Maryland
Department of the Environment

Climate Action and Maryland

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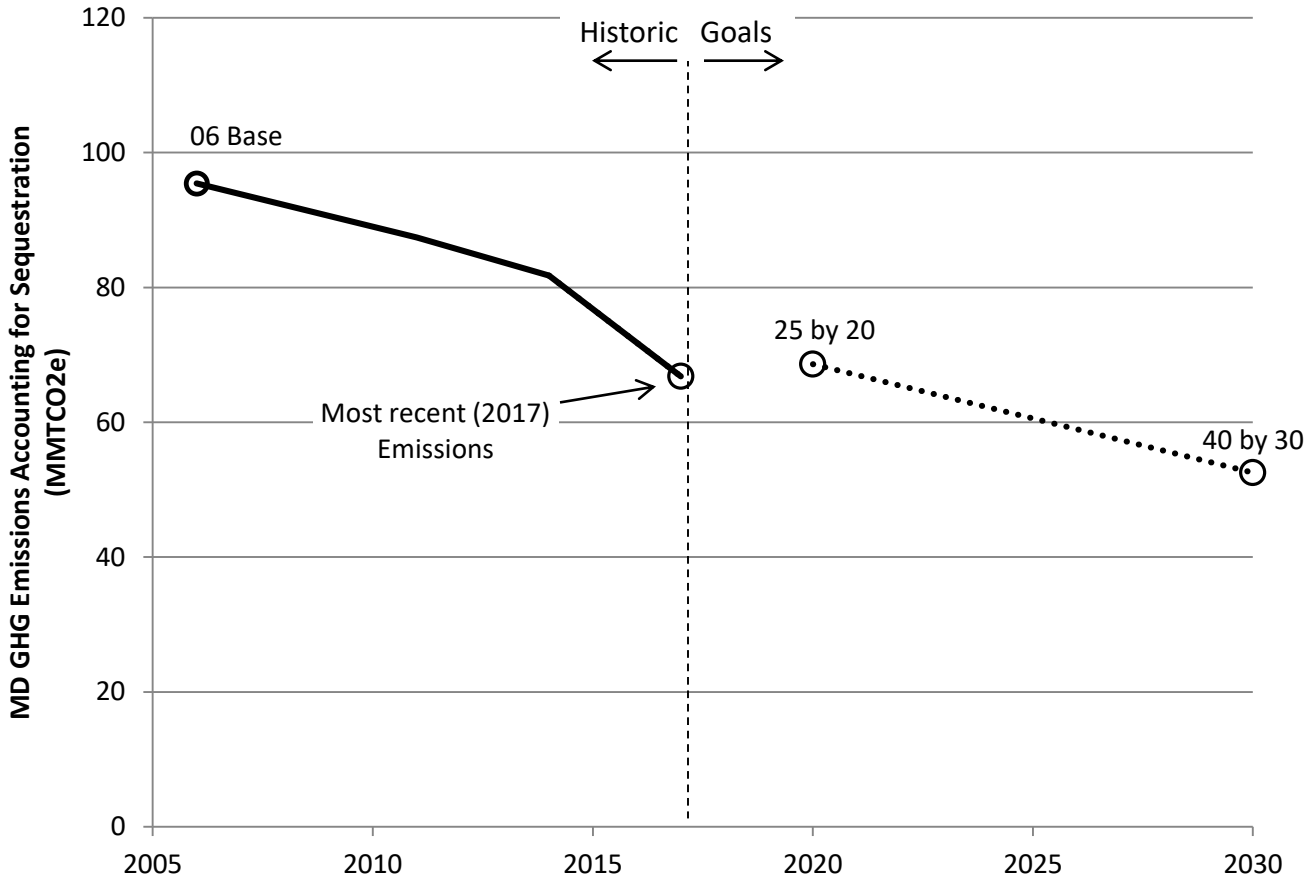
The Greenhouse Gas Reduction Act Plan

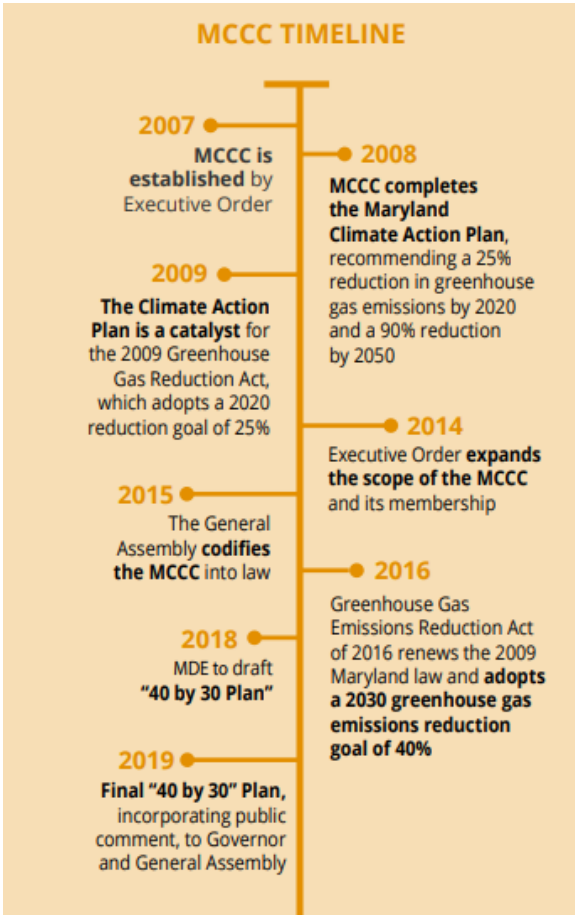
Requirement: Publish a plan to reduce GHGs by 25% by 2020, and 40% by 2030.



NOTE: 2020 goal achieved in 2017, but with help from mild weather, so continued action and progress is necessary.

Maryland Commission on Climate Change (MCCC)

- Governor Hogan signed the Commission on Climate Change Act of 2015 to codify the Commission (MCCC)



MCCC – Four Working Groups

- The MCCC has four Working Groups:
  - Adaptation and Resiliency (ARWG)
  - Education, Communication, and Outreach (ECO)
  - Mitigation (MWG)
  - Scientific and Technical (STWG).
- Working groups are required to develop work plans that are updated annually
- Each working group meets throughout the year to address the MCCC's responsibilities through a series of presentations and discussions to develop the recommendations made in the annual report

The 2019 GGRA Draft Plan

- MDE has proposed the *2019 GGRA Draft Plan*
  - in coordination with other state agencies and stakeholders
  - must achieve Maryland's goal of reducing greenhouse gas (GHG) emissions by **40 percent** by 2030 from a 2006 baseline
    - More ambitious than the Paris Climate Accord goal of 26% to 28% reduction by 2025
  - must also benefit the State's economy and creates jobs

- Sets Maryland on a path to achieve the States ambitious GHG emissions reduction goal for 2030 and to achieve much deeper reductions in the 2040 to 2050 time frame

- Serves as an example for the nation showing how state action can reduce the threat of climate change while growing the economy and creating jobs

Major Programs in the GGRA Plan

Electricity Supply
Clean and Renewable Energy Standard
Continued RGGI Geographic Expansion

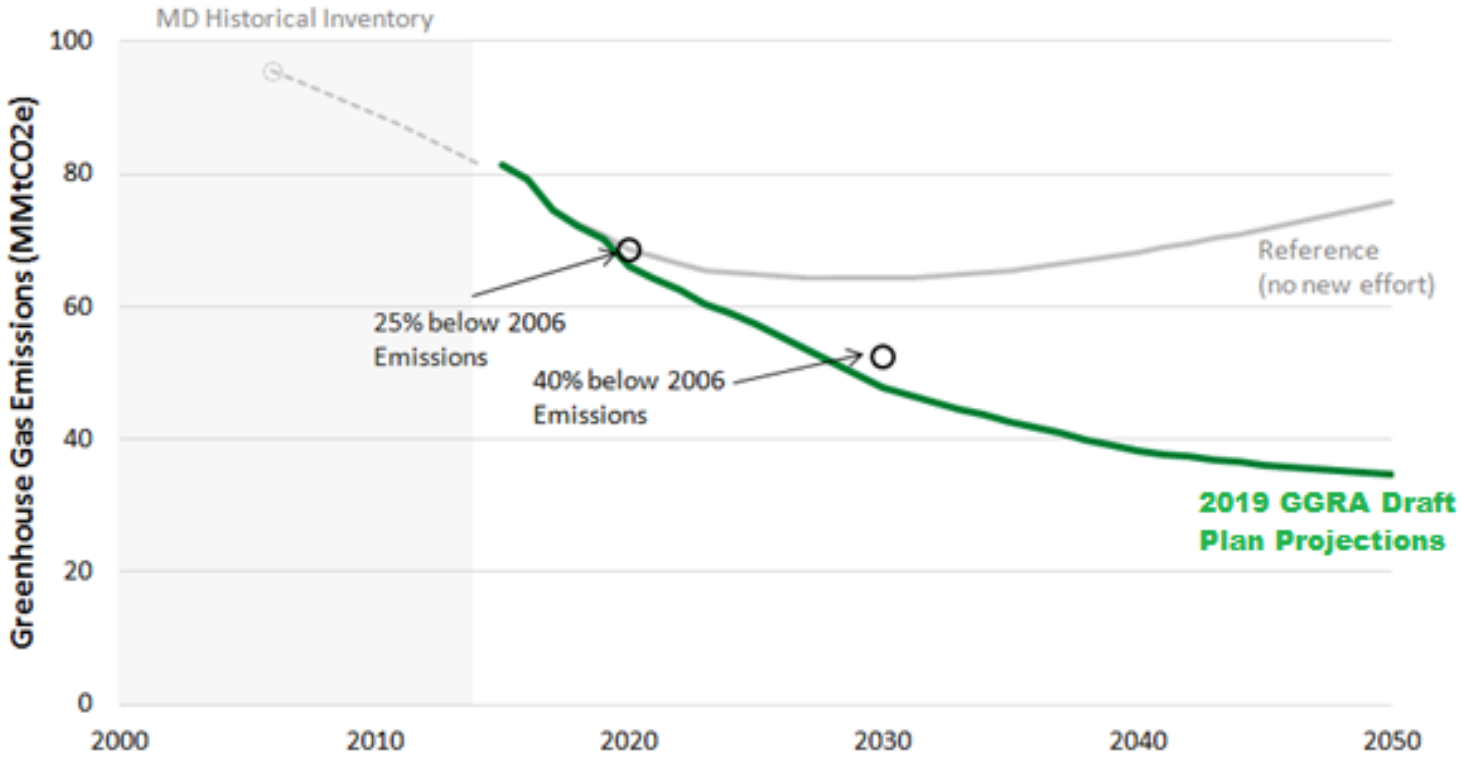
Transportation
Numerous MDOT Investments (e.g., transit)
Clean Cars / ZEV Mandate
50% ZEV Transit Buses
Compact Development
Transportation and Climate Initiative (TCI) could fund & enable other measures.

Carbon Sequestration
Enhanced Forest Management
Enhanced Healthy Soils Incentives

Building Energy Use
Extended EmPOWER
Heat Pump Incentives
Compact Development
State Building Efficiency EO

Other
Methane
HFC

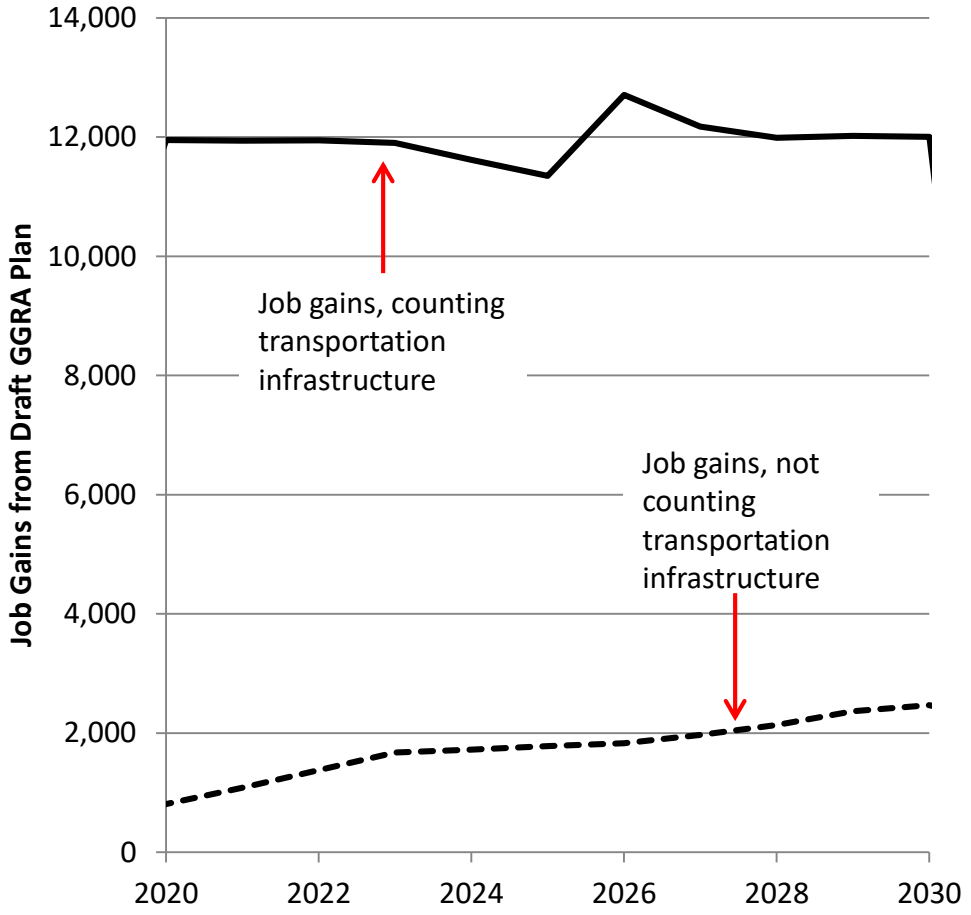
GHG Emissions under the Draft GGRA Plan



The *2019 GGRA Draft Plan* reduces emissions by 44% by 2030 (extra 4.5MMTCO2e)

GGRA Draft Plan Employment Impact

- The Draft Plan drives substantial job gains.
- Almost all of MD's fossil fuel comes from out of state.
- Investments that reduce fossil fuel consumption drive positive impacts for MD's economy.



Large transportation projects drive substantial job gains in the near-term; investments in in-state clean energy and fuel-saving measures provide more modest underlying gains. (Transportation gains dependent on Federal funding)

Air Quality co-benefits of the GGRA Plan

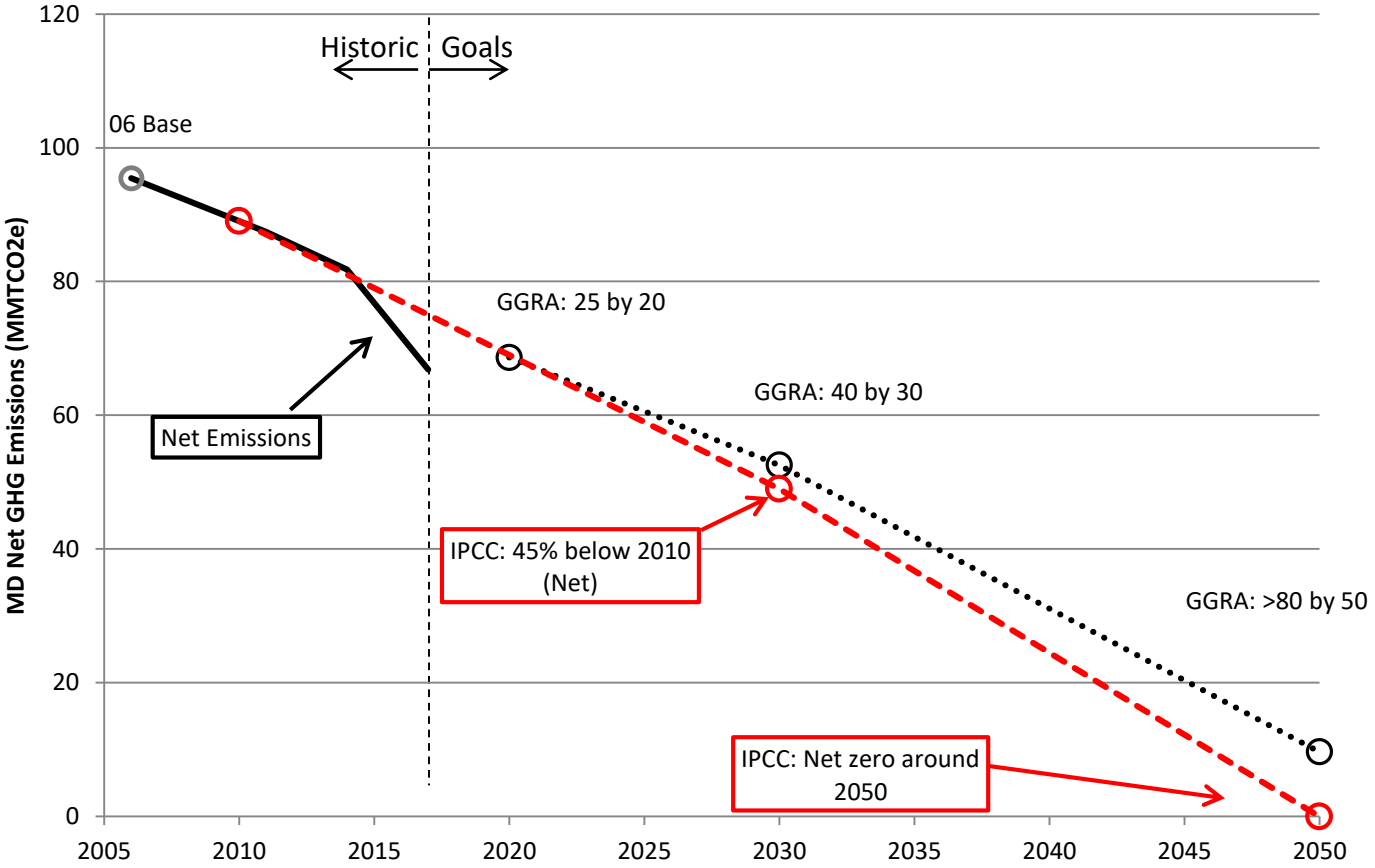
- Programs designed to lower GHG emissions can also reduce:
  - Nitrogen oxide
  - Sulfur dioxide
  - Mercury
  - Other toxic metals
  - Diesel exhaust
  - Black carbon

Chesapeake Bay Restoration Benefits

- 1/3 of nitrogen pollution in the Chesapeake Bay comes from air pollution (nitrogen oxide)
- The Plan's strategies to reduce GHG emissions also reduce Nitrogen deposition to the Bay
- Slowing the rate of sea level rise can have a positive impact on the Bay's flora and fauna by reducing sediment loads and improving habitat quality

Increasing Urgency to Limit Climate Change

Recent findings from the IPCC, the National Climate Assessment, and UMD point to increasing urgency to reduce emissions, even beyond GGRA Goals.



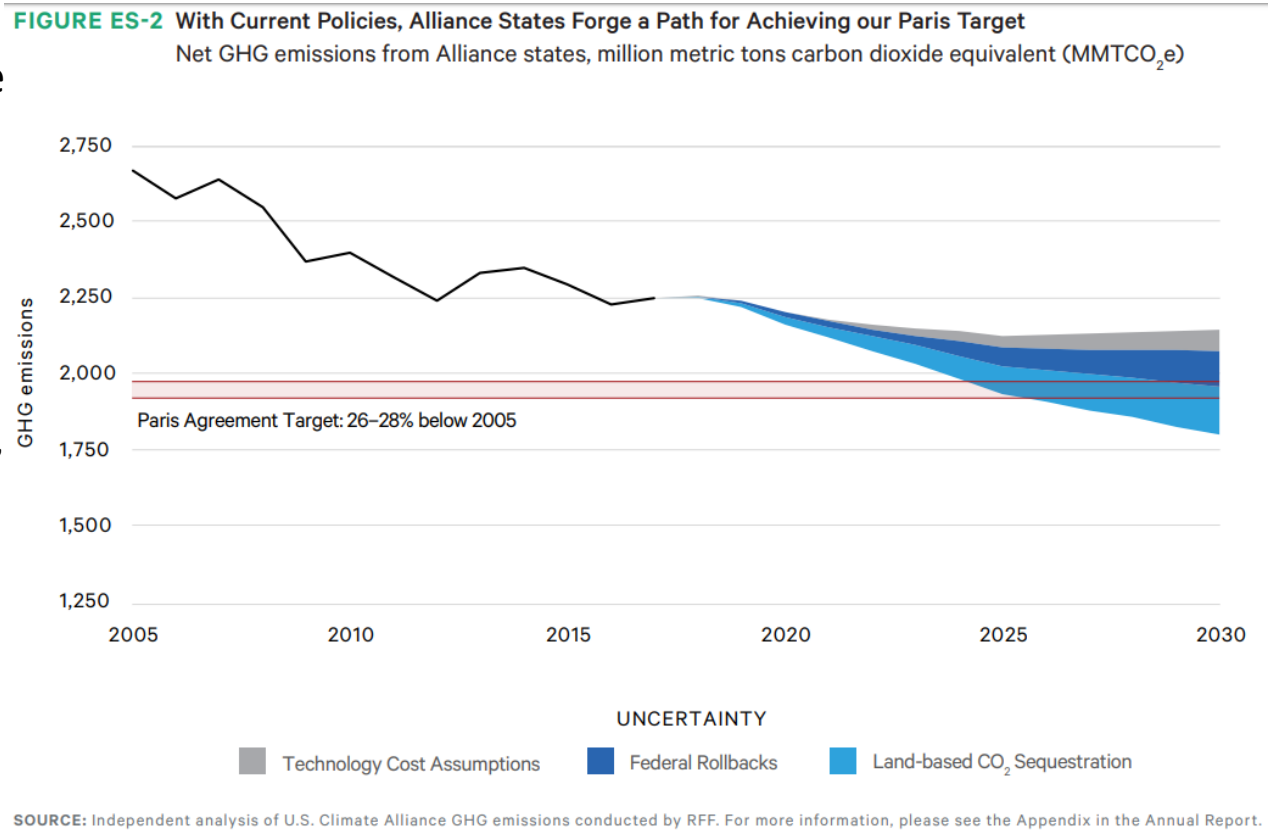
Climate Action: Federal and State

- How does Maryland reduce in-state GHGs?
  - Greenhouse Gas Emissions Reduction Act
  - SLCPs (e.g., HFCs)
- Partnerships
  - United States Climate Alliance (USCA)
  - Regional Collaboration (RGGI, TCI)
- Federal Programs
  - Legal Challenges

US Climate Alliance

Maryland joined the Alliance in 2018 (now 25 states)

- Mission: meet US commitment in Paris Climate Agreement (reduce GHG emissions 26-28 percent below 2005 levels by 2025)
- Maryland is working with other states on short-lived climate pollutant reductions, including HFCs and methane



2019 USCA Annual Report: www.usclimatealliance.org/

Background on SLCPs

- SLCPs are powerful climate forcers that remain in the atmosphere for a much shorter period of time than carbon dioxide (CO2)
- Methane (CH4) and hydrofluorocarbons (HFC) are short-lived climate pollutants (SLCPs)
- Their relative potency, when measured in terms of how they heat the atmosphere, can be tens, hundreds, or even thousands of times greater than that of CO2
- SLCPs may be responsible for about 40% or more of global warming experienced to date [1]
- Reducing emissions of SLCPs is the most effective way to immediately slow global warming and reduce the impacts of climate change, and it can be accomplished quickly and cost-effectively

[1] http://igsd.org/documents/PrimeronShort-LivedClimatePollutantsFeb192013.pdf

Maryland is on Track

- Progress made through implementation of the *2019 GGRA Draft Plan* will position the State to achieve longer term goals like reducing GHG emissions between **80 percent** and **95 percent** from 1990 levels by 2050
- Maryland is on a path that reduces risk from climate impacts and positively impacts the economy
- Maryland aims to incorporate additional strategies to meet aggressive GHG reduction goals:
  - A Clean and Renewable Energy Standard (CARES)
  - Regional partnerships like RGGI (and potentially TCI)
  - Enhanced sequestration programs
  - HFC and methane regulations

Today's Proposed Regulations

- The two regulations that will be discussed next are Maryland initiatives to begin to address SLCPs and to push for even deeper reductions than the approximate 44% reduction in the draft GGRA Plan
  - Hydrofluorocarbons (HFCs) and Methane
- Both part of our partnership with other USCA states
- Future Maryland SLCP initiatives include
    - Methane from other source sectors
    - Black Carbon