, "optimization" should be interpreted as opportunities that further increase the state's overall reduction goals by at least 1% per year, or accelerate the achievement of certain goals by at least one year.

CC-8. Creative Financial Mechanisms

Allocation of some resources under existing state programs and initiatives can be targeted to achieving state climate goals. However, it is likely that additional resources may be needed to implement the GCGW's recommendations. Therefore, the state and others will need to consider seeking and stimulating additional funding and investment in climate solutions. Initiatives could include (but are not limited to) establishing, promoting, and utilizing creative financing mechanisms for projects and products that reduce GHGs. Examples could include establishing a State Revolving Loan Fund to finance products and services with low-carbon intensity, promoting the use of "green products" procurement preferences, and establishing and promoting greener buying cooperatives.

The GCGW recommends that Arkansas establish a board to identify and procure funding from a broad range of sources to support implementation of this policy recommendation, with a goal to establish funding for this policy by mid-2009. The state should also survey options within existing state economic development plans appropriate to support GHG mitigation policies within Arkansas.

CC-9. Adaptation and Vulnerability

The GCGW recommends establishing the Arkansas Climate Change Center for collecting and analyzing data to monitor the effects of climate change on Arkansas, using the data to develop a plan to manage the projected impacts of climate change on Arkansas and reducing the Arkansas' contribution to GHGs. Along with existing local, state, and federal agencies, the Arkansas Climate Change Center will help to address the impact of climate change. The impact issues would include identifying the climate change risks to humans (e.g., factors that could contribute to disease); water resources (e.g., risk factors that could cause flooding, drought, pollution of waterways); temperature-sensitive populations (e.g., factors that could place immunocompromised individuals at even greater health risks); and ecosystems (e.g., animals and plants that may be affected by changes in their environment).

Along with these adverse changes in the natural environment, climate change could also harm Arkansas' energy, transportation, and communication systems; vital infrastructure (including public facilities); and entire economy. The analysis of these risks, along with occurring climate change data, can be used to create a model to project future problems and hopefully develop solutions to address these issues. The state should work with industries and research universities to create the Arkansas Climate Change Center. The establishment of the Center should attract more researchers and scientists to Arkansas to help stimulate industrial partners for new economic development and to create new "green" jobs for Arkansans. Once established, the Center could help to coordinate implementation of many of the GCGW's recommendations.

CC-10. Climate Change-Related Economic Development

Successful state GHG mitigation efforts are highly dependent on active participation of the business community, particularly in the energy, agriculture, transportation, development, and

manufacturing sectors. The intent of this policy is to encourage and facilitate the involvement of funding and investment sources, business interests, and entrepreneurs in pursuing business opportunities associated with GHG mitigation and global warming solutions as quickly and as significantly as possible.

Arkansas' ability to identify and secure early business opportunities associated with climate change may be enhanced, increasing its global competitive advantage and job creation within the state. This policy recommendation includes five specific goals aimed at identifying and leveraging economic development opportunities associated with GHG mitigation in Arkansas, and a performance-based strategic management system to monitor progress.

The GCGW recommends that the state legislature allocate basic seed money by the end of the 2009 legislative session to facilitate implementation of this policy.

CC-11. Regulatory Realignment in Government To Encourage Constructive Climate Action

This policy recommends that state government conduct a review of its policies and regulations to identify opportunities for realigning them to remove impediments to climate-friendly options. In addition, it recommends that state agencies identify opportunities to utilize incentives to minimize the carbon footprint of state government, as well as entities affected by state government regulations and policies (e.g., local governments and the private sector). Examples include (but are not limited to) coordination and alignment among state agencies' policies and programs; reduced costs and/or time frames for greener permits; "performance-based" regulations; and reducing or eliminating "throughput incentives," so that regulated utilities are compensated for demand-side reductions, not just supply-side activities.

This policy includes several specific recommendations, such as one for state agencies to conduct audits of energy use and GHG emissions associated with state facilities and activities to establish baseline levels needed to set achievable goals for reducing emissions. A second recommendation is for the legislature and Governor to coordinate with ADEQ in formulating an amendment to the definition of "air contaminant" in Chapter 2 of the Arkansas Air Pollution Control Code (Regulation 18) to remove any barriers that prevent Arkansas from controlling CO₂ emissions.² This policy will enable Arkansas to mitigate CO₂ emissions, as well as to effectively coordinate its GHG mitigation policies and programs with future regional and national policies and programs. A third recommendation is for the legislature and governor to coordinate to remove the 1999 exemption of Merchant Power Plants from the standard Arkansas Public Service Commission's process such that these plants would be required to substantiate that a public need exists for the electricity they propose to generate and sell in Arkansas.

² See Arkansas Pollution Control and Ecology Commission. "Chapter 2: Definitions." In *Arkansas Air Pollution Control Code—Regulation 18* (http://www.adeg.state.ar.us/regs/files/reg18_final_990215.pdf): "Air contaminant" means any solid, liquid, gas, or vapor or any combination thereof. The following shall not be considered air contaminants: water vapor, oxygen, carbon dioxide, nitrogen, hydrogen, and inert gases.