

Fact Sheet: Areas where differences between state greenhouse gas (GHG) inventories and the EPA's *Inventory of U.S. Greenhouse Gas Emissions and Sinks by State: 1990-2020* estimates may occur

The EPA recognizes that there will be differences between the EPA's state-level estimates and some inventory estimates developed independently by individual state governments. Inventories compiled by states may differ for several reasons and differences do not necessarily mean that one set of estimates is more accurate, or "correct". The EPA has strived to ensure that the coverage, methodological and accounting approaches are clearly described so that users can clearly understand differences with how states may compile their inventories. The results should be viewed as complementary and supplement existing state data.

- Organization of sectors.** The EPA has organized estimates by sector and their respective source and sink categories consistent with the national *Inventory* and international reporting guidelines¹. Standardization of sectors in international reporting promotes comparability across countries and supports cooperation on climate action. States may use alternate organization of data, such as economic sectors, for presenting emissions rather than IPCC sectors. Some states may use IPCC sectors as the basis of their inventory, but allocate some categories differently across sectors, such as reporting some Industrial Process and Product Use categories in the Energy sector (e.g., SF₆ from electrical transmission and distribution). Comparability also depends on similar coverage. The completeness and geographic disaggregation of the report are consistent with the national *Inventory*, meaning in addition to estimates for states, the methods also address emissions and removals occurring in the District of Columbia, U.S. territories, and tribal lands.
- Methods and data.** In some cases, the EPA may be using different methodologies, activity data, and emission factors, or may have access to the latest facility-level information through the EPA's Greenhouse Gas Reporting Program (GHGRP). The EPA used as a basis, or starting point, the same methods or methods based on those used to compile the national-level estimates. States may use the same methods but use different sources of activity data.
- Accounting approaches.** In other cases, states may have adopted different accounting decisions that differ from those adopted by the IPCC and UNFCCC, (e.g., use of different category definitions and emission scopes consistent with state laws and regulations). For example, the EPA's approach is to focus on emissions that occur within geographic state boundaries ("Scope 1"), whereas some states include emissions that are caused by activity within their borders but which actually occur in other states ("Scope 2 or 3") or use consumption-based accounting approaches. For example, some states include emissions from imported electricity, or electricity production that occurs outside state boundaries. EPA's use of geographic state boundaries to allocate emissions is consistent with IPCC guidelines.² Differences in accounting approaches also include differences in the approach to estimating transportation, cross-border aviation and marine emissions, or treatment of biogenic CO₂. For example, the EPA does not include biogenic CO₂ emissions in state energy sector totals because, in accordance with IPCC

¹ The international reporting guidelines under the UNFCCC require reporting GHG emissions and removals across five sectors: energy, industrial processes and product use (IPPU), agriculture, land use, land use change and forestry (LULUCF) and waste. Note, while the UNFCCC reporting guidelines require use of methods from the 2006 IPCC Guidelines for estimating GHG emissions and removals, they require separate, rather than combined reporting of emission and sinks from agriculture, forestry and other land use sectors as presented in the IPCC Guidelines.

² Per the 2006 IPCC Guidelines, national inventories include greenhouse gas emissions and removals taking place within national territory and offshore areas over which the country has jurisdiction with some minor exceptions. For example, an exception, "CO₂ emissions from road vehicles should be attributed to the country where the fuel is sold to the end user." See Volume 1, Chapter 8, Section 8.2.1 on Coverage available online at: https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/1_Volume1/V1_8_Ch8_Reporting_Guidance.pdf.

methodological guidelines, CO₂ emissions and removals due to the harvesting, combustion and growth of biomass are included in the carbon stock changes of the relevant land use category of the Agriculture and LULUCF sectors, where the biomass originates, and inclusion of these emissions in energy sector totals would result in double-counting.³ Users of state GHG data should take care to review and understand differences in accounting approaches to ensure that any comparisons of estimates is equivalent or an apples to apples comparison of estimates.

- **Time Series.** The EPA has developed state-level estimates for 1990-2020 consistent with the national *Inventory* published in April 2022⁴ and current UNFCCC reporting requirements. States may estimate emissions and sinks over a different time period based on state goals, designation of different base years, legislation and available state data. Some states may not estimate back to 1990 and include only more recent years. Other states may have published estimates for earlier years previously, but which have not been recalculated or otherwise updated in more recent publications despite changes in methods, activity data, or emissions factors. Similarly, new emissions sources may be added in recent years but not estimated for more distant years.
- **Global Warming Potentials (GWPs).** States may use different metrics for carbon equivalency of non-CO₂ gases, such as different values for global warming potentials (GWPs). Consistent with the national *Inventory*, in this report the EPA is using 100-year Global Warming Potentials (GWP) from IPCC's Fourth Assessment Report (AR4) calculate carbon dioxide equivalency of non-CO₂ emissions, as required in reporting annual inventories to the UNFCCC. The EPA will be shifting to use of 100-year GWPs from the IPCC's Fifth Assessment Report (AR5) in 2024 with the first reporting under the Paris Agreement starting in 2024. Until then, consistent with UNFCCC reporting guidelines, the EPA will continue to use AR4 100-year GWPs.

³ See Q2-10 of Frequently Asked Questions on general guidance and other inventory issues, <https://www.ipcc-nggip.iges.or.jp/faq/faq.html>.

⁴ The national *Inventory* is available online at <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2020>.