



# Minnesota Climate Change Advisory Group

Meeting #5  
November 8, 2007

Minnesota Department of Commerce  
Minnesota Pollution Control Agency  
The Center for Climate Strategies

## Welcome and Introductions

- State of Minnesota
- Minnesota Climate Change Advisory Group (MCCAG)
- Members of the Public
- Center for Climate Strategies

# Agenda

|          |   |
|----------|---|
| 9:00 am  | Introductions and Review of Day's Agenda  |
| 9:10     | Approval of Draft Summary of MCCAG Meeting #4   |
| 9:15     | Review of MCCAG Progress and Next Steps   |
| 9:25     | Public Comment  |
| 9:35     | Review and Consideration of Draft Policy Options  |
| 9:40     | <ul style="list-style-type: none"><li>• Agriculture, Forestry and Waste</li></ul>                   |
| 10:30    | <ul style="list-style-type: none"><li>• Transportation and Land Use</li></ul>                       |
| 11:30    | <ul style="list-style-type: none"><li>• Residential, Commercial and Industrial</li></ul>            |
| 12:15    | Lunch Break   |
| 12:45 pm | <ul style="list-style-type: none"><li>• Residential, Commercial and Industrial, Continued</li></ul> |
| 1:30     | <ul style="list-style-type: none"><li>• Energy Supply</li></ul>                                     |
| 2:30     | <ul style="list-style-type: none"><li>• Cap and Trade</li></ul>                                     |
| 3:00     | <ul style="list-style-type: none"><li>• Cross Cutting Issues</li></ul>                              |
| 3:30     | Review and Discussion Of Minnesota's Draft GHG Inventory and Forecast                               |
| 3:45     | Next Steps for MCCAG and Technical Work Groups (TWGs)   |
| 3:50     | Agenda, Time and Date for Next Meeting(s)   |
| 3:55     | Public Input and Announcements  |
| 4:00     | Adjourn   |

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## Stepwise Planning Process

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

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## MCCAG Schedule

- November 8, 2007 MCCAG #5
  - Interim TWG meetings
- December 5, 2007 MCCAG #6
  - Interim TWG meetings
- January 8, 2008 MCCAG #7
  - Final report production, review
- February 1, 2008 Final report complete

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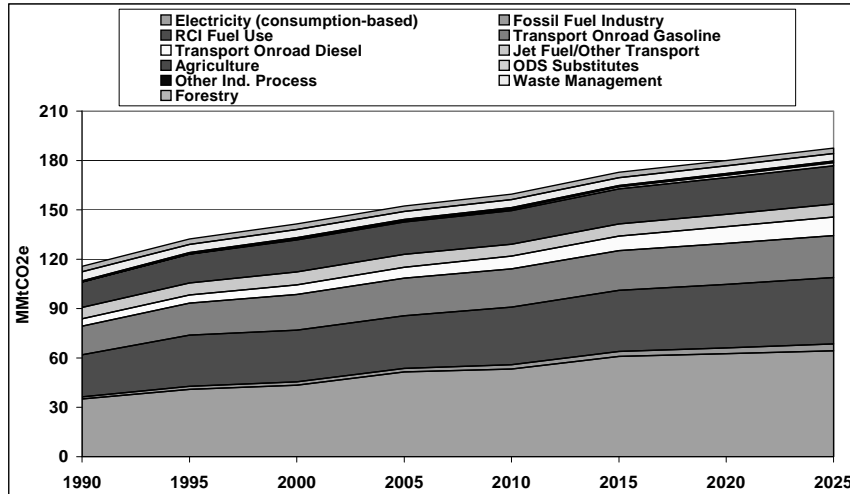
## Public Comment

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## Gross MN GHG Emissions By Sector, 1990-2025



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## Review and Approval of Draft Policy Options

- 300+ possible actions developed by TWGs and MCCAG
- MCCAG approved 55 options as priorities for analysis based on suggestions by TWGs
- MCCAG approved straw proposals for policy design, quantification based on suggestions by TWGs
- First round quantification complete for most options based on CCS and TWG analysis
- Today MCCAG identifies early consensus options, revisions needed for others
- Remaining MCCAG meetings finalize agreements on policy options

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## Policy Option Template

- Policy Description
- Policy Design (Goals, Timing, Coverage)
- Types(s) of GHG Reductions
- Estimated GHG Reductions and Net Costs or Cost Savings
- Key Uncertainties
- Implementation Mechanisms
- Related Policies/Programs in Place (BAU)
- 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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## Key Policy Options Design Issues

- Straw Design Proposals
  - *Goals, level, timing*
- Estimated GHG reductions, costs/cost savings
  - *Data sources, methods, assumptions*
- Co-benefits, feasibility issues
- Implementation mechanisms
- Related policies and programs (BAU)

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# AFW

- Agricultural Crop Management
- Land Use Management Approaches for Protection and Enrichment of Soil Carbon
- In-State Liquid Biofuels Production
- Expanded Use of Biomass Feedstocks for Electricity, Heat, or Steam Production
- Forestry Management Programs to Enhance GHG Benefits
- Forest Protection – Reduced Clearing and Conversion to Nonforest Cover
- Integrated Waste Management
- End of Use Waste Management Practices

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# TLU

- Improved Land Use Planning and Development Strategies
- Expand Transit, Bicycle, and Pedestrian Infrastructure
- Low GHG Fuel Standard (Potential overlap with ES-2 and AFW-7)
- Infrastructure Management
- Climate-Friendly Transportation Fees
- Adopt CA Clean Car Standards
- “Fix-it-First” (Repair before new infrastructure)
- Update Road Standards
- Commuter Choice/Parking Incentives / required employer Travel Demand Management (TCM) plans
- Congestion Pricing (or tolls) with targeted use of revenue towards travel alternatives – Now part of TLU-5
- Truck Stop Electrification
- Mobile Source Emissions Reduction
- Reduced Speed Limits

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# RCI

- Maximize Savings from Utility Conservation Improvement Program (CIP)
- Improved Uniform Statewide Building Codes
- Green Building Guidelines and Standards Based on Architecture 2030
- Incentives & Resources to Promote Combined Heat and Power (CHP)
- Program to reduce emissions of non-fuel, high-global-warming-potential GHGs
- Non-utility Strategies and Incentives to Encourage Energy Efficiency and Reduce GHG Emissions
- Conservation Improvement-Type Program for Propane and Fuel Oil Efficiency
- Energy Performance Disclosure
- Promote Technology-Specific Applications to Reduce GHG Emissions
- Support Strong Federal Appliance Standards and Require High State Standards in the Absence of Federal Standards

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# Break



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# ES

- Generation Performance Standard
- Efficiency Improvements, Repowering and other Upgrades to Existing Plants
- Transmission System Upgrading, including reducing transmission line and distribution system loss
- Renewable and/or Environmental Portfolio Standard
- Nuclear Power Support and Incentives
- Advanced Fossil Fuel Technology Incentives, Support or Requirements
- Carbon Capture and Storage and/or Reuse Policies
- Large-scale, supply-oriented Combined Heat and Power (CHP) & Geothermal Incentives and/or Barrier Removal
- Voluntary GHG targets
- Distributed Renewable Energy Incentives and/or Barrier Removal
- Technology-based approaches, including research & development, fuel cells, energy storage, distributed renewable energy technologies, etc.

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# Cap & Trade

- Cap-and-Trade (Multiple Scenarios)
  - Geographic region (state, regional, national)
  - Coverage of sectors (economy wide, power sector)
  - Accounting approach (consumption, production)
  - Targets and timing (state and regional targets)
  - Flexibility mechanisms (offsets, banking, borrowing, price caps, safety valves, etc.)
  - Allocation mechanisms (free v. auction; state v. sectors)
- Participate in regional and multi state GHG reduction efforts
- Develop a system for emissions credits for MN
- Develop a market advisory committee

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# CC

- GHG Inventories, Forecasting, Reporting, and Registry
- Statewide GHG Reduction Goals and Targets
- State and Local Government GHG Emissions (Lead-by-Example)
- Public Education and Outreach
- Tax and Cap Policies (Transferred to Cap and Trade TWG)
- Participate in Regional and Multi-State GHG Reduction Efforts
- Encourage the Creation of a Business-Oriented Organization to Share Information and Strategies, Recognize Successes, and Support Aggressive GHG Reduction Goals
- Dedicate Greater Public Investment to Climate Data and Analysis
- Facilitate the Development of an Effective Carbon Credit System for MN (Coordinate with Cap and Trade TWG)
- Create a Market Advisory Group (Transferred to Cap and Trade TWG)

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# Break

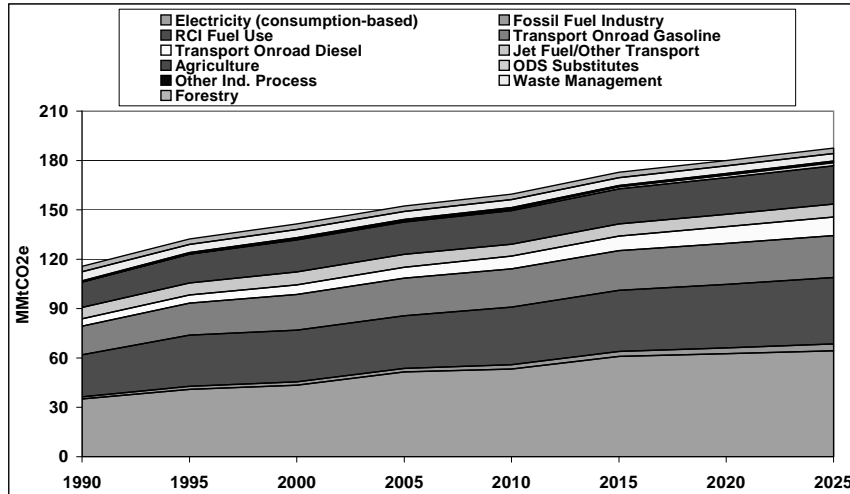


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# Gross MN GHG Emissions By Sector, 1990-2025

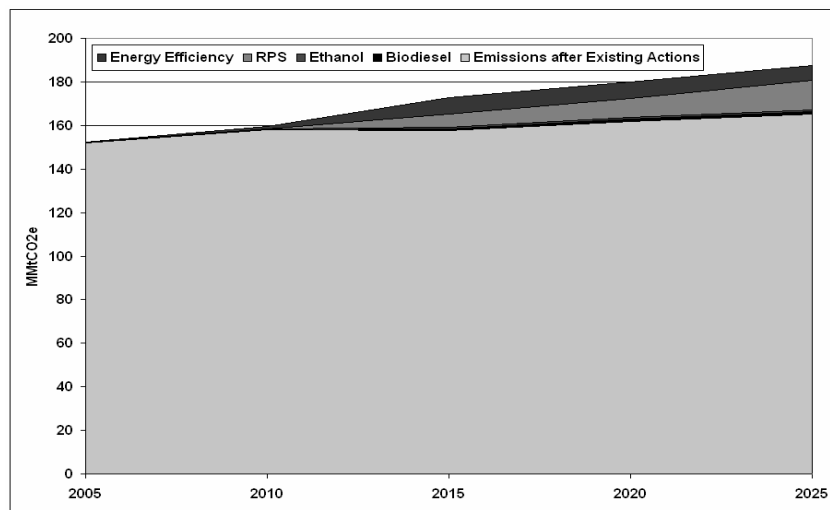


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# GHG Reductions – Existing Actions

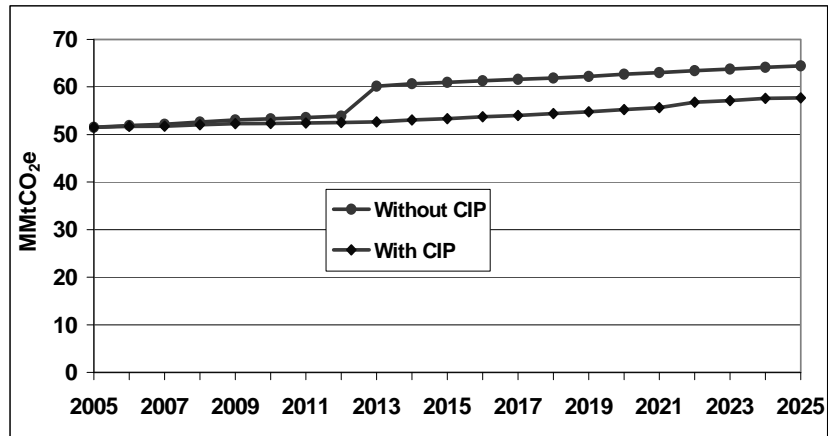


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### Effect of Utility Conservation Improvement Program (CIP) on Energy Supply Emissions (Gross, Consumption Basis)

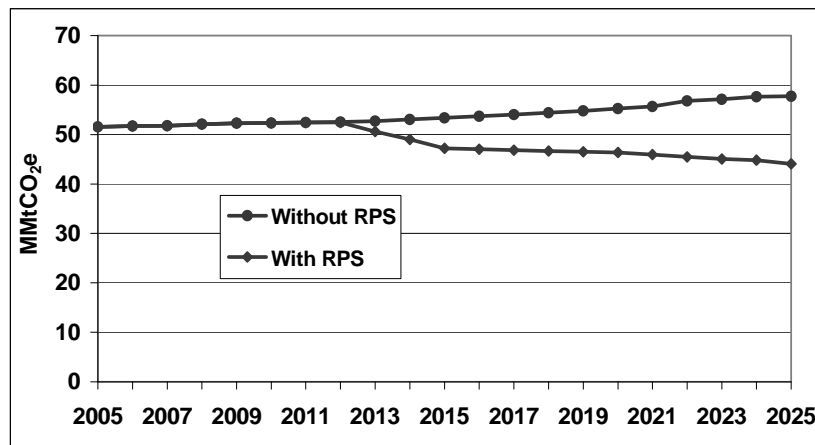


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### Effect of RPS on Energy Supply Emissions (Gross, Consumption Basis)



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## Next Steps

- TWGs
  - Revise and or complete quantification and other elements of the policy template
  - Review and approve updates to the draft inventory and forecast
- MCCAG
  - Review and approve draft pending policy options
  - Review and approve proposed revisions to the inventory and forecast

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## Final Report Process

- Completion of policy templates, inventory and forecast report, based on MCCAG meeting results
- Production of first draft of full report and appendices by CCS for MCCAG review and comment
- Final draft completed by CCS for final review and comment
- Report transmitted by CCS to DOC and PCA on behalf of MCCAG

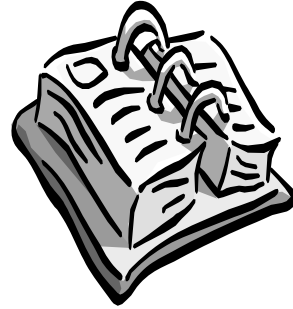
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## Next MCCAG Meeting

- Date: December 5, 2007
- Agenda:
  - Review and approval of remaining draft pending MCCAG policy options
  - Identify barriers to consensus for not yet approved options
  - Review and approval of updates to the inventory and forecast



## Public Input, Announcements