



MINNESOTA
Climate Change
Advisory Group



Minnesota Climate Change Advisory Group

Meeting #6

December 5, 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 #5
9:15	Review of MCCAG Progress and Next Steps
9:25	Public Comment
9:35	Overview of Preliminary Results
9:55	Review and Consideration of Draft Policy Options
10:00	*Residential, Commercial and Industrial
11:00	*Energy Supply
12:00	Lunch Break
12:30 pm	*Transportation and Land Use
1:30	*Agriculture, Forestry and Waste
2:30	*Cross Cutting Issues
3:00	*Cap and Trade
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

MCCAG Schedule

- December 5, 2007 MCCAG #6
 - Interim TWG meetings
- January 10, 2008 MCCAG #7
 - Interim TWG meetings
- January 24, 2008 MCCAG #8
 - Final report production, review
- January 29, Ed stays up all night
- February 1, 2008 Final report complete

Stepwise Planning Process

1. Develop inventory and forecast of statewide GHG emissions
2. Identify a full range of possible actions (300+)
3. Identify initial priorities for analysis (58)
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

Decision Criteria

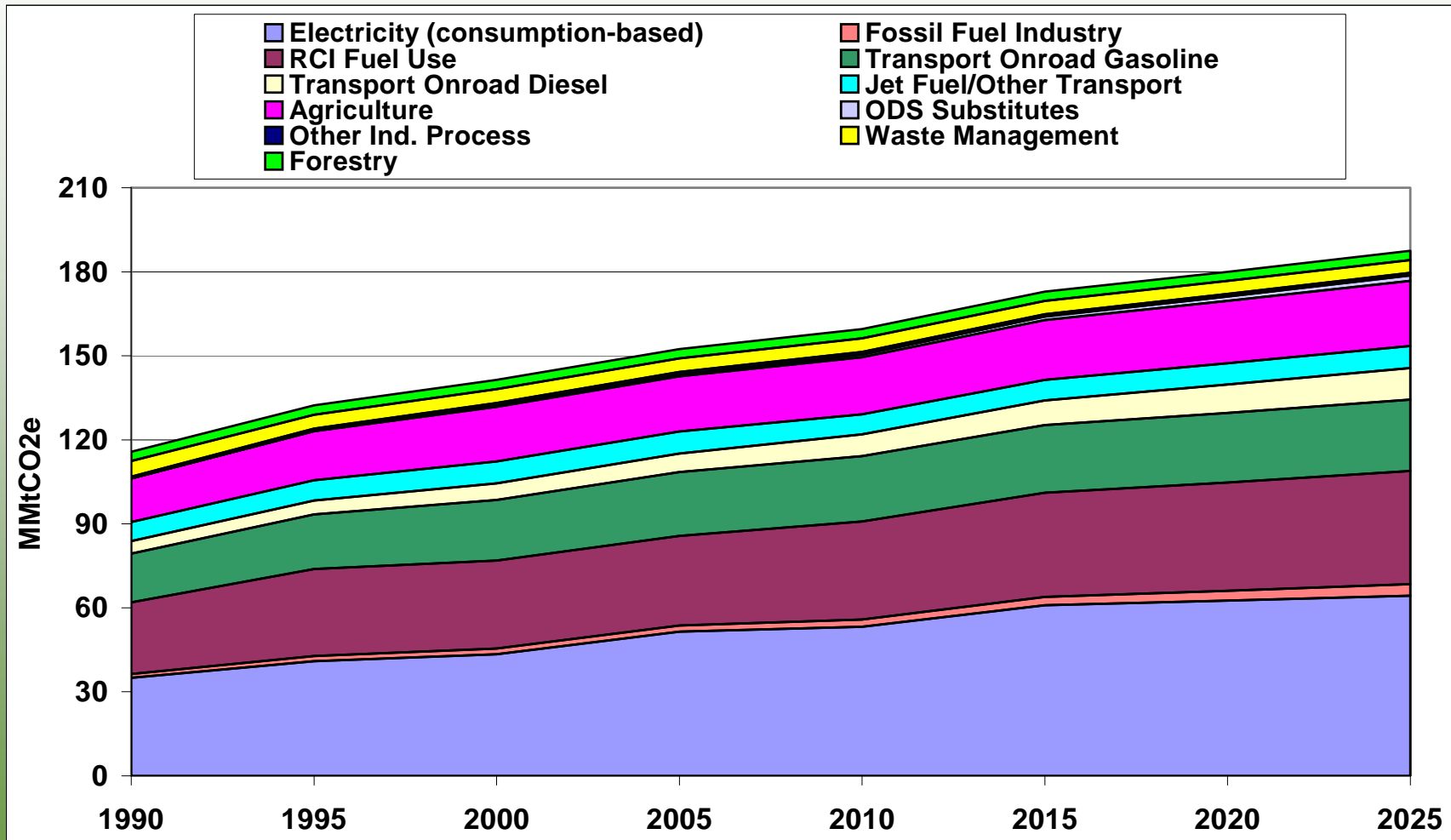
- GHG reduction potential
- Costs/cost savings potential
- Co-benefits, feasibility issues
- Implementation mechanisms

Policy Option Template

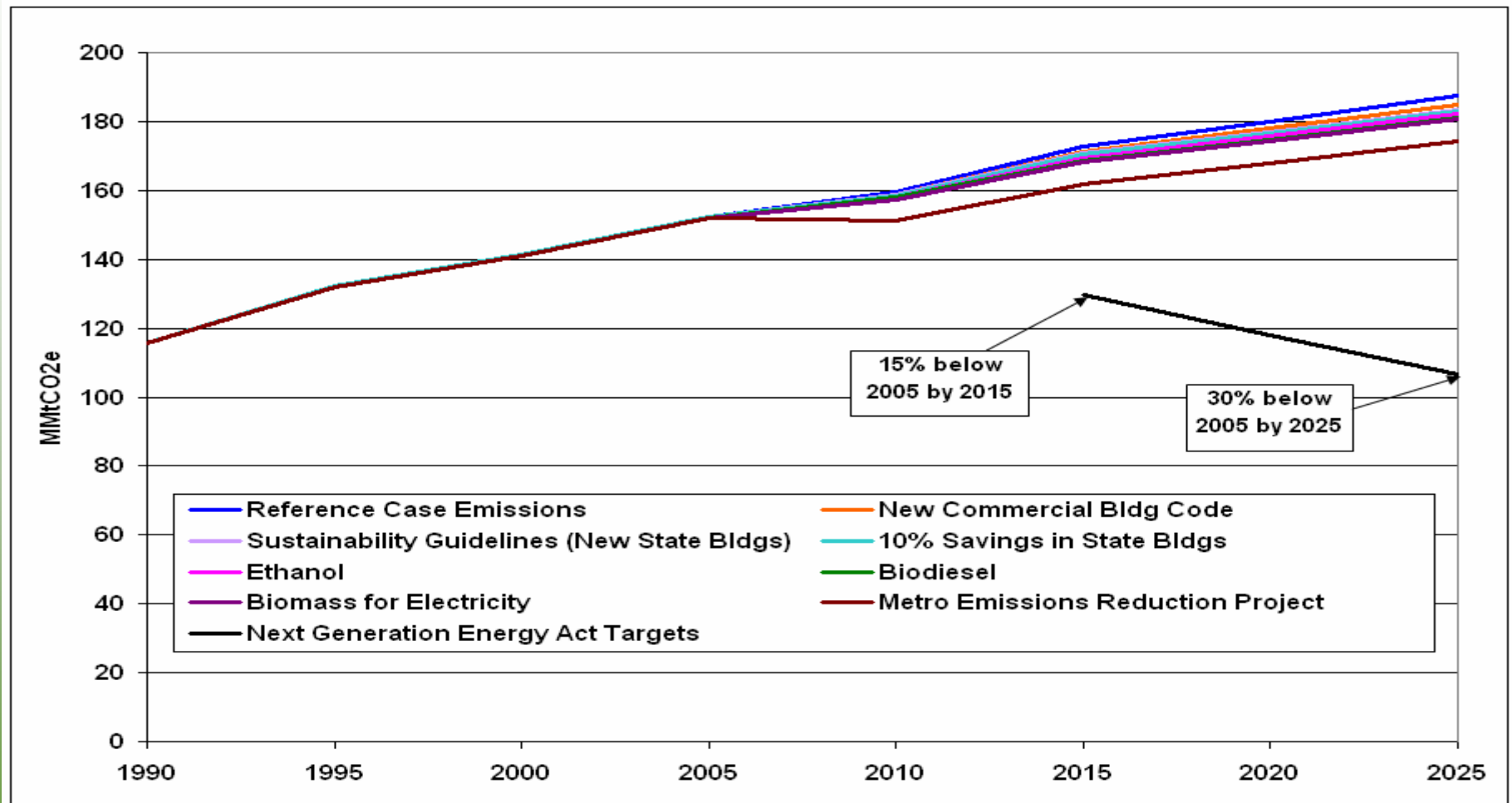
- Policy Description
- Policy Design (Goals, Timing, Coverage)
- Type(s) of GHG Reductions
- Estimated GHG Reductions and Net Costs/Cost Savings
- Key Uncertainties
- Implementation Mechanisms
- Related Policies/Programs in Place (BAU)
- Additional (non-GHG) Benefits and Costs, as Needed
- Feasibility Issues, if Needed
- Status Of Group Approval
- Level of Group Support
- Barriers to Consensus, if any

Public Comment

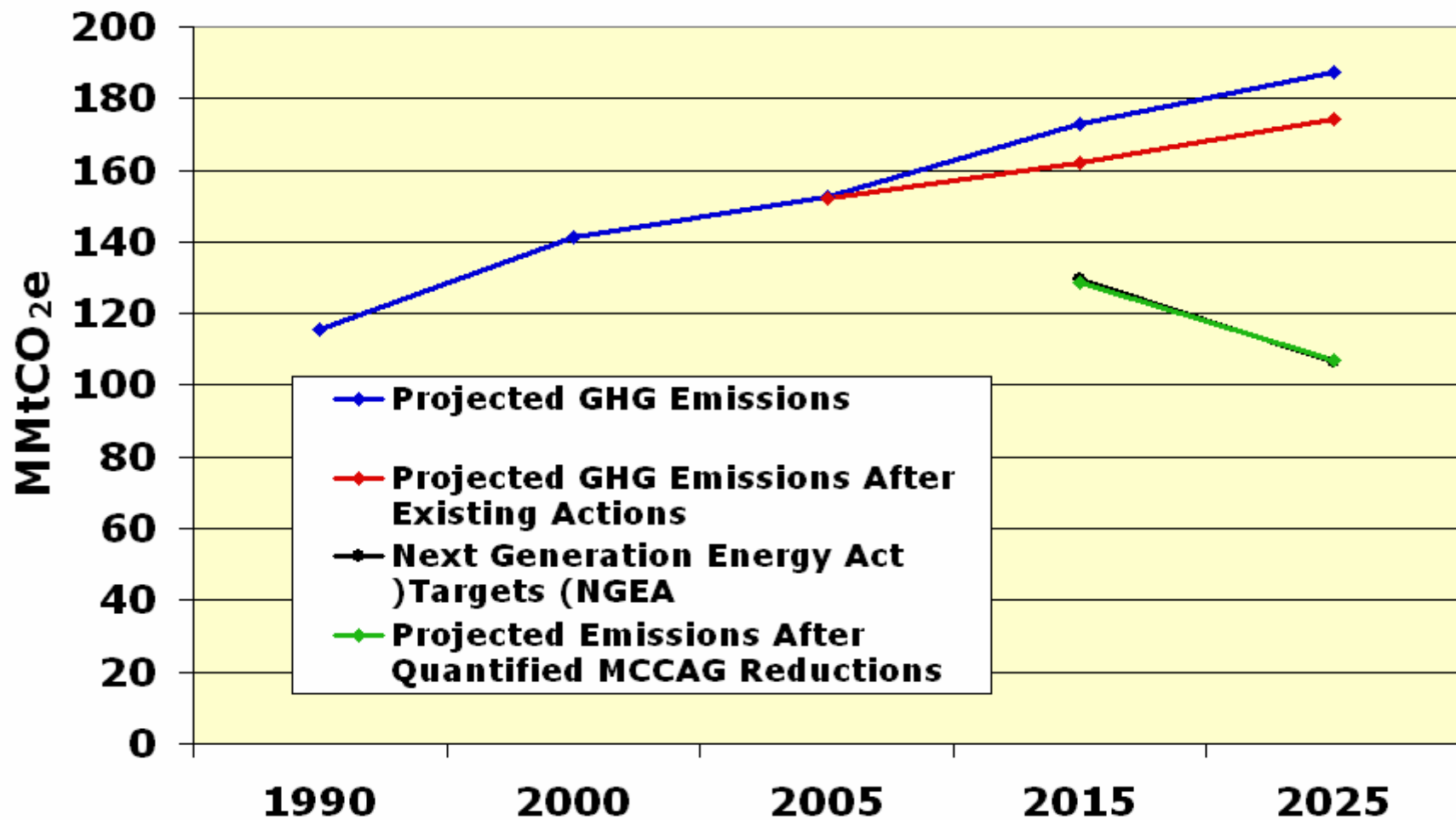
Gross MN GHG Emissions By Sector, 1990-2025



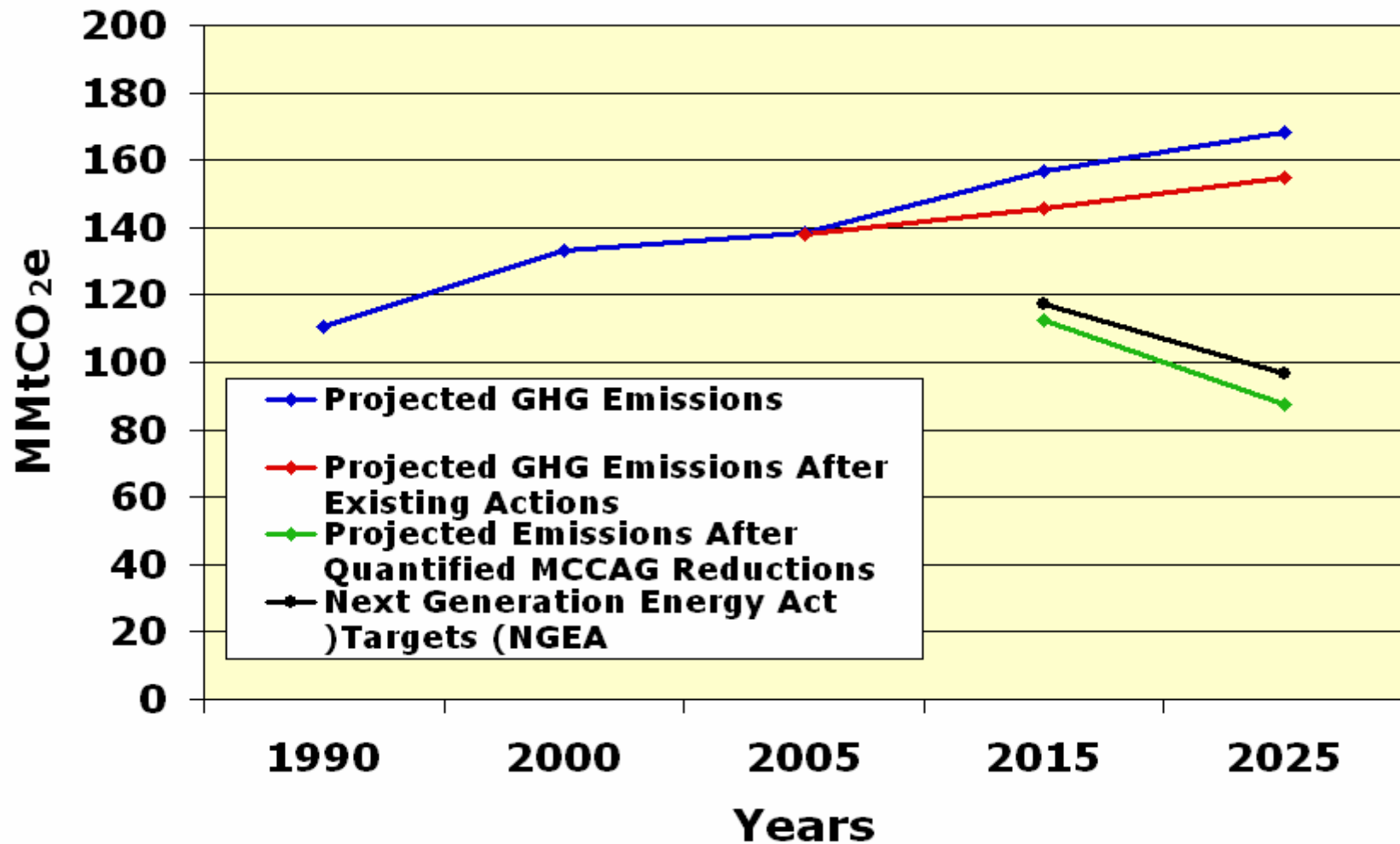
GHG Reductions – Existing Actions



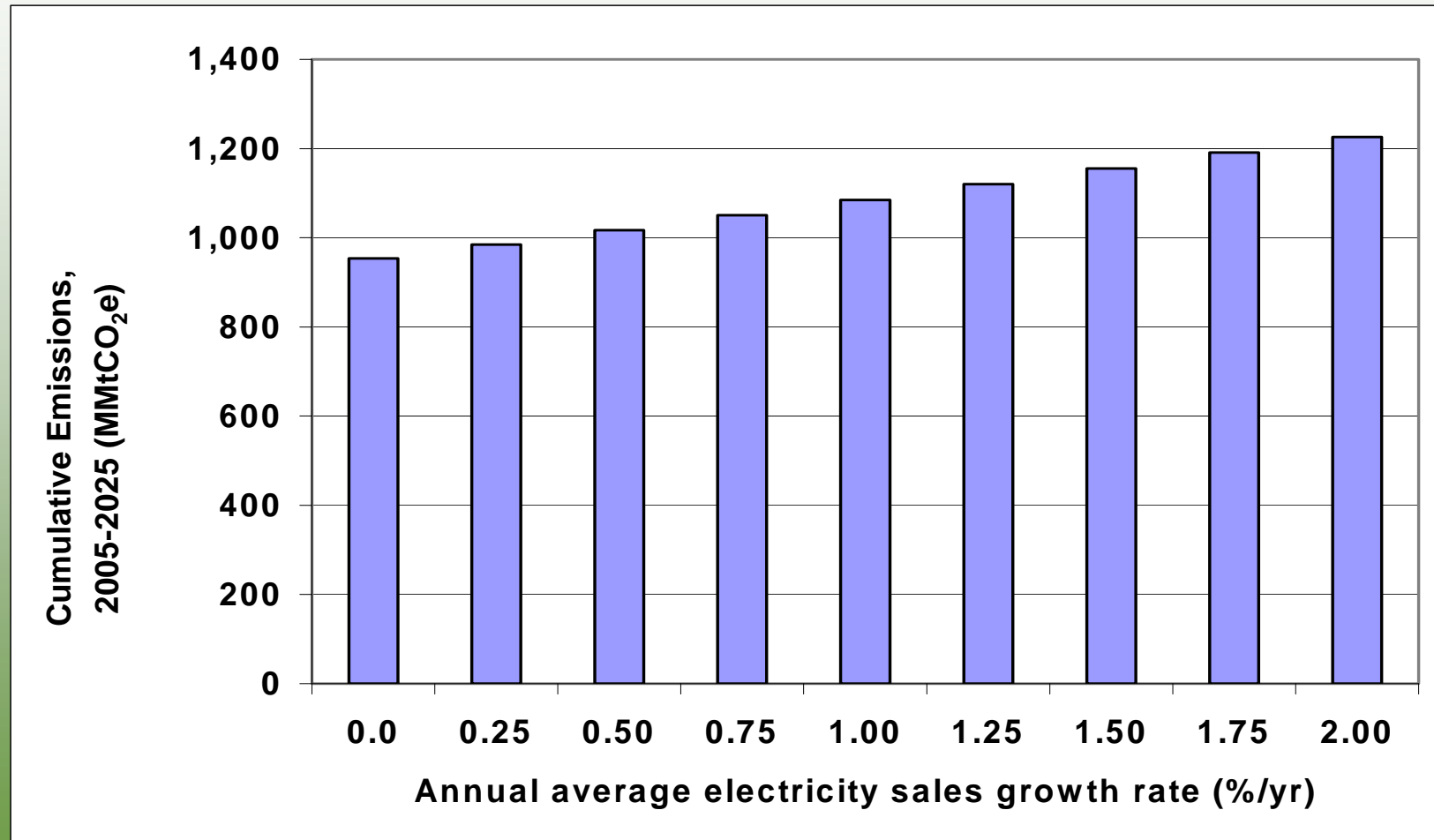
Future Emissions - Consumption Gross



Future Emissions - Production Gross



Effect of Electricity Sales Growth Rate Assumptions on Emissions



Preliminary Results

Consumption Basis - Gross / Net Emissions					
	1990	2000	2005	2015	2025
Projected GHG Emissions	115.7	141.4	152.4	172.9	187.5
Reductions from Existing Actions	0.0	0.4	0.4	11.0	13.3
Projected GHG Emissions After Existing Actions			152.0	161.9	174.3
Next Generation Energy Act Targets (NGEA)				129.6	106.7
Total GHG Reductions from MCCAG				33.0	67.1
Difference Between MCCAG Reductions & NGEA Targets				-0.7	0.4
Projected Emissions After Quantified MCCAG Reductions				128.9	107.1
Production Basis Gross / Net Emissions					
	1990	2000	2005	2015	2025
Projected GHG Emissions	110.7	133.0	138.2	156.6	168.0
Reductions from Existing Actions	0.0	0.4	0.4	11.0	13.3
Projected GHG Emissions After Existing Actions			137.8	145.5	154.8
Next Generation Energy Act Targets (NGEA)				117.5	96.8
Total GHG Reductions from MCCAG				33.0	67.1
Difference Between MCCAG Reductions & NGEA Targets				-5.0	-9.1
Projected Emissions After Quantified MCCAG Reductions				112.5	87.6

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

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

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

Break



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
- 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.

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

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)

Break



Next Steps

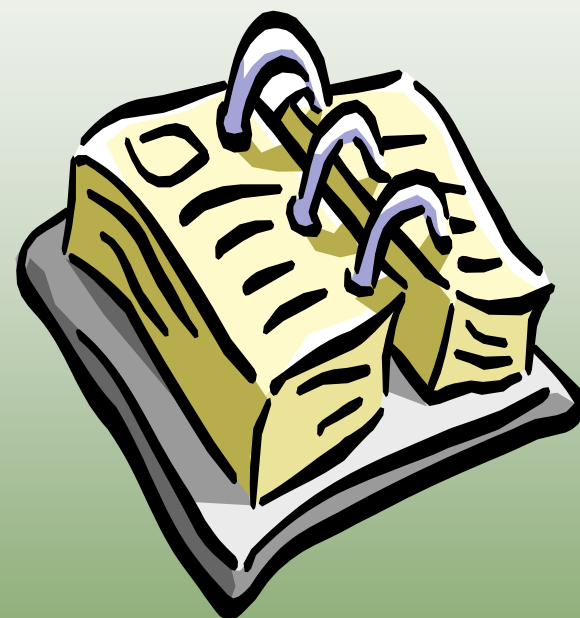
- TWGs
 - Update quantification and other elements of the policy templates if/as needed
 - Update the draft inventory and forecast if/as needed
- MCCAG
 - Review and approve draft pending policy options
 - Review and approve final proposed revisions to the inventory and forecast

Final Report Process

- Production of first draft of full report and appendices by CCS for MCCAG review and comment
 - Technical appendices from TWG policy option templates
 - Other technical appendices
 - Summary chapters based on these
 - Executive summary
- Final draft completed by CCS for final review and comment
- Report transmitted by CCS to DOC and PCA on behalf of MCCAG

Next MCCAG Meeting

- Date: January 10, 2007
- Agenda:
 - Review and approval of remaining draft pending MCCAG policy options
 - Identify alternatives for further consideration of remaining options
 - Review and approval of updates to the inventory and forecast



Public Input, Announcements