



# Arkansas Governor's Commission on Global Warming

Meeting #10, September 25, 2008

Arkansas Governor's Office  
The Center for Climate Strategies

# Welcome and Introductions

- Arkansas Governor's Office
- Governor's Commission on Global Warming Members
- Advisory Group Members
- Members of the Public
- Center for Climate Strategies

# Agenda

1. Welcome and Introductions
2. Review of Day's Agenda
3. Public Input and Announcements
4. Approval of Draft Summary of GCGW Meeting #9
5. Review of Final Report Process
6. Review and Final Approval of Arkansas' Draft GHG Inventory and Forecast
7. Review of GCGW Progress and Draft Results
8. Review and Final Approval of Draft Pending Priority Policy Options
9. Public Input and Announcements
10. Adjourn

# Public Input, Announcements

# Final Report Process

- Completion of policy templates, inventory and forecast report, based on GCGW meeting results
- Production of first draft of full report and appendices by CCS for GCGW review and comment
- Final draft completed by CCS for final review and comment
- Report transmitted by CCS to the Governor on behalf of GCGW by Friday, October 31

# Table of Contents for Report

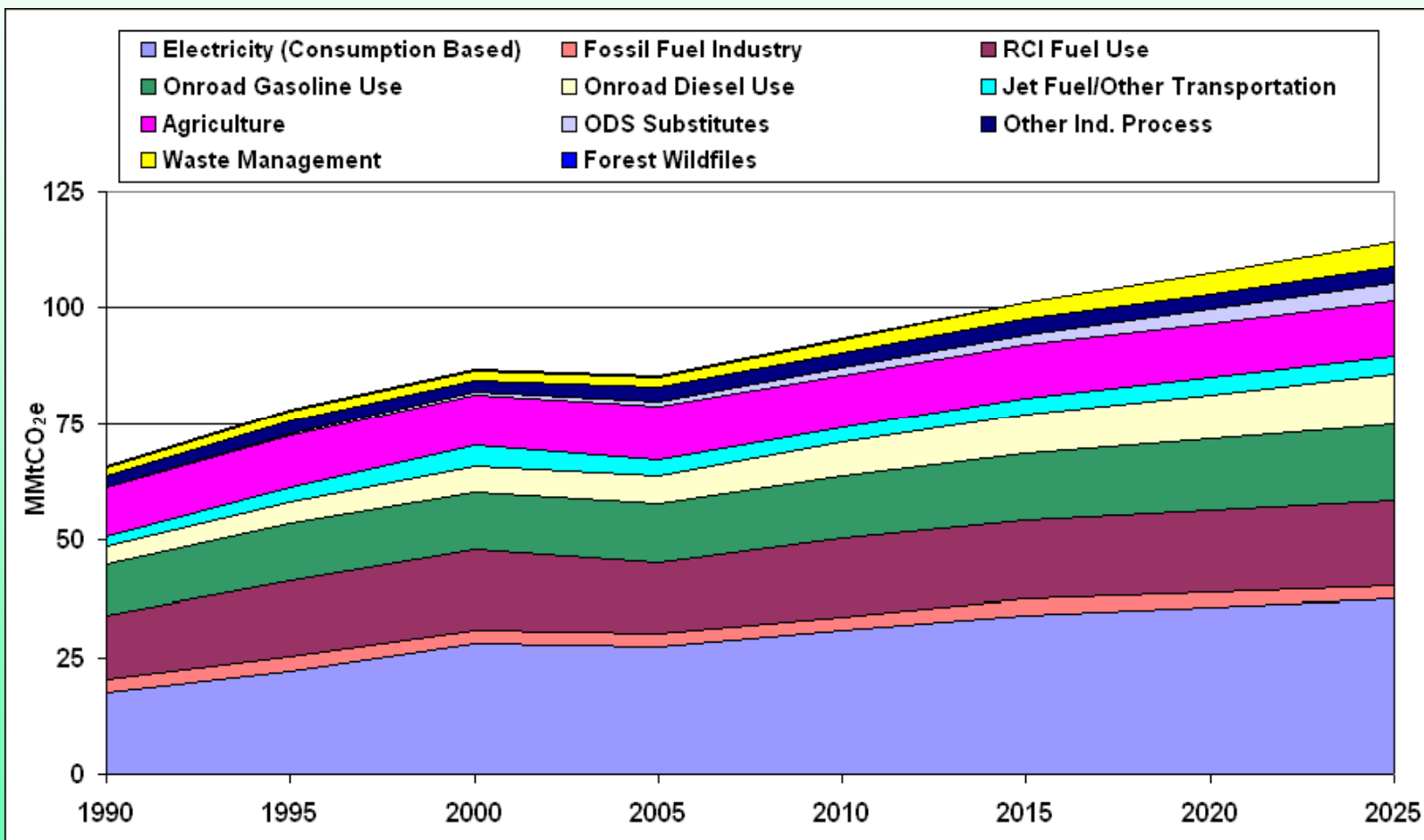
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# Gross AR GHG Emissions By Sector, 1990-2025



# Revisions Approved by GCGW

- Energy Supply
  - Plum Point and Hempstead Co. coal plants included in reference case projections
- AFW
  - Manure Management Emissions broken out by animal type in appendix
  - Cat fish farm emissions reported in appendix but not included in state's GHG emissions account due to uncertainty of estimates

# Revisions to Waste Management Emissions (Pending GCGW Approval)

- Revised municipal solid waste (MSW) landfill disposal data
  - Arkansas DEQ provided new data to replace default EPA data for 2002-2005
- Impacts on MSW landfill 2005 emissions and projections (2006-2025):

	<b>GHG Emissions from Waste Management (MMtCO<sub>2</sub>e)</b>					
	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>
<b>Draft I&amp;F</b>	2.05	2.45	2.87	3.38	3.99	4.72
<b>Revised I&amp;F</b>	2.05	2.4	2.89	3.49	4.24	5.17
<b>Difference</b>	0	-0.05	0.02	0.11	0.25	0.45

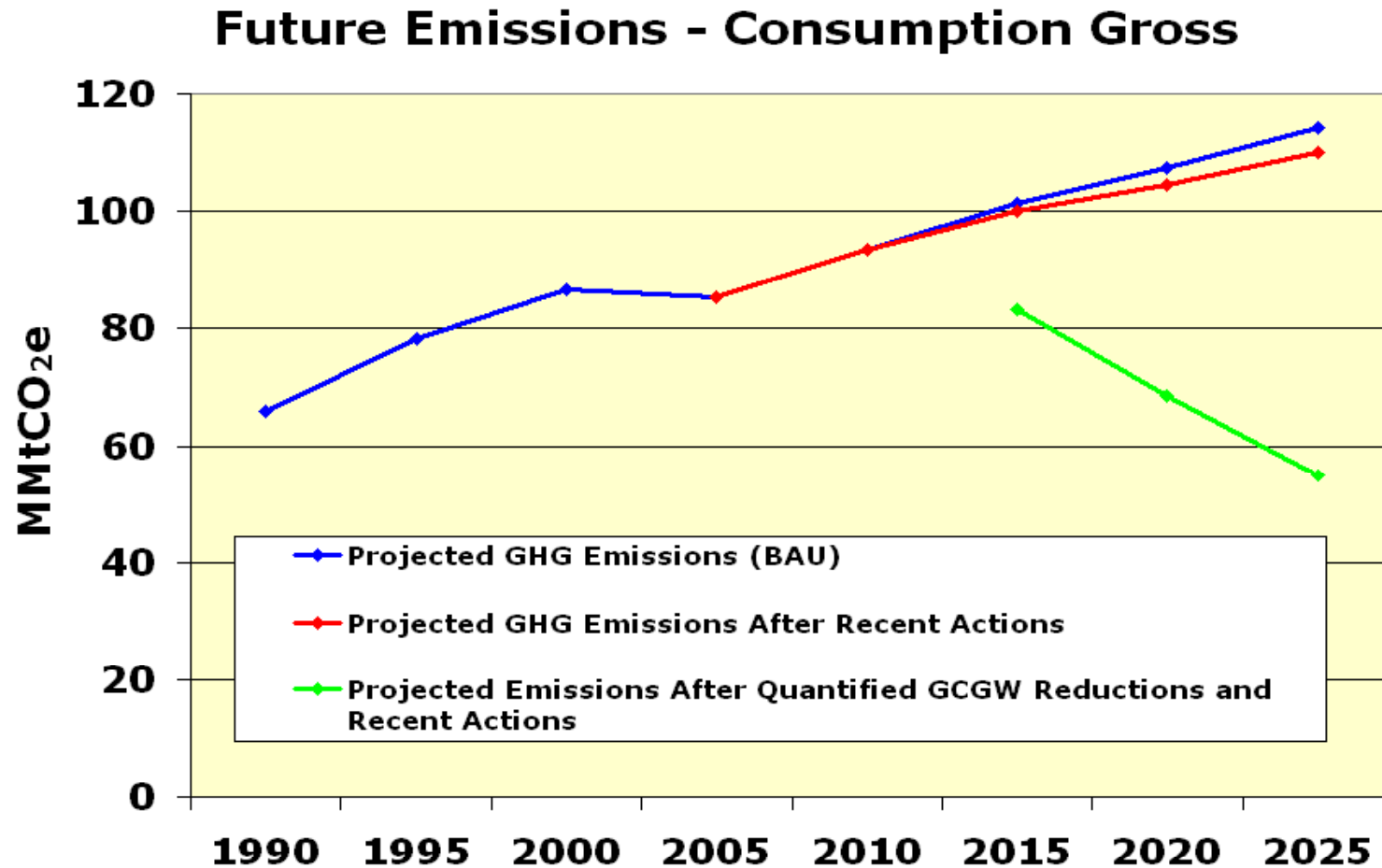
# Comparison of GHG Emissions from Draft I&F Waste Management (MMtCO<sub>2</sub>e)

Source	1990	1995	2000	2005	2010	2015	2020	2025
Landfills	1.36	1.52	1.37	1.72	2.09	2.53	3.07	3.72
Industrial Landfills	0.09	0.11	0.12	0.14	0.16	0.18	0.20	0.23
Waste Combustion	0.07	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Municipal Wastewater	0.29	0.31	0.34	0.35	0.37	0.40	0.42	0.45
Industrial Wastewater	0.20	0.21	0.22	0.24	0.26	0.27	0.29	0.31
<b>Total</b>	<b>2.01</b>	<b>2.24</b>	<b>2.05</b>	<b>2.45</b>	<b>2.87</b>	<b>3.38</b>	<b>3.99</b>	<b>4.72</b>

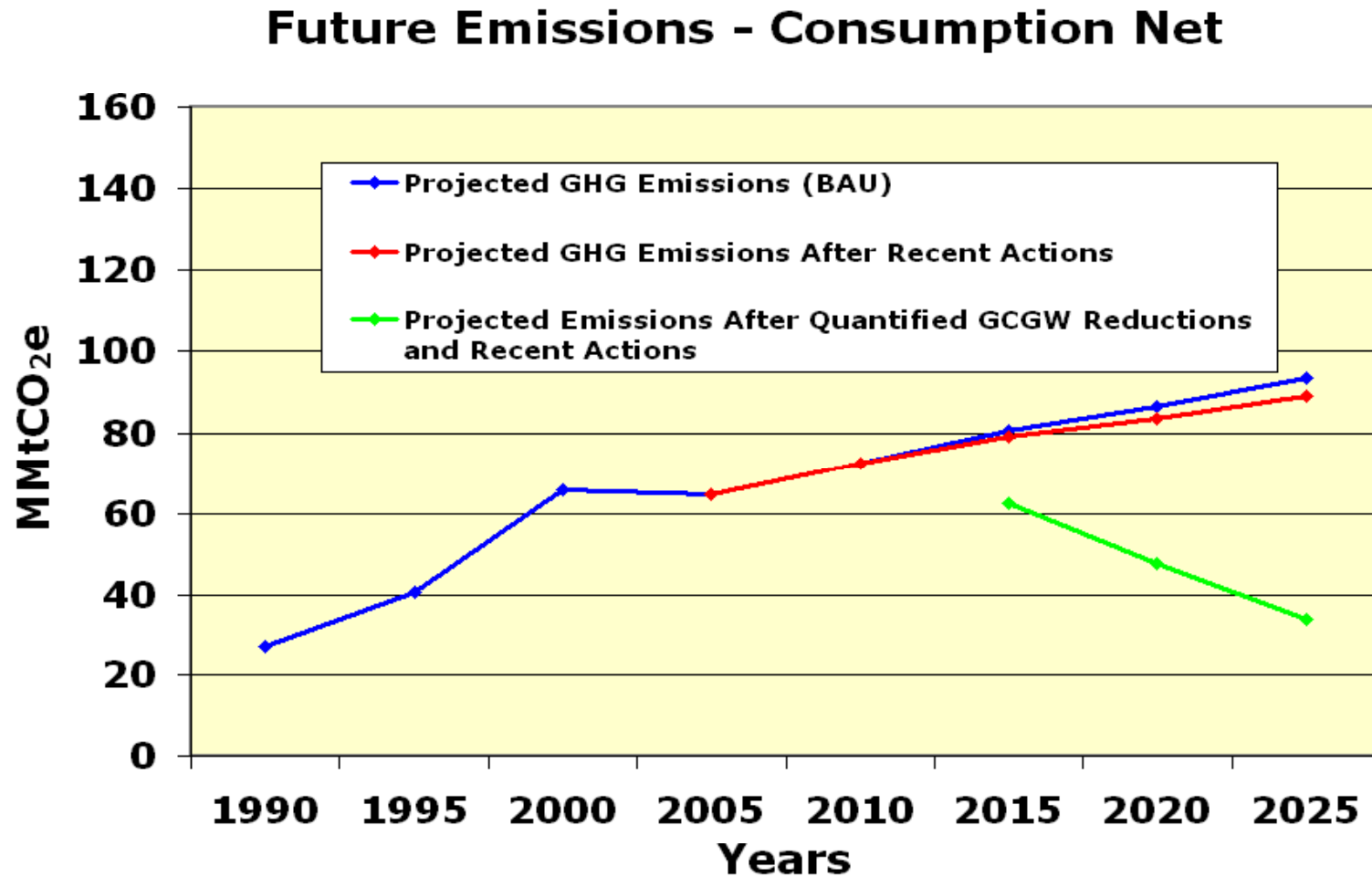
## Revised I&F

Source	1990	1995	2000	2005	2010	2015	2020	2025
Landfills	1.36	1.52	1.37	1.68	2.11	2.65	3.33	4.19
Industrial Landfills	0.09	0.11	0.12	0.13	0.15	0.17	0.19	0.22
Waste Combustion	0.07	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Municipal Wastewater	0.29	0.31	0.34	0.35	0.37	0.40	0.42	0.45
Industrial Wastewater	0.20	0.21	0.22	0.24	0.26	0.27	0.29	0.31
<b>Total</b>	<b>2.01</b>	<b>2.24</b>	<b>2.05</b>	<b>2.40</b>	<b>2.89</b>	<b>3.49</b>	<b>4.24</b>	<b>5.17</b>

# GCGW Actions – Draft Results



# GCGW Actions – Draft Results



# GCGW Actions

## Draft Results – Gross Emissions

<b>Consumption Basis - Net Emissions</b>								
	1990	1995	2000	2005	2010	2015	2020	2025
Projected GHG Emissions (BAU)	27.3	40.7	66.0	64.6	72.6	80.4	86.6	93.4
Reductions from Recent Actions				0.0	0.1	1.4	3.1	4.1
Projected GHG Emissions After Recent Actions				64.6	72.5	79.1	83.5	89.2
Total GHG Reductions from GCGW Policies						16.7	35.9	55.2
Difference Between GCGW Reductions & Targets						62.4	47.6	34.0
Projected Emissions After Quantified GCGW Reductions and Recent Actions						62.4	47.6	34.0
<b>Consumption Basis - Gross Emissions</b>								
	1990	1995	2000	2005	2010	2015	2020	2025
Projected GHG Emissions (BAU)	65.8	78.1	86.8	85.4	93.5	101.3	107.5	114.2
Reductions from Recent Actions				0.0	0.1	1.4	3.1	4.1
Projected GHG Emissions After Recent Actions				85.4	93.4	99.9	104.4	110.1
Total GHG Reductions from GCGW Policies						16.7	35.9	55.2
Difference Between GCGW Reductions & Targets						83.3	68.5	54.9
Projected Emissions After Quantified GCGW Reductions and Recent Actions						83.3	68.5	54.9

# GCGW Actions

## Draft Results – Net Emissions

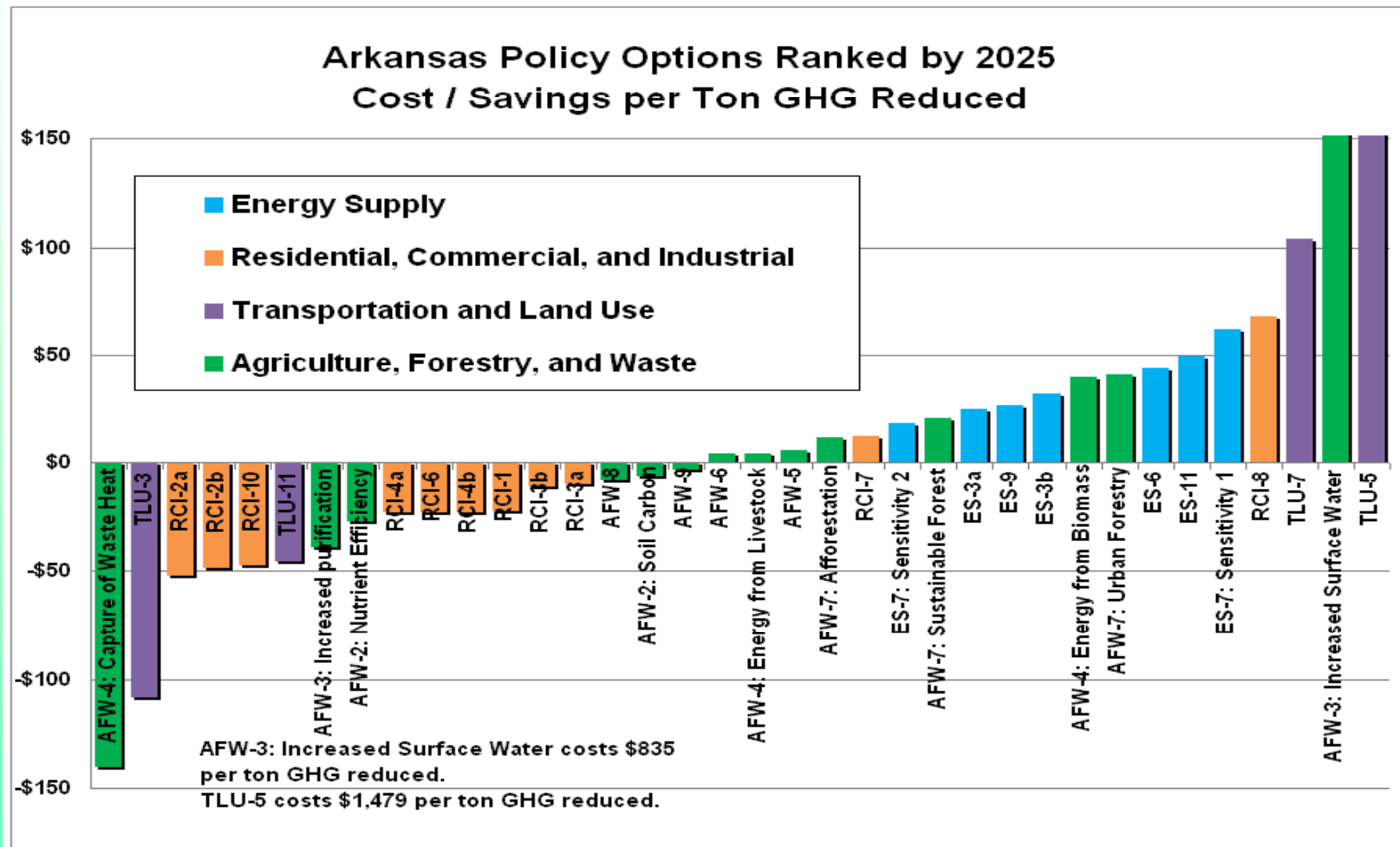
Production Basis - Net Emissions								
	1990	1995	2000	2005	2010	2015	2020	2025
Projected GHG Emissions (BAU)	32.3	43.1	65.4	64.6	72.6	80.4	86.6	93.4
Reductions from Recent Actions				0.0	0.1	1.4	3.1	4.1
Projected GHG Emissions After Recent Actions				64.6	72.5	79.1	83.5	89.2
Total GHG Reductions from GCGW Policies						16.7	35.9	55.2
Difference Between GCGW Reductions & Targets						62.4	47.6	34.0
Projected Emissions After Quantified GCGW Reductions and Recent Actions						62.4	47.6	34.0
Production Basis - Gross Emissions								
	1990	1995	2000	2005	2010	2015	2020	2025
Projected GHG Emissions (BAU)	70.8	80.5	86.2	85.4	93.5	101.3	107.5	114.2
Reductions from Recent Actions				0.0	0.1	1.4	3.1	4.1
Projected GHG Emissions After Recent Actions				85.4	93.4	99.9	104.4	110.1
Total GHG Reductions from GCGW Policies						16.7	35.9	55.2
Difference Between GCGW Reductions & Targets						83.3	68.5	54.9
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# GCGW Actions

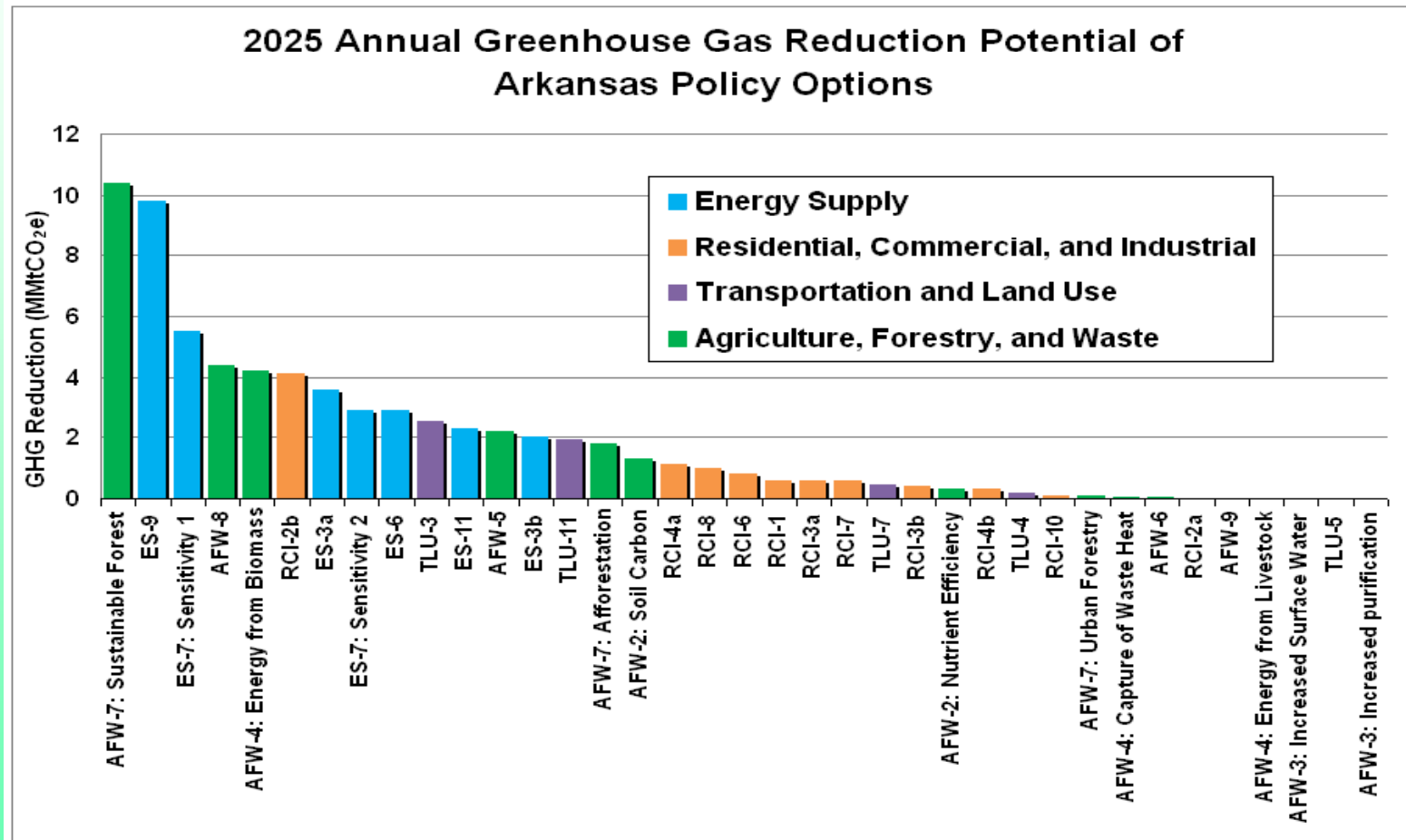
## Draft Cumulative Results

Sector	2015 MMtCO <sub>2</sub> e (Annual)	2025 MMtCO <sub>2</sub> e (Annual)	2009-2025 MMtCO <sub>2</sub> e (Cumulative)	Million\$ NPV 2009-2025 (Cumulative)	\$/tCO <sub>2</sub> e (Weighted Average)
RCI	2.5	9.2	69.8	-\$1,313	-\$19
ES	3.1	22.5	155.8	\$6,451	\$41
TLU	3.3	5.1	60.1	TBD	TBD
AFW	7.7	18.3	162.0	\$1,046	\$6.5
CC	----	----	----	----	----
<b>Total</b>	<b>15.7</b>	<b>53.7</b>	<b>432.0</b>	<b>\$4,480</b>	<b>\$10.4</b>

# Draft AR GHG Supply Curve (Completed & Pending Options)



# Draft AR GHG Reductions 2025 (Completed & Pending Options)



# Energy Supply (ES)

- 3a. Renewable Portfolio Standard (RPS)
- 3b. Renewable Energy Feed-In Tariff (REFIT)
- 4. Grid-Based Renewable Energy Incentives and/or Barrier Removal
- 5. Approaches Benefiting from Regional Application
- 7. Geological Underground Sequestration for New Plants
- 8. Transmission System Upgrades
- 10. Carbon Tax

# Break



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# Residential, Commercial, Industrial (RCI)

- RCI-6: Incentives and Funds to Promote Renewable Energy and Energy Efficiency
- RCI-9: Support for Energy-Efficient Communities, Including Smart Growth
- RCI-10: Energy-Savings Sales Tax

# Transportation & Land Use (TLU)

2. Research and Development for Renewable Transportation Fuels
  - 3a. Advanced Biofuels Development and Expansion (10%)
  - 3b. Advanced Biofuels Development and Expansion (12%)
6. School and University Transportation Bundle
8. Procurement of Efficient Fleet Vehicles (Passenger and Freight)
11. Lower Speed Limits and Enforcement

# Break



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# Cross Cutting (CC) Issues

1. Greenhouse Gas Inventories and Forecasts
2. State Greenhouse Gas Reporting and Registry
3. Statewide Greenhouse Gas Reduction Goals or Targets
7. Optimizing Best-Scale of Reduction Policies
8. Creative Financial Mechanisms
10. Climate-Change Related Economic Development
11. Regulatory Realignment in Government to Encourage Constructive Climate Action

# Announcements