



**MDE Maryland Department of the Environment**

---

# The Greenhouse Gas Emission Reduction Act

*Where We Do We Go From Here?*



Progress, Next Steps and the Critical Decisions  
During the 2016 General Assembly Session

Tad Aburn, Air Director, MDE  
Mitigation Working Group Meeting – July 16, 2015



# Overview

---

- Background
- Current Status
- Where to go next
- Discussion



# Background - Earliest Actions

- 2006 – Maryland Healthy Air Act
  - Multi-pollutant power plant reductions
  - Set up a process that lead to Maryland becoming a member of the Regional Greenhouse Gas Initiative (RGGI) in 2007
- 2007 – Maryland Clean Cars Act
  - Comprehensive effort to reduce a host of emissions from vehicles
  - Toughest standards allowed by law
  - Significant greenhouse gas (GHG) emission reductions

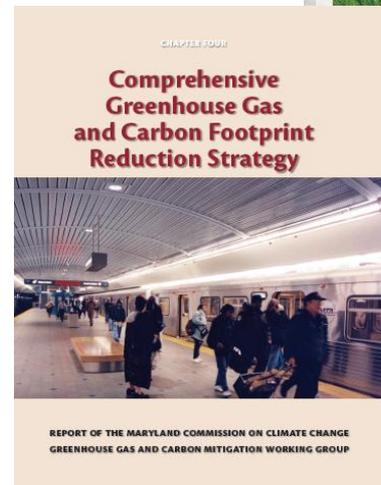
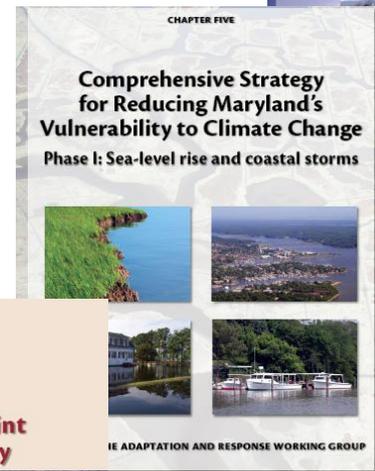
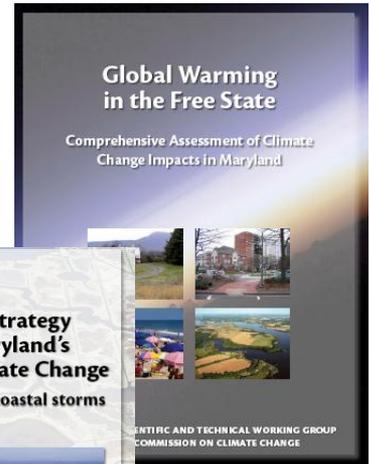


- Established in 2007 by Executive Order
- Cabinet Secretaries and six members from the General Assembly
- Charged with addressing Maryland's climate change challenge on all fronts
- Three specific areas of concern:
  - Mitigation (MDE)
  - Adaptation (DNR)
  - Science and effects in Maryland (UMD)
- Mandated that a State Climate Action Plan be developed by 2008



# The Climate Action Plan

- Finalized in August, 2008
- Includes reports from the three Working Groups
- Addresses Five Sectors:
  - Energy Supply
  - Residential, Commercial, and Industrial
  - Transportation and Land Use
  - Agricultural, Forestry, and Waste
  - Cross Cutting
- Other sections on:
  - The cost of inaction
  - Maryland's effort into a future Federal program



# The Greenhouse Gas Emissions Reduction Act

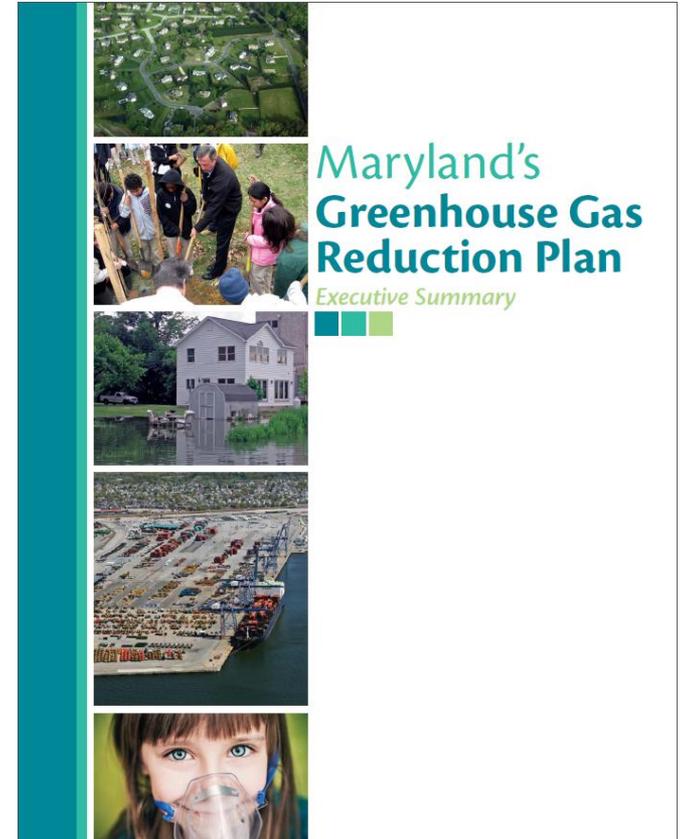
... of 2009

- The Greenhouse Gas Emission Reduction Act (GGRA) signed into law in April 2009
- Requires the State to develop and implement a Plan to reduce GHG emissions 25% from a 2006 baseline by 2020
- Must have a positive impact on Maryland's economy and jobs
- Climate Action Plan used as a "roadmap"



# GGRA – The 2012 Plan

- The Plan is comprehensive, multi-sector, and involves multiple State agencies
- Implementation of the 150-plus programs and initiatives described in the Plan will achieve 25% reduction required by GGRA
  - Must reduce Maryland's GHG emissions by 55 million metric tons of carbon dioxide-equivalent (MMtCO<sub>2</sub>e) annually
    - This reduction includes offsetting growth that is expected to occur between 2006 and 2020



## *Jobs, the Economy, Science Updates and More*

- Earlier analyses project that the Plan would result in estimated economic benefits of \$1.6 billion and support over 37,000 jobs ... being updated
- Provides an update on climate change science
  - Based on materials provided by the University of Maryland Center for Environmental Science
    - Included an update on the cost of inaction in Maryland based on materials provided by the University of Maryland Center for Integrative Environmental Research.



# More Recent Activities

- 2014: Executive Order  
01.01.2014.14
  - Signed on November 19, 2014
  - Expanded the mission and membership of the Maryland Commission on Climate Change
  - Added new tasks
- 2015: Senate Bill 258
  - Maryland Climate Commission Act of 2015
  - Now in law - Maryland Commission on Climate Change now in statute
  - Similar to EO, but adds new members and new tasks





# Critical Upcoming GGRA Activities

- Totally separate from the E.O. and SB 258, the GGRA of 2009 also requires major efforts in late 2015
  - By October 1, 2015 MDE must submit a report to the Governor that includes:
    - A summary of the State's progress toward achieving the 2020 emissions reduction goal.
    - An analysis of the overall economic costs and benefits to the state's economy, environment, and public health of a continuation or modification of the requirements to achieve a 25% reduction.
    - Recommendations on the need for adjustments to the requirement to reduce statewide GHG emissions by 25% by 2020.
    - A review of best available science regarding the level and pace of GHG emissions reductions and sequestration needed.
    - An update on emerging technologies to reduce GHG emissions.
    - A summary of additional revised regulations/control programs/incentives that are necessary to achieve the 25% reduction goal.
    - The state of any federal program to reduce GHG emissions.
- In 2016, the General Assembly must take an action to keep, change or enhance the goals of the GGRA or the laws requirements sunset



# Where to Go From Here?



- Four basic questions
  - How are we doing with achieving the GGRA goals for 2020?
  - What might we want to do to improve the 2020 effort?
  - Where do we want to go beyond 2020?
  - What else have we learned over the past 10 years?



# Some Preliminary Ideas From MDE Staff

- Based upon last ten years of developing, implementing and analyzing the GGRA
  - Also looking at what is going on in other states and other countries
- Staff level thoughts ... designed to generate discussion
  - Does not represent MDE or State policy
- Key building blocks
  - What made the 2009 GGRA work so well in the General Assembly?
  - What we have learned over the past 10 years?
  - Where is the science leading us?
  - What is happening in other states?



# Getting to 2020 Goals

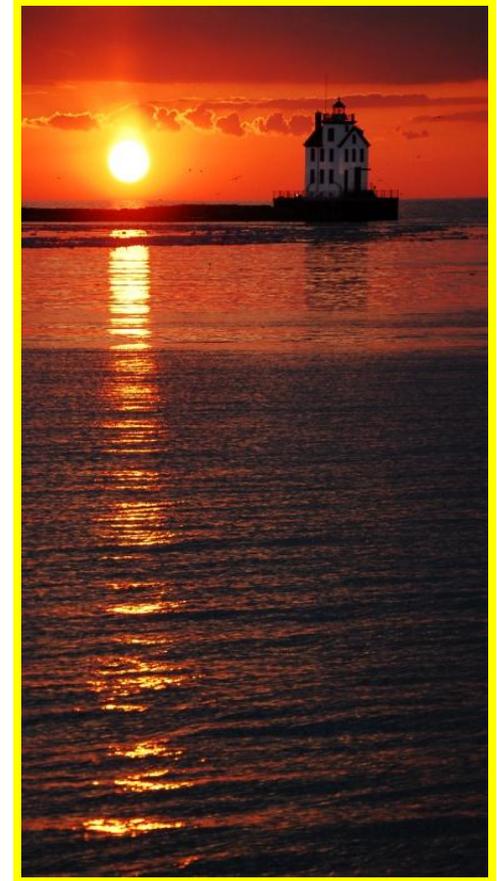
- 25% reduction by 2020
- We will make it or be very, very close
- Programs have helped, but market driven changes have also helped in a significant way
- This is not unexpected !!!



# Predicting the Future ...

... is always a challenge

- When MDE built the 2020 Plan we knew that market forces were driving change in several key “predicting the future” areas
  - Two examples
    - The role of natural gas in the energy market
    - The trends in vehicle use that indicate that the growth in “Vehicle Miles Travelled” ... or VMT ... is beginning to decrease ... not increase



# Building the Plan ...

## ... versus the “True Up”

- When MDE built the 2020 Plan, like all of our plans that try and predict the future, we generally use best estimates of growth based on the past - not emerging trends
  - That is what we did
- During true up, the best estimates often capture those trends
  - That is what we are doing
- Again, it appears that we will be meeting or exceeding the 2020 goal
  - At a minimum, we will be very, very close



# So What Do We Do ...

## ... about the GGRA 2020 Goal?

- Declare Victory !!!
  - At least a modest victory
- But also use the Commission process and the October 2015 GGRA report to
  - Identify additional enhancements that can create jobs and strengthen Maryland's efforts on economic development
  - While also helping further our GHG efforts
- Remember, the 25 by 20 in the GGRA was a target ...
  - If more can be achieved in a way that creates jobs and fosters economic prosperity - we should do that



# What About Post 2020 Goals?

- The science is clearly pushing for deep reductions
  - Something like 70% to 80% reduction ... world-wide by 2050 ... or earlier
  - Not terribly different from where we were when the GGRA was adopted in 2009
- The GGRA and other leadership states moved forward with a “first step” towards those deep goals in 2050
  - GGRA ... 25% reduction by 2020
  - Other states and nations adopted very similar “progress” steps
- What should the next step in that progress be?



# 40% by 2030?

- Maybe 45% if from a 2006 base
- Generally consistent with other states
  - Red and Blue leadership states
- Consistent with international discussions
- An aggressive goal ... but one that you can identify a feasible path forward to get to
  - Federal vehicle and fuel efficiency standards provide deeper and deeper reductions as time marches on and the older fleet turns over
- U.S. target - 28% by 2025 from 2005



# 2030 Target - Goal, Mandate or Aspiration?

- Use the current GGRA policy as a model
  - Set 40 by 30 as a goal ...
  - But have the General Assembly confirm , strengthen or otherwise adjust the goal during a mid-course check-in
- Getting to the goal should continue to be tied - strongly tied - to improving the States economy and creating new jobs
  - Having this linkage be even stronger than the current law may be a smart concept in 2016
- Timing
  - Can logically build from the current GGRA schedule



# Potential Timing

- October 2015 - MDE submits GGRA report to Governor and General Assembly
  - Includes a recommendation on a path forward
- General Assembly takes action in 2016
- How it might work:
  - 2019 - MDE (with the Commission's guidance) develops and submits a 40 by 30 Plan to the Governor and General Assembly
    - Major focus on jobs and the economy
    - Also includes a status report on 25 by 20
  - 2020 - Implementation of the 40 by 30 Plan begins
  - 2025 - MDE owes a status report to the Governor and the General Assembly on progress in reducing GHG emissions and how the plan is fostering economic development opportunities and creating new green jobs
  - 2026 - General Assembly (just like the 2016 process) must confirm or adjust the 2030 target to keep the requirements of the law in place ... if no action ... the law sunsets !!!



# What Else Have We Learned?

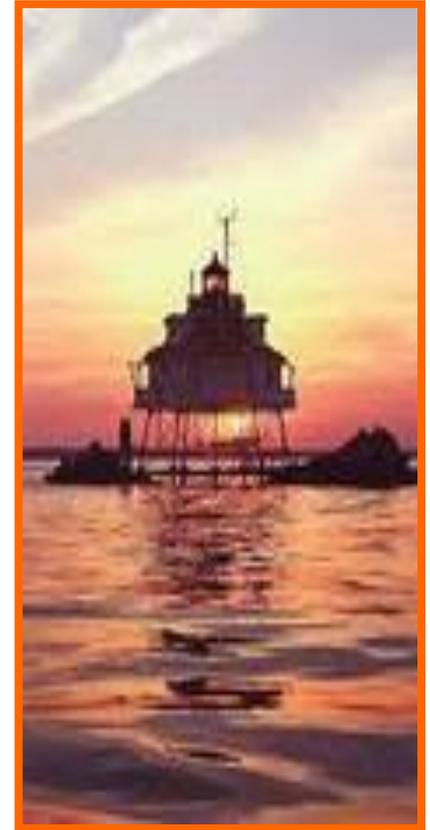
- We have been doing this work now for over 10 years
- We have learned a lot about what makes both technical and policy sense
- Four key areas where it may be good to massage our current process a bit
  - Drive the Plan more, much more, by economic development and jobs
  - Consider an initiative to look at “faster acting” GHGs
  - Push “Green Financing on Steroids”
  - Regional Approaches and Partnerships
    - Acknowledge and build from the concept that deeper reductions in Maryland will be enhanced significantly (and maybe only possible) if supported by national, regional and local partnerships



# The Economic Development ...

## ... and Greenhouse Gas Emission Reduction Act of 2016?

- Why not?
- Economic development and jobs are absolute priorities
- Why can't the next GHG Plan look as much like an element of the State's economic development plan as an environmental plan
- There are huge economic development and job opportunities linked to the significant changes taking place in the energy world and in the transportation sector
- Maryland should tap into these opportunities and use them as a way to find win-win-win solutions
- A prime time role for DBED?



# Faster Acting Climate Changers

- Or “Short Lived Climate Pollutants” (SLCPs)
  - Methane, black carbon, fluorinated gases
  - Lifetimes of a few days to a few decades
- Most of our work to date has focused on reducing CO<sub>2</sub> ...
  - Largest GHG emission, but very long lifetime (approximately 100 years)
- SLCPs are responsible for about 40% of global warming experienced to date
- The message from the scientific community is to move more quickly ... on all fronts ... if possible
  - Reducing SLCP emissions can make immediate impact on mitigating climate change
  - Mitigation of SLCPs is complementary to long-lived pollutants (e.g. CO<sub>2</sub>) mitigation



# Green Financing on Steroids

- Most, if not all climate strategies suffer from one key roadblock:
  - Up front costs get in the way of long term economic benefits and savings
- The financial world is now very tuned in to climate change ... and worried
  - Take a look at coastal insurance rates
  - There is also an evolving philanthropic or ... “we’re all in this together” movement
- The need for creative, innovative, smart, profitable financing is a critical game-changer in the GHG reduction world
- Strongly suggest a financing focused group be made an extremely high priority



# Regional Approaches and Partnerships

## How far can we get ... going it alone?

- Clearly not as far as we can get if linked to regional or national efforts
- In-state efforts are great, but the next phase of the GHG effort will need a new emphasis on regional partnerships
- It is also clear that implementation works best through local partnerships
- These realities are being seen almost everywhere GHG reduction efforts are being discussed ... Power Plants ... Transportation ... Everywhere
  - A bit chaotic right now, but the recognition of the need for partnerships is clear
- This would not be “waiting” for others to do regional or local efforts ...
  - Would be building regional & local partnership concepts into our state action plan





# In Summary

- Declare victory on the 2020 plan to achieve 25 by 20?
  - Identify economic development and job creation opportunities to enhance the 2020 plan?
- Establish a 40 by 30 goal for the state?
  - More aspirational and more explicitly linked to economic prosperity and new jobs?
- Should we add a few new bells and whistles to reflect current thinking?
  - More economics, fast acting climate changers, creative financing and regional and local partnerships?

## Key Discussion Items

1. The 2009 GGRA legislation was based upon a facilitated stakeholder discussion that generated a consensus on the law. It worked extremely well. The law passed with bipartisan support. Should a similar process be considered in advance of the 2016 Session?
2. Key Issues:
  - 40 by 30 or something different?
  - Aspirational goal, mandatory limit or something in between?
  - Increased focus on jobs and the economy?
  - Same path as 2009 law?
    - MDE Plan, implement, mid-course check-in by the General Assembly?
  - Add new “lessons learned” from past 10 years?

# In Summary

- We should declare victory on the 2020 plan to achieve 25 by 20
  - We should identify economic development and job creation opportunities to enhance the 2020 plan
- We should establish a 40 by 30 goal for the state
  - More aspirational and more explicitly linked to economic prosperity and new jobs
- We should add a few new bells and whistles to reflect current thinking
  - More economics, fast acting climate changers and regional programs

