



Commission on Climate Change

Maryland Climate Change Commission Mitigation Working Group

Agriculture, Forestry and Waste Technical Work Group Meeting #3 September 25, 2007

Maryland Department of the Environment
Maryland Energy Administration
Center for Climate Strategies

Today's Agenda

- Call to order and roll call
- Review and approval of prior call summary
- Finalize review of the Catalog of State Policy Options
- Continue review of the Draft Emissions Inventory & Forecast
- Review next steps for TWG
- Proposed date, time, & agenda items for next meeting
- Call to the public
- Announcements

MWG Meeting

- Meeting #3 – Sept. 28
 - Approve existing and new options to Catalog
 - Provide direction to the TWGs
 - Review Draft Inventory and Forecast

Stepwise Planning Process

1. Develop inventory and forecast of emissions - Ongoing
2. Identify a full range of possible actions - **Sept. 7-28**
3. Identify initial priorities for analysis - **Oct 26**
4. Develop straw proposals - **Nov**
5. Quantify GHG reductions and costs/savings - TBD
6. Evaluate externalities, feasibility issues - TBD
7. Develop alternatives to address barriers - TBD
8. Aggregate results - TBD
9. Iterate to final agreements - TBD
10. Finalize and report recommendations - TBD

TWG Role

- Assist MWG:
 - Identify potential state actions
 - Refine Draft Inventory & Forecast
 - Identify potential priorities for analysis
 - Suggest straw policy designs
 - Assist with analysis and review of options
 - Assist with development of policy alternatives
 - Assist with input to and review of MWG reports
 - Review and assist with the state GHG inventory and forecast

Key Dates

<u>Date</u>	<u>Meeting</u>
July 27, 2007	1 st MWG Meeting
September 7, 2007	2 nd MWG Meeting
September 28, 2007	3 rd MWG Meeting
October 26, 2007	4 th MWG Meeting
November 2007	Interim Report
December 2007	Tentative 5 th MWG Meeting
February 2007	Tentative 6 th MWG Meeting
March 2007	Possible 7 th MWG Meeting
April 20, 2007	Final Report
Between MWG Meetings	Technical Working Group (TWG) Calls and/or Meetings

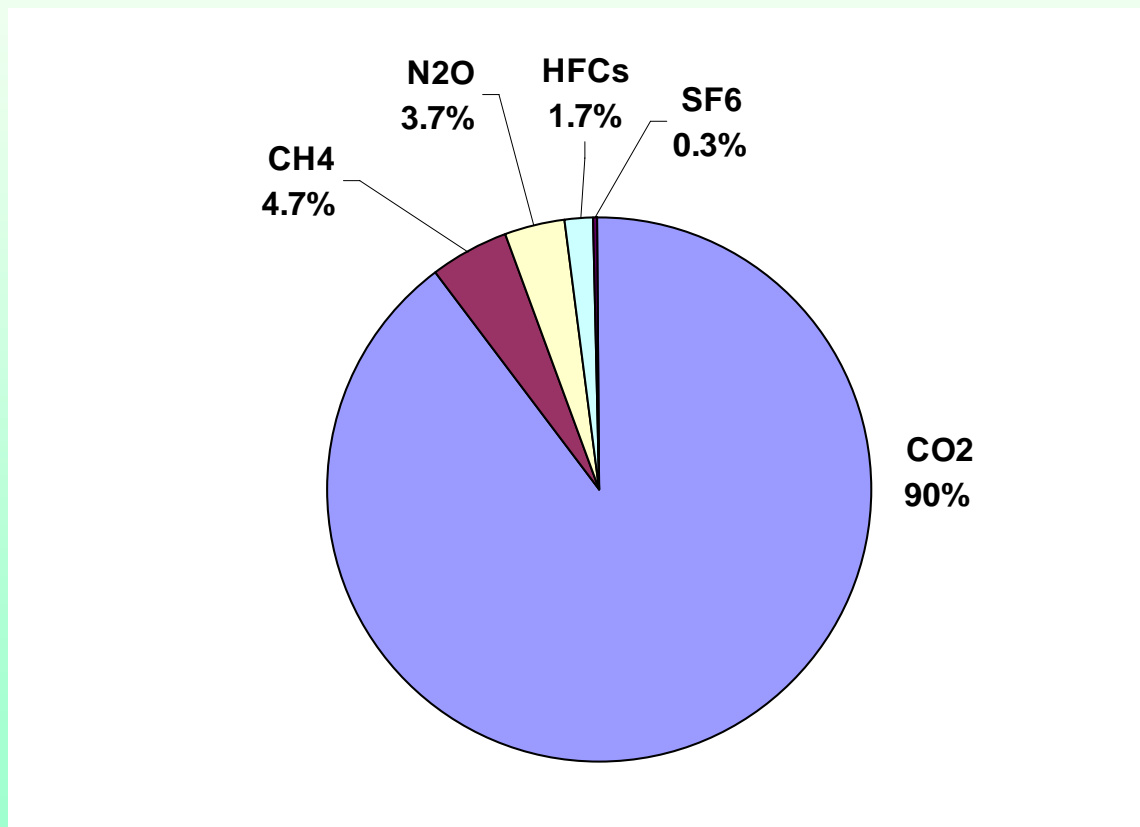
AFW Issues Catalog Refinement

- Please see MD AFW Catalog handout, extracted from complete catalog
- Refer to MD AFW Policy Option Descriptions for detailed descriptions.

GHG Inventory & Forecast

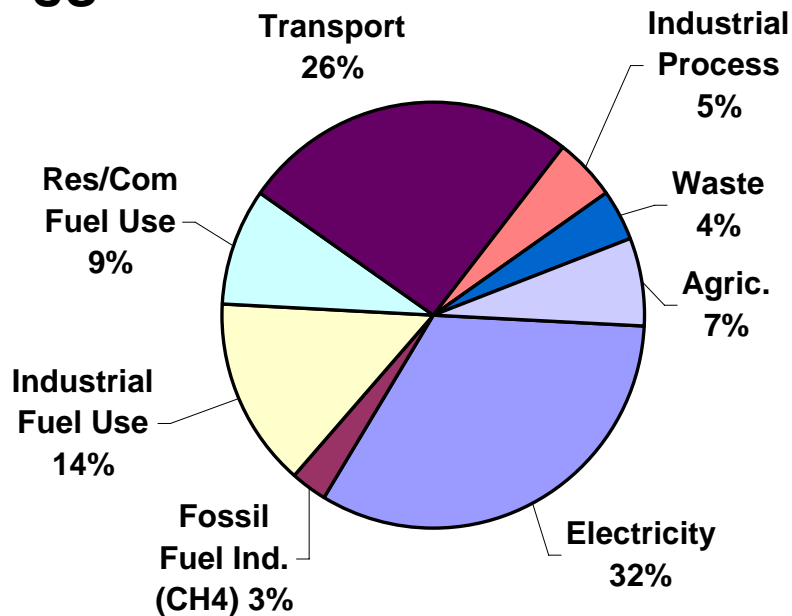
- AFW appendices posted on website

Maryland Gross Emissions by GHG Year 2000 (MMtCO₂e Based)

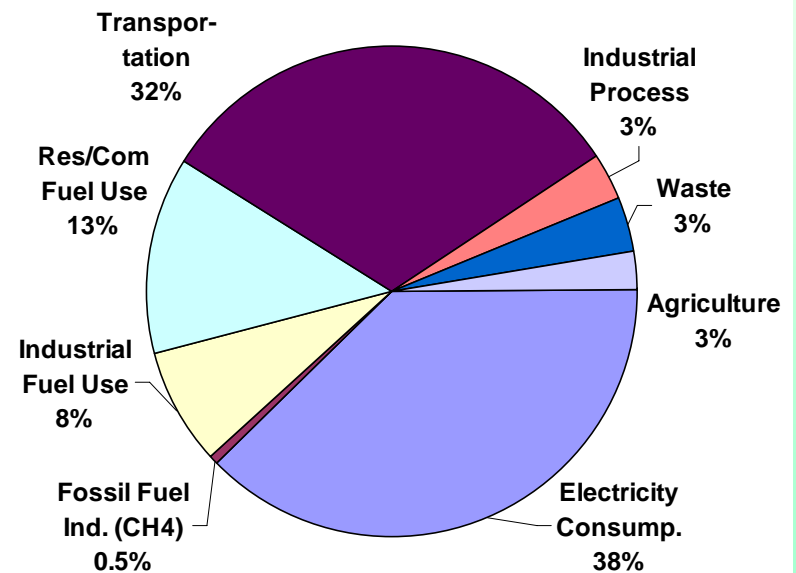


Preliminary Maryland Inventory Gross GHG Emissions By Sector

US

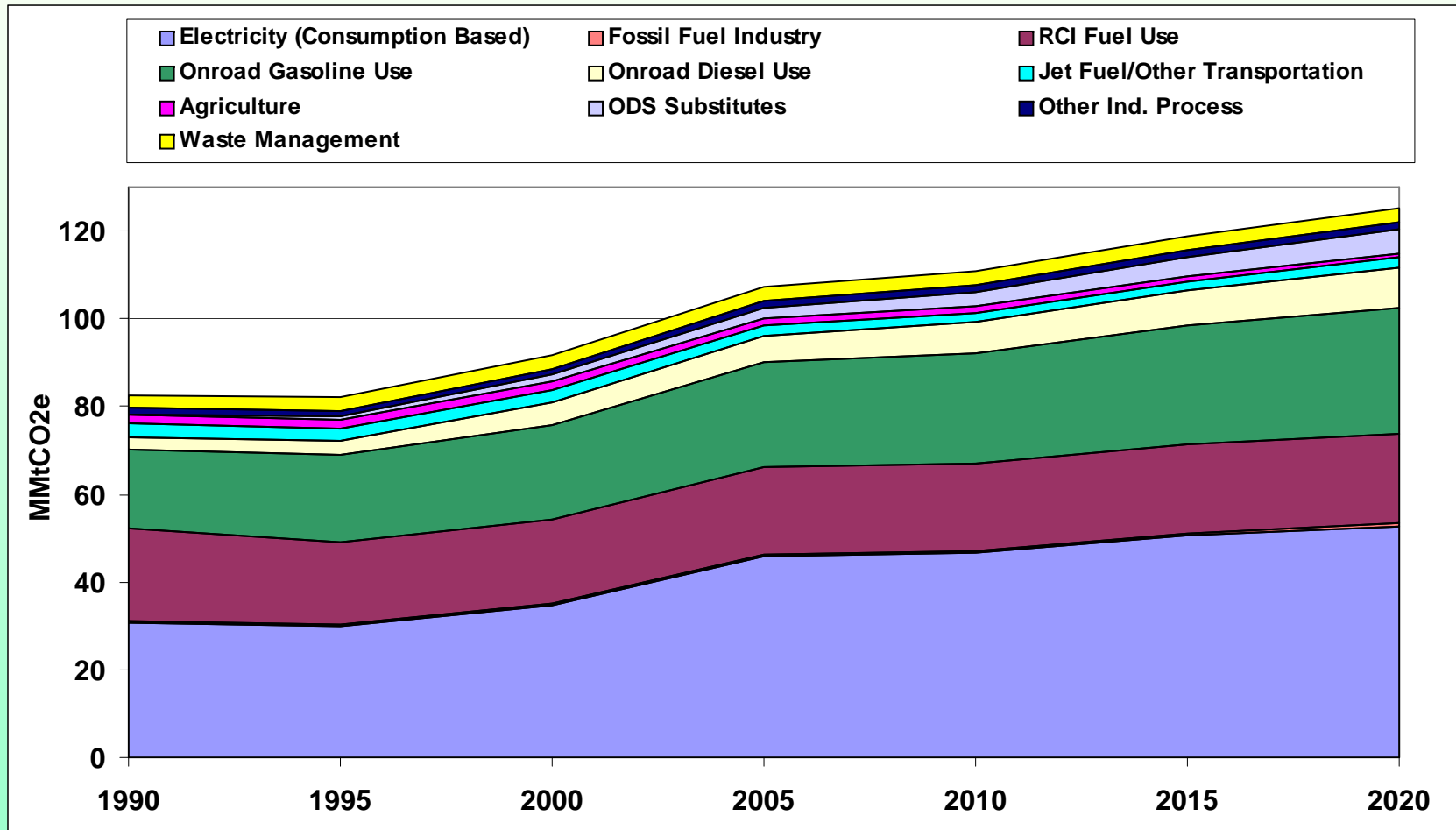


Maryland

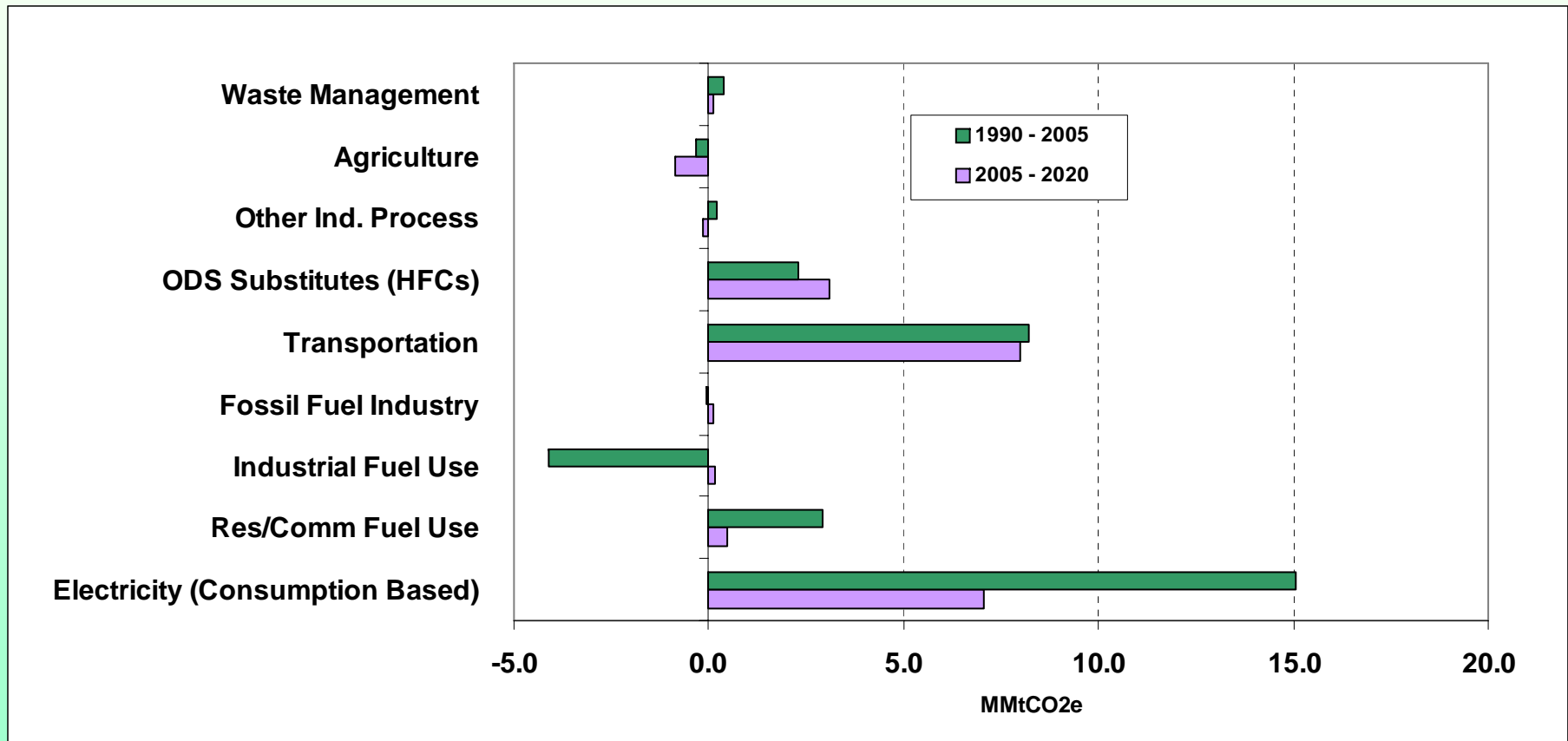


Year 2000 Data

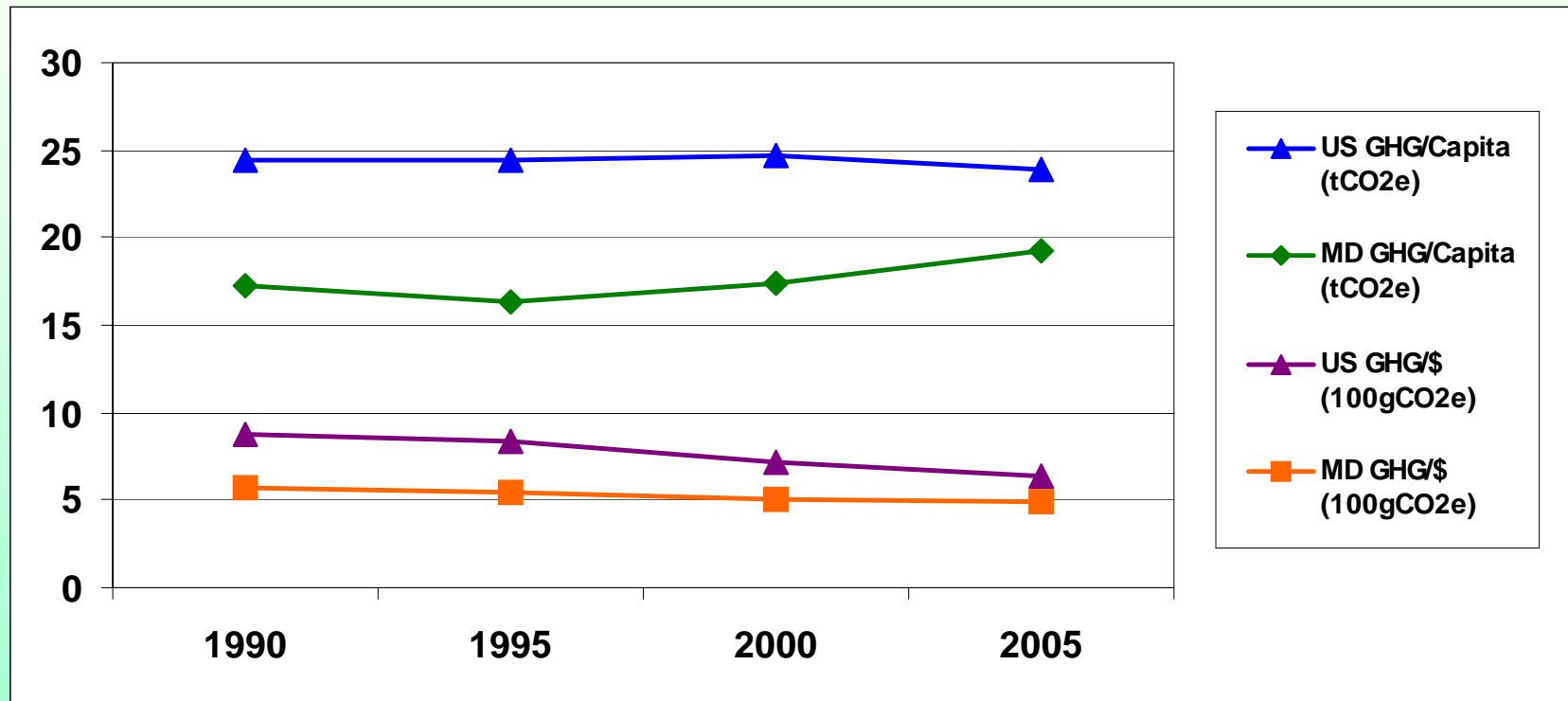
Maryland Gross GHG Emissions by Sector, 1990-2020



Maryland Gross Emissions Growth (MMtCO₂e Basis)



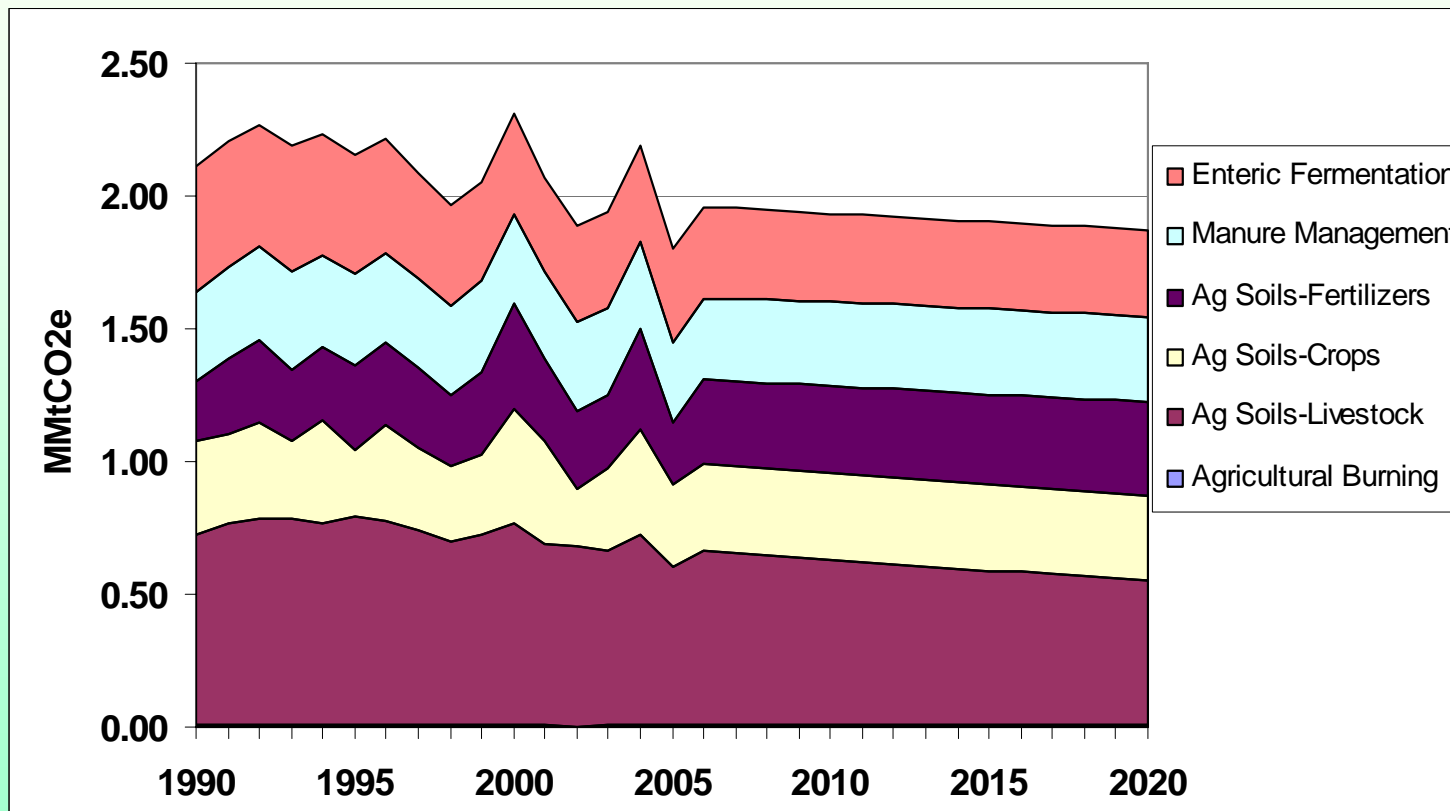
Per Capita and GSP/GDP Gross GHG Emissions, 1990-2005



Key Inventory Points

- Very preliminary draft
 - To be refined by CCS, for review and revision by Maryland
- Inventory & Forecast for diagnosis of GHG emissions and trends, not a baseline for modeling or compliance for individual options
- Consumption and Production methods
- Net and Gross methods

Agriculture



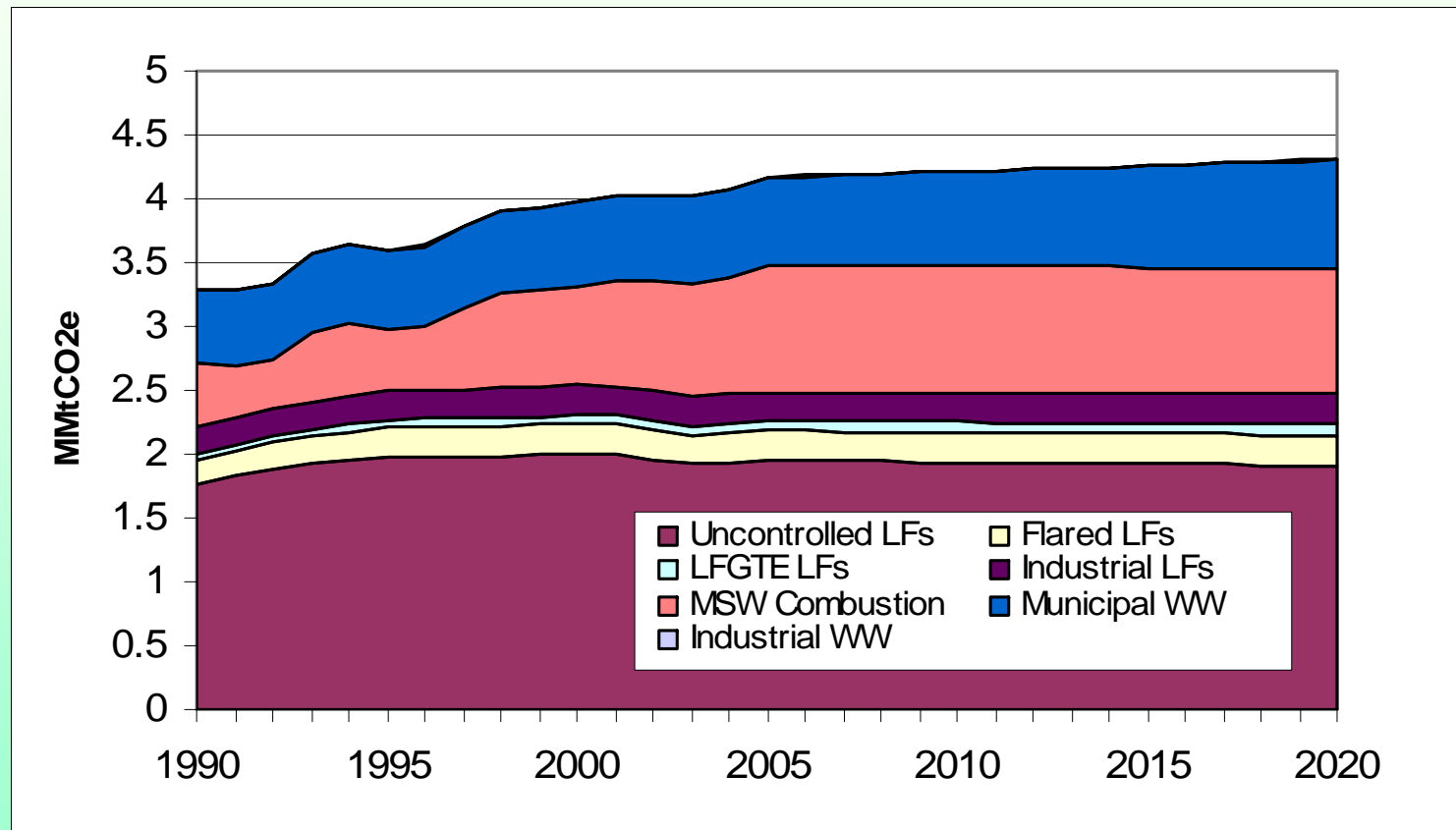
Agriculture

- Data Sources
 - Crop Production: USDA/NASS
 - Livestock: USDA/NASS
 - Fertilizer: Fertilizer Institute
- Methods
 - Crops: SGIT emission factors and crop production data
 - Livestock: SGIT emission factors and livestock populations
 - Fertilizer: SGIT fertilizer consumption
 - Dairy cattle forecasts were based on state-level projections of dairy cows from the Food and Agricultural Policy Research Institute (FAPRI)
 - Projections for other categories based on historical growth trends

Agriculture

- Key Assumptions
 - Future growth for agricultural soils will follow historical trends
- Key Uncertainties
 - Manure management emission factors derived from limited data sets
 - Livestock numbers based on point estimates for each year to represent populations that fluctuate throughout the year
 - Projection assumptions

Waste Management



Waste Management

- Data sources
 - EPA Landfill Methane Outreach Program Database
 - Additional landfill data provided by MDE
 - MDE data on waste combustion and wastewater (WW)
 - State population and SGIT default data for municipal WW treatment
- Methods
 - SGIT with data sources above
 - CCS post-processing to account for controls and growth

Waste Management

- Key Assumptions
 - Growth Rates
 - Landfills – based on historic emissions growth (2000-2005)
 - Industrial WW – based on historic emissions growth (1990-2005)
 - Municipal WW – MD population projections
- Key Uncertainties
 - Future controls applied to uncontrolled landfills
 - Industrial landfills
 - SGIT default of 7% of municipal landfills
 - Solid Waste Combustion and Waste Water
 - calculated using national defaults

Forestry

	Forestry and Land Use Flux and Reference Case Projections (MMtCO ₂ e)				
	1990	2000	2005	2010	2020
Forested Landscape (excluding soil carbon)	-2.08	-8.89	-8.89	-8.89	-8.89
Urban Forestry and Land Use	-5.69	-2.42	-2.62	-2.86	-3.27
Sector Total	-7.77	-11.31	-11.51	-11.75	-12.16

Forestry

- Data Sources
 - USFS carbon stock data for 2001-2005 based on FORCARB2 model
 - USFS also provides modeled estimates for harvested wood products
- Methods
 - Forestry: USFS FORCARB2 carbon stock change model provides carbon pools for each inventory cycle
 - Flux calculated for each pool based on difference in time between inventory cycles
 - Carbon pool data for the 2001-2005 time-period

Forestry

- Key Assumptions
 - 1999-2005 carbon stock change representative of current and historical conditions
 - No significant change in sequestration from 2006-2020
- Key Uncertainties
 - Estimates from wildfires
 - Effects of near-term climate change on forest sequestration levels

TWG/MWG Next Steps

- TWGs propose new and amended MD options to the Catalog of State Actions
- CCS incorporates comments from MWG into final Catalog at Sept. 28 Meeting
- TWG balloting on priority policy options from final Catalog
- TWG refines priority list on Oct. call
- MWG reviews, modifies and approves options (October 26)
- TWG develops straw proposals

How Balloting Takes Place

- Once Catalog is deemed complete, CCS develops and distributes a ballot via email to the TWG;
- TWG votes on 10 priorities returns ballot to CCS;
- CCS tallies the votes and reviews results during the next TWG call or via email;
- MCCC-MWG review and refine priorities;
- TWG develops straw proposals for policy design from priorities.

Public Input, Announcements

Next TWG Call

- Date and Time
 - October 4th, 1:00-3:00 PM
- Agenda:
 - Update from MWG Sept. 28 Meeting
 - Discuss next steps for finalizing policy options
 - Continue review of emissions inventory and forecasts

