



Maryland
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Status Report

Draft 40 by 30 Plan



Brian Hug
Mitigation Working Group Meeting
February 1, 2018

Presentation Overview



- Progress to date
- 40 by 30 Basics and Schedule
- Next Steps



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On Track for Continual Progress

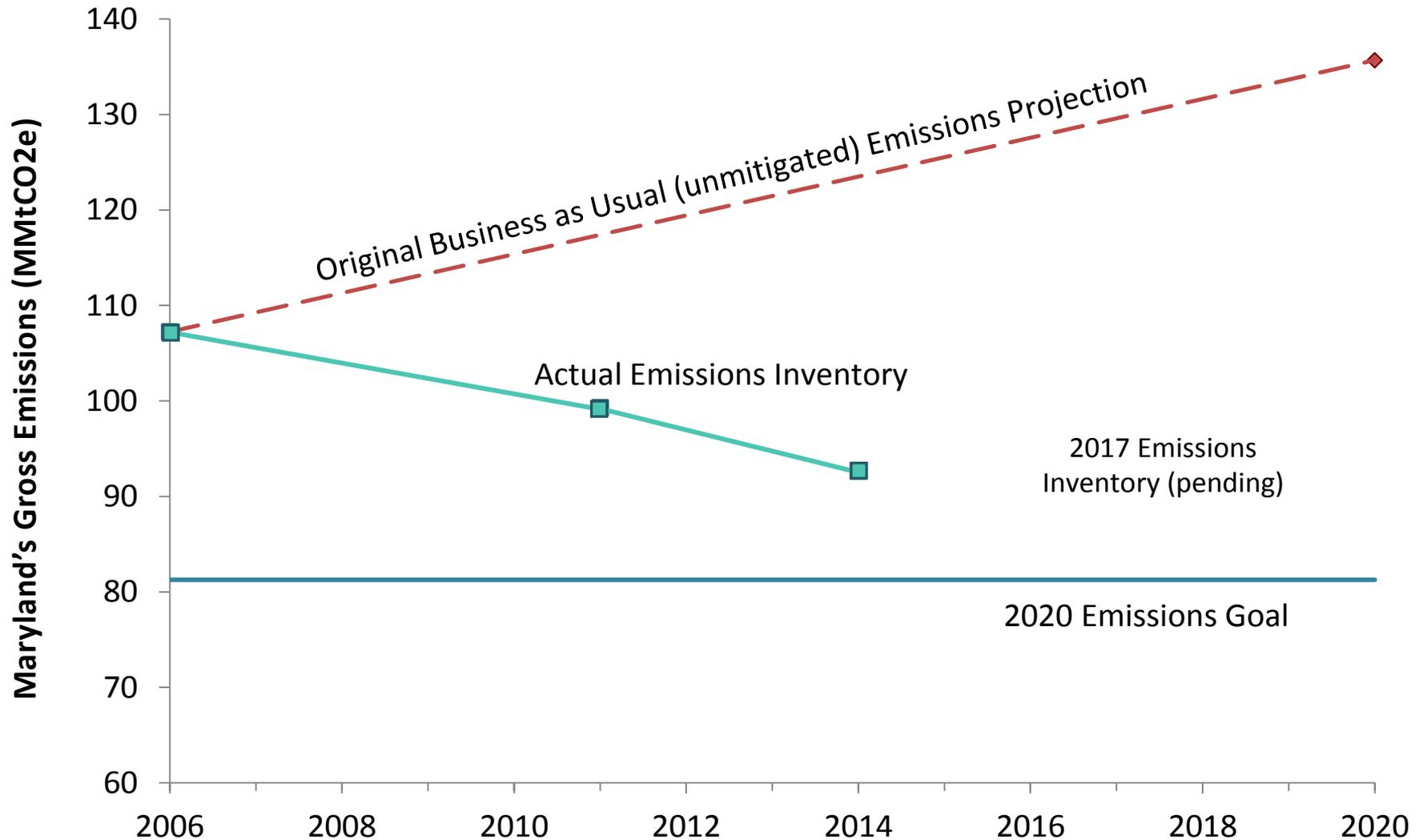
Maryland has always been a leader in tackling climate change. We are on track to meet or exceed existing goals, and well positioned to continue this progress and maintain our leadership role into the future.

- The Greenhouse Gas Emissions Reduction Act (GGRA) of 2009 and 2016 set goals for 25% reduction in GHG emissions by 2020, and 40% by 2030
 - On track for 25 by 20
 - Many programs will continue to provide reductions towards 40 by 30
- Leading in the implementation and continued success of the Regional Greenhouse Gas Initiative (RGGI), with a strong commitment to expansion and future pollution reduction
- Joining our colleagues in the Climate Alliance to collaborate on aggressive but balanced climate action



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Progress Towards 25% by 20



The Greenhouse Gas Emissions Reduction Act (GGRA)

- Original GGRA adopted in 2009
 - Reauthorized and enhanced in 2016
- Core elements of the law
 - 25% reduction by 2020 (2009 law)
 - 40% reduction by 2030 (2016 law)
 - Must produce a net economic benefit to the State's economy and a net increase in jobs in the State
 - Many other safeguards



Photo by Matt Rath/Chesapeake Bay Program



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Key Safeguards in the GGRA

- Manufacturing sector not included in the Plan unless required by 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



Jane Hawkey, IAN/UMCES
(ian.umces.edu/imagelibrary)



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Federal Programs

- There is still a great deal of uncertainty regarding what will happen at the Federal level
- Many State and regional programs that Maryland participates in place us in an excellent position to meet our goals regardless



However...

- MDE will update assumptions as information becomes available, and keep the Commission up-to-date
- Some key programs include:
 - The Clean Power Plan
 - Vehicle Emissions Standards
 - The California Car Program



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GGRA Schedule

- 2018 - MDE, other State agencies, MWG and stakeholders research and build 40 by 30 plan
- December 31, 2018 - Draft plan
- December 31, 2019 - Final plan
- October 1, 2022 – Two Studies Due
 - Independent study by institution of higher education on the economic impact of requiring GHG reductions from manufacturing sector
 - Update from MDE on progress towards achieving required reductions and those needed by 2050
- December 31, 2023 – Law terminates if not reauthorized
- October 1, 2027 – MDE owes second progress report if the law is reauthorized



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40 by 30 - What Do We Know?

Many of the control programs in the 25 by 20 plan will continue to generate deeper reductions as they are implemented through 2030

- Mobile source measures will be critical as fleets “turn over”
- Energy sector reductions should also continue to increase



Photo by Will Parson/Chesapeake Bay Program

Other factors should also be helpful in getting to 40 by 30

- As we continue to improve reduction estimates, we appear to be exceeding the 25 by 2020 goal with the current plan
- Energy demand, natural gas, and travel trends continue to be interesting



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Well on our Way with Existing Policies

- Many existing programs and policies will generate reductions through 2030. Major programs include:
 - 25% by 2020 RPS goal
 - ZEV mandate and CAFE standards
 - Energy efficiency goals
- Some programs are designed to get deeper reductions as time passes
 - Most obvious in the transportation sector, as the vehicle fleet turns over and average fuel economy improves



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On-the-Books and On-the-Way

OTB/OTW Programs that will drive post 2020 reductions

OTB/OTW Mobile Source Programs

The Maryland Clean Cars Program

**Federal Light Duty Fuel Economy 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)**

OTB/OTW Energy Sector

Regional Greenhouse Gas Initiative (RGGI)

Empower Maryland

Renewable Portfolio Standard

OTB/OTW Other Sectors

Forestry and Sequestration

Building Codes and Trade Codes

Leadership by Example

Emerging New and Enhanced Programs

Emerging Efforts - Potential Enhancements

**Methane (3 MDE Initiatives and Fracking Ban)
and Black Carbon (Clean Diesel)**

**Electric and Zero Emission Vehicle Initiatives - VW Settlement
(and other MDOT/MDE/MEA initiatives)**

Grid-of-the-Future Proceedings (PSC)

Healthy Soils Initiative (MDA)

Other Sequestration Efforts (DNR)

Waste Diversion and Recycling Efforts (MDE)

**ECO Climate Ambassadors/Climate Champion Initiative
and other Enhanced Partnerships**

Multi-State Transportation and Climate Initiative (TCI)

Three Steps to 40 by 30

1. What will 2030 look like with On-the-Books programs only?
2. What additional reductions are required to meet the 40 by 30 goal?
3. How will On-the-Way programs and emerging strategies close the gap?



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Emissions Model: PATHWAYS



Energy+Environmental Economics

- E3's PATHWAYS model
 - Used by CA & NY for 2030 goal planning
- Representation of energy consuming stock across economic sectors
 - Captures emissions from most inventory categories, but not all



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Business as Usual (BAU) Case

- Projects emissions to 2030 & 2050 under all programs currently on the books
 - This is not a “no policy” reference case
- All major programs together
 - Interactions automatically captured
 - This will not produce program-level reduction estimates
- Primary Question: How much work do we have to do to reach 40-by-30?



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Major Modeled Programs

Modeled in PATHWAYS

1. RGGI
2. EmPOWER
3. RPS
4. Clean Cars
5. Public Transportation
6. Land Use / Smart Growth
7. Green Buildings
8. Other transportation?
9. Grid of the Future?

NOT in PATHWAYS

1. All Agriculture
2. All Forestry/Sinks
3. Waste Reduction / Materials Management
4. Methane
5. Non-energy Land Use impacts

Current
Draft

Add'l
Work

Timeline

Late 2017: Build database and run BAU

Early 2018: Present BAU results, construct policy scenarios

Mid-2018: Run policy scenarios

Late 2018: Present policy scenarios, draft Plan

Macroeconomic impact modeling (REMI), non-energy GHG analysis, and public health analysis will occur concurrently & iteratively.



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Current Draft BAU - Caveats

E3 is presenting preliminary results today.

Upcoming refinements to transportation and non-energy sectors will change the results.

Some programs not included yet.

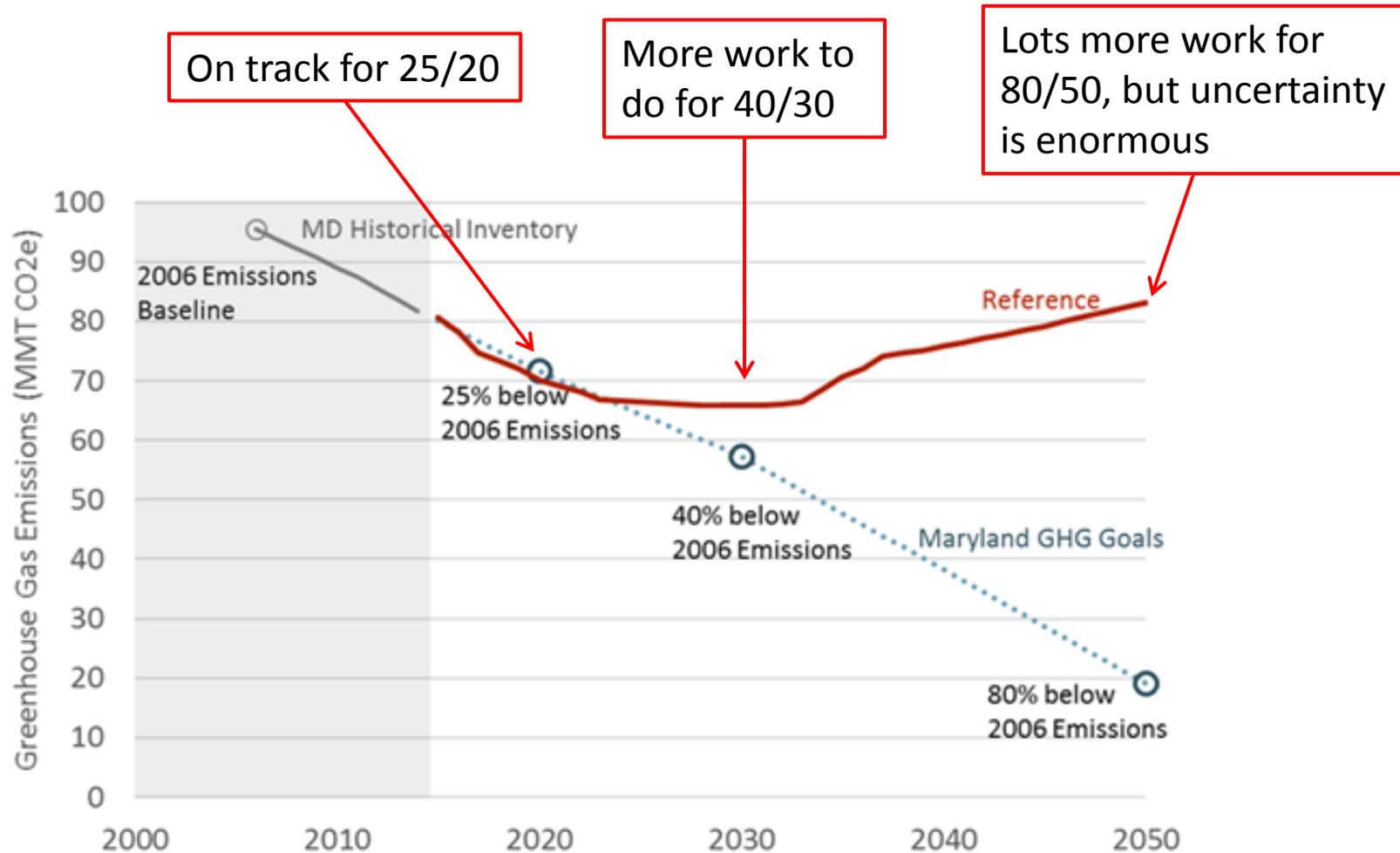
The initial assumptions are conservative.



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Current Draft BAU - Takeaways

Spoiler Alert



Questions?



Photo by Southern Living Magazine



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