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The Maryland Commission on Climate Change

Where we have been … Where we need to go

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Maryland Commission on Climate Change Orientation

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Presentation Overview

- The Maryland Commission on Climate Change (MCCC)
- The Greenhouse Gas Emission Reduction Act (GGRA)
  - 2009 and 2016
- What have we accomplished to date?
- What do we know about the future …
  - And deeper reductions?

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Maryland Commission on Climate Change

- Originated in 2007
- Developed 2008 Maryland "Climate Action Plan"
- This lead to the "Greenhouse Gas Emission Reduction Act" of 2009 or GGRA
- Commission codified into law in 2015
  - Recommended enhancements to the 2009 GGRA in December of 2015
- GGRA of 2016 signed into law in April 2016
- Basic charge of the Commission:
  - Provide recommendations on how to reduce greenhouse gas emissions and adapt to the impacts of climate change

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Working Groups of the MCCC

- The MCCC is supported by 4 Working Groups
  - The Adaptation and Response Working Group (ARWG)
    - Purpose - to recognize, prepare, and adapt to the adverse effects of climate change
    - ARWG has outlined four main challenges:
      - Reducing impact to exiting built environments, as well as to future growth and development
      - Shifting to sustainable investments and avoiding financial and economic impact
      - Enhancing preparedness to protect human health, safety, and welfare
      - Restoring and protecting Maryland's natural resources and resource-based industries
  - The Scientific and Technical Working Group (STWG) addresses 5 main goals
    - Update the Climate Impacts Report based on emerging science, accompanied with an increased focus on economy, revenues, and investment decisions
    - Provide scientific and technical support for adaptation strategies (for ARWG)
      - Contribute information and analysis in support of the Commission's Comprehensive Action Plan to achieve science based reductions in Maryland's Greenhouse Gas Emissions
    - Improve technical effectiveness of inventory of GHG emission sources and sinks
    - Ensure sound scientific basis for communication and education

Working Groups - Continued

- The Education, Communications, and Outreach Working Group (ECO) is to assist the MCCC in engaging, educating, and communicating with stakeholders by:
  - Advising on communications strategies for cohesive and strategic outreach to the Commission's diverse stakeholders and Maryland citizens
  - Identifying and advising on opportunities for diverse stakeholder and citizen engagement
  - Providing tools and advising on best management practices for educating various sectors on complex climate change ideas
  - Educating, communicating, and providing outreach on issues related to climate change and the GGRA

- The Mitigation Working Group (MWG)
  - To provide recommendations to the MCCC on strategies to reduce greenhouse gas emissions and other mitigation strategies and support the State's efforts to meet the requirements of the 2009 and 2016 GGRA

Greenhouse Gas Emission Reduction Act

- Originally adopted in 2009
- Required that Maryland develop and implement a plan to reduce greenhouse gas (GHG) emissions by 25% by 2020
- The law also requires that the plan support a healthy economy and create new jobs
- Required a status report/update from MDE in October of 2015
  - The update report summarized
    - Emission reductions
    - Economic benefits and jobs
    - How to move forward
    - Numerous other issues

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The 2015 MDE Update Report

- Generally good news and a path forward
  - The GGRA Plan appears to have us on a pace to meet the 25% reduction by 2020 GHG emission reduction requirement
  - We have achieved these reductions in a way that has a positive impact on Maryland's economy and on job creation
  - The state should move beyond the 2020 GHG goal by adopting a "next step" of incremental progress towards the deeper reductions needed by 2050
    - This next phase should include an increased focus on a healthy economy and generating more jobs in Maryland
  - There are emerging issues that should be built into ongoing and future planning and analyses
    - Methane leakage, fast acting climate changers, increasing efforts on resiliency, etc.

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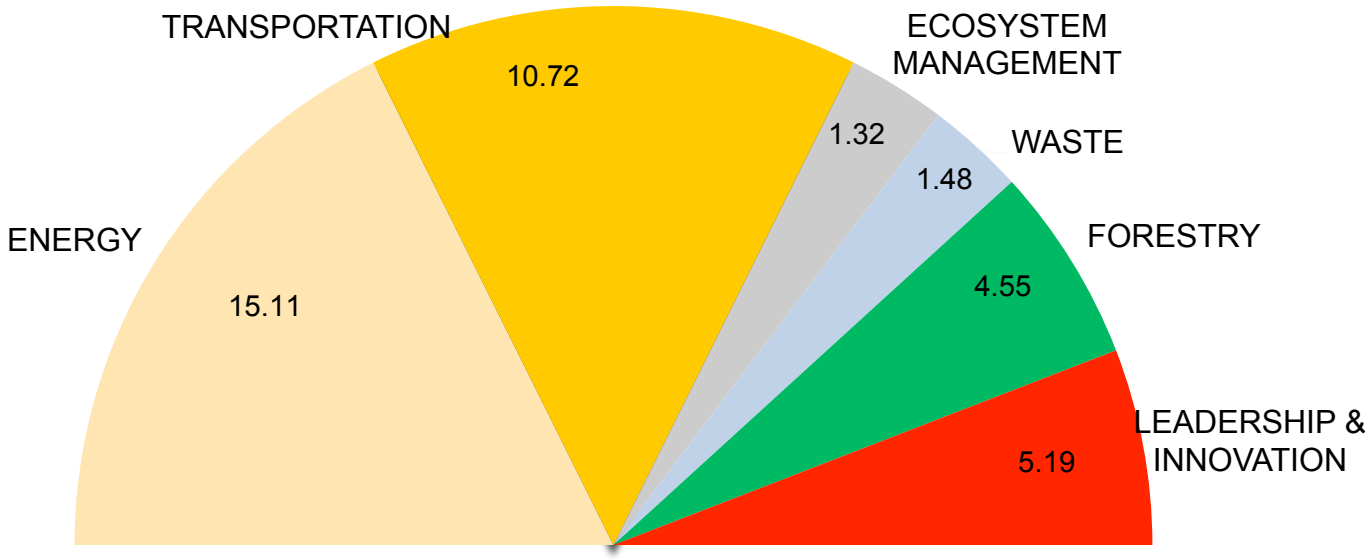
GGRA 2020 Requirement
The Bottom Line

- The 25% by 2020 Reduction Requirement = 34.36 $MMtCO_2e$*
- Reductions expected by 2020 = 38.37 MMtCO2e



CO2 Emission Reductions by Sector (MMtCO2e)

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* MMtCO2e = Million Metric Tons of Carbon Dioxide Equivalents

Economic Benefits and Jobs

- The 2015 GGRA Plan Update includes refined estimates of the economic benefits and job creation driven by the Plan
- Also includes real world examples of economic benefits and job creation
- Win, Win, Win programs are abundant – programs where we see reductions in GHG emissions, net economic benefits and additional new jobs

	2015 GGRA Update
Net Economic Benefit in 2020	$2.5 to $3.5 Billion in economic output
Jobs Created and Maintained in 2020	26,000 to 33,000 jobs

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The Commission's 2015 Report

- Builds from MDE 2015 Update Report
- Finalized in December of 2015
- Key recommendations included in the MCCC's 2015 report include:
  - The State should develop and implement a plan to achieve a 40% reduction in GHGs by 2030
  - This plan should increase the focus on achieving those GHG reductions in a manner that improves the States economy, creates and protects jobs and protects consumers
  - Any legislation to implement a 40% by 2030 requirement should maintain the framework and safeguards provided in the 2009 GGRA

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The GGRA of 2016

- Reauthorized and enhanced GGRA of 2016 signed into law on April 4, 2016
- Builds from the recommendations of the MCCC
  - Senator Pinsky and Delegates Stein and Barve sponsored and shepherded identical bills that moved steadily and smoothly through the General Assembly
  - Many other MCCC members played critical roles
- Core elements of new law
  - 40% reduction by 2030
  - Must support a healthy economy and create new jobs
  - Maintains structure and safeguards from 2009 law

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GGRA - A Balanced Approach to Address Climate Change

- The law continues to include a balanced set of requirements and safeguards
  - GHG emission reductions, economic progress, new jobs and more…
- Key safeguards include:
  - Manufacturing sector not covered unless through a federal rule
  - Mid-Course status report from MDE on greenhouse gas (GHG) emission reductions, jobs and the economy
  - Mid-Course reaffirmation of goals by the General Assembly
    - … or the law sunsets

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Other Critical Balancing Provisions

- Reauthorized GGRA maintains all of the key issues that are part of the balance that allowed the 2009 and 2016 legislation to pass with support from all interested parties

- For example, the 40 by 30 Plan must:
  - Produce a net economic benefit to the State's economy & a net increase in State jobs
  - Encourage new employment opportunities in the State related to energy conservation, alternative energy supply, and greenhouse gas emissions reduction technologies.
  - Ensure that the plan does not decrease the likelihood of reliable and affordable electric service and statewide fuel supplies

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More Balance

- The 40 by 30 Plan must also:
  - Not disproportionately impact rural or low–income, low–to-moderate–income, or minority communities or any other particular class of electricity ratepayers
  - Not directly cause the loss of existing jobs in the manufacturing sector
  - Consider the impact on rural communities of any transportation related measures
  - Provide credit for voluntary action
  - Consider whether the measures would result in an increase in electricity costs to consumers in the State
  - Attract, expand and retain aviation services
  - Conserve, protect, and retain agriculture
  - Minimize leakage

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The Basic 40 by 30 Schedule

- 2016, 2017 and 2018 - MDE, other State agencies, MWG and stakeholders research and build the 40% by 2030 reduction plan
  - Stakeholder meetings across the State
- December 31, 2018 - Draft plan to Governor and General Assembly
- December 31, 2019 - Final plan to Governor and General Assembly
- October 1, 2022 - MDE owes mid-course status report
  - Emission reductions
  - Jobs, the economy … more
- October 1, 2022 – Manufacturing study due
- December 1, 2023 – Law terminates if not reauthorized

40 by 30 - What Do We Know?

- Many of the control programs in the current "25% by 2020" plan will continue to generate deeper reductions as they are implemented through 2030
  - Mobile source measures will be critical as federal rules kick in and fleets "turn over"
  - Energy sector reductions should also continue to increase
- Other factors should also be helpful in getting to 40 by 30
  - As we continue to improve reduction estimates, we may be able to use less cautious discount factors for projected benefits
    - We currently discount the credit for many measures by 30%
  - Natural gas and travel trends continue to be interesting

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Transportation Sector

Key mobile source programs that will drive significant post-2020 reductions

State and Federal Mobile Source Programs
The Maryland Clean Cars Program
Federal Light Duty Fuel Economy (CAFÉ) Standards (2012 to 2016)
Federal Tier 3 Vehicle and Fuel Standards (2017 to 2025)
Federal Phase 1 Medium and Heavy Duty GHG Standards (2014 to 2018)
Federal Renewable Fuel Standards
Federal Phase 2 Medium and Heavy Duty GHG Standards (proposed)
Federal GHG Reductions from Aircraft (just starting)

Energy and Other Sectors

Key Programs that will drive post-2020 reductions

Energy Sector
Regional Greenhouse Gas Initiative (RGGI)
Potential Clean Power Plan/CPP (inside Maryland and in states that Maryland imports energy from)
Empower Maryland/PSC 2015 Energy Efficiency Goals
Renewable Portfolio Standard

Other Sectors
Forestry and Sequestration
Building Codes and Trade Codes
Leadership by Example/Partnerships

New and Enhanced Programs

... that may be a critical piece of post-2020 reductions

New
Short-Lived Climate Pollutants
Creative Financing
Enhanced State/Local/Federal Partnerships

Lower Hanging Fruit Enhancements
Zero and Electric Vehicle Efforts - Electric Vehicle Infrastructure Council Transportation Climate Initiative (TCI)
Continued Efforts on Energy Efficiency and Renewable Energy Initiatives
Sequestration Efforts
Zero Waste and Recycling Efforts

MDE Initial Projection

... the challenge of 40 by 30

	Estimated Reductions Needed *Most Optimistic*	Estimated Reductions Needed *Least Optimistic*
Reductions needed by 2030 to achieve a 40% reduction (with different growth assumptions)	57 $MMtCO_2e$	61 $MMtCO_2e$
Rough, preliminary estimate of where we will be with 40 by 30 based upon programs that are in the works	**-2 $MMTCO_2e$ (surplus - more than 40 by 30)**	16 $MMtCO_2e$ (additional reductions needed)

$MMtCO_2e$ = Million Metric Tons of Carbon Dioxide Equivalent

Climate Commission Web Site

http://www.mde.state.md.us/programs/Marylander/Pages/mccc.aspx

- Also a direct link from MDE Home Page
- Membership
- Meetings
- Working Groups
- Commission documents
- Interesting articles and documents from external sources
- More

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Questions?

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