



# Arkansas Governor's Commission on Global Warming

Cross Cutting Issues  
Technical Work Group  
Meeting #12, September 19, 2008

Office of the Governor  
Center for Climate Strategies

# Agenda

1. Introductions
2. Review and Approval of Prior Call Summary
3. Date and Time for final GCGW meeting
4. Review Goals for GCGW Meeting #10
5. Discussion Regarding Development of TWG  
Recommendations for Pending Priority Policy Options
6. Final Report Process
7. Public Comments and Announcements

# Future GCGW and CC TWG Meetings

- GCGW Meetings (9:00 am - 5:00 pm Central)
  - #10: Thursday, Sept. 25, 2008
  - Public comment periods:
    - 9:00-9:30 am / 4:30-5:00 pm
- Final Recommendations to Governor
  - Friday, October 31

# Goals for GCGW Meeting #10 (Sept. 25, 2008)

- Goals: Obtain GCGW approval of TWG recommendations on pending priority policy options

# Next Steps for CC TWG

- Finalize TWG recommendations for CC-3 and CC-11
- TWG has approved the following options for review/approval by the GCGW:
  - CC-1, CC-2, CC-7, CC-8, CC-10

# Development of TWG Recommendations for Priority Policy Options

*(See Handout: Draft Priority Policy Options for Analysis)*

Proposed Option #	Proposed Option Name	# From Catalog of State Actions
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)

# Statewide GHG Reduction Goals and Targets

## Act 696; Section 5 (Purpose and duties):

(b) Based on the commission's evaluation of the current global warming data, the assessment of global warming mitigation strategies, and the available global warming pollutant reduction strategies, the commission shall set forth:

(1) A global warming pollutant reduction goal

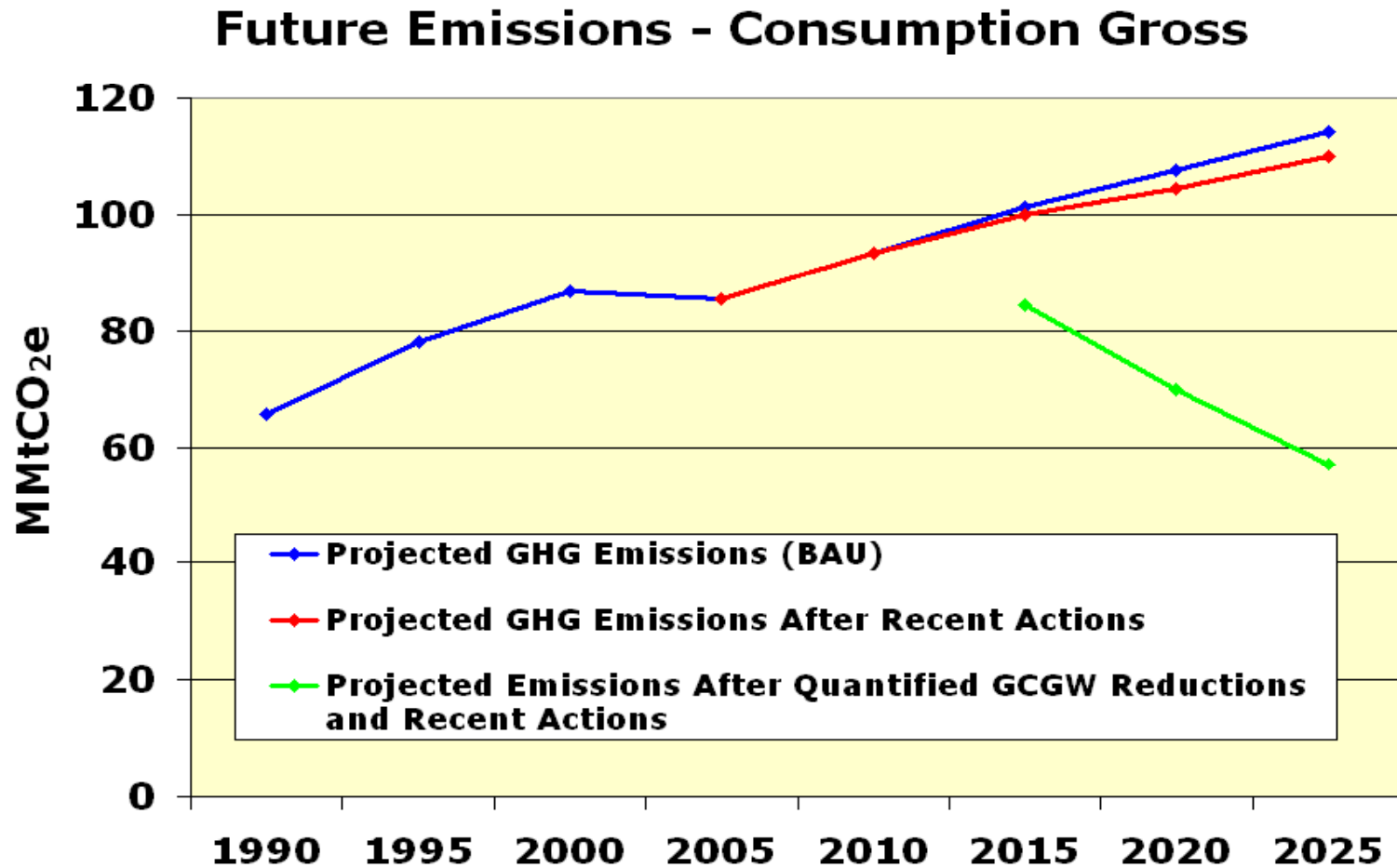
# Statewide GHG Reduction Goals and Targets

- Gross vs. Net (Sinks)
- Production vs. Consumption
- Levels
- Timing

State, Province, or Region	1990-2020 GHG Forecast	State Goals	Climate Plan Coverage
Arizona	144%	<ul style="list-style-type: none"> <li>• 2000 levels by 2020; 50% below by 2040</li> <li>• 15% below 2005 levels by 2020 (WCI)</li> </ul>	106%
California	40%	<ul style="list-style-type: none"> <li>• E.O.: 2000 level by 2010; 1990 by 2020; 80% below 1990 by 2050</li> <li>• AB-32: 1990 levels by 2020</li> <li>• 15% below 2005 levels by 2020 (WCI)</li> </ul>	100%
Colorado	71%	<ul style="list-style-type: none"> <li>• 20% below 2005 level by 2020; 80% below by 2050</li> </ul>	75%
Connecticut	32%	<ul style="list-style-type: none"> <li>• 1990 level by 2010; 10% below by 2020; 75% below by 2050</li> </ul>	100%
Florida	?	<ul style="list-style-type: none"> <li>• 2000 level by 2017; 1990 level by 2025; 80% below 1990 by 2050</li> </ul>	?
Massachusetts	?	<ul style="list-style-type: none"> <li>• 1990 level by 2010; 10% below by 2020; 75% below by 2050</li> </ul>	?
Maine	34%	<ul style="list-style-type: none"> <li>• 1990 level by 2010; 10% below by 2020; 75% below by 2050</li> </ul>	100%
Maryland	42%	<ul style="list-style-type: none"> <li>• Recommended: 10% below 2006 levels by 2012; 15% below 2006 levels by 2015; 25% (enforceable)-50% (science based) below 2006 levels by 2020; 90% below 2006 levels by 2050.</li> </ul>	100%
Minnesota	48%	<ul style="list-style-type: none"> <li>• Next Generation Energy Act: 15% below 2005 levels by 2015; 30% by 2025; 80% by 2050</li> </ul>	TBD
Montana	30%	<ul style="list-style-type: none"> <li>• 1990 level by 2020; 80% below by 2050 (consumption &amp; production)</li> </ul>	89%-105%
North Carolina	113%	?	TBD
NEG/ECP	?	<ul style="list-style-type: none"> <li>• 1990 level by 2010; 10% below by 2020; 75% below by 2050</li> </ul>	TBD

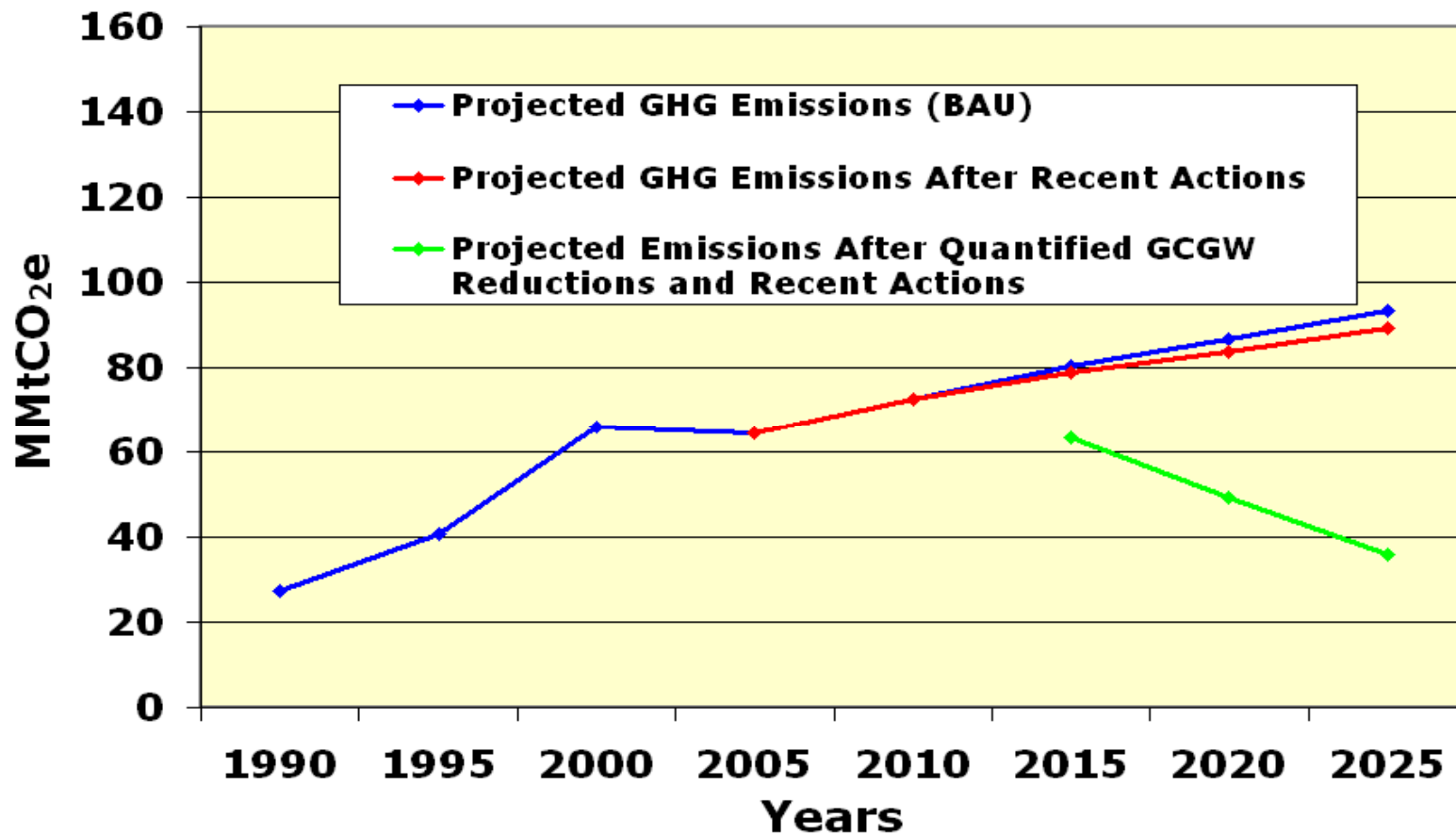
State, Province, or Region	1990-2020 GHG Forecast	State Goals	Climate Plan Coverage
New Jersey	28%	• E.O. 54: 1990 level by 2020; 80% below 2006 levels by 2050	TBD
New Mexico	65%	• 2000 level by 2012; 10% below by 2020; 75% below by 2050 • 15% below 2005 levels by 2020 (WCI)	133%
New York	24%	• 5% below 1990 by 2010	?
Ontario	?	• 6% below 1990 by 2014	n/a
Oregon	61%	• 10% below 1990 by 2020; 75% below 1990 by 2050 • 15% below 2005 levels by 2020 (WCI)	85%
Puget Sound	37%	• 1990 level by 2010; 10% below by 2020; 75% below by 2100	100%
Rhode Island	35%	• 1990 level by 2010; 10% below by 2020; 75% below by 2050	100%
South Carolina	87%	• Recommended: 5% below 1990 levels by 2020	99%
Vermont	26-59%	• 25% below 1990 levels by 2012; 50% below 1990 by 2028; 75% below by 2050	TBD
Utah	95%	• 15% below 2005 levels by 2020 (WCI)	TBD
Washington	40%	• E.O.: 1990 levels by 2020; 25% below 1990 by 2035; 50% below 1990 by 2050 • 15% below 2005 levels by 2020 (WCI)	TBD
WCI	54%	• 15% below 2005 levels by 2020 (AZ, NM, CA, OR, UT, WA, BC, MB)	TBD
British Columbia	69%	• 15% below 2005 levels by 2020 (WCI)	TBD
Manitoba	TBD	• 15% below 2005 levels by 2020 (WCI)	TBD

# GCGW Actions – Draft Results



# GCGW Actions – Draft Results

## Future Emissions - Consumption Net



# GCGW Actions

## Draft Results – Gross Emissions

Consumption Basis - Gross Emissions							
	1990	2000	2005	2010	2015	2020	2025
Projected GHG Emissions (BAU)	65.8	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					15.7	34.4	53.1
Projected Emissions After Quantified GCGW Reductions and Recent Actions					84.3	70.0	57.0
Production Basis - Gross Emissions							
	1990	2000	2005	2010	2015	2020	2025
Projected GHG Emissions (BAU)	70.8	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					15.7	34.4	53.1
Projected Emissions After Quantified GCGW Reductions and Recent Actions					84.3	70.0	57.0

# GCGW Actions

## Draft Results – Net Emissions

Consumption Basis - Net Emissions							
	1990	2000	2005	2010	2015	2020	2025
Projected GHG Emissions (BAU)	27.3	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					15.7	34.4	53.1
Projected Emissions After Quantified GCGW Reductions and Recent Actions					63.4	49.1	36.1
Production Basis - Net Emissions							
	1990	2000	2005	2010	2015	2020	2025
Projected GHG Emissions (BAU)	32.3	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					15.7	34.4	53.1
Projected Emissions After Quantified GCGW Reductions and Recent Actions					63.4	49.1	36.1

# GCGW Actions

## Draft Cumulative Results

<b>Sector</b>	<b>2015 MMtCO<sub>2</sub>e (Annual)</b>	<b>2025 MMtCO<sub>2</sub>e (Annual)</b>	<b>2009-2025 MMtCO<sub>2</sub>e (Cumulative)</b>	<b>Million\$ NPV 2009-2025 (Cumulative)</b>	<b>\$/tCO<sub>2</sub>e (Weighted Average)</b>
RCI	3.0	10.7	82.6	-\$1,405	-\$17
ES	3.2	21.5	149.7	\$4,966	\$33
TLU	2.4	2.6	38.8	TBD	TBD
AFW	7.0	18.3	157.7	\$1,024	\$6.5
CC	----	----	----	----	----
<b>Total</b>	<b>15.7</b>	<b>53.7</b>	<b>428.8</b>	<b>\$4,585</b>	<b>\$10.7</b>

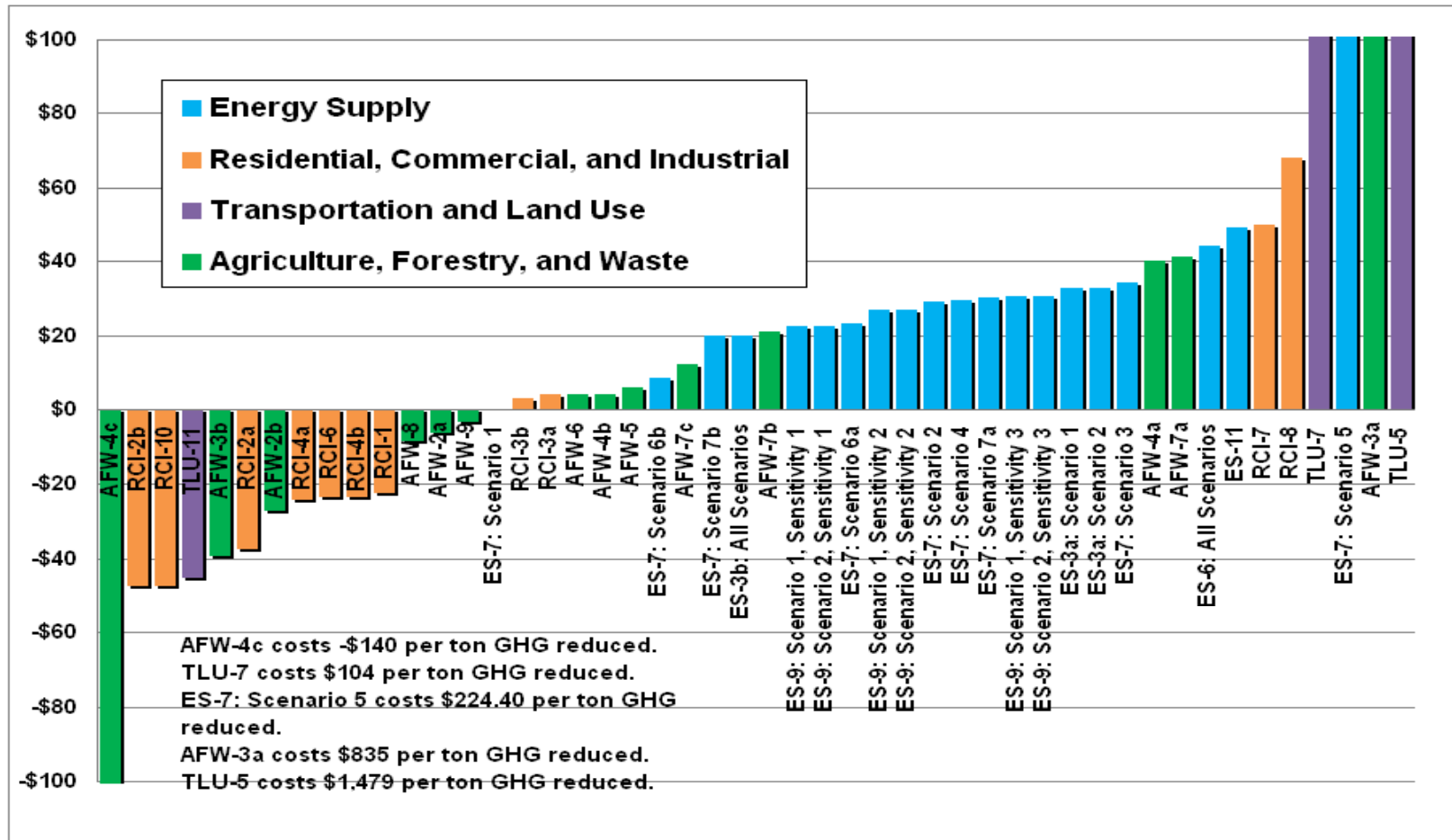
# Overlaps Between Options

Policy Option	Policy Option	Overlap Adjustment To:	Notes
AFW-4 (Expanded Use of Agriculture and Forestry Biomass Feedstocks for Electricity, Heat, or Steam Production)	ES-3a (Renewable Portfolio Standard (RPS)) ES-6 (Combined Heat and Power)	AFW-4	Assumed total overlap between AFW-4 and ES-3; impacts for AFW-4 removed from AFW-4 cumulative results
AFW-4	RCI-7 (Green Power Purchasing for Consumers)	AFW-4	Assumed total overlap between AFW-4 and RCI-7; impacts for AFW-4 removed from AFW cumulative results
AFW-4	RCI-8 (Non Residential Energy Efficiency (Combined Heat and Power))	AFW-4	Assumed total overlap between AFW-4 and RCI-8; impacts for AFW-4 removed from AFW cumulative results
AFW-5 (Expanded Use of Liquid Biofuels)	TLU-2 (Research and Development of Renewable Transportation Fuels) TLU-3 (Advanced Biofuels Development and Expansion)	AFW-5	Assumed total overlap between AFW-5 and TLU-2 and TLU-3; impacts for AFW-5 removed from AFW cumulative results
AFW-7 (Forest Management and Establishment for Carbon Sequestration)	RCI-3a (Reduced Energy Use in New and Retrofitted State-Owned Buildings) RCI-3b (Reduced Energy Use in State-Owned Buildings) RCI-4a (Promotion and Incentives for Improved New Building Design and Construction) RCI-4b (Promotion and Incentives for Improved Existing Buildings) RCI-9 (Support for Energy-Efficient Communities, Including Smart Growth)	None	No overlap: quantification methods for RCI options exclude energy savings from tree shading

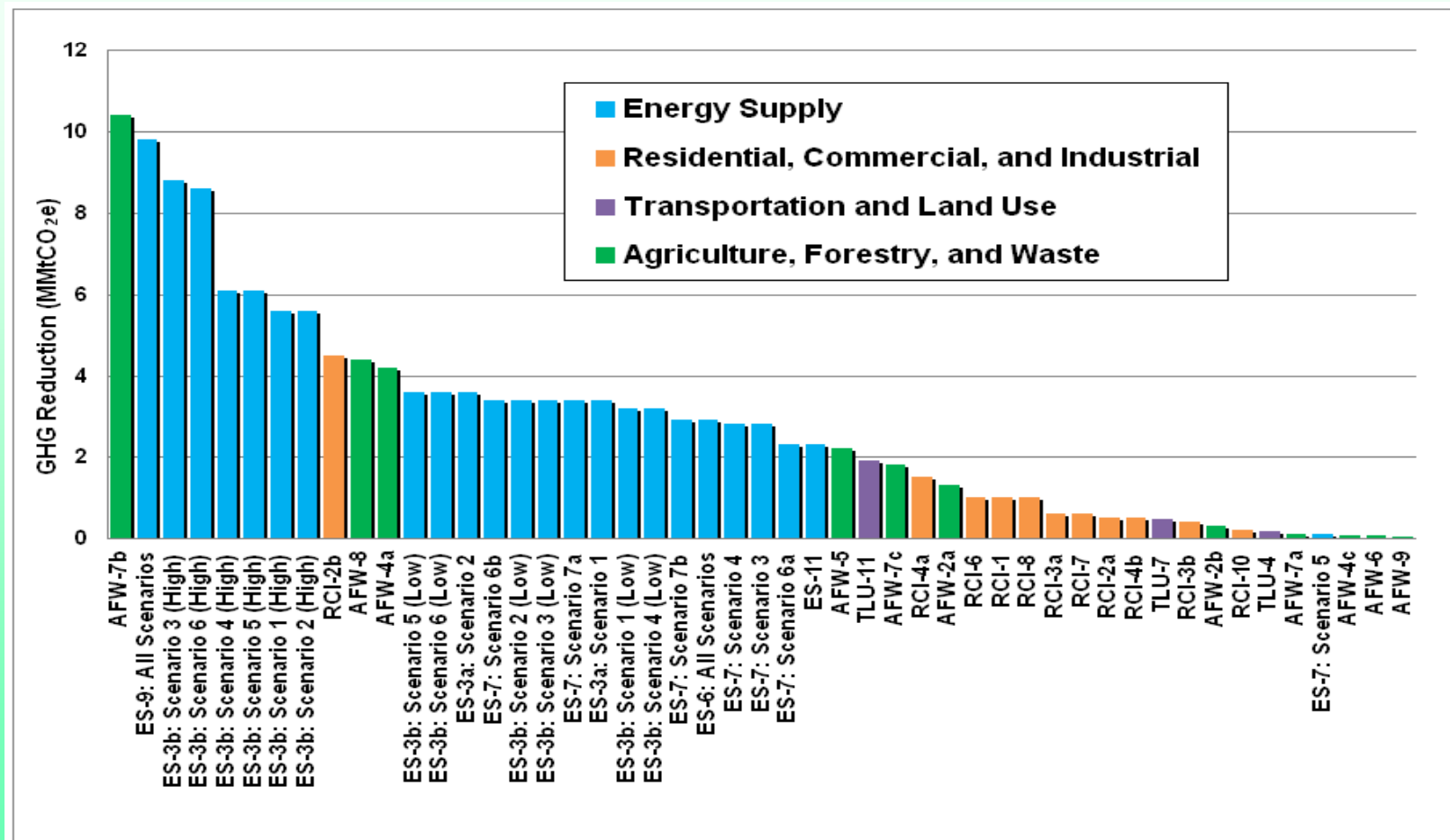
# Overlaps Between Options

Policy Option	Policy Option	Overlap Adjustment To:	Notes
TLU-4 (Smart Growth, Pedestrian and Bicycle Infrastructure)	TLU-5 (Improve and Expand Transit Service and Infrastructure) TLU-6 (School and University Transportation Bundle)	TLU-5 and TLU-6	TBD: Transit and land use interact closely; school siting overlaps with land use and school access overlaps with transit
TLU-7 (Promote and Facilitate Freight Efficiency)	TLU-11 (Lower Speed Limits and Enforcement)	TLU-7	TBD: Savings in long-haul truck emissions overlap with benefits from speed reduction
CC-11 (Regulatory Realignment in Government To Encourage Constructive Climate Action)	RCI-3a (Reduced Energy Use in New and Retrofitted State-Owned Buildings) and RCI-3b (Reduced Energy Use in State-Owned Buildings)	None	Keep Implementation Mechanisms language for energy audits of state facilities and activities in CC-11 and RCI-3

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



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



# 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

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