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2000-2020 GHG Inventory (2022 Edition)

October 26, 2022
Inventory Background

- AB 32 inventory includes anthropogenic emissions from within CA’s borders, as well as imported electricity consumed in the state.
- Updated annually using most current data.
- Mandatory Reporting Regulation (MRR) data used for AB 32 GHG inventory.
  - MRR requires certain facilities and fuel suppliers to report and third-party verify data.
Agenda

- Inventory Trends
- Pandemic Impacts
- Methodology Updates
- Q&A

Inventory Data and Reports: 
https://ww2.arb.ca.gov/ghg-inventory-data
The decrease in 2020 emissions is likely due in large part to the impacts of the COVID-19 pandemic, and recovery may result in emissions increases over the next few years.

- California statewide GHG emissions dropped below the 2020 GHG Limit in 2014 and have remained below the 2020 GHG Limit since.
- In 2020, emissions from GHG emitting activities statewide were 369.2 MMTCO2e.
- 2020 emissions were 35.3 MMTCO2e lower than 2019 levels and 61.8 MMTCO2e below the 2020 GHG Limit.
The carbon intensity of the economy is continuing to decline.

<table>
<thead>
<tr>
<th>Metric</th>
<th>Associated 2020 Value</th>
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</thead>
<tbody>
<tr>
<td>GDP</td>
<td>2.7 trillion (2012 $)</td>
</tr>
<tr>
<td>Population</td>
<td>39.5 million</td>
</tr>
<tr>
<td>GHG Emissions</td>
<td>369.2 MMTCO$_\text{2e}$</td>
</tr>
<tr>
<td>GHG Emissions per Capita</td>
<td>9.3 metric tons CO$_\text{2e}$ per person</td>
</tr>
<tr>
<td>GHG Emissions per GDP</td>
<td>139 metric tons CO$_\text{2e}$ per million $</td>
</tr>
</tbody>
</table>
Sector GHG trends at a glance
Transportation emissions significantly declined in 2020

- Transportation emissions continued to decline in 2020, most likely from light duty vehicles after shelter-in-place orders were enacted.
- There was an 18 percent growth in BEVs on the road between 2019 and 2020.
- The fuel efficiency of the passenger fleet has steadily risen since 2009 when it was 20.3 mpg to 24.1 in 2020.
Total electric power emissions stayed relatively constant despite decrease in in-state hydropower generation

• Total electric power emissions remained at a similar level to 2019 despite a 44 percent decrease in in-state hydropower generation.

• This loss was more than compensated by a 10 percent growth in in-state solar generation and cleaner imported electricity.
Industrial sector emissions dropped 7 MMT compared to 2019, driven by lower emissions from the refinery and oil and gas production sectors

- Refineries and hydrogen production represent the largest individual sources in the industrial sector, contributing 35% of the total.
- Industrial sector emissions dropped 7 MMTCO₂e (9 percent) compared to 2019. The decrease is driven by lower emissions from both the refining sector and the oil and gas production sector.
Emissions from residential & commercial sector decreased in 2020

- In 2020, residential and commercial sector emissions decreased by 1.7 MMTCO$_2$e compared to 2019 due to less need for residential space heating in winter and a reduction in commercial fossil gas use likely due in part to the effects of the pandemic.
The combined emissions from ozone depleting substances (ODS) and their substitutes continued to drop in 2020.
METHODOLOGICAL UPDATES
2022 Edition Inventory Updates

• Completed the integration of MRR third-party verified emissions and data
  – Aligns total emissions from the combustion of diesel and fossil natural gas with MRR data
  – Including alignment with MRR emission factors
• Corrections based on enhanced review and QAQC
  – previous inventories used reported refinery gas as all refinery fuel gas (RFG)
  – reported refinery gas has been corrected to reflect that it’s both RFG and fossil natural gas
2022 Edition Inventory Updates (continued)

• Refined assumption of fossil denaturant content of ethanol from 5.4% to 2.5%
• Other updates that are minor or involve recategorizing emissions from one sector to another.

Technical Updates document will be available by the end of the month.
With updates, 2019 emissions are about 3.3% lower than previous edition.
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Inventory released in 2021

Inventory released in 2022

2020 Limit = 431

418.2 MMT

13.7 MMT

404.5 MMT
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