

Maryland Climate Change Commission

USM Overview Session on Sustainability



Don Boesch
October 11, 2007





Commission on Climate Change

- Established by April 20 Executive Order by Governor O'Malley.
- 22 members, including state agency heads (**including Chancellor Kirwan**) and 6 members of General Assembly; chaired by Secretary of the Environment Shari Wilson.
- Advise Governor and General Assembly on matters related to climate change.
- Develop a Plan of Action to **address the drivers and causes of climate change, to prepare for the likely consequences and impacts of climate change to Maryland, and to establish firm benchmarks and timetables for implementing the Plan of Action.**
- Supported by 3 Working Groups (**including many USM experts**):
 - Scientific and Technical Working Group
 - Greenhouse Gas and Carbon Mitigation Working Group
 - Adaptation and Response Working Group

<http://www.mde.state.md.us/air/mccc/>





Commission on Climate Change

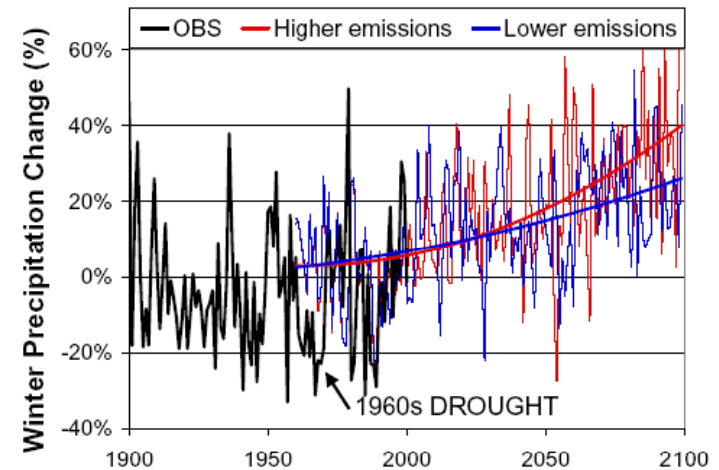
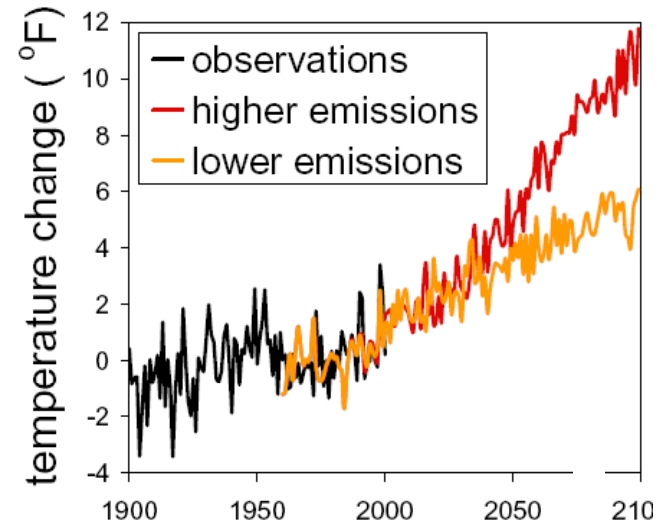
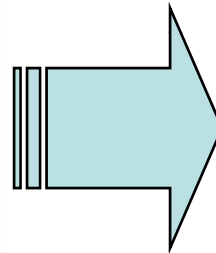
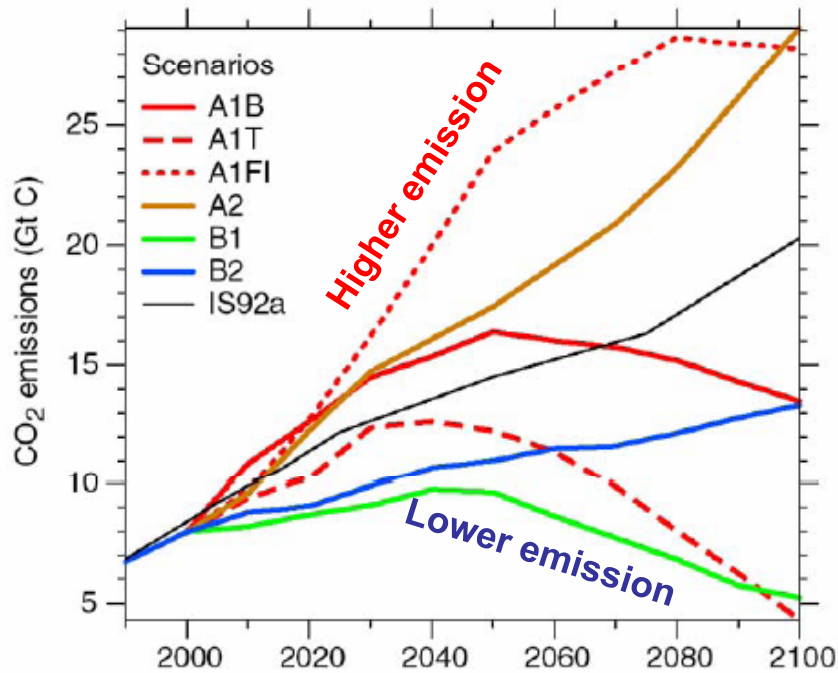
Products and Milestones

- **Within one year present to the Governor and General Assembly the Plan of Action, including:**
 - **Comprehensive Climate Change Impact Assessment**
 - **Comprehensive Greenhouse Gas and Carbon Footprint Reduction Strategy**
 - **Comprehensive Strategy for Reducing Maryland's Climate Change Vulnerability**
- **Report to the Governor and General Assembly on or before November 1 an update on the development of the Plan of Action, implementation timetables and benchmarks, and preliminary recommendations, including draft legislation.**



Assess Likely Impacts Using Existing Climate Models

Emission Scenarios

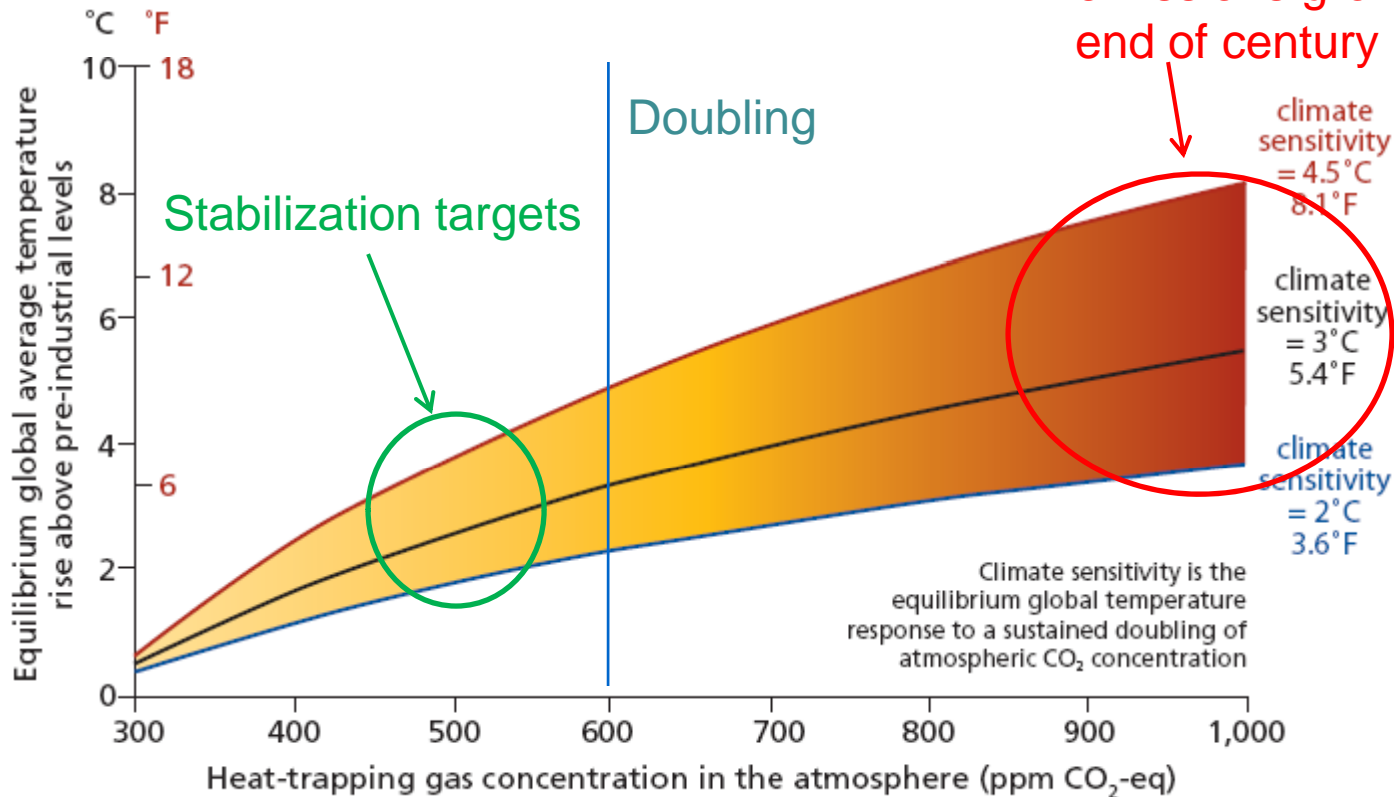


- High and low emission scenarios
- Use model averages



GHG concentrations and warming

Higher Emissions Lead to Higher Temperatures



Based on Union of Concerned Scientists Highlights of IPCC





IPCC findings on climate change mitigation

Table TS.2: Classification of recent (Post-Third Assessment Report) stabilization scenarios according to different stabilization targets and alternative stabilization metrics [Table 3.5].

Category	Additional radiative forcing (W/m ²)	CO ₂ concentration (ppm)	CO ₂ -eq concentration (ppm)	Global mean temperature increase above pre-industrial at equilibrium, using "best estimate" climate sensitivity ^{a), b)} (°C)	Peaking year for CO ₂ emissions ^{c)}	Change in global CO ₂ emissions in 2050 (% of 2000 emissions ^{c)}	No. of assessed scenarios	
I	2.5-3.0	350-400	445-490	2.0-2.4	2000 - 2015	-85 to -50	6	
II	3.0-3.5	400-440	490-535	2.4-2.8	2000 - 2020	-60 to -30	18	
III	3.5-4.0	440-485	535-590	2.8-3.2	2010 - 2030	-30 to +5	21	
IV	4.0-5.0	485-570	590-710	3.2-4.0	2020 - 2060	+10 to +60	118	
V	5.0-6.0	570-660	710-855	4.0-4.9	2050 - 2080	+25 to +85	9	
VI	6.0-7.5	660-790	855-1130	4.9-6.1	2060 - 2090	+90 to +140	5	
http://www.mnp.nl/ipcc/pages_media/AR4-chapters.html							Total	177

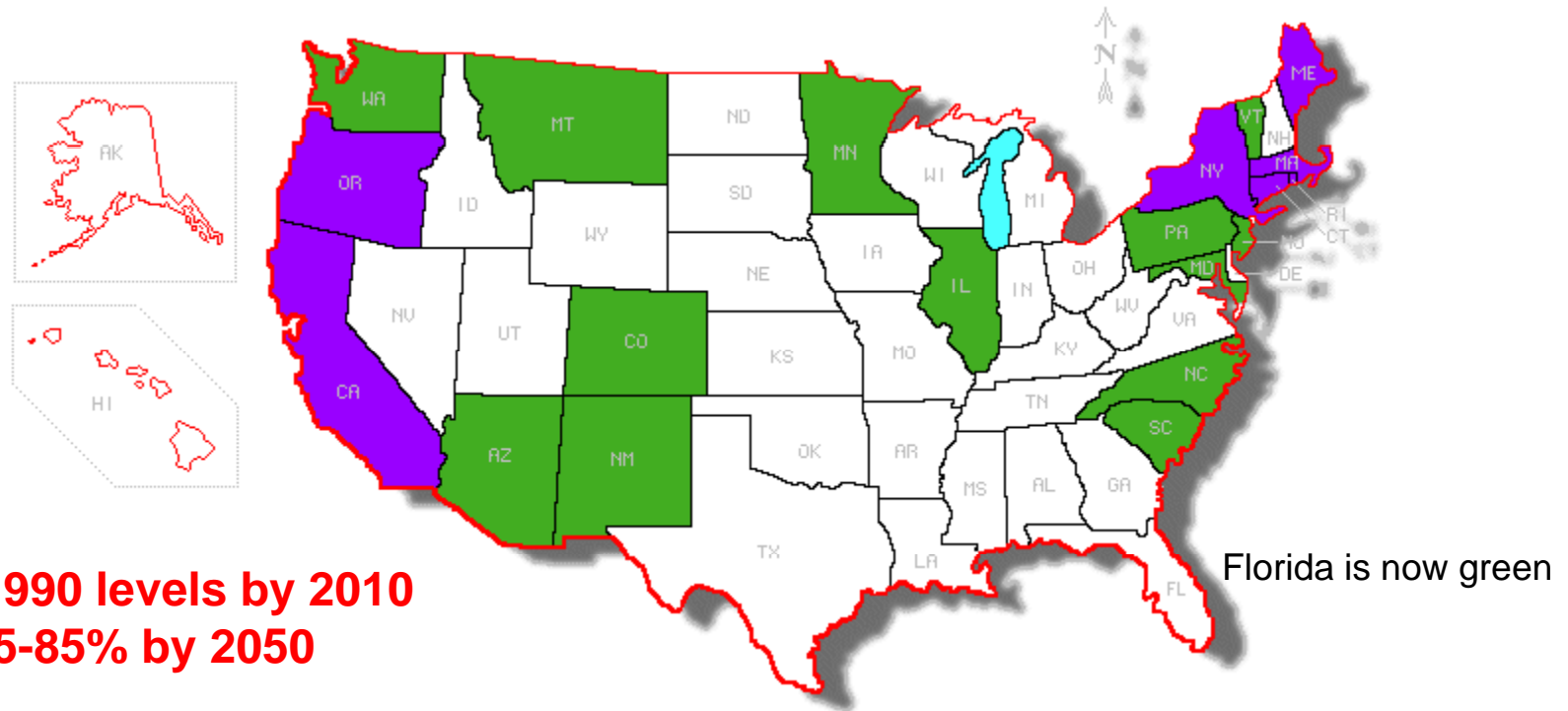
- Assessed measures to achieve 50 to 85 % reductions in emissions of GHGs by 2050 (compared with 2000 levels)
- Involved emissions peaking by 2015 and GHG concentrations stabilizing around the end of the century at about 445 to 490 ppm CO₂-eq.
- Could keep equilibrium global average temperature increases within 2 to 2.4 °C, thereby avoiding some of the most damaging and irreversible impacts.



Many States are Developing Greenhouse Gas Reduction Goals

- - Post-2000 Plan
- - Recent & Underway

~24 States



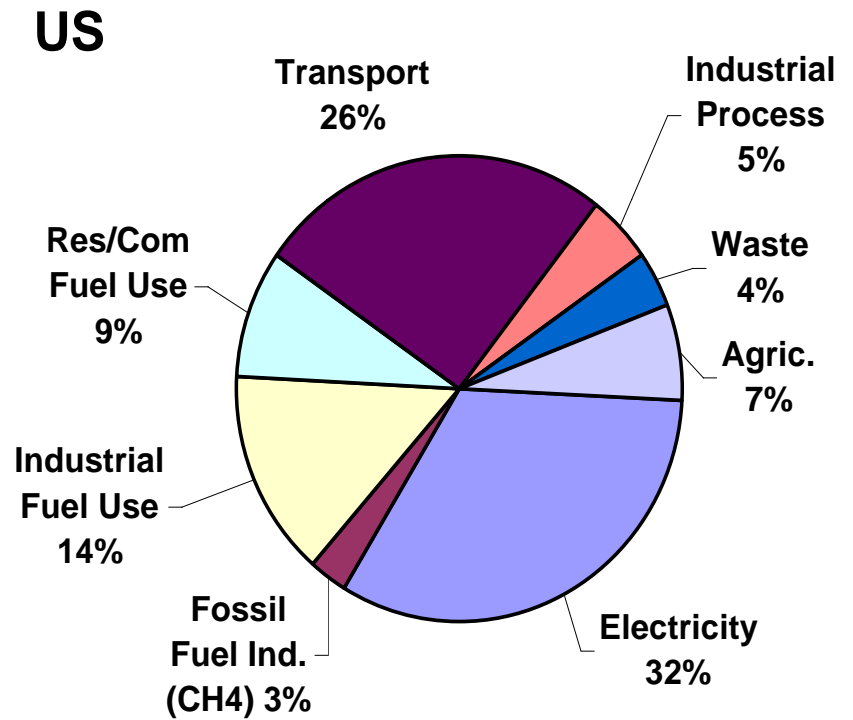
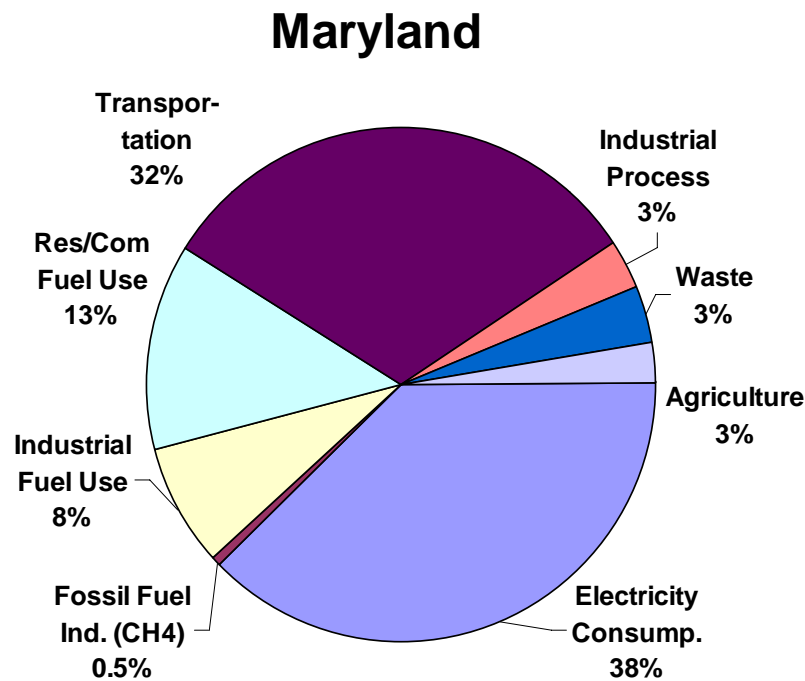
- Many ~1990 levels by 2010
- Many -75-85% by 2050

Source: Center for Climate Strategies

6-17-07



Preliminary Maryland Inventory Gross GHG Emissions By Sector



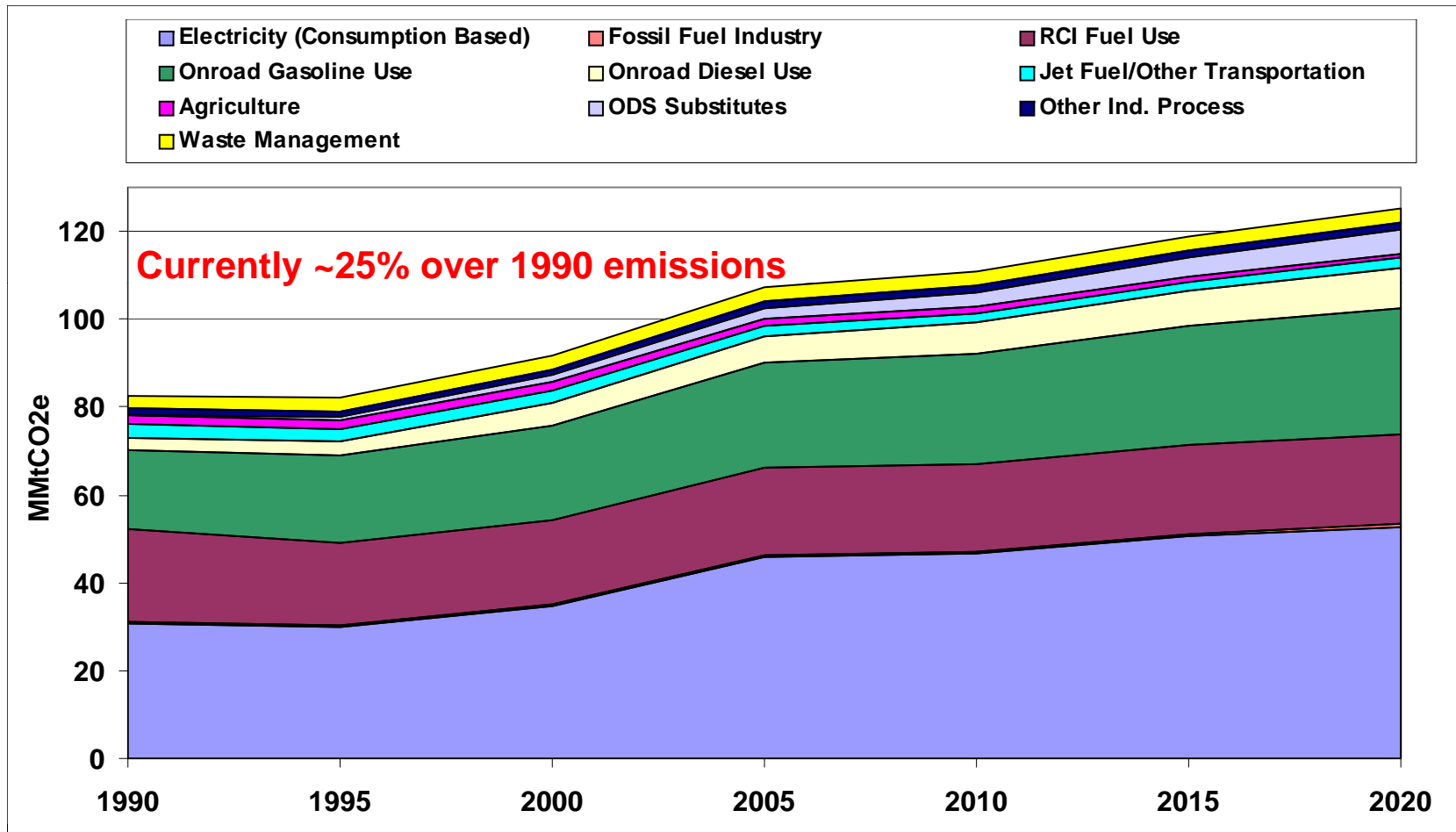
Year 2000 Data

August 15, 2007

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Maryland Gross GHG Emissions by Sector, 1990-2020



August 15, 2007

www.mdclimatechange.us

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Achieving 1990 Emissions by 2020

National Scale

Potential US 2020	% of "US 1990" Goal	M Tons GHG	Sample Cost/Cost Savings	Total Savings (Best Guess)
Energy Efficiency and Conservation	~24%	555	-\$10 to -\$30	-\$11 Billion
Clean and Renewable Energy	~24%	565	\$7 to \$21	\$8 Billion
Transportation and Land Use Efficiency	~36%	831	-\$32 to -\$36	-\$28 Billion
Agriculture and Forestry Conservation	~6%	132	-\$1 to -\$5	-\$0.4 Billion
Waste Management, Industrial Processes, and Other	~11%	246	?	?
Additional Federal Actions	(~6-18%)	264	?	?
Total	NPV 2007-2020: -\$117 Billion			

August 15, 2007

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Maryland: Actions Taken

- **Healthy Air Act 2006**
 - Requires Maryland to join the Regional Greenhouse Gas Initiative
- **Clean Cars Act 2007**
- **Commission on Climate Change Executive Order 2007**
- **Governor O'Malley's EmPower Maryland**
 - State Agencies to reduce power consumption by 15% by 2015
- **Policies and Legislation Resulting from the MCCC?**



Think about connections

