



Maryland
Department of
the Environment

Maryland's Greenhouse Gas Emissions Reductions: Progress, Goals, and Plans

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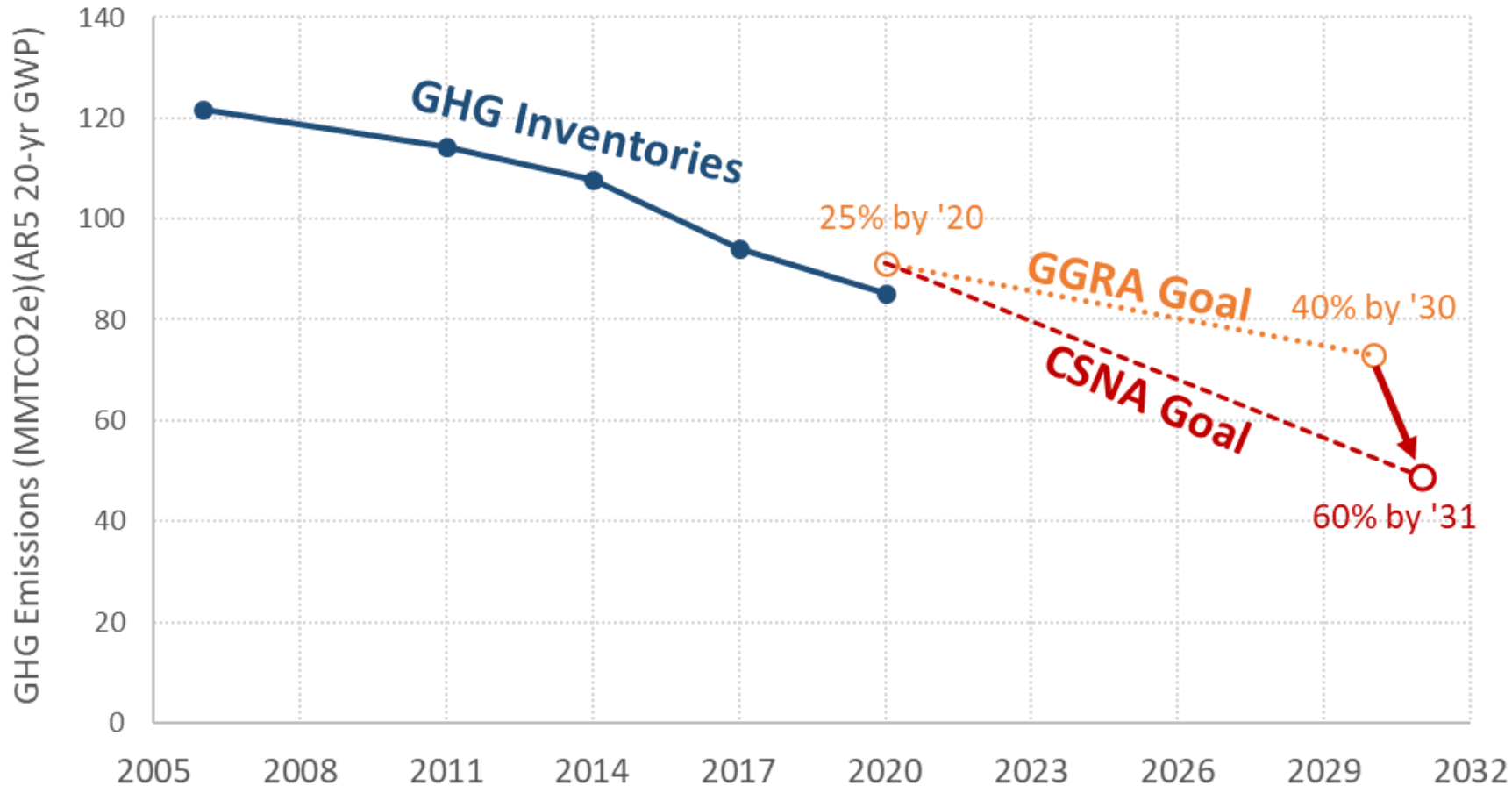
April 25, 2023



Part 1: 2020 Goal Achieved



2020 Goal Achieved



Goal

25% below 2006 levels
by 2020

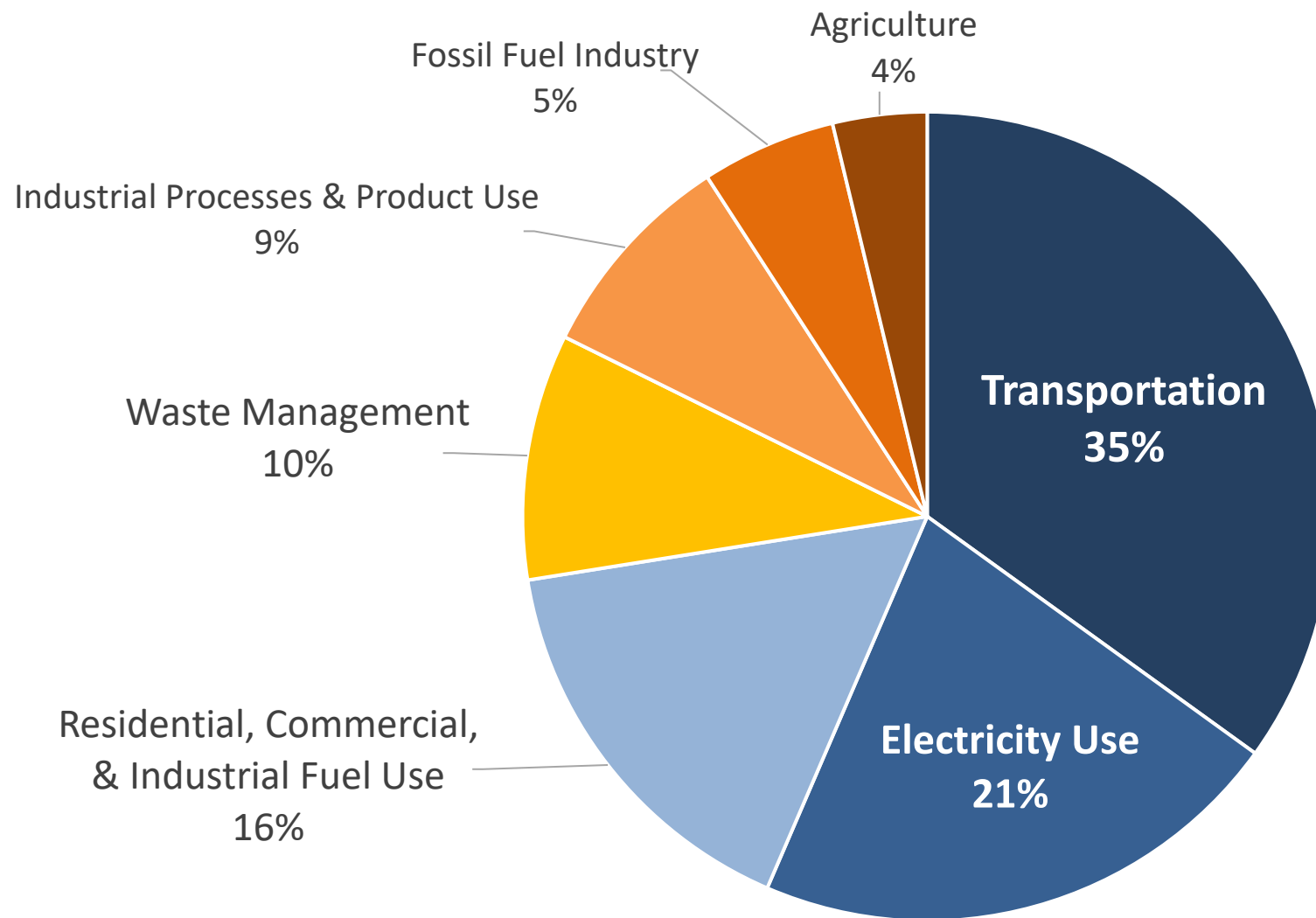
Actual

**30% below 2006 levels
in 2020** (33% below 2006 levels
using the 100-year GWP for GHGs)

Roughly 26% below 2006
levels in 2020 (using the 20-
year GWP) if Maryland had
not experienced COVID-
related travel impacts.

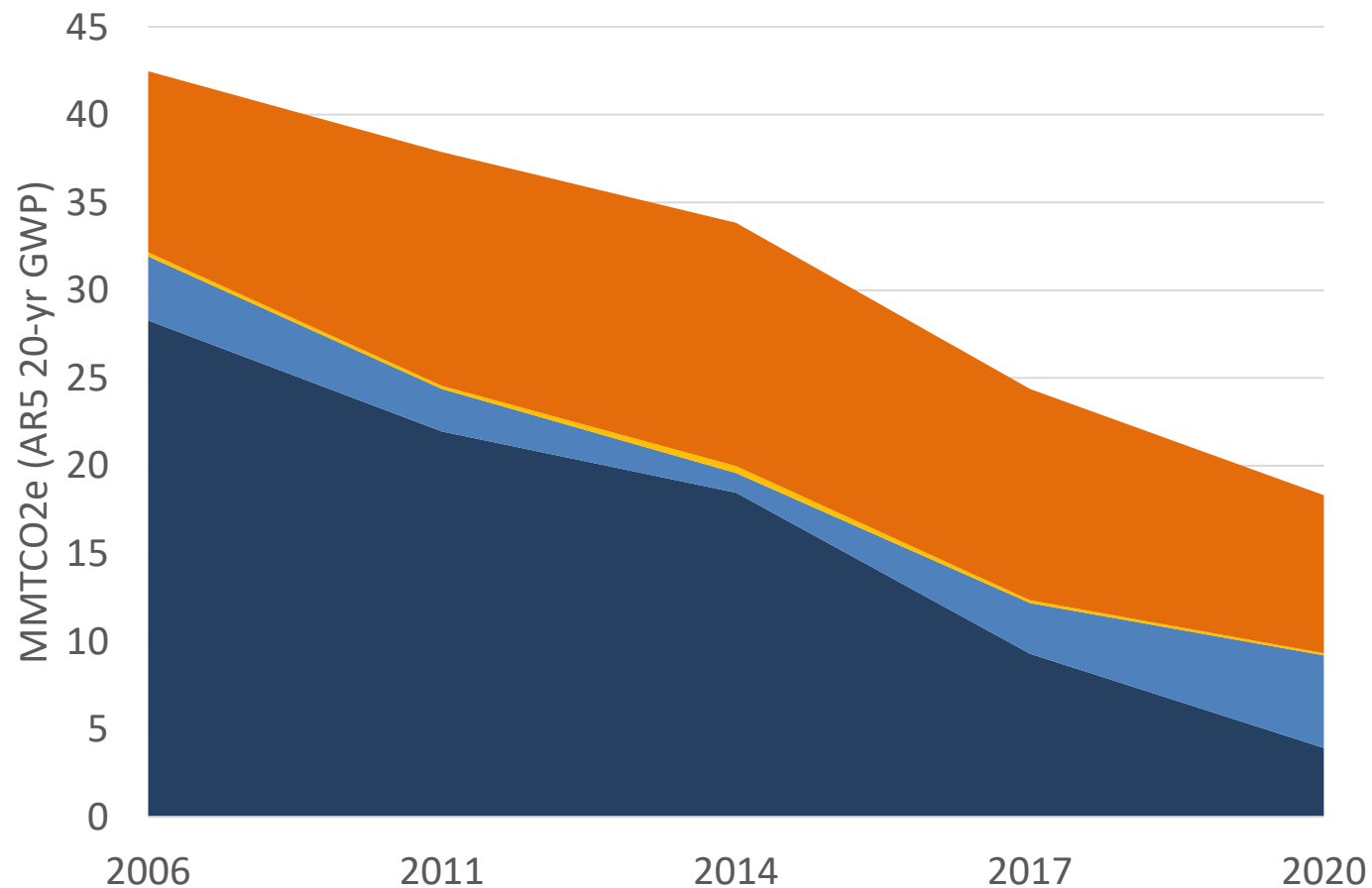


2020 Sector Contributions (20-year GWP)





Electricity Use Emissions

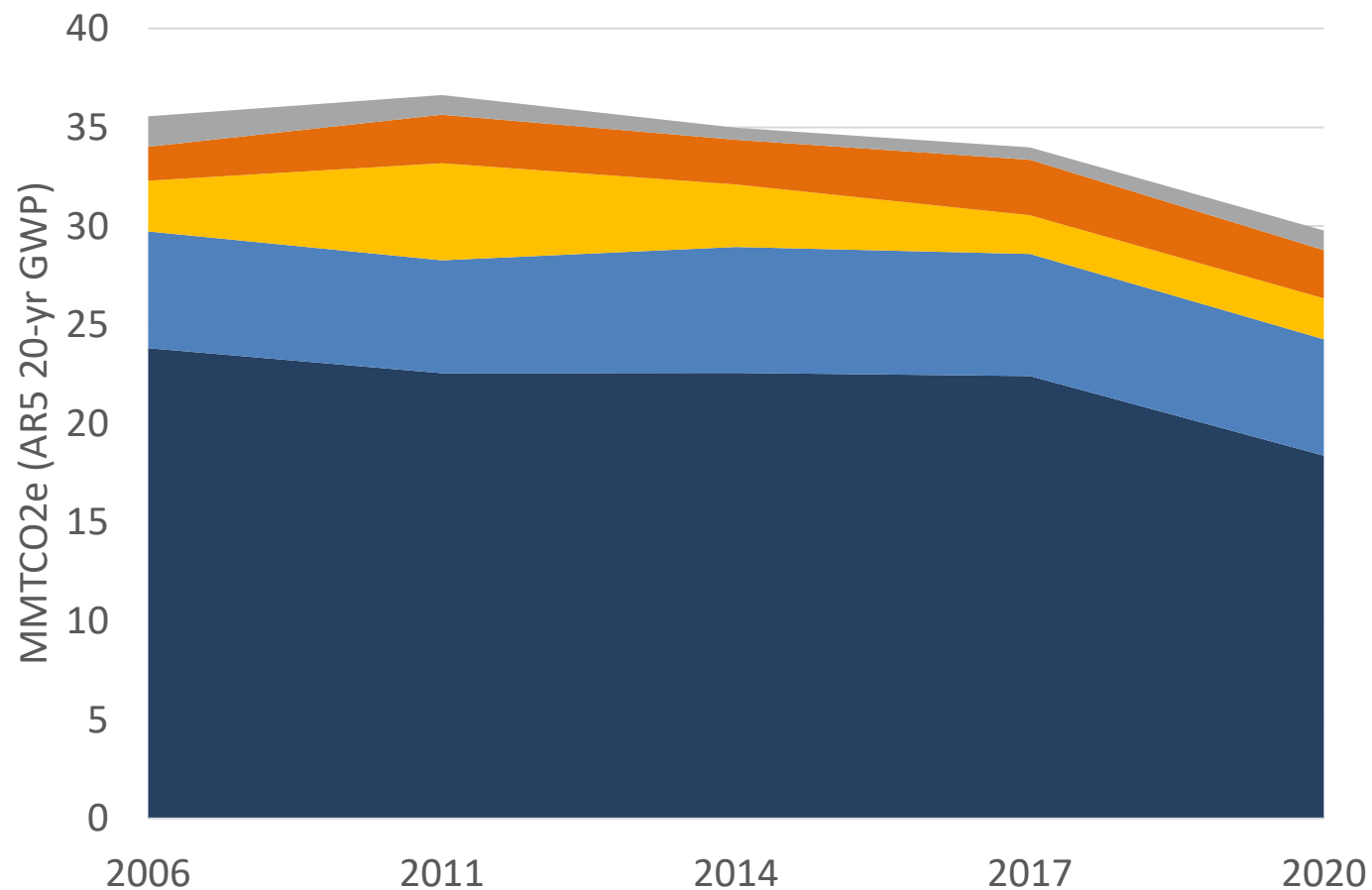


Most of Maryland's emissions reductions since 2006 have resulted from shifting from coal to cleaner sources of electricity generation.

- Net Imported
- Oil (in-state)
- Natural Gas (in-state)
- Coal (in-state)



Transportation Emissions

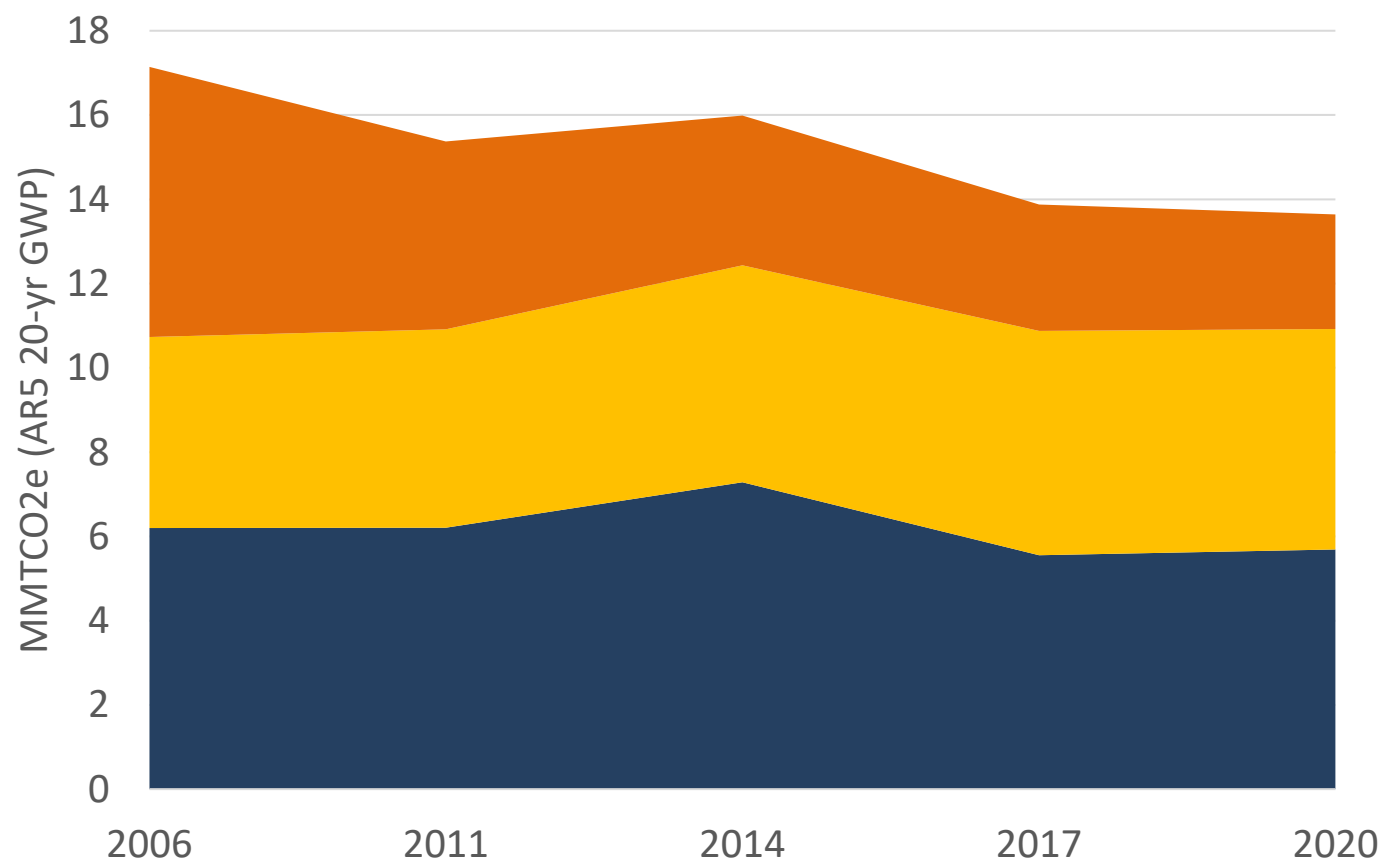


The decrease in transportation emissions in 2020 is mostly a result of COVID-related impacts.

- Other
- Aviation
- Nonroad
- Onroad Diesel
- Onroad Gasoline



Building Fuel Use by End-Use Sector



The jump in emissions in 2014 was due to a colder than average winter.

The closure of a couple of manufacturing facilities contributed to the decrease in industrial emissions.

- Industrial
- Commercial
- Residential



Part 2: Progress Toward Future Goals

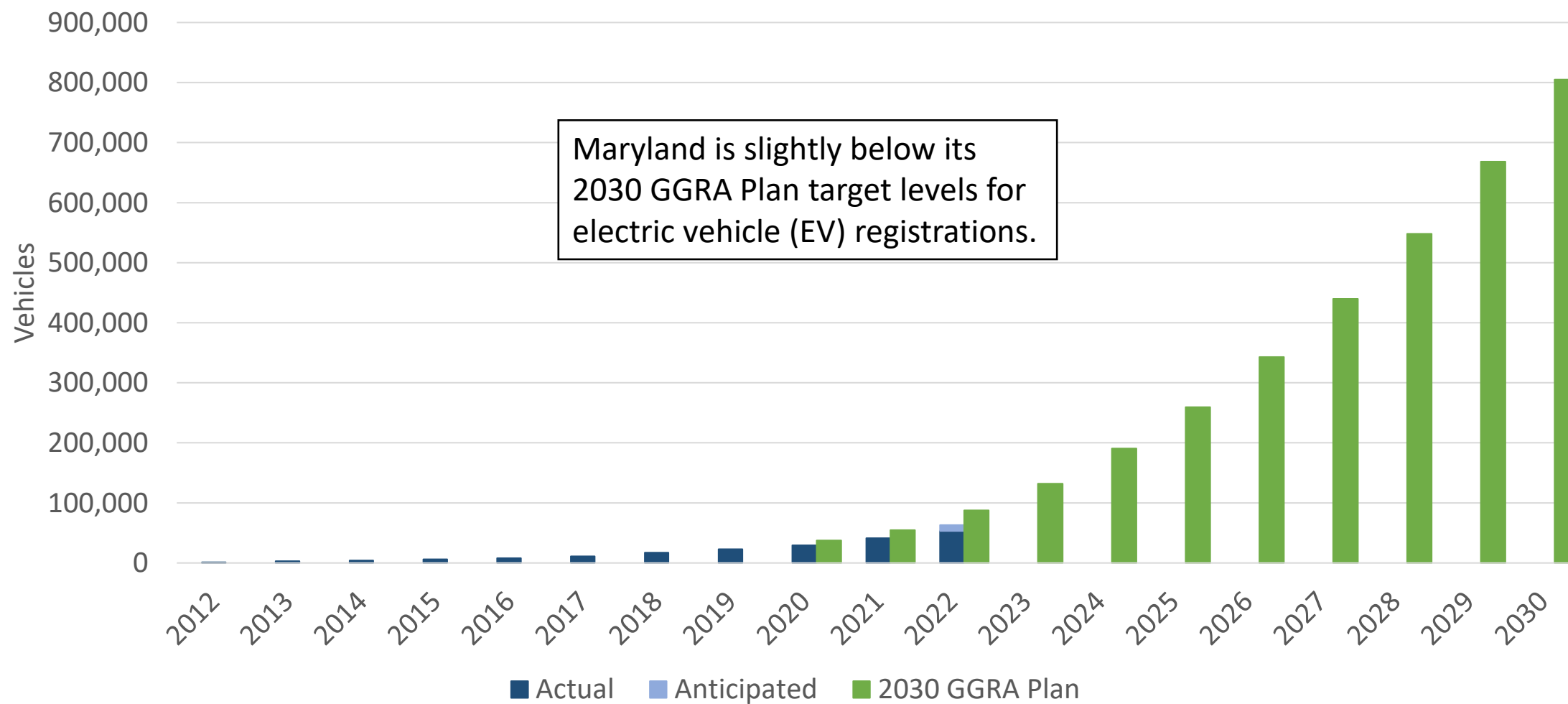


Climate Solutions Now Act of 2022

- GHG reduction goal changed from a 40% reduction by 2030 to a **60% reduction by 2031** and **net-zero emissions by 2045**
- MDE has until the end of 2023 to replace the state's existing GHG reduction plan (the "2030 GGRA Plan") with a new plan that achieves Maryland's new 2031 goal
- The following graphs show progress toward achieving the 2030 GGRA Plan goals
- A new GHG Reduction Plan will be released at the end of this year

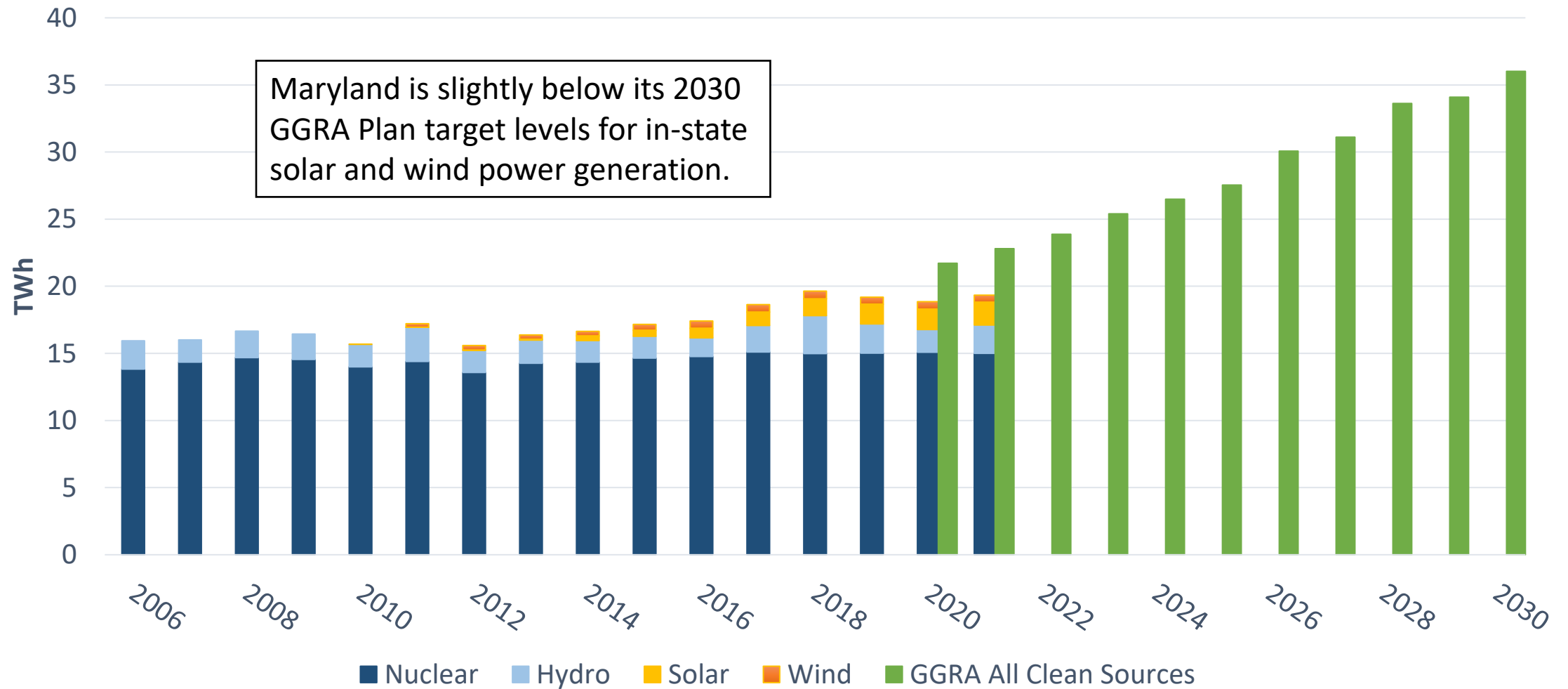


Zero Emission Vehicles



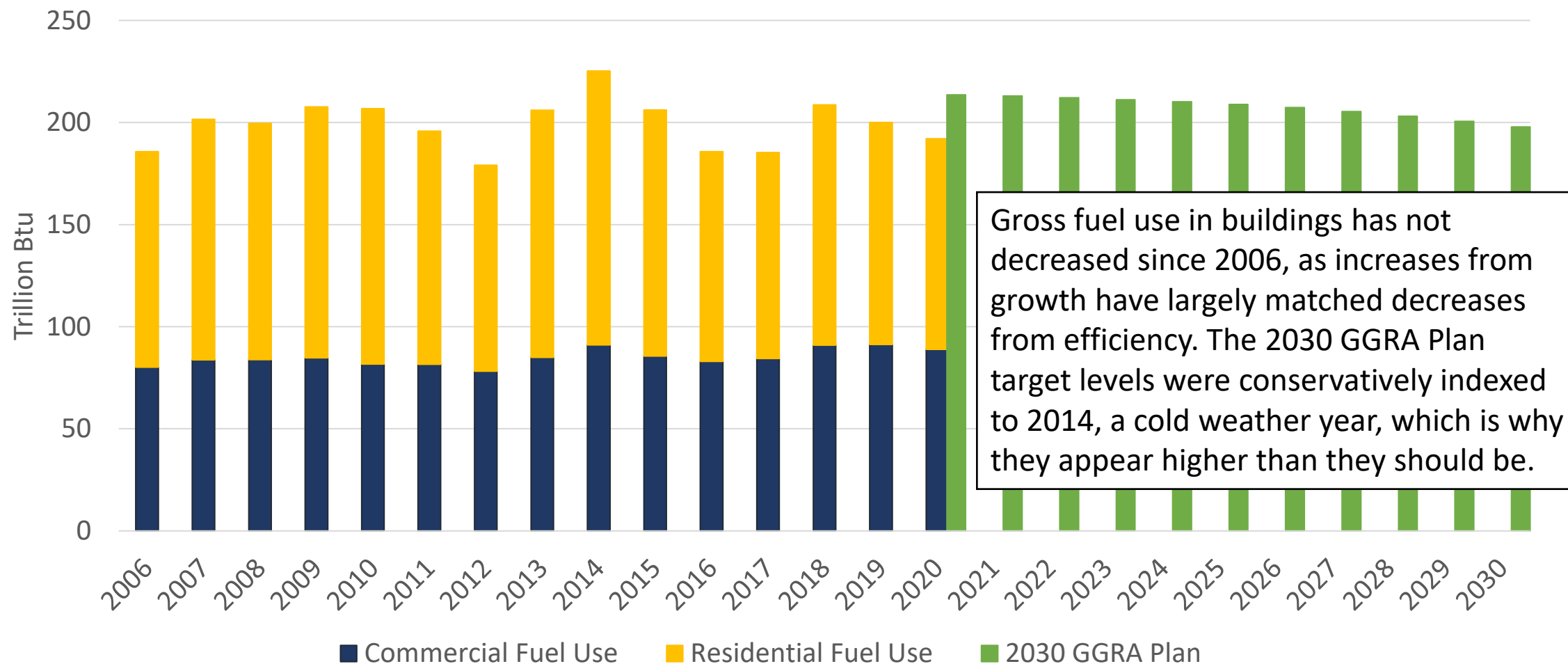


In-State Clean Electricity Generation



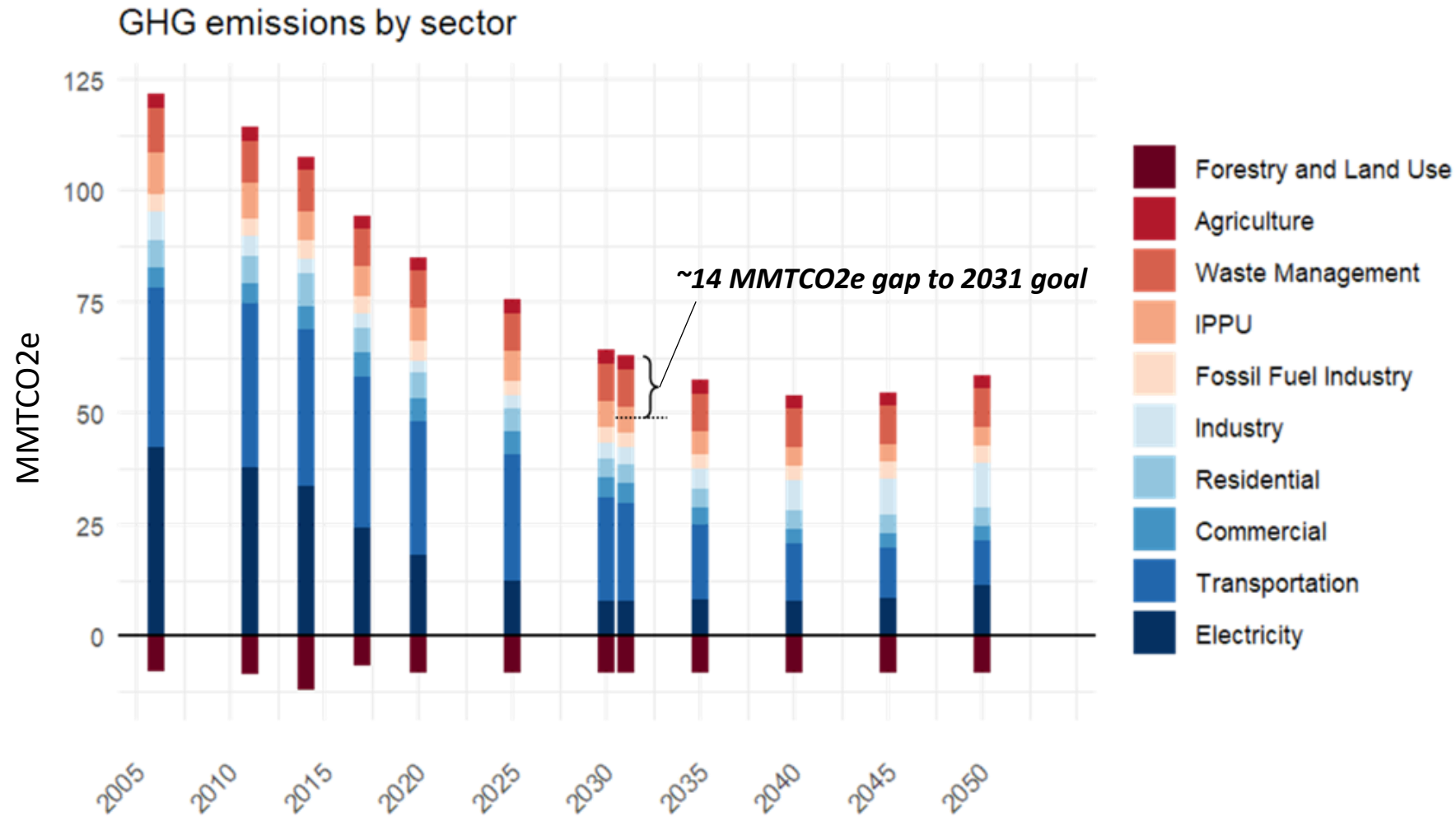


Fuel Use in Buildings





Current Policies Achieve a 48% Reduction by 2031



Preliminary projected emissions in Maryland by sector under a “no additional action” reference case



Part 3: New Policies



Recent Actions

- Adopting California's Advanced Clean Cars II Rule
- Adopting California's Advanced Clean Trucks Rule
- Setting a Goal to Build 8500 MW of Off-Shore Wind Power by 2031
- Setting a Goal to Achieve 100% Clean Power Generation by 2035
- Requiring Large Buildings to Achieve Net-Zero Direct Emissions by 2040
- Adapting EmPOWER Maryland to Achieve Greater GHG Reductions
- Adopting New Landfill Methane Regulations
- Etc.



Climate Commission Recommendations Currently Under Consideration by the Agencies

- Expand EV and EVSE Purchasing Incentives
- Adopt Low-Carbon Fuel Standards for Motor Fuels
- Adopt Clean Heat Standards
- Adopt Zero Emissions Appliance Standards
- Adopt All-Electric Standards for New Construction
- Etc.



Contact

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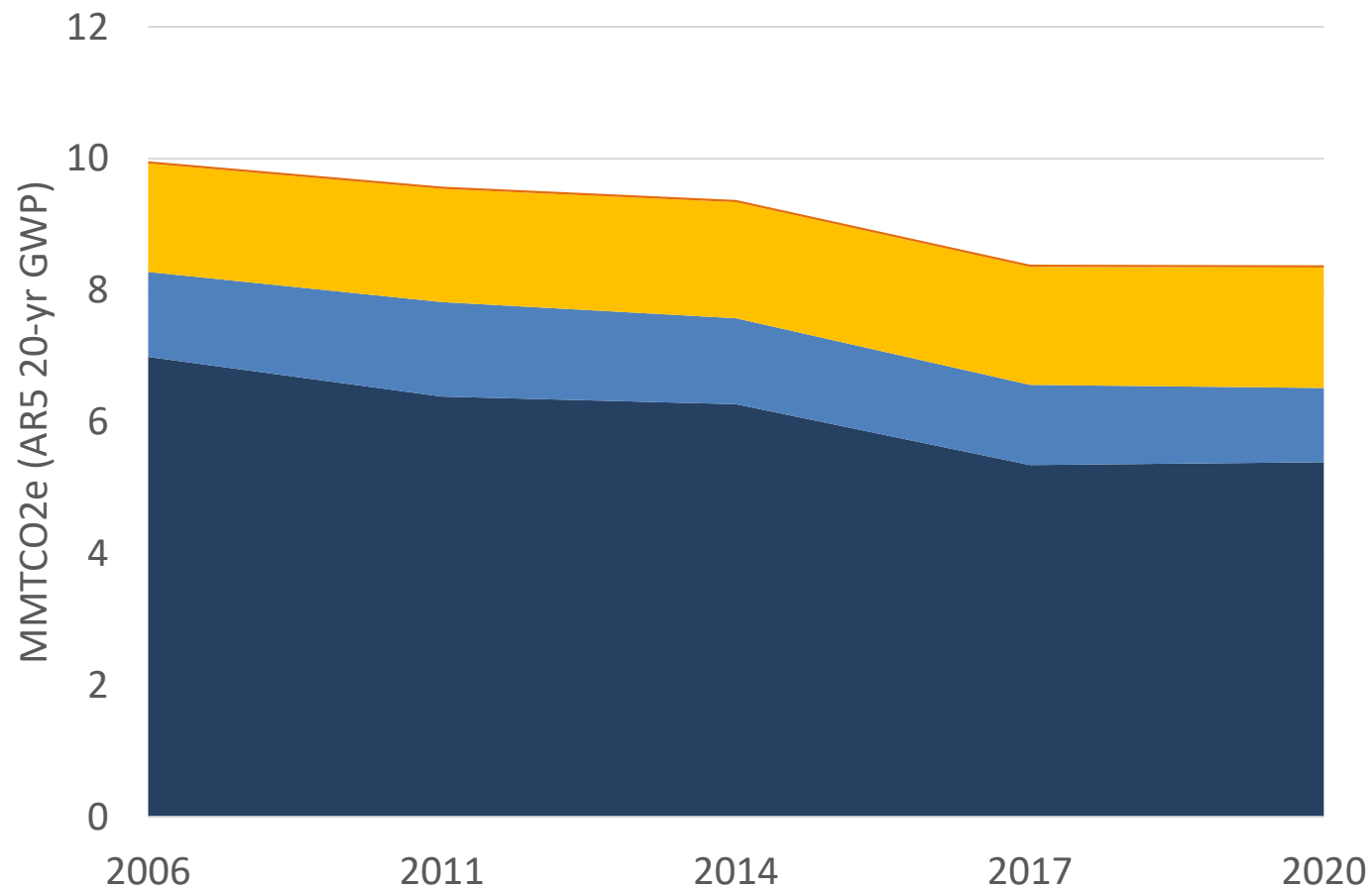
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Additional Slides



Waste Management Emissions

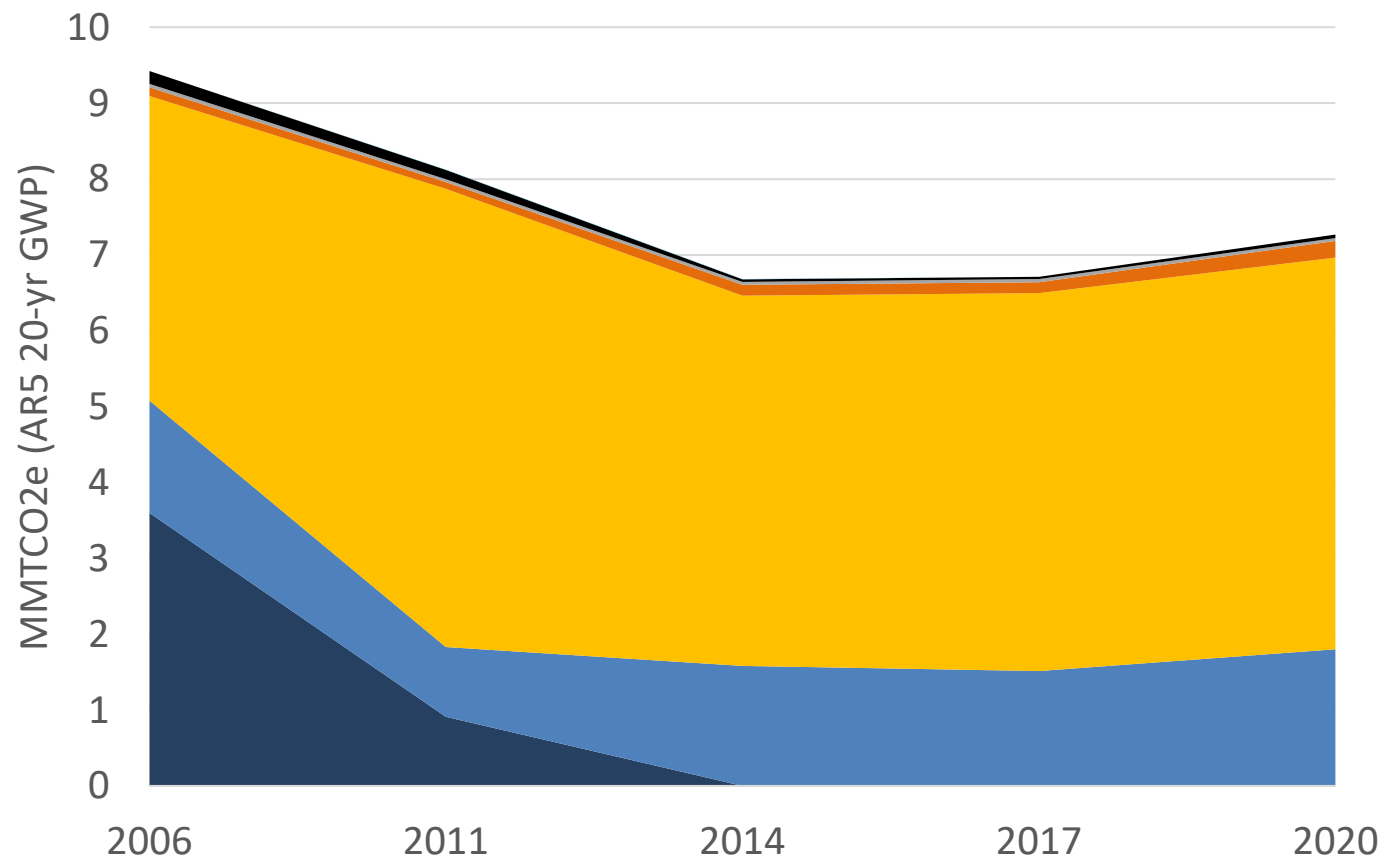


Methane emissions from landfills have decreased gradually since 2006.

- Residential Open Burning
- Wastewater Management
- Waste Combustion
- Landfills



Industrial Processes & Product Use Emissions

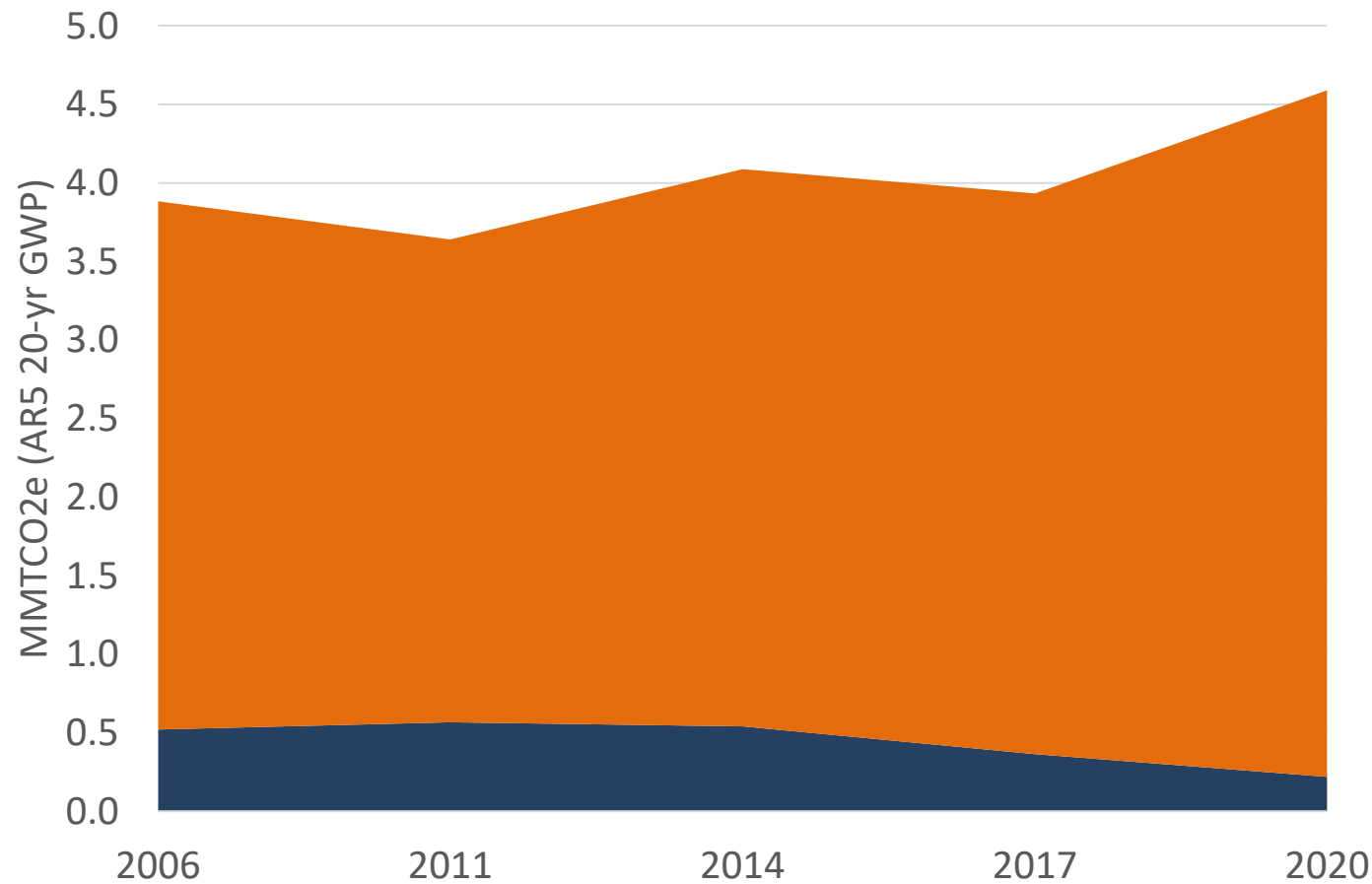


The largest part of these emissions (HFC and PFC use) is primarily associated with refrigerant and aerosol use.

- Urea Consumption
- Electricity Transmission and Distribution
- Soda Ash
- Limestone Use
- HFC and PFC Use
- Cement Manufacture
- Iron and Steel



Fossil Fuel Industry Emissions



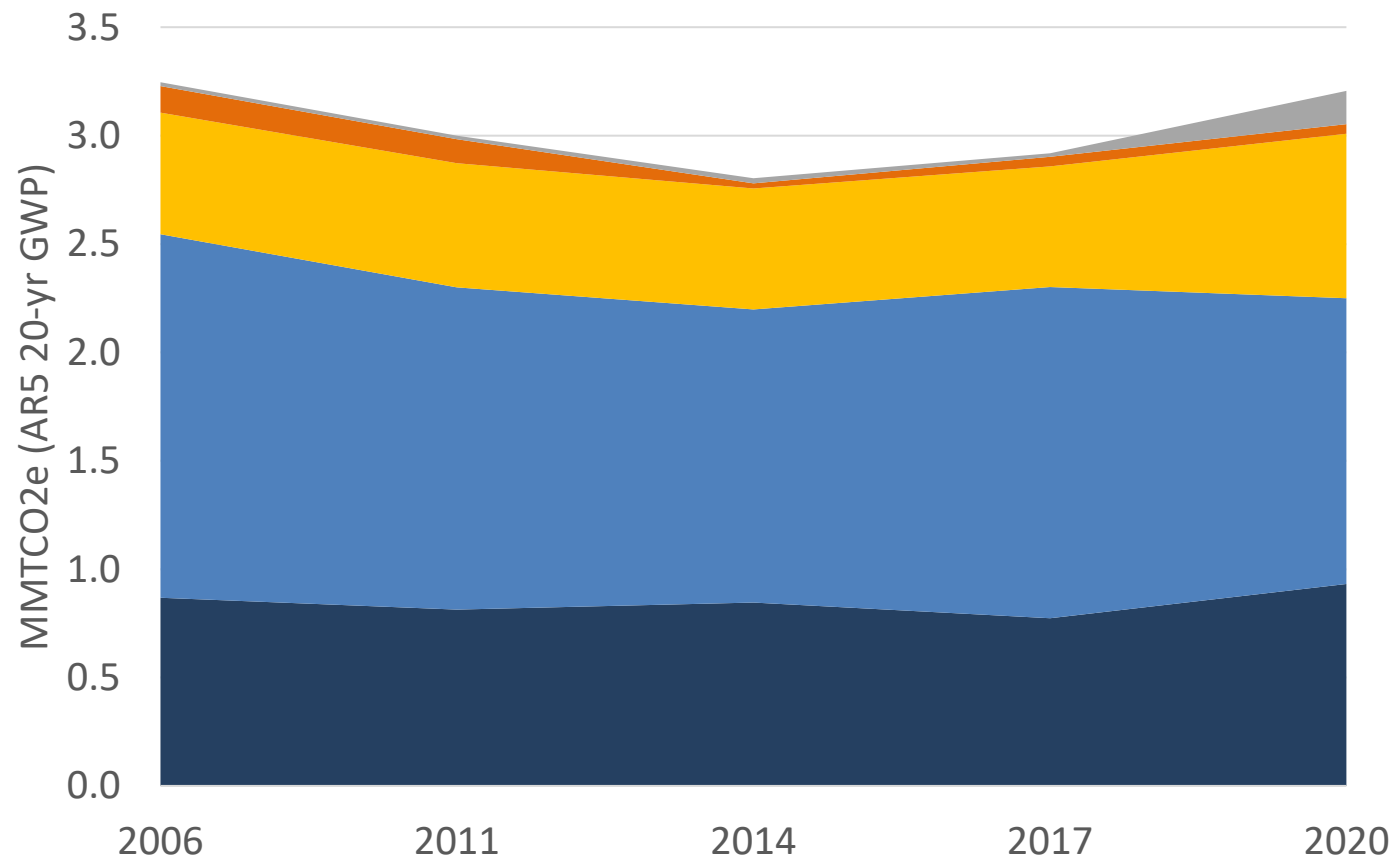
Natural gas industry emissions increased as the Cove Point Liquefied Natural Gas export facility came online.

■ Natural Gas Industry

■ Coal Industry



Agriculture Emissions



Enteric fermentation is a natural part of the digestive process in ruminant animals such as cattle, sheep, and goats. Microbes in the digestive tract decompose and ferment food, producing methane as a by-product.

- Agricultural Burning
- Urea Fertilizer Usage and Liming
- Manure Management
- Enteric Fermentation
- Agricultural Soils



Forestry & Land Use Emissions *and Sinks*

