



**Department of the Environment**

---

# **MD-DE APA Conference**

November 19, 2008

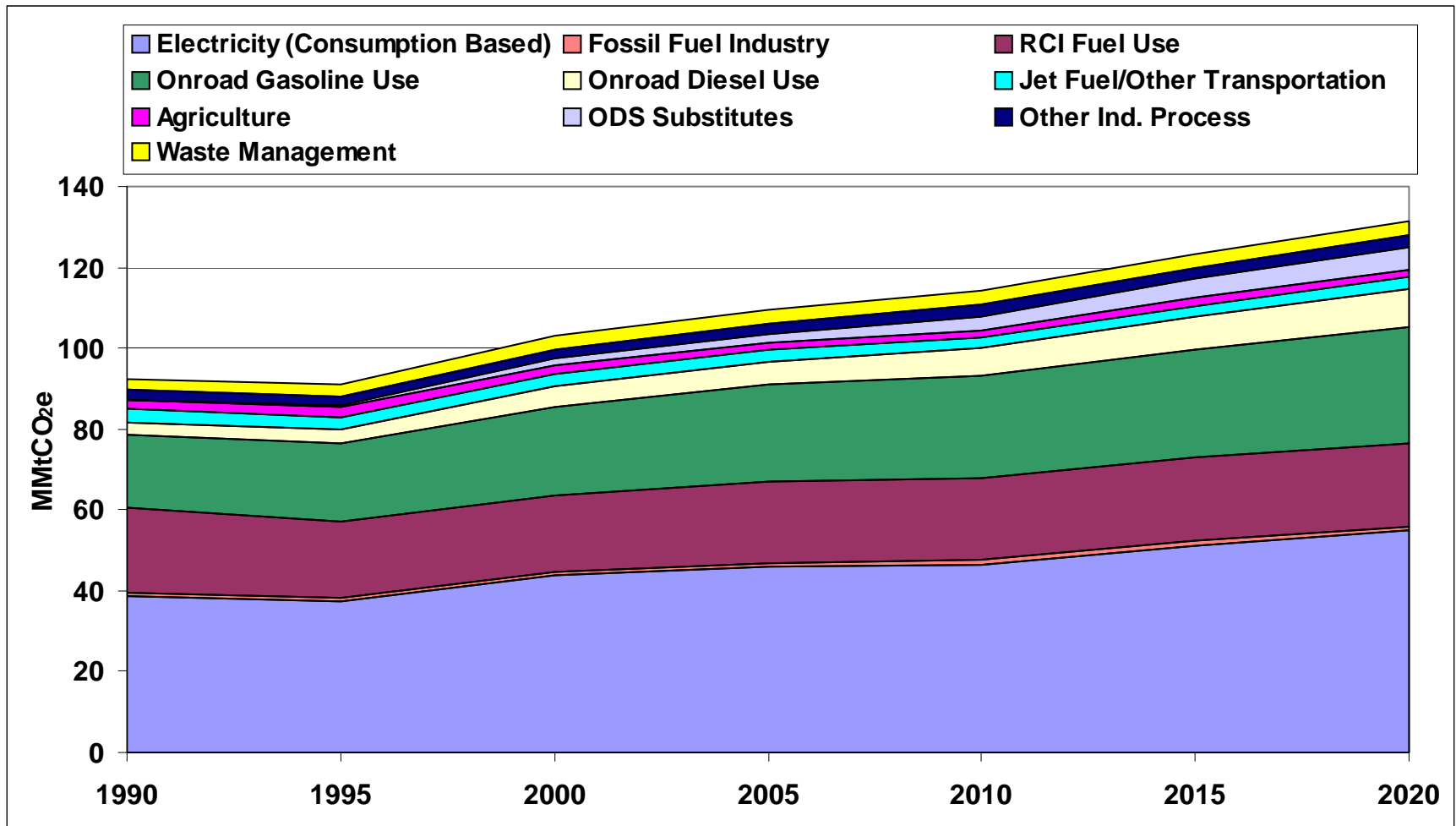
Shari T. Wilson, Secretary

Maryland Department of the Environment

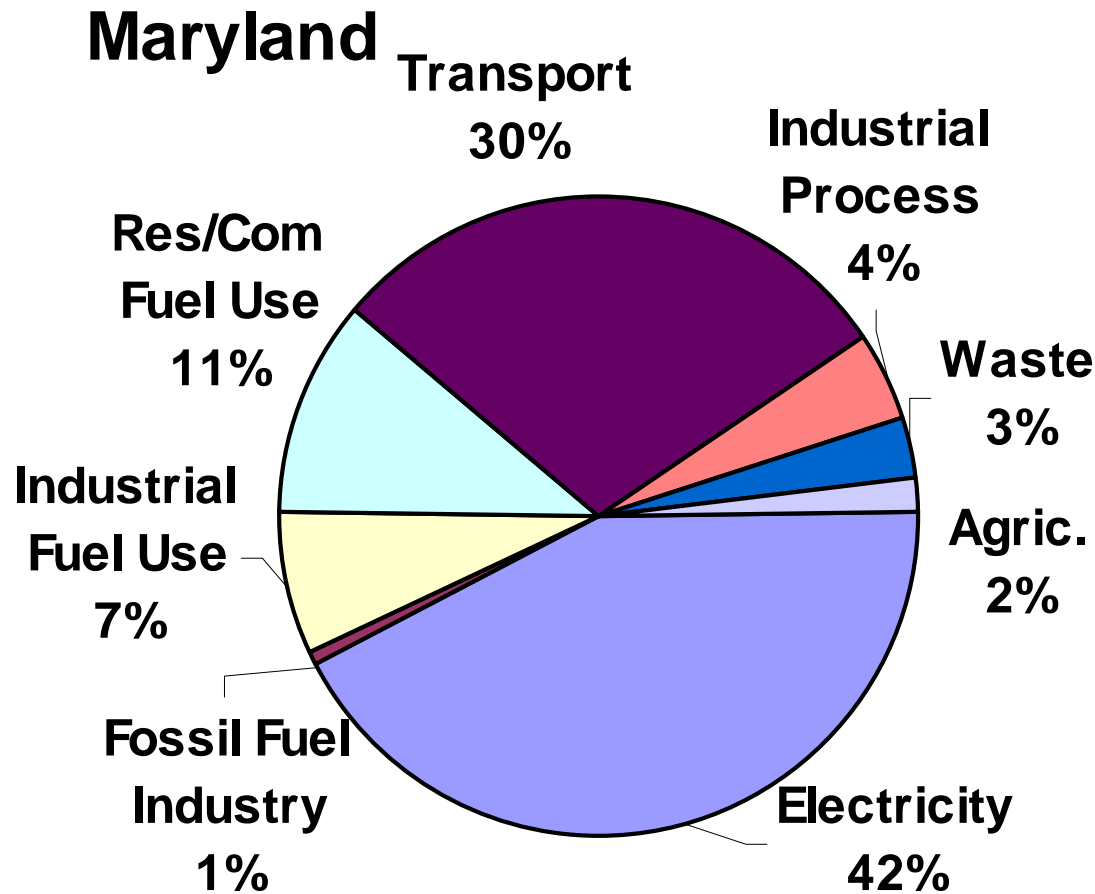




# Growth in GHG Emissions



# Maryland GHG Emissions

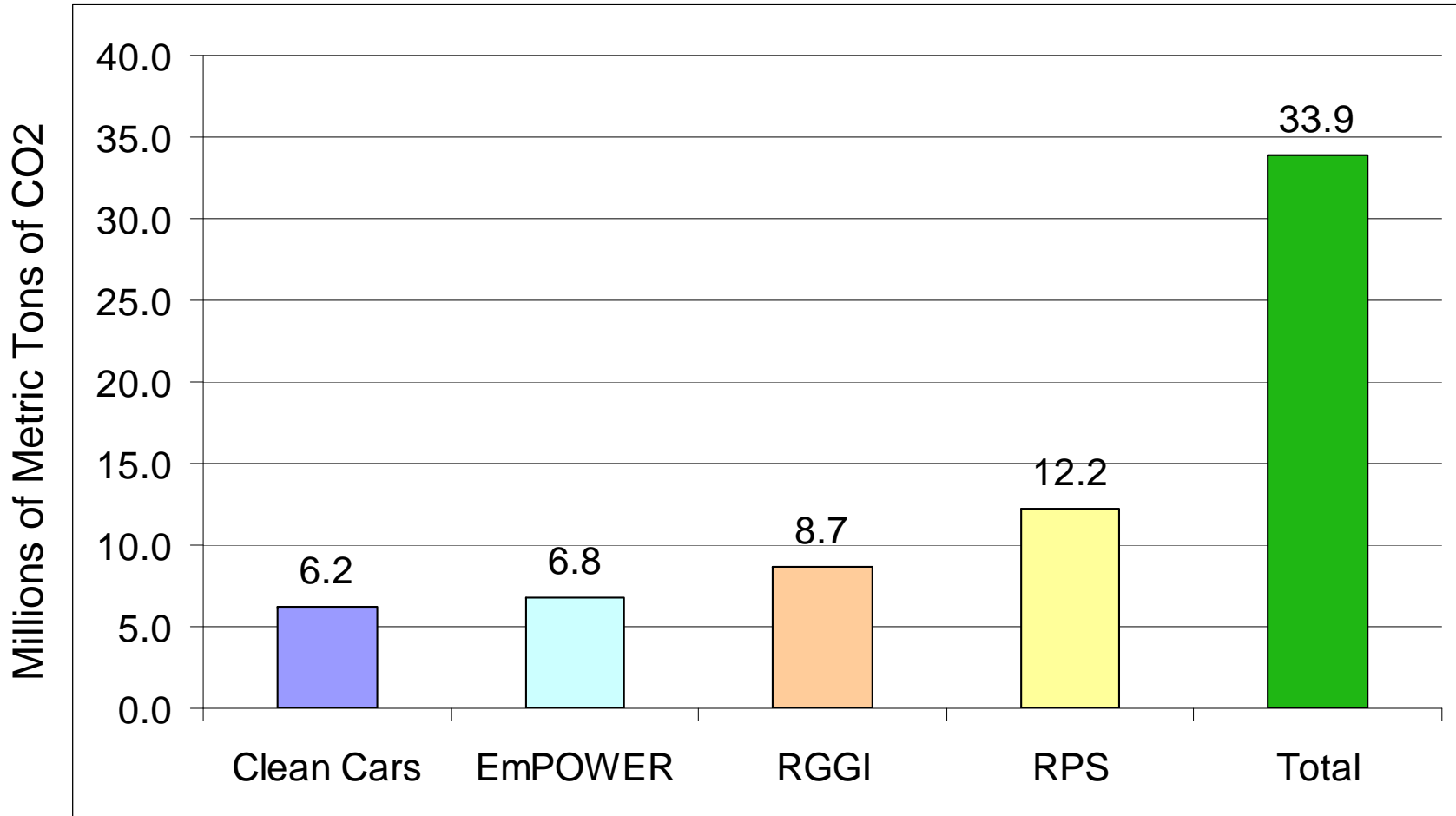


- 70% of Maryland's Greenhouse Gas Emissions come from the combination of the electricity consumption and transportation sectors

- Electricity consumption includes the >25% of electricity created outside of Maryland's borders



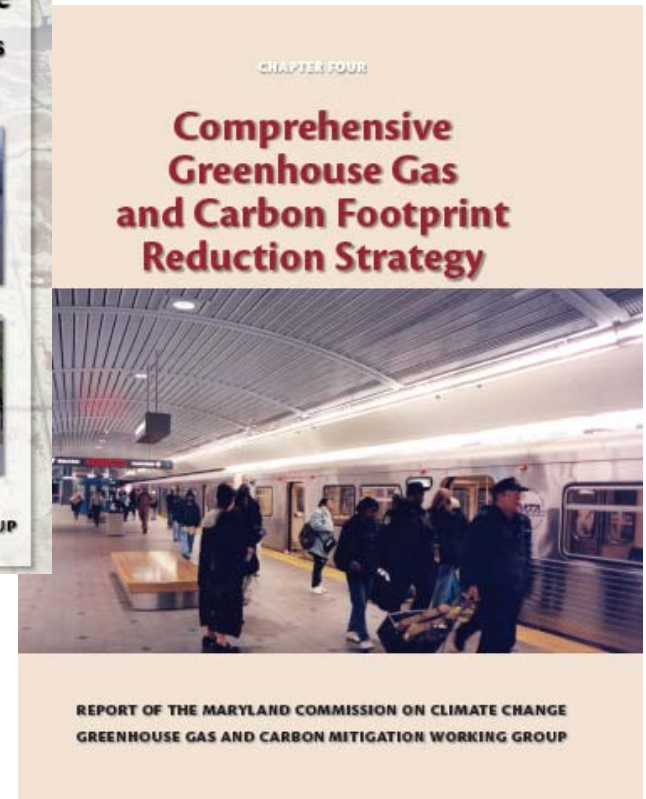
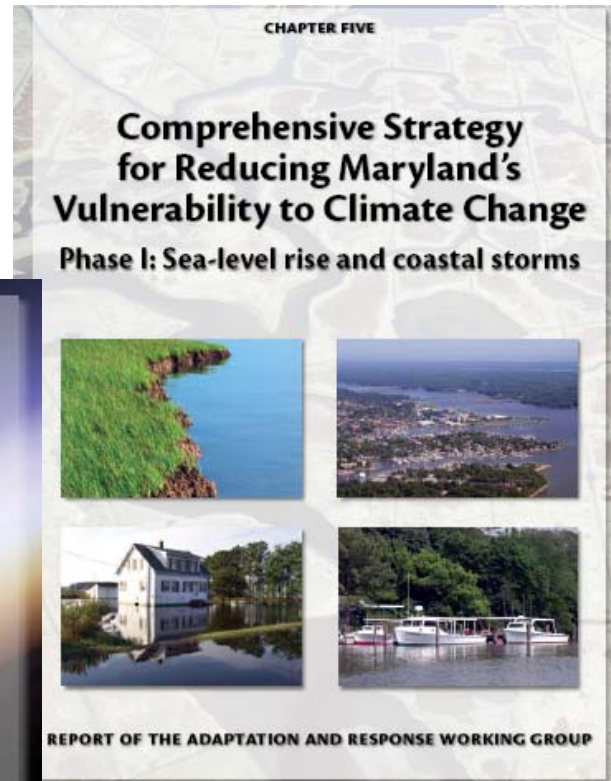
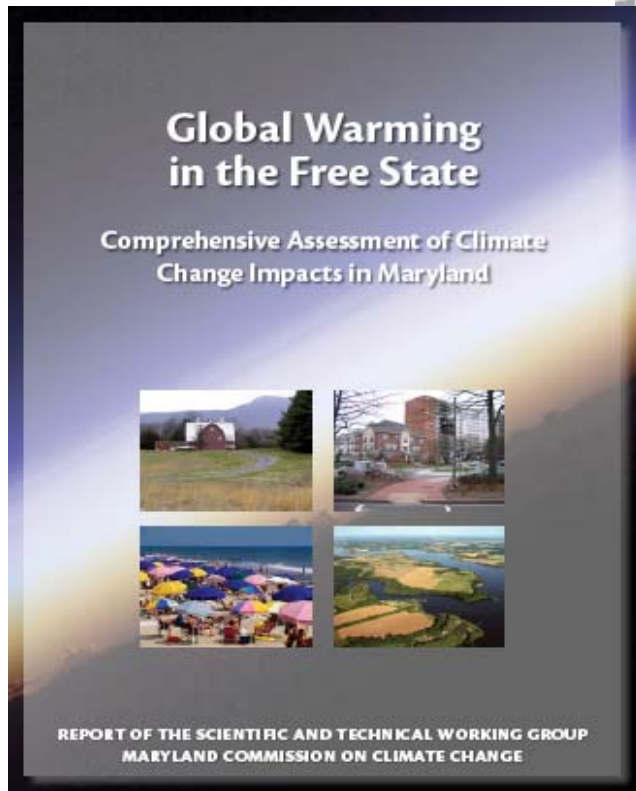
# GHG Reductions from Recent Actions



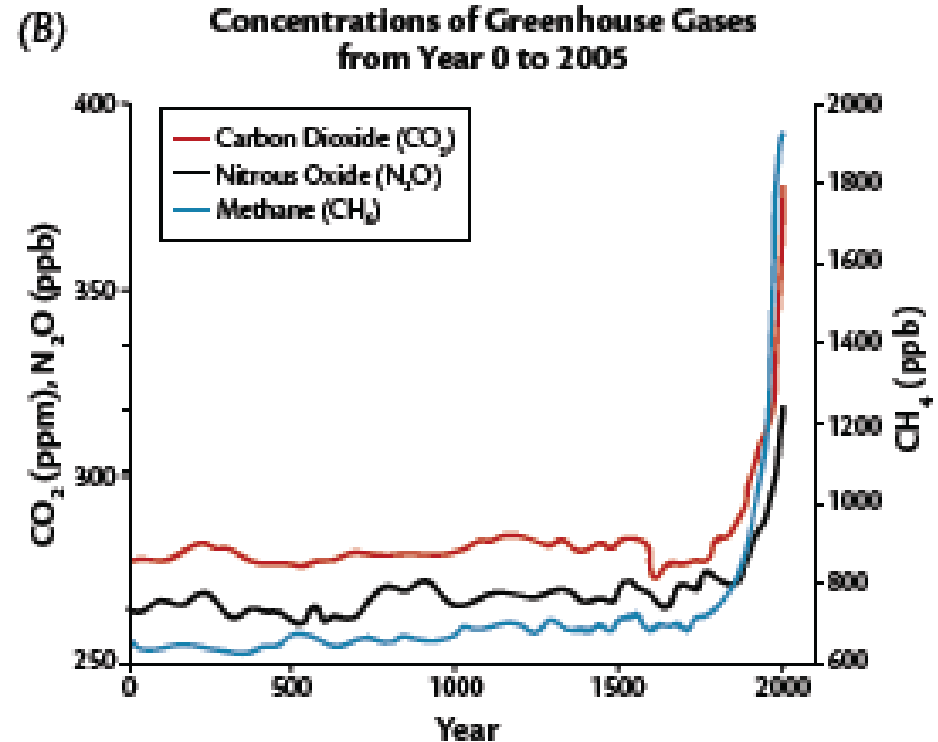
- Recent actions will achieve 60-70% of the reductions needed to reach the 25% in 2020 goal



# Plan Covers Three Issues



- Reductions in GHG will have significant benefits to Maryland
- Mitigation of global emissions would likely lower sea level rise, reduce public health risks
- Adaptation strategies are needed





# Adaptation Working Group

Forests, wetlands & beaches  
protect from coastal flooding

## Priority Recommendations:

- **Create Priority Protection Areas**
- **Forest & Wetland Protection**
- **Living Shorelines &  
Buffer Area Management Practices**



## Commission Goals

- 25-50% reduction in Greenhouse Gas Emissions by 2020
- Goal: 90% reduction in Greenhouse Gas Emissions by 2050
- Build on existing programs to reduce ghg emissions



## Plan to Reduce Emissions

- Agriculture Forestry & Waste Use
- Energy Supply
- Residential, Commercial, & Industrial Use
- Transportation & Land Use
- Cross Cutting Issues





# Mitigation Policy Options

| POLICY OPTION   | NUMBER | IMPLEMENTING AGENCY       |
|---|--------|---------------------------|
| <i>Cross Cutting (CC)</i>                               |        |                           |
| GHG Inventories & Forecasting                           | CC-1   | MDE                       |
| GHG Report & Registry                                   | CC-2   | MDE                       |
| Statewide GHG Reduction Goals & Targets                 | CC-3   | MDE                       |
| State & Local Government Lead-by-Example                | CC-4   | MDE                       |
| Public Education & Outreach                             | CC-5   | MDE                       |
| Review Institutional Capacity                           | CC-7   | Climate Change Commission |
| Participate in Regional, Multi-State & National Efforts | CC-8   | MDE                       |
| Promote Economic Development Opportunities              | CC-9   | DBED                      |
| "After Peak Oil"  | CC-10  | MEA                       |
| Public Health Risks                                     | CC-11  | DHMH                      |
| <i>Residential, Commercial, &amp; Industrial (RCI)</i>  |        |                           |
| Improved Building & Trade Codes                         | RCI-1  | DHCD                      |
| Demand-Side Management & Energy Efficiency              | RCI-2  | MEA                       |
| Low-Cost Loans for Energy Efficiency                    | RCI-3  | MEA                       |
| Improved Design, Construction, Appliances & Lighting    | RCI-4  | MDE                       |
| More Stringent Appliance/Equipment Efficiency Standards | RCI-7  | MEA                       |
| Energy Efficiency resource Standard                     | RCI-10 | MEA                       |
| Promotion & Incentives for Energy Efficient Lighting    | RCI-11 | MEA                       |





# Mitigation Policy Options

| <i>Energy Supply (ES)</i>  |        |     |
|--|--------|-----|
| Promotion of Renewable Energy  | ES-1   | MEA |
| Technology-Focused Initiatives for Electricity Supply                          | ES-2   | MEA |
| GHG Cap & Trade  | ES-3   | MDE |
| Clean Distributed Generation   | ES-5   | MEA |
| Integrated Resource Planning   | ES-6   | MEA |
| Renewable Portfolio Standard   | ES-7   | PSC |
| Efficiency Improvements & Repowering Existing Plants                           | ES-8   | MEA |
| Generation Performance Standards   | ES-10  | MDE |
| <i>Agriculture, Forestry &amp; Waste (AFW)</i>                                 |        |     |
| Forest Management for Enhanced Carbon Sequestration                            | AFW-1  | DNR |
| Managing Urban Trees & Forests   | AFW-2  | DNR |
| Afforestation, Reforestration & Restoration of Forests & Wetlands              | AFW-3  | DNR |
| Protection & Conservation of Agricultural Land, Coast Wetlands & Forested Land | AFW-4  | MDA |
| “Buy Local” Programs   | AFW-5  | MDA |
| Expanded Use of Forest & Farm Feedstocks & By-Products for Energy Production   | AFW-6  | DNR |
| In-State Liquid Biodiesel Production   | AFW-7b | MEA |
| Nutrient Trading with Carbon Benefits  | AFW-8  | MDE |
| Waste Management & Advanced Recycling  | AFW-9  | MDE |



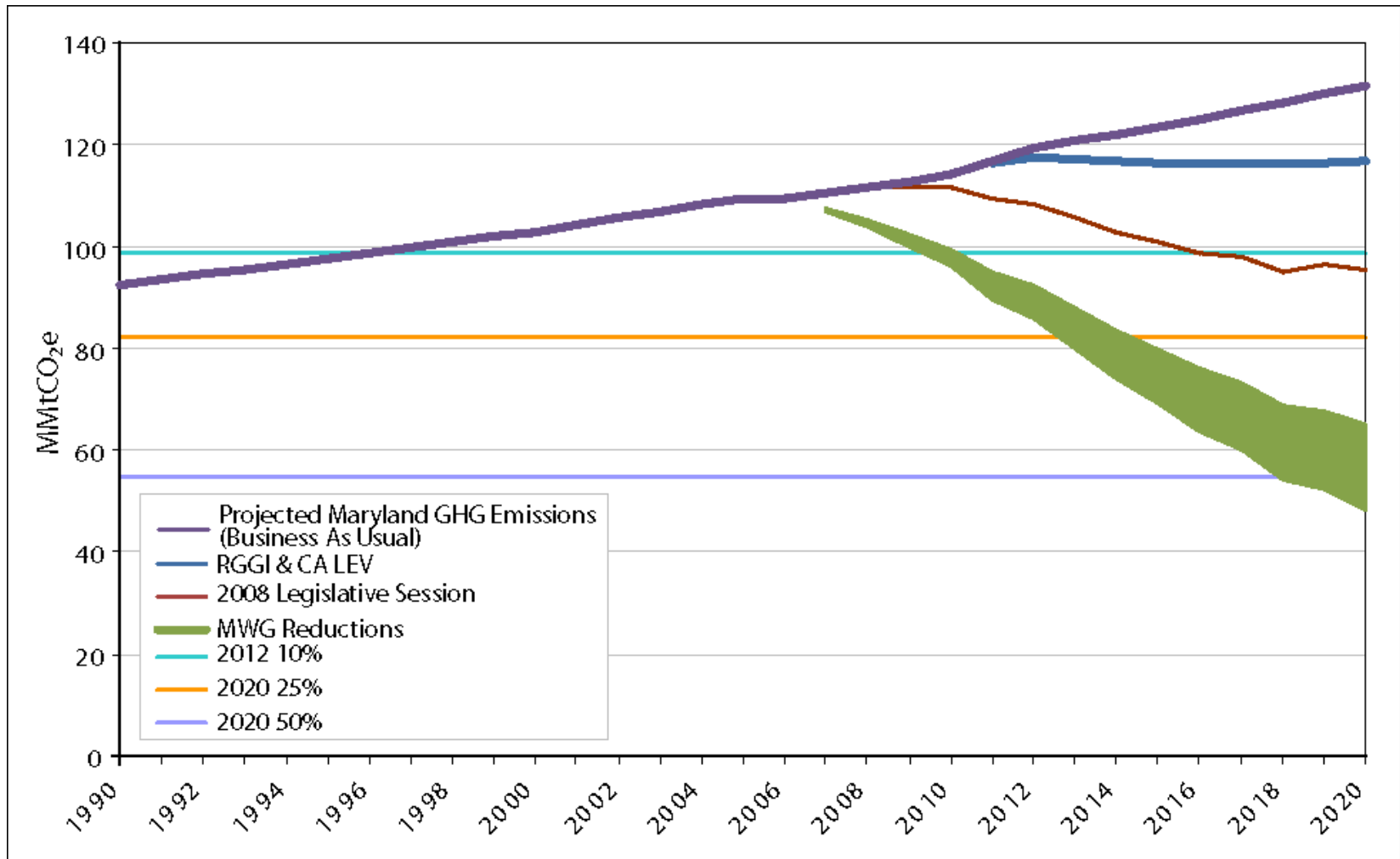


# Mitigation Policy Options

| <i>Transportation &amp; Land Use (TLU)</i> |        |      |
|--|--------|------|
| Land Use & Location Efficiency             | TLU-2  | MDOT |
| Transit                                    | TLU-3  | MDOT |
| Intercity Travel                           | TLU-5  | MDOT |
| Pay-As-You-Drive Insurance                 | TLU-6  | MDOT |
| Bike & Pedestrian Infrastructure           | TLU-8  | MDOT |
| Incentives, Pricing & Resource Measures    | TLU-9  | MDOT |
| Transportation Technologies                | TLU-10 | MDE  |
| Evaluate GHG from Major Projects           | TLU-11 | MDOT |

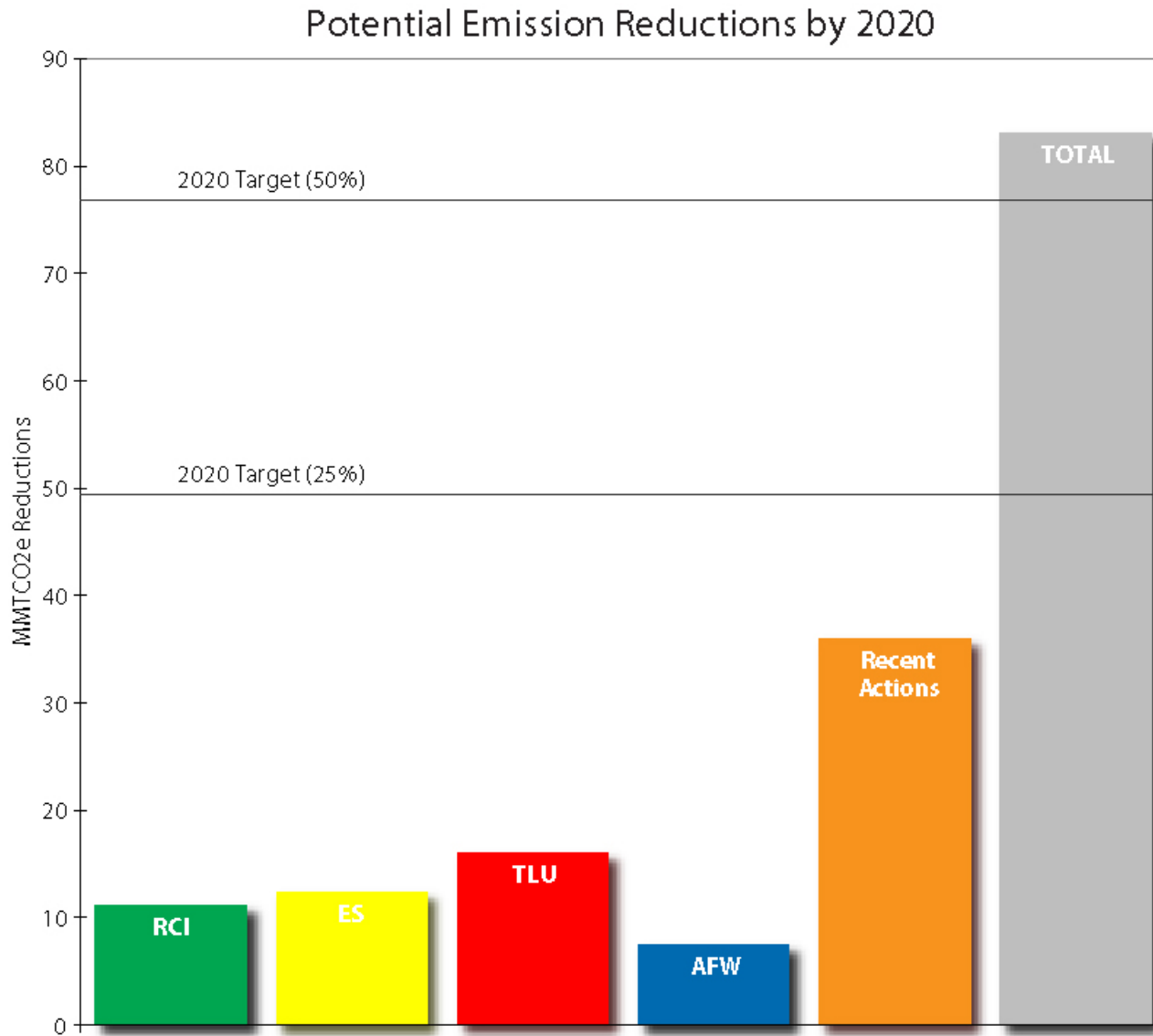


# Reductions and Goals





# Policies: Reductions by 2020



# Cost Effectiveness

---

- Under QAQC to refine analyses that were conducted for each policy option
- Preliminary data indicate implementing 42 measures will result in a net economic benefit to the State of approximately \$2B by 2020

- The Commission’s 2020 goal is to achieve a 25% to 50% reduction from 2006 levels.
- The 42 strategies are projected to achieve an approximate 40% to 55% reduction from 2006 levels by 2020.
- Early actions, already taken in Maryland, will achieve about 60% to 70% of the reductions needed to meet the 25% reduction goal.

Projected Emissions by 2020

