

# Indicators of Global Climate Change: Where are we now compared to AR6?

## The causal chain from emissions to warming

Intergovernmental Panel on Climate Change (IPCC) assessments are the go-to source of scientific evidence for climate negotiations.

But IPCC reports are published at 5–10 year intervals, while evidence-based decision making needs up-to-date information.

The **Indicators of Global Climate Change (IGCC)** initiative takes key climate indicators from the IPCC AR6 Working Group One (WGI) report and updates them, based on consistent methods and datasets.

Our approach follows the **causal chain from emissions to warming**, via greenhouse gas concentrations, radiative forcing, surface temperature change, the Earth's energy imbalance, and the remaining carbon budget. We also provide updates on global temperature extremes.

Our aim is to update these indicators annually. For more information and the latest updates see <https://igcc.earth/>

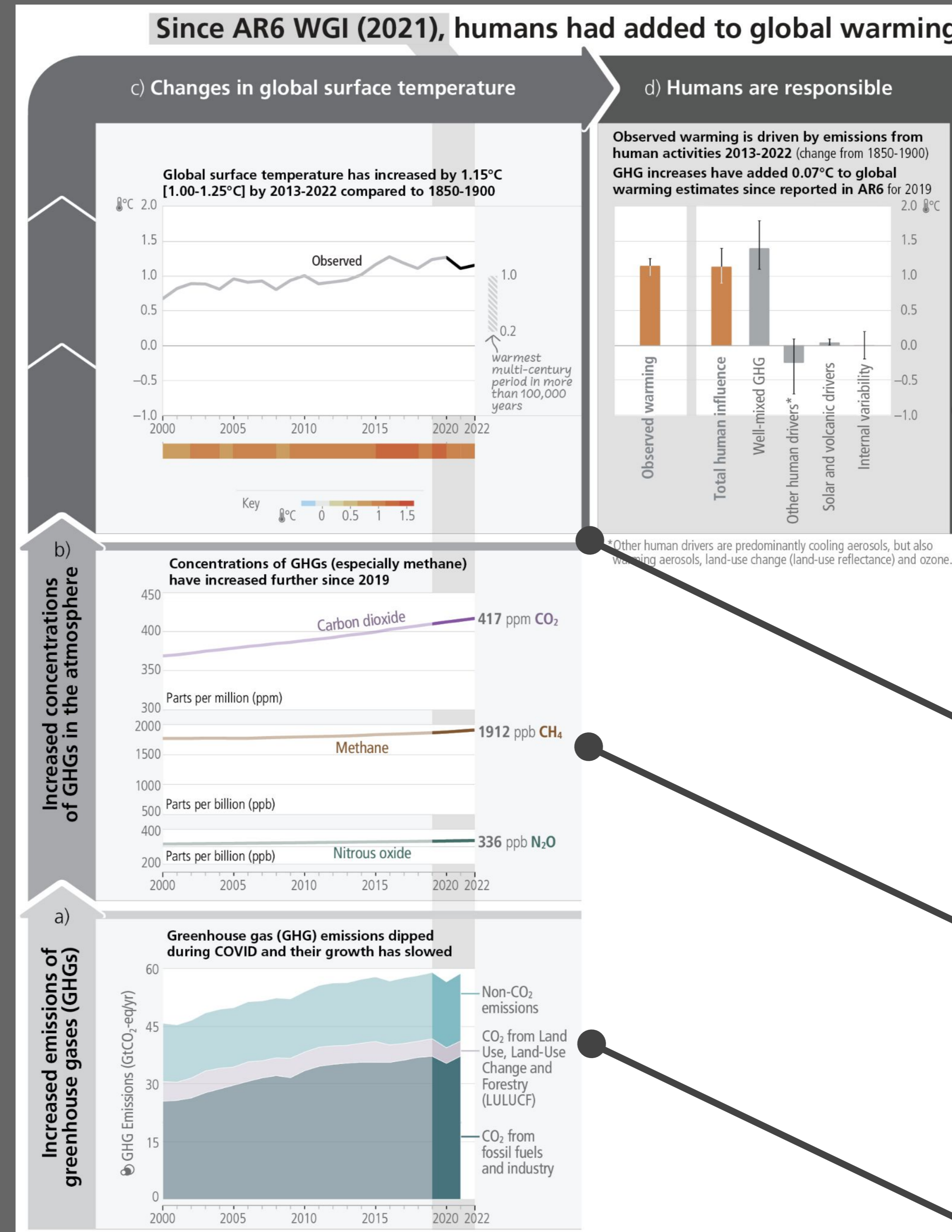


Figure adapted from AR6 SYR (Figure 2.1, Lee et al., 2023); updates shaded in grey

The IPCC AR6 WGI report provides a wide range of information relevant to the **Global Stocktake (GST)**.

These IGCC updates are traceable to and consistent with IPCC report methods, conveying wider understanding of the climate system and its direction of travel as the GST progresses.

**Estimated human-induced warming is a close match to observed warming (panel d).** The high decadal rate of warming is a result of rising GHG concentrations and a drop in aerosol cooling.

**Global surface temperature has increased by around 1.15°C since 1850–1900 (panel c).**

**GHG emissions have increased rapidly over recent decades (panel a), increasing atmospheric GHG concentrations (panel b).** Average GHG emissions are still growing, but at a slower rate in the past decade than the one before.

