



## **Iowa Climate Change Advisory Council (ICCAC)**

Meeting # 7

November 10, 2008

### Welcome and Introductions

- Iowa Climate Change Advisory Council
- Iowa Department of Natural Resources
- Members of the Public
- Center for Climate Strategies

# Agenda

1. Welcome and Introductions
2. Opening Remarks
3. Approval of September 3-4, 2008, Meeting #6 Summary (Decision)
4. Meeting Purpose and Goals
5. Status and Next Steps of ICCAC Process
6. Final Approval of the Iowa GHG Emissions Inventory and Forecast (Decision)
7. Discussion of Cumulative Results of Quantification of All Approved and Pending Policy Options and Discussion of 2012 and 2020 Goals
8. Review and Approval of Pending Policy Options and Quantification Results from Subcommittees (Decisions)
9. Short (2012) and Mid-Term (2020) Statewide Goals and Targets (Decision)
10. Review Process and Discuss Draft Outline of Final Report
11. Agenda, Date and Time of ICCAC Conference Call (Decision)
12. Announcements and Adjourn

NOTE: There will be an opportunity for public input at 9:30 am

## Approval of September 3-4, 2008 Meeting #6 Summary

## Meeting Purpose and Goals

- Final Approval of the Iowa GHG Emissions Inventory and Forecast
- Review and Approve all Remaining Policy Option Documents from SC's, including Quantification Results
- Approval of GHG Reduction Goals and Targets for Iowa
- Review Process for Developing and Approving the Final Report.

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## Status and Next Steps of ICCAC Process

- Stepwise Planning Process
- Policy Option Templates
- Quantification Results
- Goal Setting

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## Stepwise Planning Process

1. Identify a full range of possible actions
2. Identify initial priorities for analysis
3. Develop inventory and forecast of emissions
4. Develop straw proposals
5. Quantify GHG reductions and costs/savings
6. Evaluate externalities, feasibility issues
7. Develop alternatives to address barriers
8. Aggregate results
9. Iterate to final agreements
10. Finalize and report recommendations

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## Policy Option Template

- Policy Description (Concept)
- Policy Design (Goals, Timing, Coverage)
- Implementation Methods
- Related Programs and Policies (BAU)
- Estimated GHG Savings and Costs Per MMTCO<sub>2</sub>e
  - Data sources, methods, and assumptions
  - Key uncertainties
- Additional (non-GHG) Benefits and Costs, as Needed
- Feasibility Issues, if Needed
- Status of Group Approval
- Level of Group Support
- Barriers to Consensus, if Any

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# **PUBLIC INPUT**

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## **Iowa GHG Emissions Inventory and Forecast**

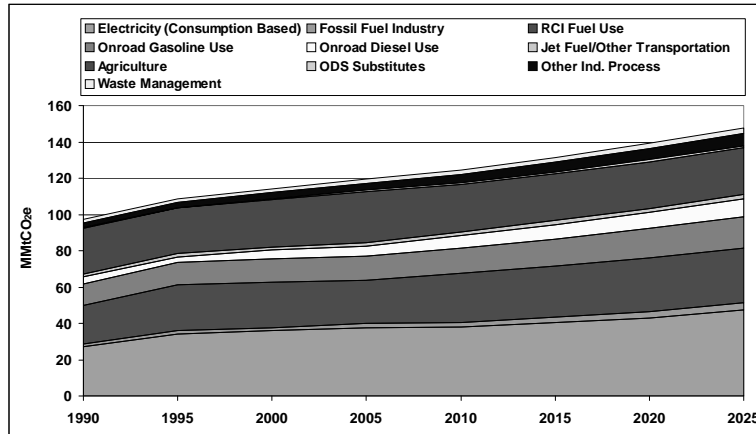
- All Changes Approved by ICCAC at Last Meeting have been included
- ICCAC Approval of Final Report

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**Figure ES-2. Iowa Gross GHG Emissions by Sector, 1990-2025: Historical and Projected**



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## Quantification Results

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## ICCAC Actions Draft Cumulative Results

Sector	2012 MMtCO <sub>2</sub> e	2020 MMtCO <sub>2</sub> e	2009-2020 MMtCO <sub>2</sub> e	Million \$ NPV 2009- 2020	\$/tCO <sub>2</sub> e
EEC (RCI Fuels; Non-Electric)	1.1	8.5	42.8	-\$1,057	-\$25
CRE	5.8	48.0	233.5	\$5,921	\$25
TLU	1.6	11.1	55.0	-\$2,219	-\$40
AFW	11.3	37.2	232.4	\$2,019	\$8.7
CC					
<b>Total</b>	<b>19.8</b>	<b>104.9</b>	<b>563.8</b>	<b>\$4,665</b>	<b>\$8.3</b>

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## ICCAC Actions Draft Results- Gross Emissions

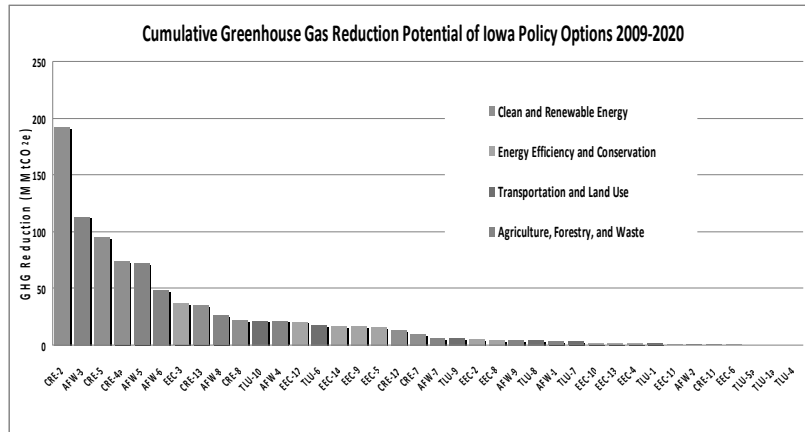
Consumption Basis - Gross Emissions								
	1990	1995	2000	2005	2010	2012	2015	2020
Projected GHG Emissions	97.3	108.7	114.2	119.5	124.4	127.3	131.4	139.1
Reductions from Recent Actions				0.0	0.3	0.7	1.6	3.3
Projected GHG Emissions After Recent Actions				119.5	124.1	126.6	129.8	135.7
GHG Reduction Goal Recommended by ICCAC						TBD		TBD
Total GHG Reductions from ICCAC Policies						19.8	51.8	104.9
Difference Between ICCAC Reductions & Targets						TBD		TBD
Projected Emissions After Quantified ICCAC Reductions						106.7	78.1	30.8

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## Cumulative Greenhouse Gas Reduction Potential of Iowa Policy Options 2009-2020

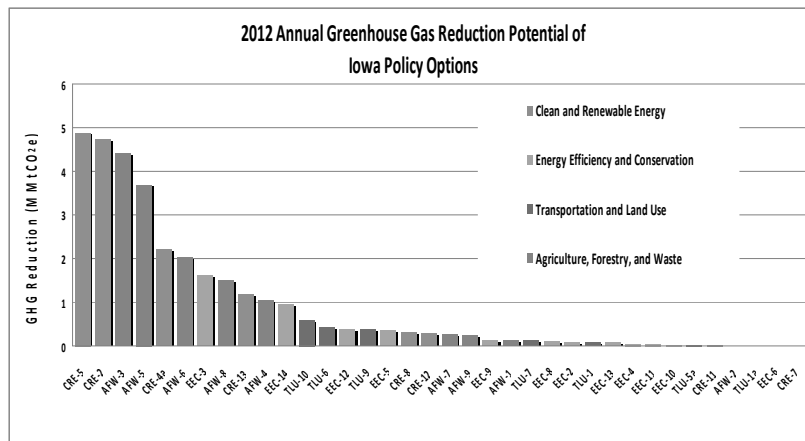


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## 2012 Annual Greenhouse Gas Reduction Potential of Iowa Policy Options

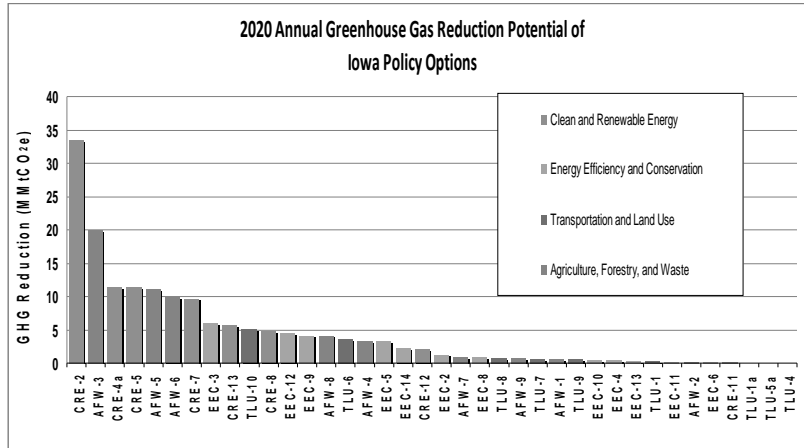


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## 2020 Annual Greenhouse Gas Reduction Potential of Iowa Policy Options

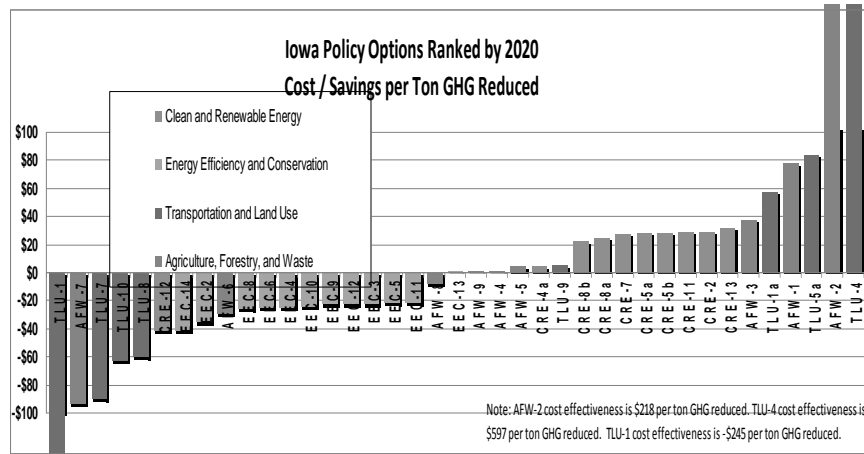


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## 2020 Annual Greenhouse Gas Reduction Potential of Iowa Policy Options

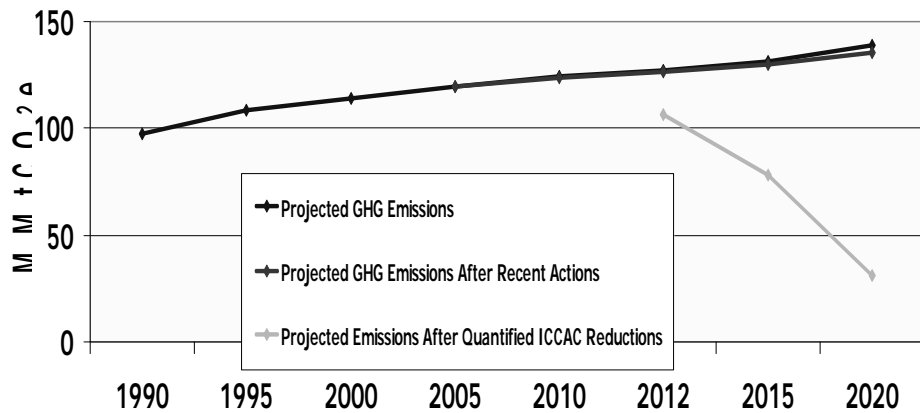


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## IA Future Emissions- Consumption Gross



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## IA GHG Reduction Goals

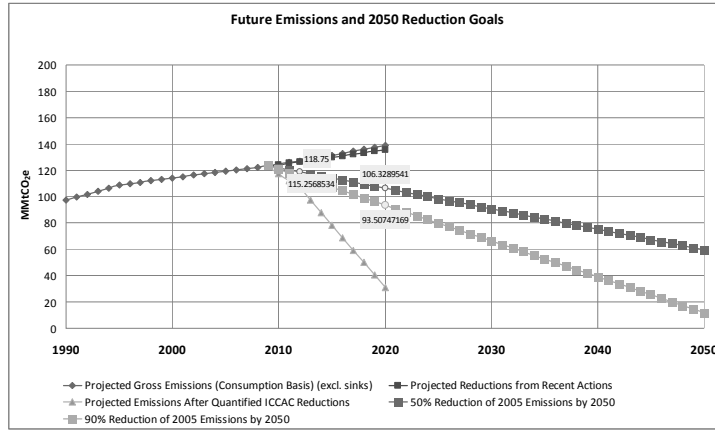
- 2005 Baseline Year
- 2012 Short Term Goal- TBD
- 2020 Mid-Term Goal- TBD
- 2050 Long-Term Goals- 50%- 90% Reduction from 2005 Baseline Levels

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# Future Emissions and 2050 Reduction Goals

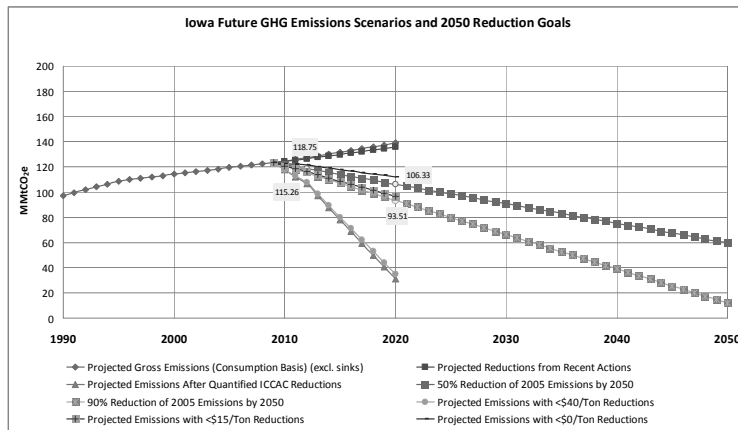


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# Alternative GHG Reduction Scenarios



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## Policy Option Proposals

- See Subcommittee Policy Option Proposal Handouts and the following Summary Charts of Approved and Pending Priority Options
- Review and Approve Remaining Pending Policy Options

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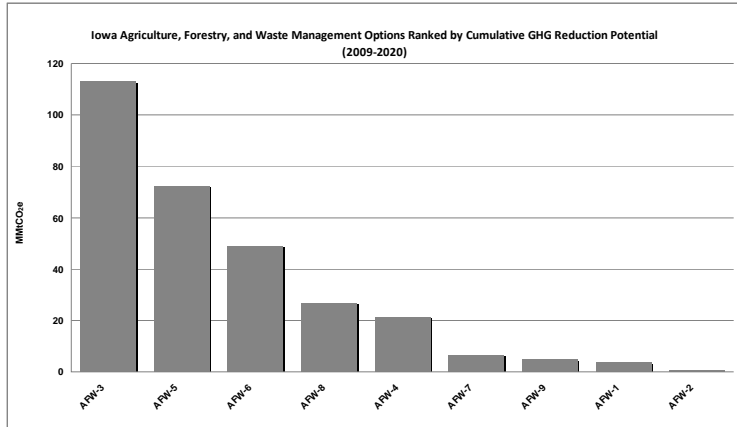
## Agriculture, Forestry, and Waste Management Subcommittee- Approved Priorities

1. Nutrient Management
2. Wetlands and Drainage – Not Approved
3. Expanded use of Agriculture and Forestry Biomass Feedstocks for Electricity, Heat, or Steam Production
4. Encourage Large-scale Manure/Methane Management Capture Utilization
5. Land Management to Promote Sequestration Benefits
6. Cellulosic Fuel incentives
7. Improved on-Farm (or First Point of Purchase) Energy Use and Efficiency
8. Waste Management Strategies
9. Landfill Methane Energy Programs

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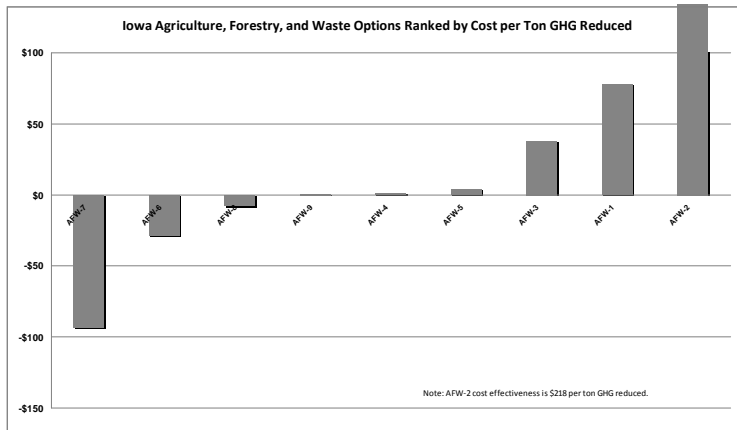
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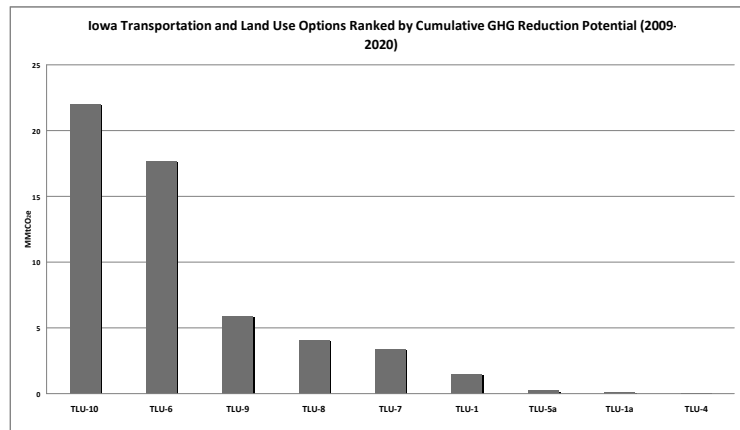
## Transportation and Land Use Subcommittee-Approved and Pending Priorities

- 1. Smart Growth Bundle
  - 1a. Expand and Improve Transit Infrastructure
- 2. GHG Impacts for State and Local Capital Funding
- 3. Moved to 1a.
- 4. Support Passenger Rail Services in Iowa
- 5a. Adopt Best Workplaces for Commuters in Iowa
- 5b. Distributed Workplace Models
- 6. Light-Duty Vehicle Fuel Efficiency Incentives
- 7. Fuel Efficient Operations for Light-Duty Vehicles
- 8. New Vehicle Standards (Tailpipe GHG and Fuel Economy)
- 9. Freight Strategies (Truck and Rail)
- 10. Fuel Strategies (20% Low Carbon Fuel Standard)

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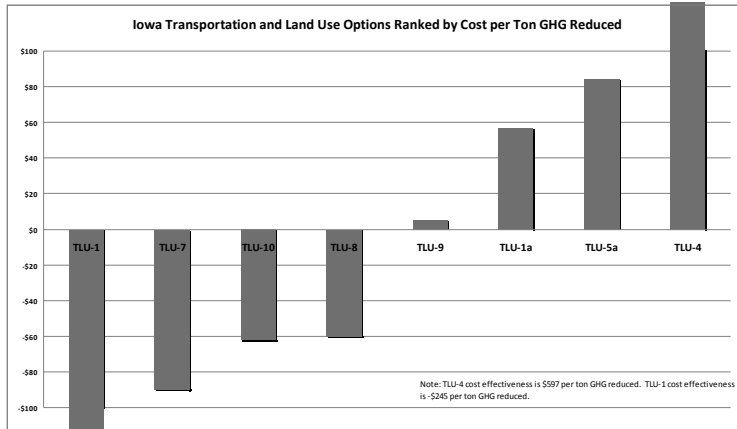
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## Energy Efficiency and Conservation Subcommittee-Approved and Pending Priorities

1. Consumer Education Programs
2. Demand-Side Management (DSM)/Energy Efficiency Programs for Natural Gas
3. Financial Mechanisms for Energy Efficiency
4. Improved Building Codes for Energy Efficiency
5. Incentive Mechanisms for Achieving Energy Efficiency
6. Promotion and Incentives for Improved Design and Construction in the Private Sector
7. Training and Education for Builders and Contractors
8. Focus on Specific Market Segments
9. Midwestern Governors Association Energy Security and Climate Stewardship Platform
10. Energy Management Training/Training of Building Operators

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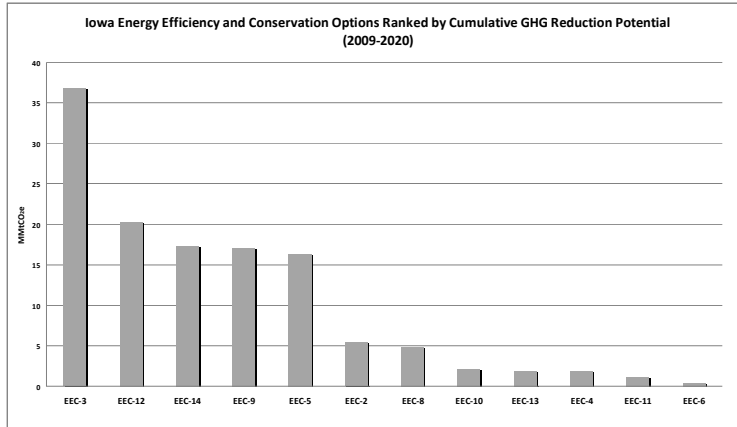
## Energy Efficiency and Conservation Subcommittee-Proposed Priorities (Continued)

11. Rate Structures and Technologies to Promote Reductions
12. Demand-Side Management (DSM)/Energy Efficiency Programs for Electricity
13. Government Lead by Example: Improved Design and Construction in New and Existing State and Local Government buildings
14. More Stringent Appliance Efficiency Standards

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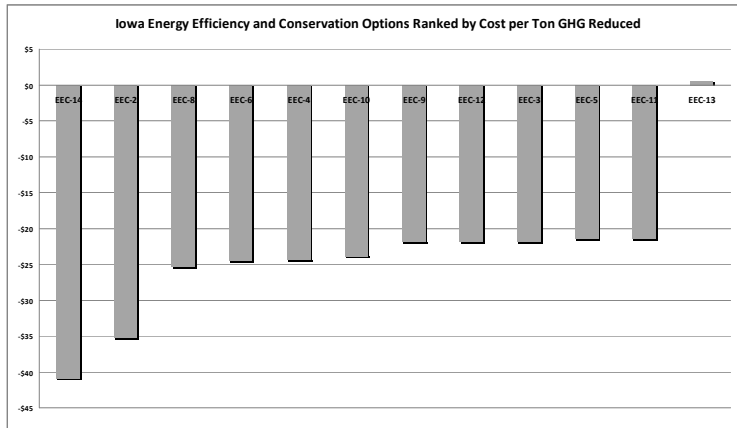
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## Clean and Renewable Energy Subcommittee-Approved and Pending Priorities

- 1. Education
- 2. Technology Initiatives, including Renewables
- 3a. Federal Cap-and-Trade, including offsets to promote renewables
- 3b. MGA Cap and Trade , including offsets to promote renewables
- 4a. De-carbonization Fund
- 4b. Carbon Tax (All sectors, except AFW)
- 5a. Performance Standards (50% reduction by 2050)
- 5b. Performance Standards (90% reduction by 2050)
- 6. Voluntary GHG commitments
- 7. Policies Related to Nuclear Power
- 8a. Support for Grid-based Renewable Energy and Development (400K MWh/yr)
- 8b. Support for Grid-based Renewable Energy and Development (MGA Target of 20% of retail sales by 2020)
- 9. Transmission System Upgrading
- 10. R&D for Emerging Technologies and Corresponding Incentives

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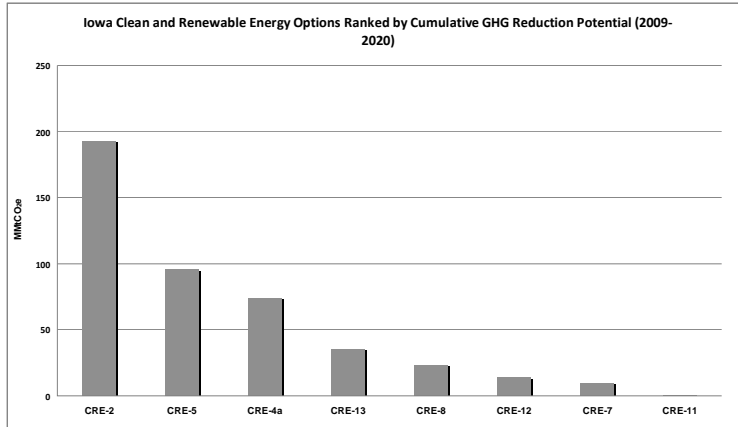
## Clean and Renewable Energy Subcommittee-Approved and Pending Priorities (Continued)

- 11. Distributed Generation/Co-generation
- 12. Combined Heat and Power (CHP)
- 13. Pricing Strategies to Promote Renewable Energy and/or CHP

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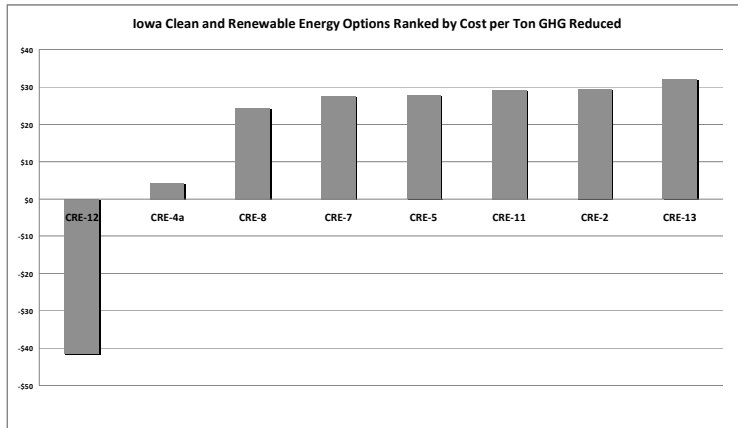
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## Cross-Cutting Issues Subcommittee- Approved and Pending Priorities

1. GHG Inventories, Forecasting, Reporting, and Registry
2. Statewide GHG Reduction Goals and Targets
3. State and Local Government GHG Emissions (Lead-by-Example)
4. Public Education and Outreach
5. Tax and Cap Policies (Transferred to CRE SC)
6. Seek Funding for Implementation of ICCAC Recommendations
7. Adaptation and Vulnerability
8. Participate in Regional and Multi-state GHG Reduction Efforts
9. Encourage the Creation of a Business-Oriented Organization to Facilitate Investment in Climate Related Business Opportunities and to Share Information and Strategies, Recognize Successes, and Support Aggressive GHG Reduction Goals

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## GHG Reduction Goals and Targets for Iowa

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## IA GHG Reduction Goals

- 2005 Baseline Year
- 2012 Short Term Goal- TBD
- 2020 Mid-Term Goal- TBD
- 2050 Long-Term Goals- 50%- 90% Reduction from 2005 Baseline Levels

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## Statewide GHG Reduction Goals and Targets

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

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State, Province, or Region	1990-2020 GHG Forecast (% Growth)	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

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State, Province, or Region	1990-2020 GHG Forecast (% Growth)	State Goals	Climate Plan % Coverage
New Jersey	28%	<ul style="list-style-type: none"> <li>• E.O. 54: 1990 level by 2020; 80% below 2006 levels by 2050</li> </ul>	TBD
New Mexico	65%	<ul style="list-style-type: none"> <li>• 2000 level by 2012; 10% below by 2020; 75% below by 2050</li> <li>• 15% below 2005 levels by 2020 (WCI)</li> </ul>	133%
New York	24%	<ul style="list-style-type: none"> <li>• 5% below 1990 by 2010</li> </ul>	?
Ontario	?	<ul style="list-style-type: none"> <li>• 6% below 1990 by 2014</li> </ul>	n/a
Oregon	61%	<ul style="list-style-type: none"> <li>• 10% below 1990 by 2020; 75% below 1990 by 2050</li> <li>• 15% below 2005 levels by 2020 (WCI)</li> </ul>	85%
Puget Sound	37%	<ul style="list-style-type: none"> <li>• 1990 level by 2010; 10% below by 2020; 75% below by 2100</li> </ul>	100%
Rhode Island	35%	<ul style="list-style-type: none"> <li>• 1990 level by 2010; 10% below by 2020; 75% below by 2050</li> </ul>	100%
South Carolina	87%	<ul style="list-style-type: none"> <li>• 5% below 1990 levels by 2020 (voluntary)</li> </ul>	99%
Vermont	26-59%	<ul style="list-style-type: none"> <li>• 25% below 1990 levels by 2012; 50% below 1990 by 2028; 75% below by 2050</li> </ul>	TBD
Utah	95%	<ul style="list-style-type: none"> <li>• 15% below 2005 levels by 2020 (WCI)</li> </ul>	TBD
Washington	40%	<ul style="list-style-type: none"> <li>• E.O.: 1990 levels by 2020; 25% below 1990 by 2035; 50% below 1990 by 2050</li> <li>• 15% below 2005 levels by 2020 (WCI)</li> </ul>	TBD
WCI	54%	<ul style="list-style-type: none"> <li>• 15% below 2005 levels by 2020 (AZ, NM, CA, OR, UT, WA, BC, MB)</li> </ul>	TBD
British Columbia	69%	<ul style="list-style-type: none"> <li>• 15% below 2005 levels by 2020 (WCI)</li> </ul>	TBD
Manitoba	TBD	<ul style="list-style-type: none"> <li>• 15% below 2005 levels by 2020 (WCI)</li> </ul>	TBD

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## Final Report Process

- Finalize remaining policy options, based on ICCAC decisions at Meeting #7
- Update Quantification results, based on ICCAC decisions at Meeting #7
- Production of first draft of full report and appendices by CCS for ICCAC review and comment
- Final draft completed by CCS for final review and comment by ICCAC
- Final Report transmitted by CCS to ICCAC and IDNR

## Table of Contents for Report

- See Handout

## Next Steps for ICCAC

- Schedule and Hold Conference Call in December to Review draft Final Report
- Submit Report to Governor and Legislature

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## Next ICCAC Meeting/ Conference Calls

- Agenda
  - Review and Comment on Draft ICCAC Report
  - Finalize Report
- Dates- TBD



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## Timing

<b>Date</b>	<b>Action</b>
October 18, 2007	1 <sup>st</sup> ICCAC meeting
December 17, 2007	2 <sup>nd</sup> ICCAC meeting
February 8, 2008	3 <sup>rd</sup> ICCAC meeting
April 11, 2008	4 <sup>th</sup> ICCAC meeting
June 12, 2008	5 <sup>th</sup> ICCAC meeting
September 3-4, 2008	6 <sup>th</sup> ICCAC meeting
November 10, 2008	7 <sup>th</sup> ICCAC meeting
December 15, 2008	ICCAC Final Report completed
Between ICCAC meetings	SC conference calls and meetings

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## ANNOUNCEMENTS

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# ADJOURN

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