Maryland's 2023 Greenhouse Gas Emissions Inventory

Preliminary Results

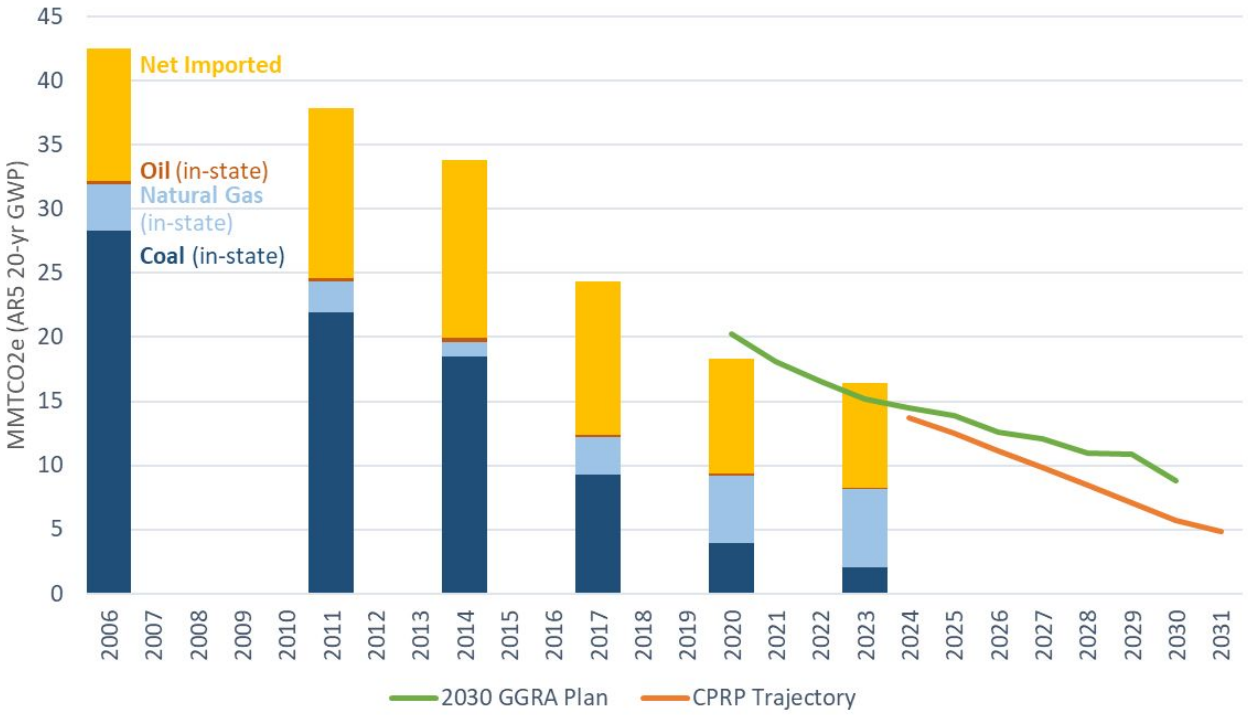
Maryland
Department of the Environment

MCCC Mitigation Working Group
April 16, 2025

2023 Inventory Status

- Data presented herein is preliminary
- We have 2023 data for 70% of the inventory
  - 2022 data used as placeholder for 20% of the inventory
  - 2020 data used as placeholder for 10% of the inventory
- Remaining datasets will become available this Spring/Summer
- The 2023 inventory will be finalized this Summer/Fall
- This presentation focuses on gross emissions

Electricity Use Emissions

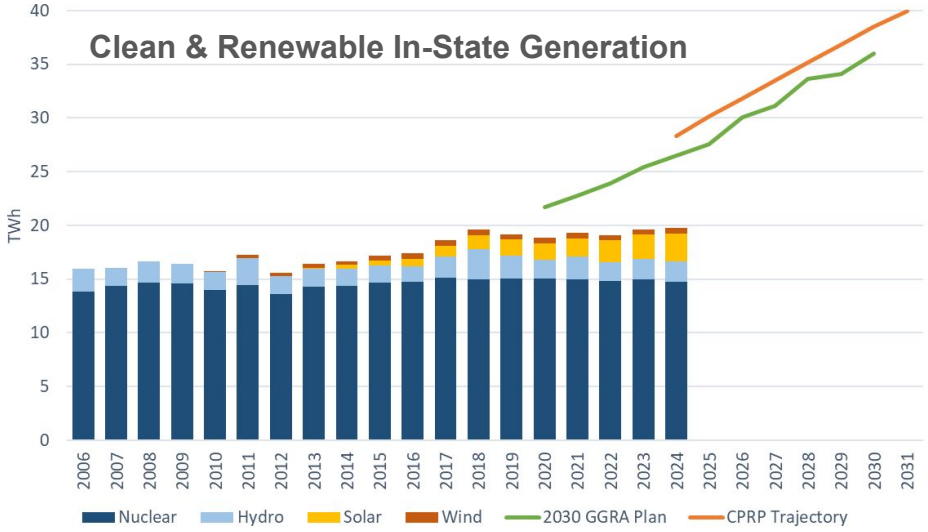


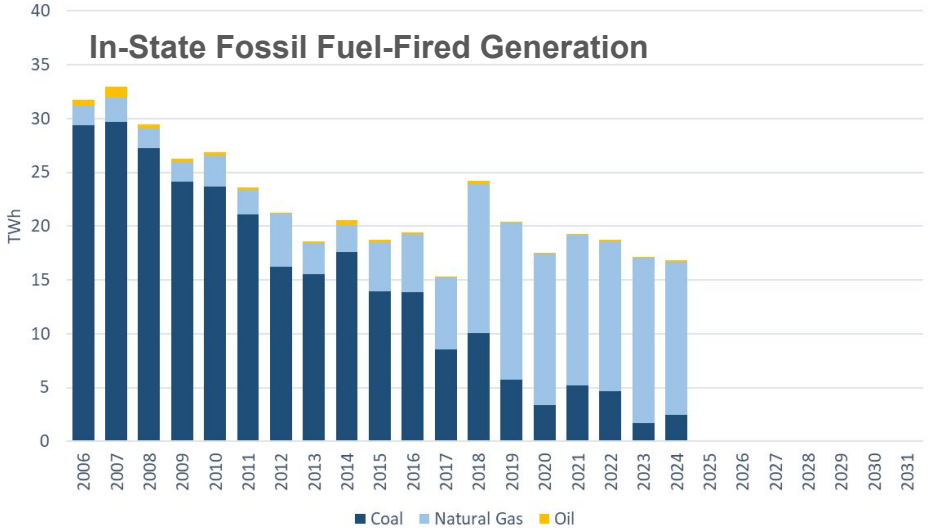
- 10% overall reduction from 2020
  - 12% reduction in in-state generation emissions
  - 9% reduction in emissions attributable to imported electricity
- Historic rate of sector reductions appears to be leveling off
- Weather: 2023 summer and winter were mild
  - Emissions would have been higher under average weather conditions

All numbers presented are draft and subject to review and refinement

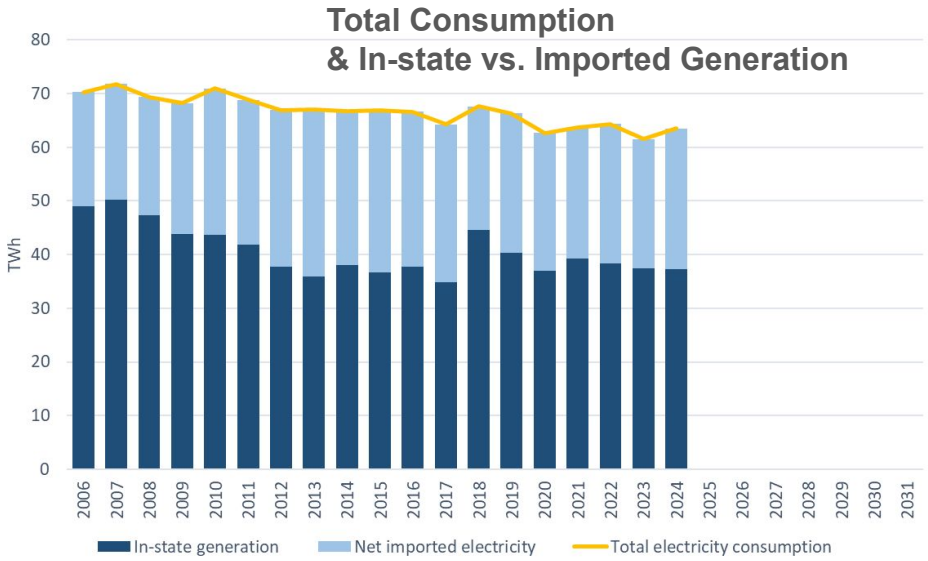
GGRA - planned trajectory under the 2021 Greenhouse Gas Emissions Reduction Act Plan
CPRP - planned trajectory under the 2023 Climate Pollution Reduction Plan

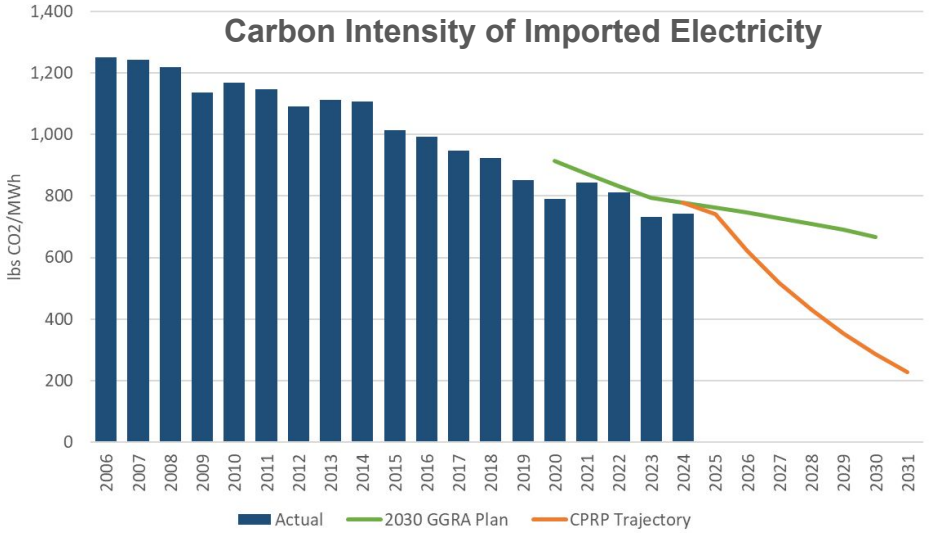
Electricity Indicators



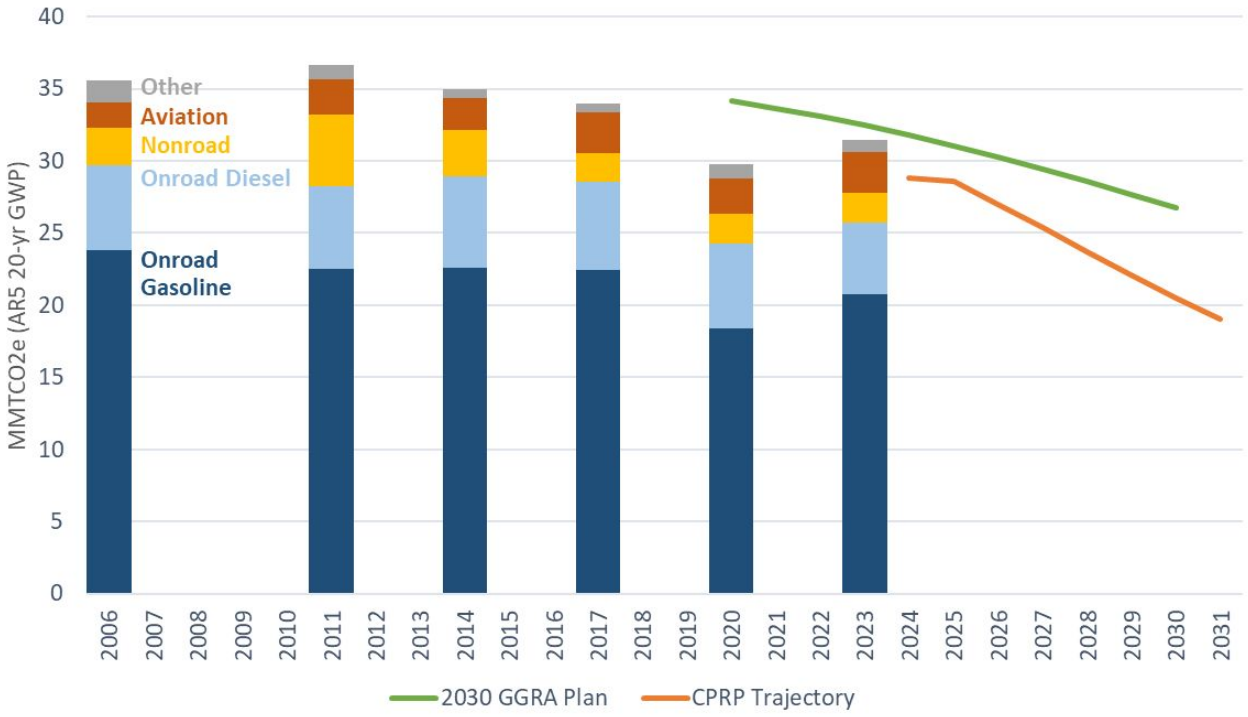


Electricity Indicators (cont.)





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
- Placeholder data
  - 2020 for **nonroad** category
  - Mix of 2020 & 2022 for **Other** category

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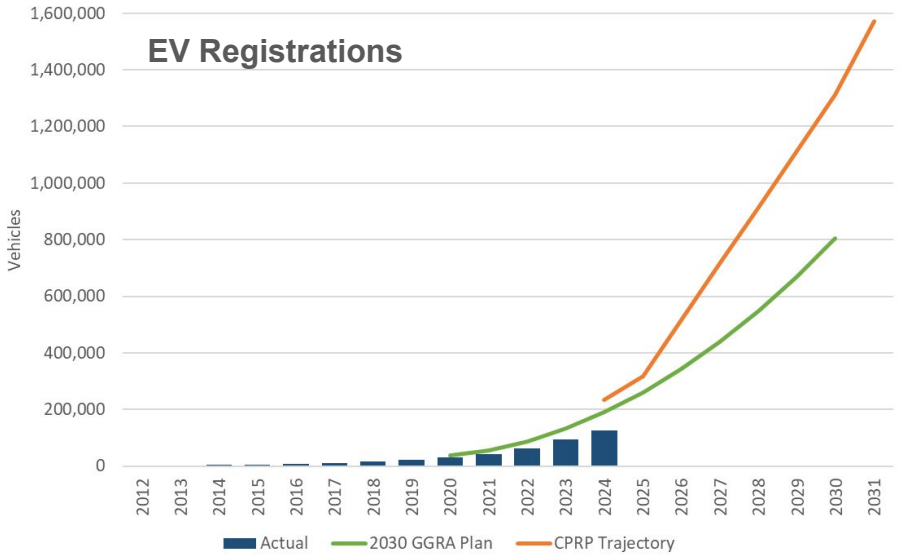
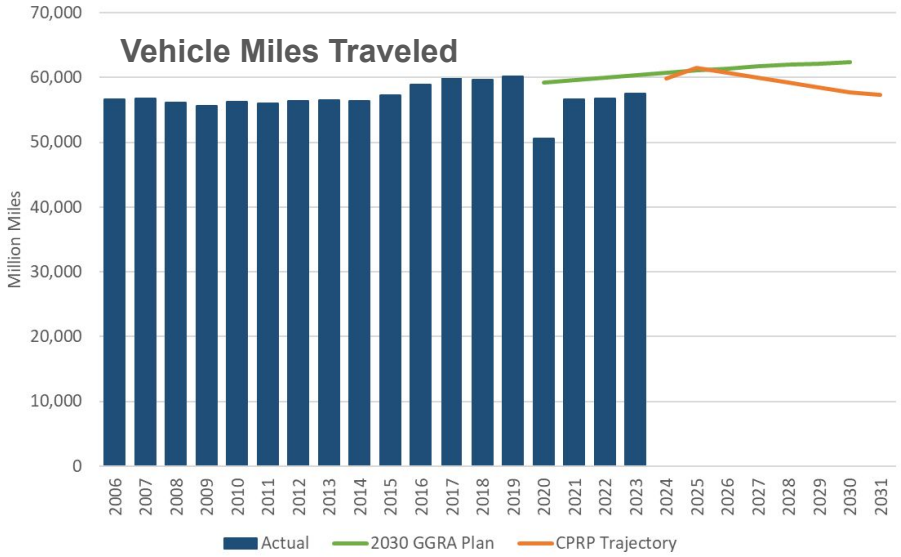
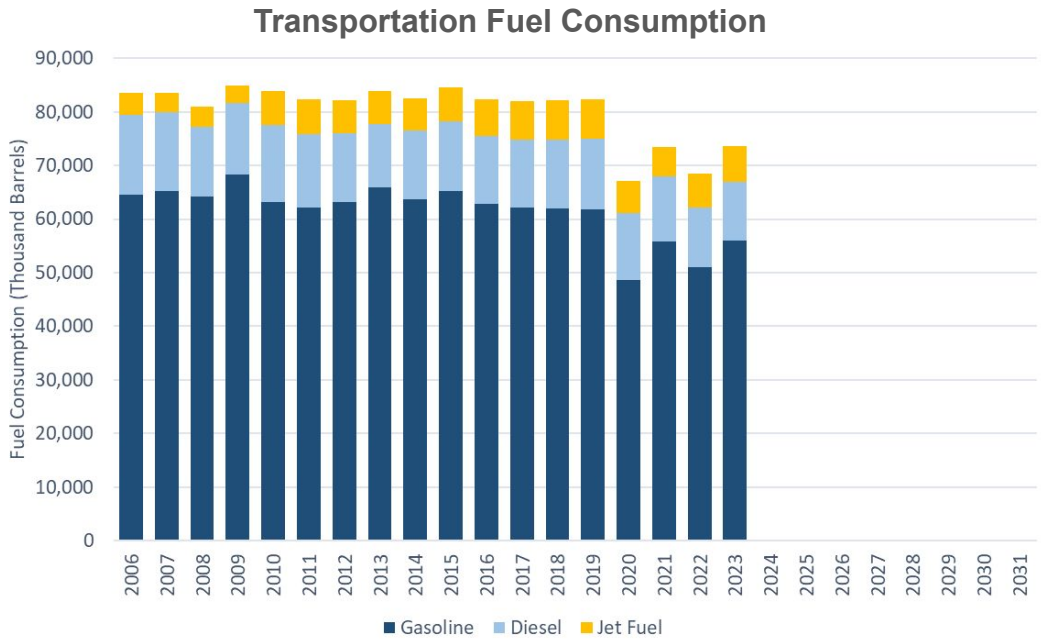
Transportation Indicators

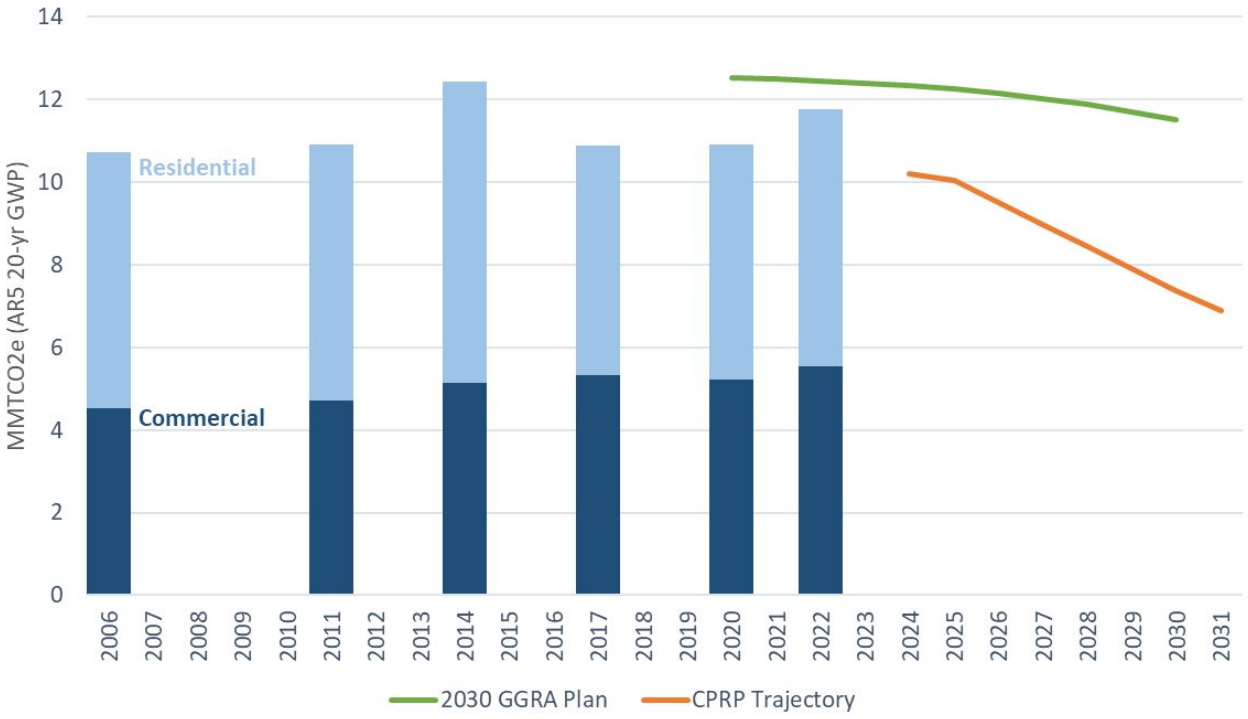




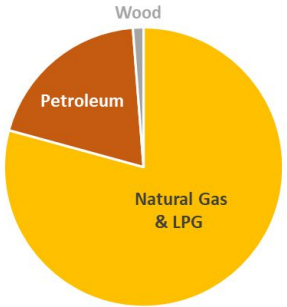
Transportation Indicators (cont.)



Buildings Emissions



- 2022 data as placeholder
- 8% overall increase from 2020
- Year-to-year fluctuations influenced by weather
  - 2023 emissions will be lower due to lower heating demand
- Flat trend historically (considering weather variations)
- 2022 by fuel:



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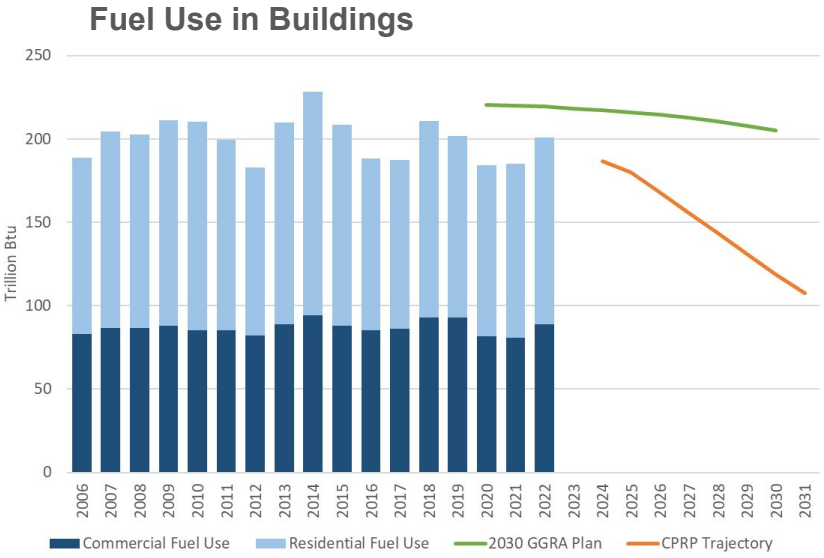
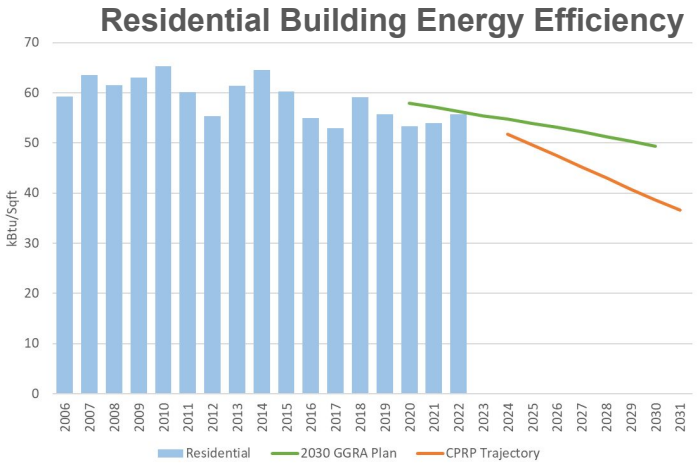
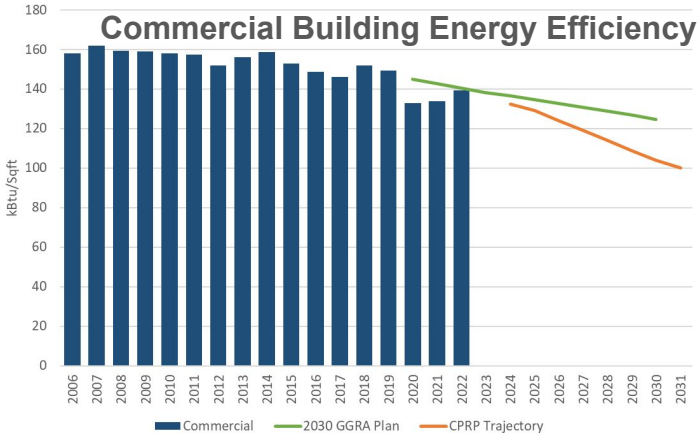
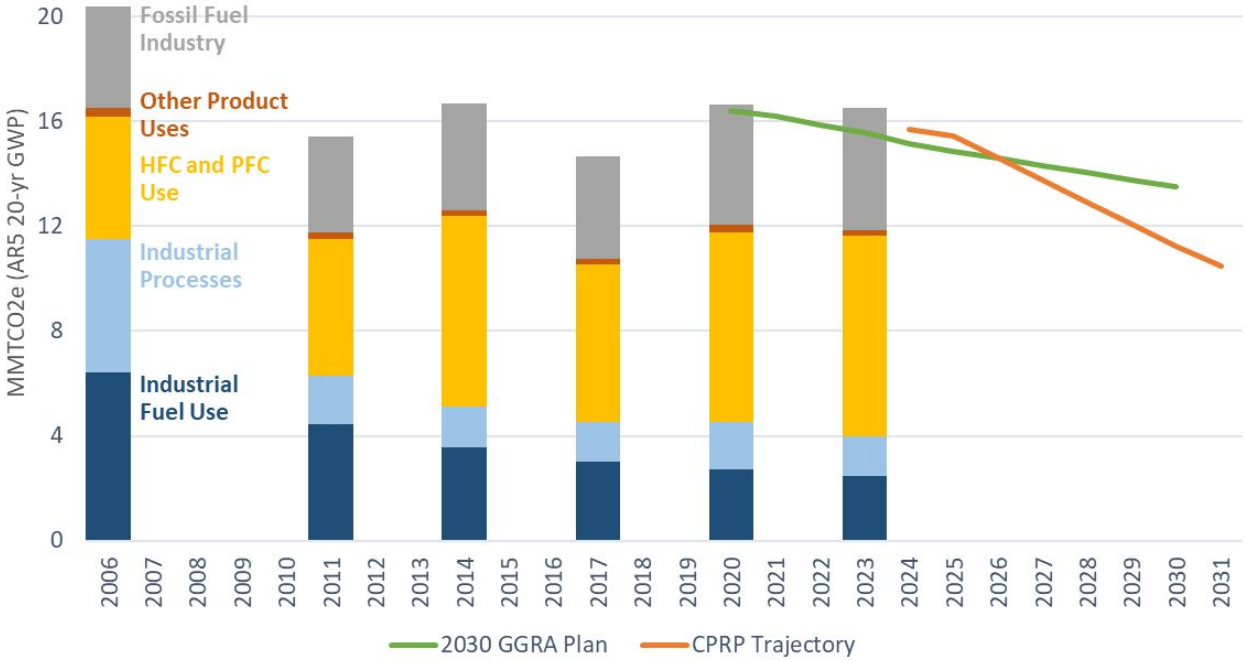






Industry & Product Use Emissions



- 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
  - Aside from method change, emissions continue to increase over time. 6% increase from revised 2020 to 2022.
- 2% increase in **fossil fuel industry** emissions from 2020

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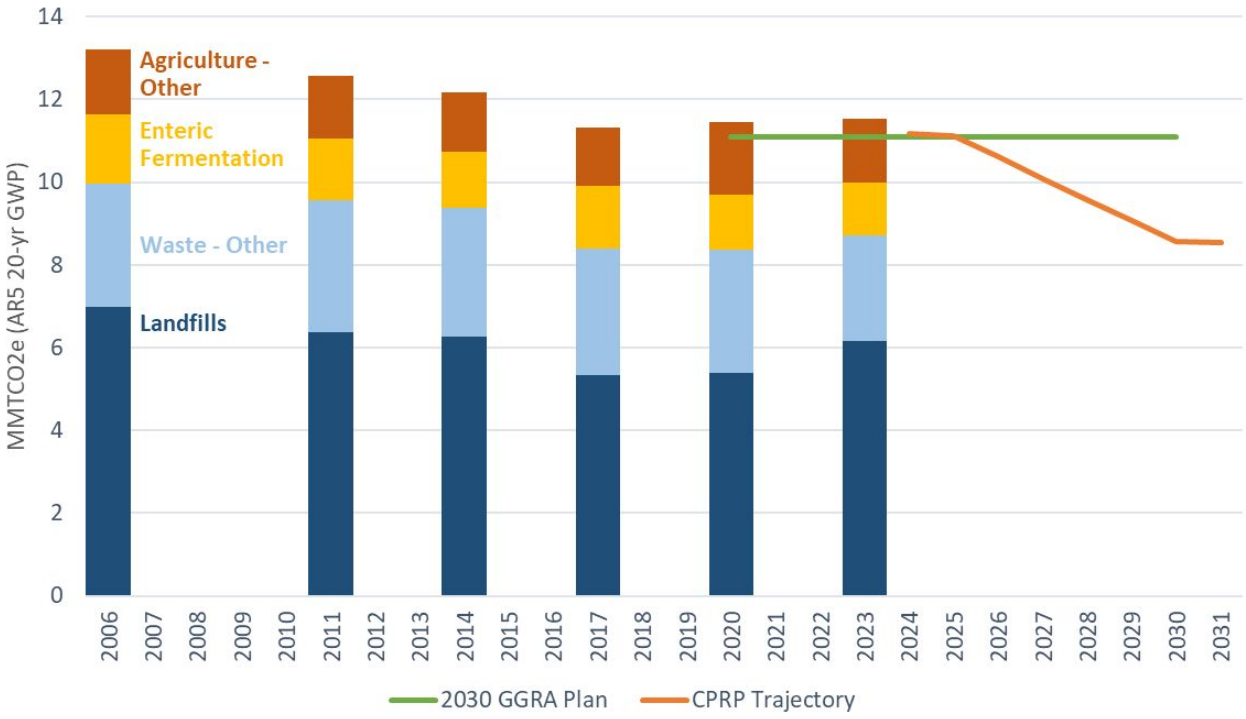
*projected GGRA & CPRP trajectories adjusted consistent with revision in historic HFC emissions

Waste Management & Agriculture Emissions



- Mostly 2023 data for waste
- Mix of 2023 and 2022 data for agriculture
- 14% increase in landfill emissions from 2020
  - More methane being generated in the landfills combined with less landfill gas being collected

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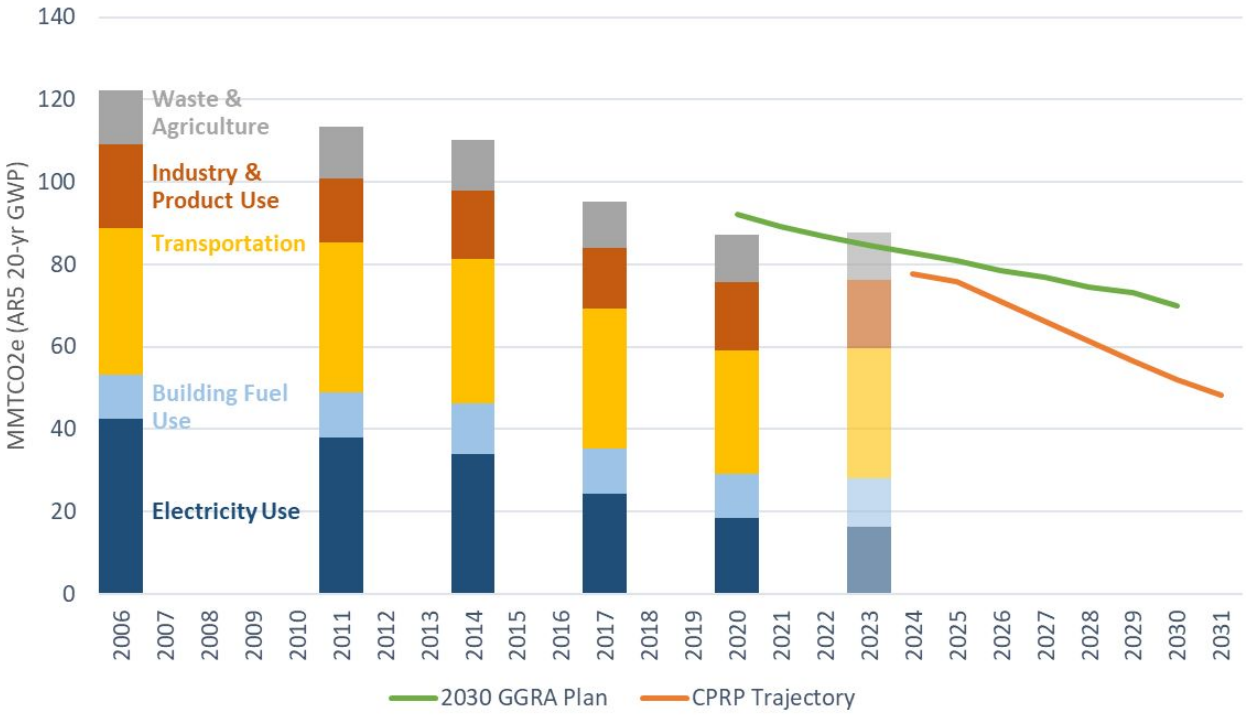
Statewide (gross emissions)



- Reminders
  - These are preliminary results, subject to change
  - Still awaiting final 2023 data for some sectors
- 0.6% increase from 2020 emissions
- 28% reduction from 2006 baseline
- Can expect ~29% reduction after final 2023 data comes in

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