Maryland's 2023 Greenhouse Gas Emissions Inventory

Updated Results

Maryland
Department of
the Environment

Maryland Commission on Climate Change
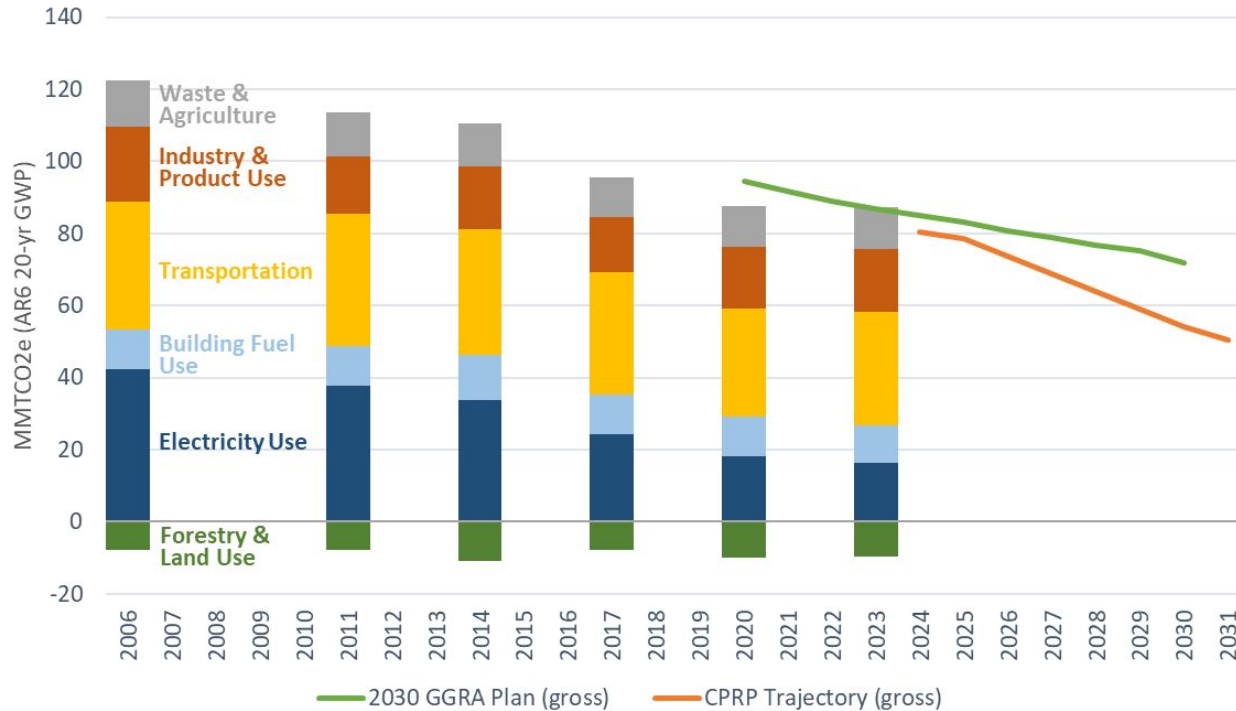**February 2, 2026**

2023 Inventory Status

- Preliminary results presented April 2025
  - With placeholder data for some sectors
  - Mainly awaiting final 2023 building and industry fuel use data
  - Showed 28% reduction in gross emissions from 2006
- Updates since then
  - GWPs (global warming potentials) updated from IPCC AR5 (Fifth Assessment Report) to AR6
    - Increases HFC (hydrofluorocarbon) emissions by 11%
    - Minor changes to methane and nitrous oxide
  - Forestry & Land Use sector added to the presentation
  - Residential, Commercial, and Industrial fuel use updated from 2022 placeholder data to 2023
  - Non-road equipment updated from 2020 placeholder data to 2023
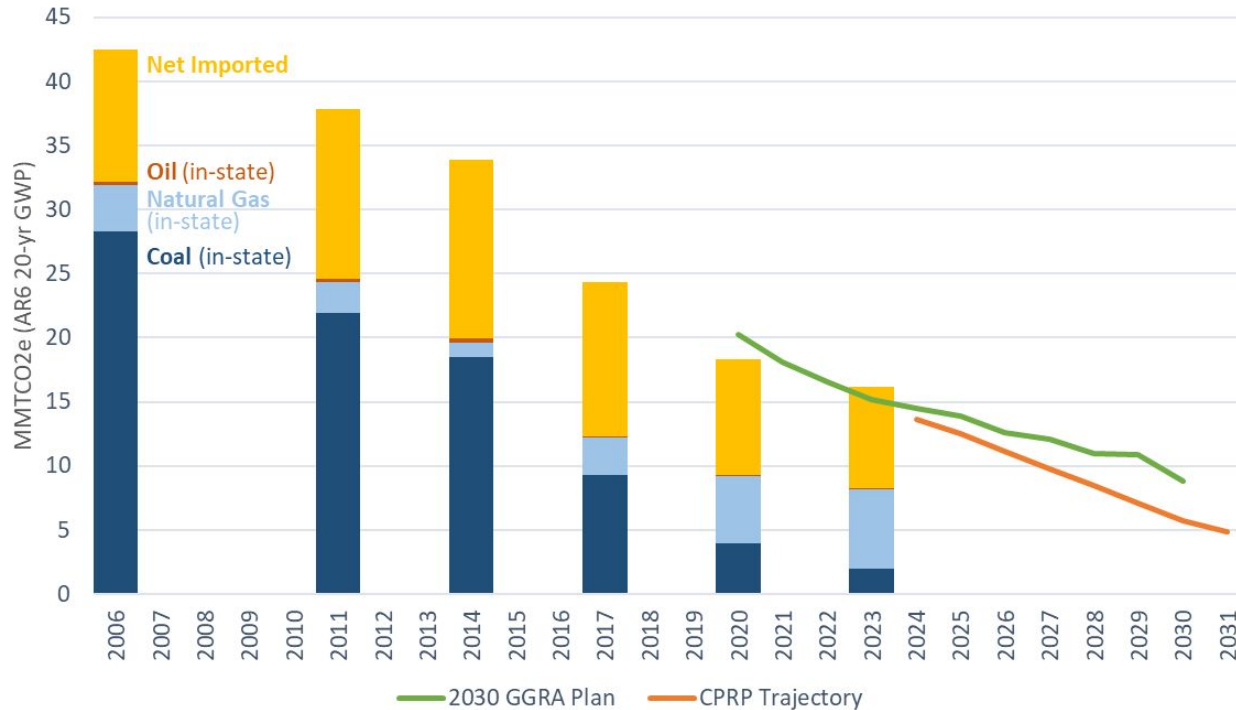- Workbooks being prepared for publication in Spring

Statewide Emissions

- Gross emissions
  - 0.3% decrease from 2020 emissions
  - 29% reduction from 2006 baseline
- Net emissions
  - 0.2% increase from 2020 emissions
  - 32% reduction from 2006 baseline

All numbers presented are draft and subject to review and refinement

GGRA - planned trajectory under the 2021 Greenhouse Gas Emissions Reduction Act Plan
CPRP - planned trajectory under the 2023 Climate Pollution Reduction Plan
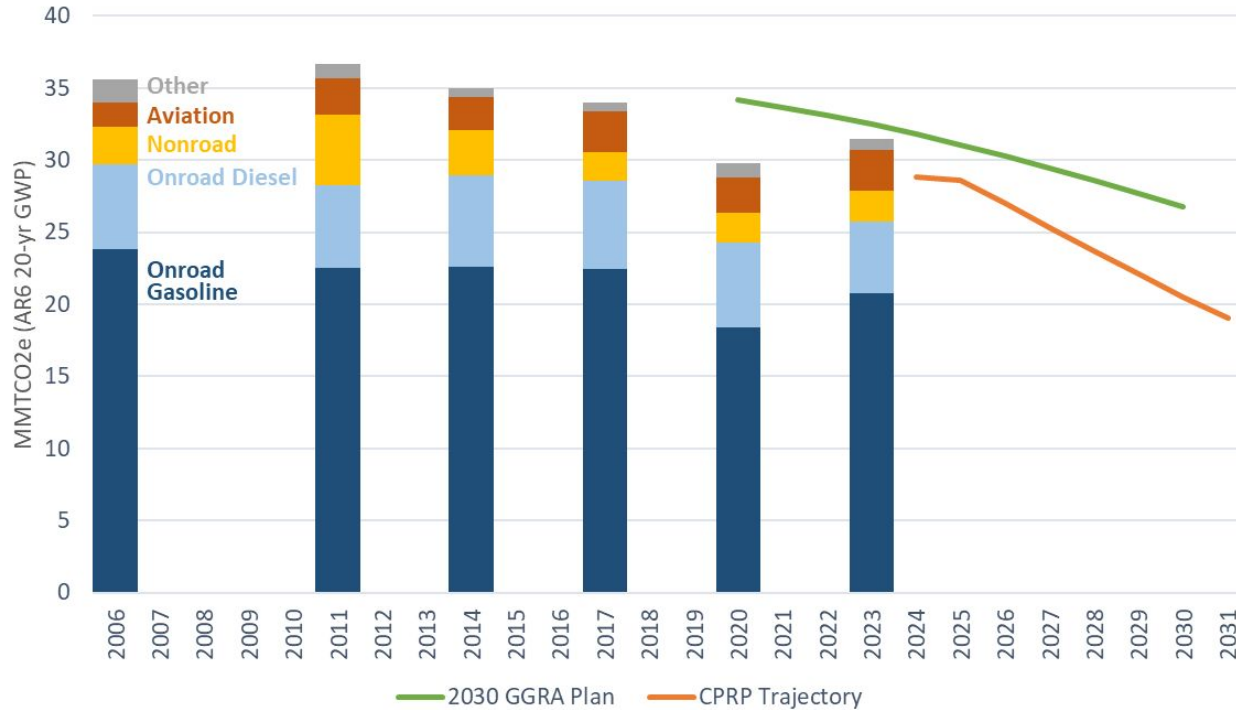
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Electricity Use Emissions

- 12% overall reduction from 2020
  - 12% reduction in in-state generation emissions
  - 12% reduction in emissions attributable to imported electricity
- Historic rate of sector reductions appears to be leveling off
- Weather: 2023 summer and winter were mild
  - Emissions would have been higher under average weather conditions

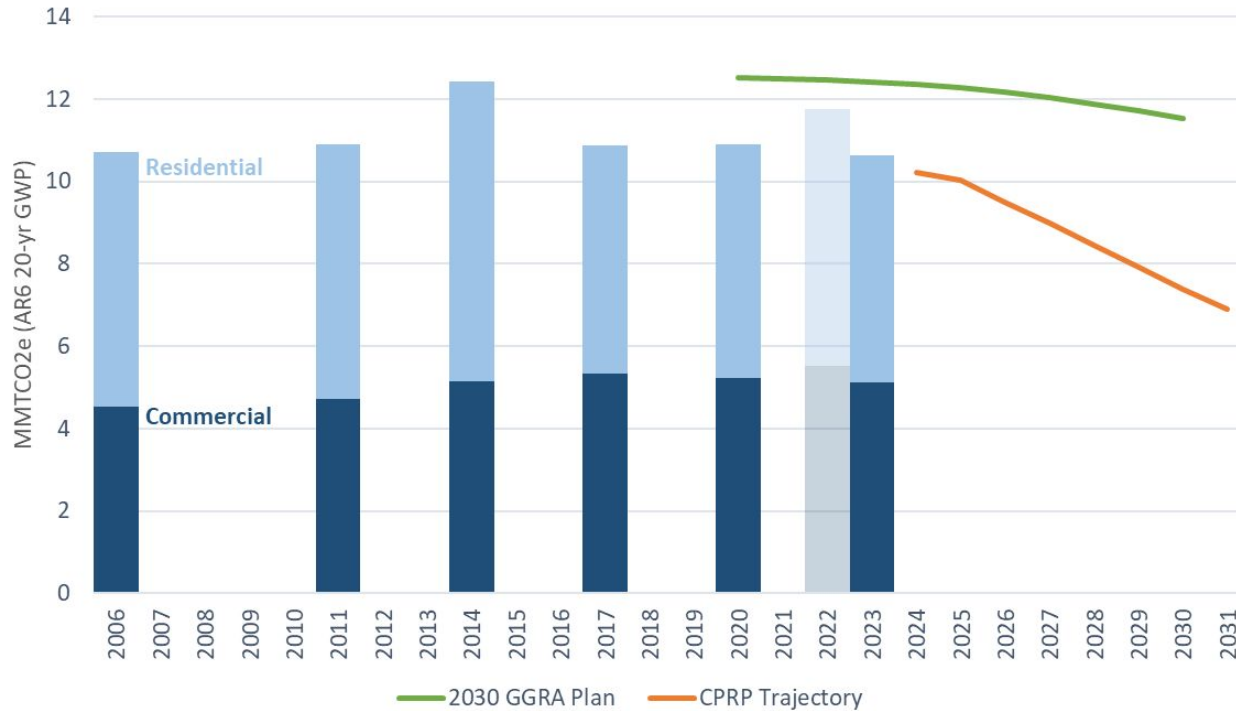*All numbers presented are draft and subject to review and refinement*
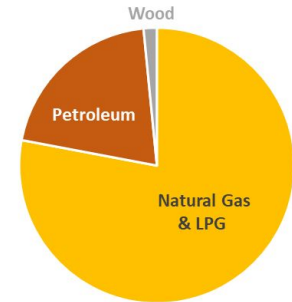
Transportation Emissions

- 2020 road and air travel were depressed by COVID pandemic
  - Emissions have not bounced back to pre-pandemic levels
- 6% overall increase from 2020
  - 13% increase in **on-road gasoline** emissions
  - 15% reduction in **on-road diesel** emissions
  - 14% increase in **aviation** emissions
  - 3% increase in **nonroad equipment** emissions

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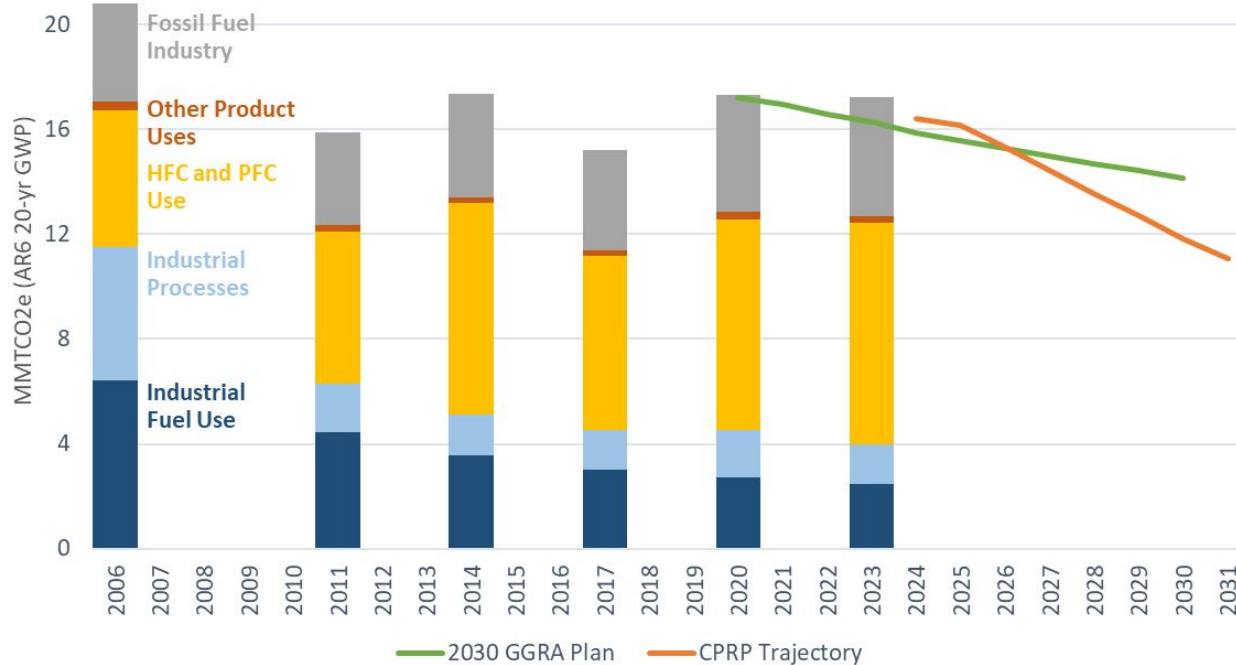
Building Fuel Use Emissions

- Updated with 2023 data
- 3% overall reduction from 2020
- Year-to-year fluctuations influenced by weather ([heating demand](#))
- Flat trend historically (considering weather variations)
- 2023 by fuel:

Chart legend: Residential, Commercial, 2030 GGRA Plan, CPRP Trajectory

Y-axis: MMTCO2e (AR6 20-yr GWP)

Pie chart: Wood, Petroleum, Natural Gas & LPG

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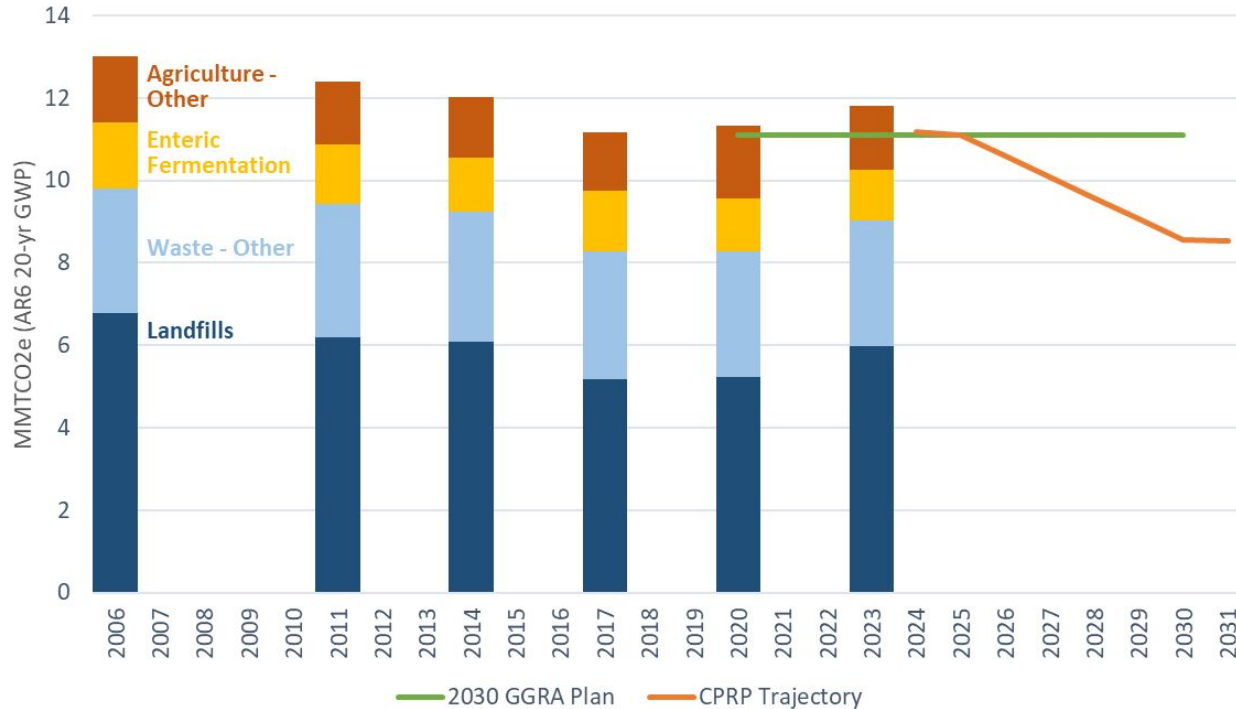
Industry & Product Use Emissions

- 12% overall reduction in **industrial fuel use** and **process** emissions from 2020

- Improvements by EPA to their state disaggregation methods for **ODS substitutes** (**HFC and PFC use** in the graph)
  - Impacts 2014-2020 estimates. 2 MMTCO2e average increase over prior estimates.
  - Shaves off 1% from statewide reduction from 2006
  - Additional 0.8 MMTCO2e increase due to GWP update
  - Aside from accounting changes, emissions continue to increase over time. 6% increase from revised 2020 to 2023.

- 2% increase in **fossil fuel industry** emissions from 2020

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*projected GGRA & CPRP trajectories adjusted consistent with revision in historic HFC emissions

Waste Management & Agriculture Emissions

- 15% increase in landfill emissions from 2020
  - More methane being generated in the landfills combined with less landfill gas collected
- Wastewater updated to include previously unreported industrial wastewater emissions

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Forestry and Land Use

MMTCO2e (AR6 20-yr GWP)

Settlement Soils
Forest Fires
Wetlands and SAV

Tree and Forest Carbon

Wood Products and Landfilled Carbon

Agricultural Soil Carbon

- Not included in gross emissions accounting
  - CPRP modeling evaluated potential sequestration opportunity rather than policy commitment
  - Therefore no goal lines shown
- Forest carbon flux can vary due to factors such as precipitation and disturbance
- Forest fire emissions are up due to a significant increase in prescribed burns, which has been fairly consistent from 2022-2024

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