

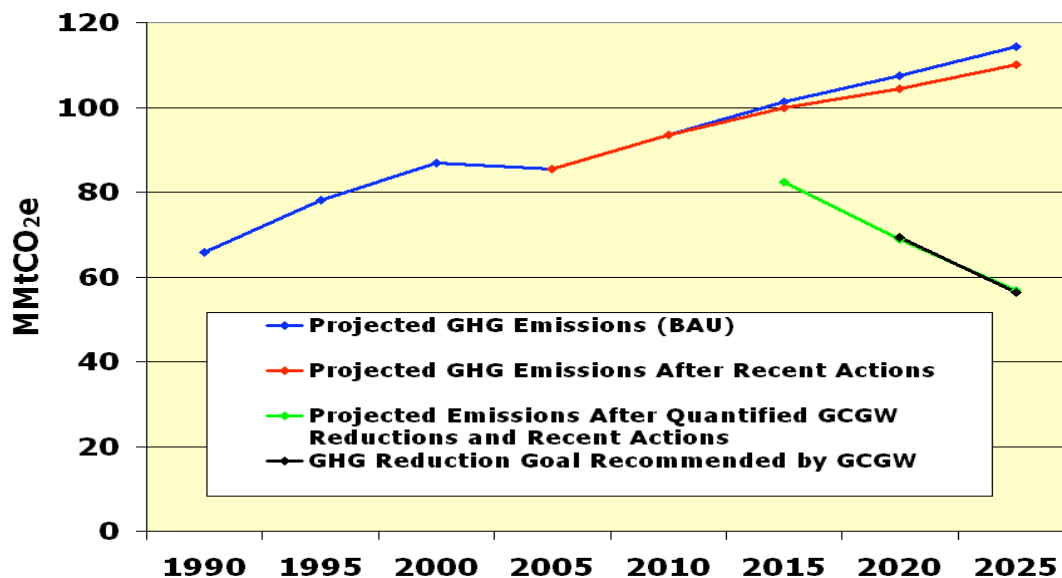


Arkansas Climate Action Plan Summary

With the signing of Act 696 of the Arkansas 86th General Assembly (HB2460), Governor Mike Beebe established the Governor's Commission on Global Warming (GCGW). The 21 members of the GCGW were appointed by the Governor and state Legislature, and represented a wide diversity of perspectives with members from business, energy providers, manufacturing, transportation, agriculture, environmental groups, local government, academia, and other interests.

The GCGW was co-chaired by State Representative Kathy Webb, first with Pearlie Reed now serving as USDA Assistant Secretary for Administration, and then with Kevin Smith, Vice President of Farmers Insurance. The GCGW recommended 54 policies - all but 3 by super majority or unanimous consent. Of these, 31 recommendations were quantified to determine their potential emission reductions. Their estimated cumulative effect is to reduce emissions by about 17.6 million metric tons carbon dioxide equivalent (MMtCO₂e) in 2015, 35.5 MMtCO₂e in 2020, and 53.3 MMtCO₂e in 2025. This is equivalent to about a ten percent reduction below 1990 GHG emissions levels by 2020.

GHG Reduction Potential from Arkansas Recent and Proposed Actions (CCS analysis, 2008)



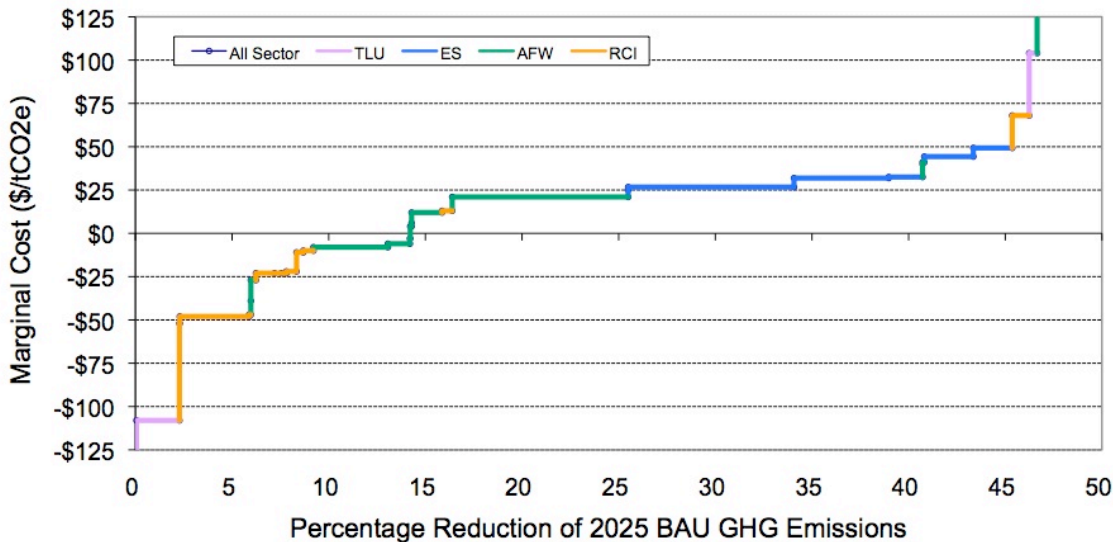
MMtCO₂e = million metric tons of carbon dioxide equivalent; GHG = greenhouse gas; GCGW = Governor's Commission on Global Warming.

At the request of the GCGW, the [Center for Climate Strategies \(CCS\)](#) provided facilitation, technical and analytical support to assist its five Technical Work Groups (TWGs) including:

- [Agriculture, Forestry and Waste Conservation](#)
- [Energy Supply and Demand \(Heat and Power Generation\)](#)
- [Residential Commercial and Industrial Conservation and Efficiency \(Heat and Power Consumption\)](#)
- [Transportation and Land Use Improvements](#)

The GCGW analyzed the direct costs or cost savings of 31 of its 54 recommendations. Many of the policies are estimated to yield significant cost-saving opportunities for Arkansans, as shown in this economy-wide stepwise marginal cost curve. (Items below the \$0 mid-line are cost savings).

Economy Wide Stepwise Marginal Cost Curve of Arkansas, 2025
(Center for Climate Strategies, 2008)



BAU = business as usual; GHG = greenhouse gas; tCO₂e = metric tons of carbon dioxide equivalent; AFW = Agriculture, Forestry, and Waste Management; RCI = Residential, Commercial, and Industrial; TLU = Transportation and Land Use; ES = Energy Supply. Note: Negative numbers are cost savings.

The [Arkansas Global Warming Action Plan](#) is one of [31 such state plans](#) that have been completed or are underway by U.S. states. It includes a comprehensive set of sector-based policies and measures. Its design is consistent with the national climate proposal passed in the [U.S. House of Representatives](#) and supported by the Administration, but includes more specific listings and provisions for specific sector based policies and measures, and was less specific on the design of national market based mechanisms.

Summary Tables of Sector-Based Recommendations

The tables below list Arkansas’s recommended policies by sector/Technical Work Group and show results of analyses conducted by CCS according to specifications by the Work Groups. Some policies were not quantified due to data limitations or other factors.

Key to Table Acronyms: GHG = greenhouse gas, MMtCO₂e = million metric tons of carbon dioxide equivalent, \$/tCO₂e = dollars per metric ton of carbon dioxide equivalent, N/Q = not quantified; CO₂e/MWh = carbon dioxide equivalents per megawatt-hour;

Note: Negative dollar values indicate *cost savings*. All costs are reported in 2005 U.S. dollars, net present value as of January 1, 2009. Totals in some columns may not add to the totals shown due to rounding. The numbering of policies does not reflect prioritization among the options.

Arkansas Policy Recommendations by Sector/Work Group

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

Residential, Commercial, and Industrial (RCI)						
Policy No.	Recommendation Name	GHG Reductions (MMtCO _{2e})			Net Present Value 2009–2025 (Million \$)	Cost-Effectiveness (\$/tCO _{2e})
		2015	2025	Total 2009–2025		
RCI-1	Improved Building Codes	0.2	0.6	5.3	–\$118	–\$22
RCI-2a	Utility and Non-Utility DSM for Peak Use Electricity	0.01	0.02	0.21	–\$11	–\$52
RCI-2b	Utility and Non-Utility DSM and Energy Efficiency for Electricity	1.1	4.1	30.5	–\$1,450	–\$48
RCI-3a	Reduced Energy Use in New and Retrofitted State-Owned Buildings	0.1	0.6	4.3	–\$42	–\$10
RCI-3b	Reduced Energy Use in State-Owned Buildings	0.2	0.4	4.2	–\$46	–\$11
RCI-4a	Promotion and Incentives for Improved New Building Design and Construction	0.2	1.1	7.0	–\$160	–\$23
RCI-4b	Promotion and Incentives for Improved Existing Buildings	0.0	0.3	1.7	–\$39	–\$23
RCI-5	Education for Consumers, Industry Trades, and Professions	<i>Not Quantified</i>				
RCI-6	Incentives and Funds To Promote Renewable Energy and Energy Efficiency	0.2	0.8	5.1	–\$118	–\$23
RCI-7	Green Power Purchasing for Consumers	0.2	0.6	4.7	\$61	\$13
RCI-8	Nonresidential Energy Efficiency	0.4	1.0	8.6	\$583	\$68
RCI-9	Support for Energy-Efficient Communities, Including Smart Growth	<i>Not Quantified</i>				
RCI-10	Energy-Savings Sales Tax	0.0	0.1	0.7	–\$33	–\$47
	Sector Total After Adjusting for Overlaps	2.55	9.24	69.77	–\$1,313	–\$18.8
	Reductions From Recent Actions (ESIA Title II requirements for new appliances and lighting)	0.34	0.89	8.02	<i>Not Quantified</i>	
	Sector Total Plus Recent Actions	2.89	10.13	77.79	–\$1,313	–\$18.8

DSM = demand-side management; EISA = Energy Independence and Security Act of 2007.

Energy Supply						
Policy No.	Policy Recommendation	GHG Reductions (MMtCO ₂ e)			Net Present Value (Million \$)	Cost-Effectiveness (\$/tCO ₂ e)
		2015	2025	Total 2009–2025		
ES-2	Technology Research & Development	<i>Not Quantified</i>				
ES-3	3a: Renewable Portfolio Standard (RPS)	0.3	3.6	21.9	\$548	\$25.0
	3b: Renewable Energy Feed-In Tariff (REFIT)	0.2	2.0	12.3	\$399	\$32.5
ES-4	Grid-Based Renewable Energy Incentives and/or Barrier Removal	<i>Not Quantified</i>				
ES-5	Approaches Benefiting From Regional Application	<i>Not Quantified</i>				
ES-6	Combined Heat and Power	0.6	2.9	20.0	\$886	\$44.3
ES-7	Geological Underground Sequestration for New Plants	2.9	5.6	56.5	\$1,801	\$31.9
ES-8	Transmission System Upgrades	<i>Not Quantified</i>				
ES-9	Nuclear Power	0.0	9.8	58.9	\$1,574	\$26.7
ES-10	Carbon Tax	<i>Not Quantified</i>				
ES-11	Efficiency Improvements and Repowering of Existing Plants	2.3	2.3	31.8	\$1,568	\$49.3
	Sector Total After Adjusting for Overlaps	6.0	22.6	179.5	\$6228	\$34.7
	Reductions From Recent Actions	0	0	0	\$0	\$0.0
	Sector Total Plus Recent Actions	6.0	22.6	179.5	\$6,228	\$34.7

Note: ES-1 (Green Power Purchases and Marketing) was combined with RCI-7 (Green Power Purchasing for Consumers).

Transportation and Land Use Policy						
Policy No.	Policy Recommendation	GHG Reductions (MMtCO₂e)			Net Present Value 2009–2025 (Million \$)	Cost-Effectiveness (\$/tCO₂e)
		2015	2025	Total 2009–2025		
TLU-1	Study the Feasibility of Plug-In Vehicles	<i>Not Quantified—Qualitative Study Recommendation</i>				
TLU-2	Research and Development of Renewable Transportation Fuels	<i>Incorporated Into Analysis for TLU-3</i>				
TLU-3	Advanced Biofuels Development and Expansion	0.88	2.54	21.26	–\$2,293	–\$108
TLU-4	Smart Growth, Pedestrian and Bicycle Infrastructure	0.06	0.17	1.39	≤0 (Net Savings)	≤0 (Net Savings)
TLU-5	Improve and Expand Transit Service and Infrastructure	0.001	0.007	0.03	1.5	\$1,479
TLU-6	School and University Transportation Bundle	0.006	0.013	0.113	N/A	N/A
TLU-7	Promote and Facilitate Freight Efficiency	0.33	0.47	6.1	\$48	\$104
TLU-8	Procurement of Efficient Fleet Vehicles (Passenger and Freight)	<i>State "Lead by Example" Qualitative Recommendation</i>				
TLU-9	Fuel Efficiency: Clean Car Incentive	<i>Not Quantified—Qualitative Study Recommendation</i>				
TLU-10	Public Education	<i>Not Quantified</i>				
	Sector Total After Adjusting for Overlaps	1.28	3.2	28.89	–\$2,244	–\$78
	Reductions From Recent Actions (Federal CAFE Requirements)	1.02	3.26	26.9	<i>Not Quantified</i>	
	Sector Total Plus Recent Actions	2.29	6.45	30.2	–\$2,244	–\$78

CAFE = corporate average fuel economy; N/A = not applicable.

Agriculture, Forestry, and Waste Management Policy							
Policy No.	Policy Recommendation		GHG Reductions (MMtCO ₂ e)			Net Present Value 2009–2025 (Million \$)	Cost-Effectiveness (\$/tCO ₂ e)
			2015	2025	Total 2009–2025		
AFW-1	Manure Management		Not quantified				
AFW-2	Promotion of Farming Practices That Achieve GHG Benefits	Soil Carbon	0.5	1.3	11	–\$71	–\$6
		Nutrient Efficiency	0.1	0.3	2.4	–\$66	–\$27
AFW-3	Improved Water Management and Use	Increased Surface Water	0.005	0.01	0.10	\$86	\$835
		Improved Purification	0.001	0.001	0.01	–\$0.4	–\$39
AFW-4	Expanded Use of Agriculture and Forestry Biomass Feedstocks for Electricity, Heat, or Steam Production	Energy From Biomass	2.1	4.2	41	\$1,637	\$40
		Energy From Livestock Manure and Poultry Litter	0.01	0.02	0.2	\$0.8	\$4
		Capture of Waste Heat	0.02	0.06	0.50	–\$70	–\$140
AFW-5	Expanded Use of Advanced Biofuels		1.4	2.2	20	\$114	\$6
AFW-6	Expanded Use of Locally Produced Farm and Forest Products		0.03	0.06	0.6	\$2	\$4
AFW-7	Forest Management and Establishment for Carbon Sequestration	Urban Forestry	0.02	0.1	0.4	\$17	\$41
		Sustainable Forest Management	4.1	10.4	91	\$1,139	\$21
		Afforestation	0.7	1.8	16	\$201	\$12
AFW-8	Advanced Recovery and Recycling		1.5	4.4	36	–\$283	–\$8
AFW-9	End-of-Use Waste Management Practices		0.02	0.02	0.4	–\$1	–\$3
	Sector Total After Adjusting for Overlaps		7.8	18.3	162.2	\$1,045	\$6.4
	Reductions From Recent Actions		0.0	0.0	0.0	\$0.0	\$0.0
	Sector Total Plus Recent Actions		7.8	18.3	162.2	\$1,045	\$6.4

For greater detail on these recommendations see the [Arkansas Governor’s Commission on Global Warming Final Report](#).