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Memo

To: Arkansas Governor's Commission on Global Warming
From: The Center for Climate Strategies
CC: Arkansas Governor's Office
Technical Work Group Members
Subject: Preparation for the Fifth Meeting of the Arkansas Governor's Commission on Global Warming
Date: April 9, 2008

At our fifth meeting of the Arkansas Governor's Commission on Global Warming (GCGW) on Wednesday, April 9, 2008, we will focus on review and approval of the draft "priority for analysis" policy options and updates to the draft Arkansas greenhouse gas (GHG) emissions inventory and forecast. Based on this discussion and any adjustments made by the GCGW, the Technical Work Groups (TWGs) will begin work on straw proposals for future development and quantification of draft policy options.

As preparation for our meeting, please review the attached lists of TWG suggested draft policy option "priorities for analysis" and other background documents posted to the project website at: www.arclimatechange.us.

In terms of overall progress, the GCGW has completed key milestones since its launch, including:

- Identification of a full range of potential Arkansas options for mitigation of GHG emissions, including over 300 possible state actions.
- TWG identification, by balloting, of 51 initial priorities for analysis of draft policy options.

The next stages of the GCGW process will include completion of the following milestones:

- Completion of updates to the initial statewide inventory and forecast of GHG emissions and start of the review process.
- Approval of a full range of initial priorities for analysis of draft policy options at our fifth meeting.
- Formulation of "straw proposals" for the design of these initial draft policy options for consideration by the GCGW at its sixth meeting.
- Completion of the first round of economic analysis of draft policy options by CCS, and identification of early consensus recommendations at our seventh meeting.

- Review and revision of policy option design, analysis, and draft options as needed during TWG calls and meetings.
- Final approval of remaining GCGW policy option recommendations at our eighth meeting.
- Final approval of the statewide inventory and forecast of GHG emissions by the final meeting.

Summary of GCGW Progress and Next Steps

Status of Draft Policy Options	
Original Number of Potential Options Presented to the GCGW from the CCS Catalog of State Actions	306
Updated Number of Potential Options on the CCS Catalog of States Actions, Including GCGW Additions	326
Current Number of Draft Potential Priority Policy Options for Analysis	51
• Residential, Commercial, and Industrial	11
• Energy Supply	11
• Transportation and Land Use	9
• Agriculture, Forestry and Waste Management	9
• Cross-Cutting Issues	11
Next Steps	
Approve Straw Proposals for Draft Policy Option Design	GCGW Meeting #6
Present First Round of Analysis of Draft Policy Options and Identify Early Consensus Recommendations	GCGW Meeting #7
Approve Final GCGW Policy Option Recommendations	GCGW Meeting #8

**Table 1.
 Residential, Commercial, and Industrial Technical Work Group
 Summary List of Recommended Priority Policy Options for Analysis**

Proposed Option #	Proposed Option Name	# From Catalog of State Actions
High-Priority (Tier I)		
RCI-1	Improved Building Codes	2.1 (Improved Building Codes for energy efficiency) 2.2 (Training of building codes and other officials in energy code enforcement)
RCI -2	Utility and Non-utility DSM for Electricity and Natural Gas	1.1 (Utility DSM for electricity) 1.2 (Utility DSM for natural gas, propane and fuel oil) 1.3: Non-utility DSM programs for electricity
RCI -3	Reduced Energy Use in State-owned Buildings: Government “Lead by Example”	1.10 (Reduce energy use in state-owned buildings) 2.3 (Improved design and construction, government “lead by example”) 9.3 (Carbon neutral requirement for state buildings)
RCI -4	Promotion and Incentives for Improved Building Design and Construction	2.6 (Promotion and incentives for Improved design and construction (e.g., LEED) in the private sector) 2.7 (Feebate program to encourage energy efficiency in building design) 2.8 (Incentives for retrofit of existing residential buildings)
RCI -5	Consumer Education for Consumers and Industry Trades, Professions	4.1 (Consumer Education Programs) 4.2 (Energy Efficiency School Curriculum) 3.2 (Support for Federal-level Appliance Efficiency Standards) 2.9 (Training and Education for Builders and Contractors) 2.10 (Energy Management Training/Training of Building Operators) 8.5 (Provide tools and information for residents, businesses, and communities to perform GHG inventories)

Proposed Option #	Proposed Option Name	# From Catalog of State Actions
RCI -6	Incentives to Promote Energy-efficiency	6.1 (Incentives to Promote Implementation of Renewable Energy Systems) 6.4 (Incentives for passive solar heating) 6.5 (White Roofs, Rooftop Gardens, and Landscaping) 6.6 (Focus on specific end-uses/technologies) 6.7 (Passive solar heating design) 6.8 (Solar hot water heating)
RCI -7	Green Power Purchasing for Consumers	5.1 (Green Power Purchasing for Consumers)
RCI -8	Non-Residential Energy Efficiency	6.2 (Incentives and resources to promote combined heat and power) 6.3 (Efficient transformers on customer-side of meter)
RCI -9	Energy-efficiency Funds	1.4 (Energy-efficiency Funds)
RCI -10	Support for Energy-efficient communities, including “Smart Growth”	2.5 (Support for Energy-efficient communities, including “Smart Growth”)
RCI -11	Energy-savings Sales Tax	1.9 (Energy-savings Sales Tax)
Medium-Priority (Tier II)		
	Property tax initiative	6.10 (Property tax initiative)
	Regional Market Transformation Alliance	1.5 (Regional Market Transformation Alliance)
	Increased Use of Blended Cement	2.4 (Increased Use of Blended Cement (substituting fly ash or other pozzolans for clinker))
	Expansion of State-level Appliance Efficiency Standards	3.1 (Expansion of State-level Appliance Efficiency Standards)
	Require high-efficiency appliances in new construction and retrofits	3.3 (Require high-efficiency appliances in new construction and retrofits)
	In-home energy displays	4.4 (In-home energy displays)
	Tiered (increasing block) rates for electricity and natural gas use	5.4 (Tiered (increasing block) rates for electricity and natural gas use)
	Support for switching to less carbon-intensive fuels	8.1 (Support for switching to less carbon-intensive fuels (coal and oil to natural gas or biomass))
	Government agency requirements and goals	9.1 (Government agency requirements and goals)
	Statewide effort to retrofit existing buildings for energy efficiency	9.5 (Statewide effort to retrofit existing buildings (residential, commercial, public, and industrial) for energy efficiency)
	Industrial audits	9.8 (Industrial audits)

Table 2.
Energy Supply Technical Work Group
Summary List of Recommended Priority Policy Options for Analysis

Proposed Option #	Proposed Option Name	# From Catalog of State Actions
High-Priority (Tier I)		
ES-1	Green Power Purchases and Marketing	2.4 (Green power purchases and marketing)
ES-2	Technology Research & Development	5.1 (CCSR incentives/enabling policies) 3.1 (advanced fossil fuel technologies) 1.6 (technology research and development) 3.5 (technology-focused initiatives) 4.4 (incentives/requirements for low-GHG coal production) 5.2 (R&D for CCSR)
ES-3	Renewable and/or Environmental Portfolio Standard (RPS/EPS)	2.1 (Renewable and/or Environmental Portfolio Standard (RPS/EPS))
ES-4	Grid-based Renewable Energy Incentives and/or Barrier Removal	2.2 (Grid-based Renewable Energy Incentives and/or Barrier Removal)
ES-5	Approaches Benefiting from Regional Application	2.10 (Explore regional economies of scale for cost-effective implementation of RE) 1.1 (GHG cap and trade)
ES-6	Combined Heat and Power	2.5 (Combined Heat and Power)
ES-7	Geological Underground Sequestration for New Plants	3.6 (Geological Underground Sequestration for New Plants)
ES-8	Transmission System Upgrades	6.1 (Transmission system upgrades) 6.2 (Reduction of transmission and distribution line losses) 6.3 (General distributed generation support)
ES-9	Nuclear Power	3.2 (New nuclear power) 3.3 (Relicensing/up-rating of existing nuclear power)
ES-10	Carbon Tax	1.2 (Carbon Tax)
ES-11	Efficiency Improvements and Repowering of Existing Plants	3.4 (Efficiency Improvements and Repowering of Existing Plants)
Medium-Priority (Tier II)		
	Integrated resource planning (IRP)	1.4 (Integrated resource planning (IRP))
	Cost recovery for GHG reduction investments	1.7 (Cost recovery for GHG reduction investments)

Proposed Option #	Proposed Option Name	# From Catalog of State Actions
	Pricing strategies to promote renewable energy and/or CHP	2.6 (Pricing strategies to promote renewable energy and/or CHP (e.g., net metering))
	Environmental (GHG emissions) disclosure	6.4 (Environmental (GHG emissions) disclosure)
	Generation performance standards and/or mitigation requirements for electricity	1.3 (Generation performance standards and/or mitigation requirements for electricity)
	Public Benefits Charge	2.9 (Public Benefits Charge)
	Reduced-GHG Coal Production	4.4 (Coal Production: GHG emission reduction incentives, support, or requirements)
	Low-GHG Hydrogen production incentives and support	4.6 (Low-GHG Hydrogen production incentives and support)
	Oil and gas tax as a funding mechanism for GHG reduction options or R&D	4.7 (Oil and gas tax as a funding mechanism for GHG reduction options or R&D)
	Landfill Gas Recovery	6.5 (Landfill Gas Recovery)
	Waste to Energy	6.6 (Waste to Energy)
	N ₂ O Reduction Co-benefit	6.7 (N ₂ O Reduction Co-benefit)

Table 3.
Transportation and Land Use Technical Work Group
Summary List of Recommended Priority Policy Options for Analysis

Proposed Option #	Proposed Option Name	# From Catalog of State Actions
High-Priority (Tier I)		
TLU-1	Infrastructure for Plug-In Vehicles	TLU-1.1.8 (Develop Infrastructure for Plug-In Vehicles)
TLU-2	Research and Development for Renewable Transportation Fuels	TLU-1.4.5 (Fund R&D for a Full Range of Renewable Transportation Fuels)
TLU-3	Smart Growth Bundle	TLU-2.1.9 (Brownfield Redevelopment) TLU-2.1.8 (Downtown Revitalization) TLU-2.1.11 (Infill Redevelopment) TLU-2.1.12 (Transit-Oriented Development)
TLU-4	Bicycle and Pedestrian Infrastructure	TLU-2.2.4 (Bike and Pedestrian Infrastructure, Trails)
TLU-5	Promote and Facilitate Freight Efficiency Bundle	TLU-3.3.3 (Increase Rail Capacity and Address Rail Freight System Bottlenecks) TLU-3.3.4 (Shift Freight Movements - Truck to Rail) TLU-3.3.5 (Promote Strategies To Ease the Movement of Freight in More GHG-Efficient Ways) TLU-3.1.1 (Vehicle Technology Improvements [e.g., Aerodynamics]) TLU-3.2.6 (Truck stop electrification [e.g., IdleAire]; provide alternatives to diesel engine idling at truck stops and terminal sites)
TLU-6	Improve and Expand Transit Service and Infrastructure	TLU-2.2.2 (Improve Transit Service [Frequency, Convenience, and Quality]) TLU-2.2.5 (Expand Transit Infrastructure [Rail, Bus, Bus Rapid Transit]) TLU-4.5 (Intercity Bus Incentives and Subsidies) TLU-4.6 (Intercity Passenger Rail)
TLU-7	School and University Transportation Bundle	TLU-2.3.15 (Encourage Arkansas Colleges To Restrict Student Driving by Limiting Student Parking on Campus) TLU-2.3.16 (Encourage Arkansas Secondary Schools To Restrict Student Driving by Initiating Restrictive Policies for Student Parking) TLU-2.2.23 (Encourage School Age Children to Take the Bus or Rideshare) TLU-1.2.7 (School Education Programs)
TLU-8	Alternative Fuel Development and Expansion	TLU-1.4.3 (Biofuel Expansion [Biodiesel, CNG, LPG, Cellulosic Ethanol]) TLU-1.4.4 (Alternative fuel infrastructure)

Proposed Option #	Proposed Option Name	# From Catalog of State Actions
		development)
TLU-9	Public Education	TLU-1.2.9 (Public Education)
Medium-Priority (Tier II)		
	Vehicle Maintenance and Driver Training	1.2.2 Vehicle Maintenance and Driver Training
	Procurement of Efficient Fleet Vehicles	1.3.1 Procurement of Efficient Fleet Vehicles
	Feebates (State-Specific or Regional)	1.3.2 Feebates (State-Specific or Regional)
	Tax Credits for Efficient Vehicles	1.3.4 Tax Credits for Efficient Vehicles
	New Vehicle Standards: Tailpipe GHG and Fuel Economy	1.1.1 New Vehicle Standards: Tailpipe GHG and Fuel Economy
	Provide a Tax Incentive for Adult Bicycles	1.3.9 Provide a Tax Incentive for Adult Bicycles
	Support Alternative Travel in the Advertising Mainstream	1.3.10 Support Alternative Travel in the Advertising Mainstream
	Statewide Growth Management Plan	2.1.1 Statewide Growth Management Plan
	Include GHG Evaluations in State Policies	2.1.2 Include GHG Evaluations in State Policies
	Land Use, Zoning, Tax, and Building Code Reform	2.1.5 Land Use, Zoning, Tax, and Building Code Reform
	Smart Growth Planning, Modeling, and Tools	2.1.13 Smart Growth Planning, Modeling, and Tools
	Targeted Open-Space Protection	2.1.14 Targeted Open-Space Protection
	Balance Economic Development With Agriculture, Protection of Natural Resources, and Preserving Rural Character	2.1.15 Balance Economic Development With Agriculture, Protection of Natural Resources, and Preserving Rural Character
	Issue Free Bus Passes to Downtown Workers	2.2.18 Issue Free Bus Passes to Downtown Workers
	VMT/GHG Offset Requirements for Large Developments	2.3.11 VMT/GHG Offset Requirements for Large Developments
	Free Downtown Parking for Fuel-Efficient Vehicles	2.3.17 Free Downtown Parking for Fuel-Efficient Vehicles
	Enforce Anti-Idling Ordinances/Encourage Idling Alternatives	3.2.7 Enforce Anti-Idling Ordinances/Encourage Idling Alternatives
	Freight Villages/Consolidation Centers	3.2.9 Freight Villages/Consolidation Centers

Proposed Option #	Proposed Option Name	# From Catalog of State Actions
	Procurement of Efficient Fleet Vehicles (Public, Private, Other)	3.4.1 Procurement of Efficient Fleet Vehicles (Public, Private, or Other)
	High-Speed Rail	4.1 High-Speed Rail
	Integrated Aviation, Rail, Bus Networks (Planning, Governance, and Investment)	4.2 Integrated Aviation, Rail, Bus Networks (Planning, Governance, and Investment)
	“Shore power” at Port Sites	5.10 “Shore power” at Port Sites

Table 4.
Agriculture, Forestry, and Waste Management Technical Work Group
Summary List of Recommended Priority Policy Options for Analysis

Proposed Option #	Proposed Option Name	# From Catalog of State Actions
High-Priority (Tier I)		
AFW-1	Expanded use of Agriculture and Forestry biomass feedstocks for electricity, heat or steam production	AFW 1.1 (Expanded use of biomass feedstocks for electricity or steam production) AFW 6.1 (Use of forest biomass feedstocks for electricity, heat, and steam production)
AFW-2	Advanced Recovery and Recycling	AFW 9.1 (Advanced Recovery and Recycling)
AFW-3	Forest Management and Establishment for Carbon Sequestration	AFW 7.2 (Urban Forestry) AFW 7.3 (Afforestation/Reforestation) AFW 7.4 (Forest management for carbon sequestration)
AFW-4	Expanded use of in-state Liquid Biofuels	AFW 1.2 (In-state liquid biofuels production {Agriculture}) AFW 6.2 (In-state liquid biofuels production {Forestry})
AFW-5	Manure Management	AFW 2.1 (Manure Management)
AFW-6	Promotion of Farming Practices that Achieve GHG Benefits	AFW 5.2 (Promotion of Farming Practices that Achieve GHG Benefits)
AFW-7	End of Use Waste Management Practices	AFW 9.7 (Promotion of New & Existing Technologies for Waste Energy Conversion) AFW 10.3 (Landfill Methane Energy Programs)
AFW-8	Improved Water Management	AFW 3.4 (Water Management {including Drainage and Irrigation}) AFW 3.6 (Promote Use of Surface Water Over Ground Water)
AFW-9	Expanded Use of Locally Produced Farm and Forest Products	AFW 5.3 (Programs to Support Local Farming/Buy Local) AFW 8.3 (Expanded Use of Wood Products for Building Materials)
Medium-Priority (Tier II)		
	Land Use Management that Promotes Permanent Cover	4.1 Land Use Management that Promotes Permanent Cover
	Encourage Cogeneration at Ag-Biomass Energy Sites	1.4 Encourage Cogeneration at Ag-Biomass Energy Sites
	Soil Carbon Management	3.1 Soil Carbon Management
	Reductions in On-Farm Energy Use	5.1 Reductions in On-Farm Energy Use

**Table 5.
 Cross-Cutting Issues Technical Work Group
 Summary List of Recommended Priority Policy Options for Analysis**

Proposed Option #	Proposed Option Name	# From Catalog of State Actions
High-Priority (Tier I)		
CC-1	Greenhouse Gas Inventories and Forecasts	CC-1 (Greenhouse Gas Inventories and Forecasts)
CC-2	State Greenhouse Gas Reporting and Registry	CC-2 (State Greenhouse Gas Reporting) CC-3 (State Greenhouse Gas Registry)
CC-3	Statewide Greenhouse Gas Reduction Goals or Targets	CC-4 (Statewide Greenhouse Gas Reduction Goals or Targets)
CC-4	The State's Own Greenhouse Gas Emissions (Lead-by-Example)	CC-5 (The State's Own Greenhouse Gas Emissions (Lead-by-Example))
CC-5	Comprehensive Local Government Climate Action Plans	CC-6 (Comprehensive Local Government Climate Action Plans)
CC-6	State Climate Public Education and Outreach	CC-7 (State Climate Public Education and Outreach)
CC-7	Optimizing Best-Scale of Reduction Policies	CC-8 (Market-Based Greenhouse Gas Reduction Policies) CC-11 (Participate in Regional and Multistate Greenhouse Gas Reduction Efforts) CC-15 (Facilitate the Development of an Effective Carbon Credit System)
CC-8	Creative Financial Mechanisms	CC-9 (Creative Financial Mechanisms)
CC-9	Adaptation and Vulnerability	CC-10 (Adaptation and Vulnerability) CC-14 (Dedicate Greater Public Investment to Climate Data and Analysis) CC-17 (Establish a Climate Analogue to the Arkansas Biosciences Institute) CC-18 (Evaluate Climate Change Policy Options to Determine Impacts (Potential Risks, Costs, and Benefits) to Public Health, Environmental Justice, and Low-Income Residents)
CC-10	Climate-Change Related Economic Development	CC-12 (Create a Clearinghouse to Facilitate Investment in Climate-Related Business Opportunities) CC-13 (Encourage the Creation of a Business-Oriented Organization to Share Information and Strategies, Recognize Successes, and Support Aggressive GHG Reduction Goals)
CC-11	Regulatory Realignment in Government to Encourage Constructive Climate Action	CC-16 (Regulatory Realignment in Government to Encourage Constructive Climate Action)

Proposed Option #	Proposed Option Name	# From Catalog of State Actions
Medium-Priority (Tier II) - None		

Sample Draft Policy Option Template AFW-x Policies to Promote Ethanol Production

Policy Description

Trees, crops and other plants convert atmospheric carbon to carbohydrate or fiber stocks that can be converted to liquid fuels, such as ethanol. The use of these renewable biological fuels can offset fossil fuel use and reduce associated net carbon dioxide emissions. Production incentives for the conversion of crops, forest sources, animal waste, and other sources to ethanol through existing or new technologies can increase the level of ethanol use in future markets.

Policy Design

Goals: Several projects are being proposed in Arkansas that would result in the production of x million gallons of ethanol annually in Arkansas by 20xx. Production incentives could increase this amount by x% beyond expected levels in 20xx, and x% by 20xx.

Timing: Start up in 20xx and ramp up to higher levels in 20xx and 20xx, consistent with goals.

Parties Involved: Suppliers of feedstocks, ethanol producers, and distributors. Associated agencies would include xxx...

Other: As needed, identify incentives that encourage the growing and supply of feedstocks and the utilization of ethanol in transportation markets across the state.

Implementation Mechanisms

TBD

Related Policies/Programs in Place

TBD

Type(s) of GHG Reductions

Net reduction in CO₂ emissions.

Estimated GHG Reductions and Costs (or Cost Savings)

TBD

Data Sources: TBD

Quantification Methods: Full life-cycle analysis with supply/demand equilibrium adjustments.

Key Assumptions: TBD

Key Uncertainties

TBD

Additional Benefits and Costs

TBD

Feasibility Issues

TBD

Status of Group Approval

Pending – [until GCGW moves to final agreement at meeting #7 or #8]

Level of Group Support

TBD – [blank until GCGW meeting #7 or #8]

Barriers to Consensus

TBD – [blank until final vote by the GCGW]