

1990-2017 Country-level Greenhouse Gas Emission Estimates

Each year Rhodium estimates global and country-level anthropogenic greenhouse gas (GHG) emissions by gas and by sector. All 193 UN member countries are represented in our dataset, in addition to four Non-Party regions. We track emissions of the six Kyoto gases identified by the United Nations Framework Convention on Climate Change (UNFCCC), including methane (CH₄), carbon dioxide (CO₂), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) as well as nitrogen trifluoride (NF₃).

To estimate global and country-level GHG emissions we take a bottom-up approach, which combines national activity data (e.g. fuel combustion, steel production, livestock production) with sector- and country-specific emission factors to develop national emissions inventories following guidance by the Intergovernmental Panel on Climate Change (IPCC). This method provides annual emissions based on changes in socioeconomic activity at the country and sector level and is appropriate for tracking trends in emissions and emissions intensity over time for use in national or global emissions inventories.

Not all countries estimate and report annual GHG emissions. Countries listed in Annex I of the UNFCCC (those countries that were OECD members in 1990) are required to produce and submit an annual report of GHG emissions based on IPCC guidance to the UNFCCC each year. All other countries (referred to as non-Annex I Parties) are not required by the UNFCCC to submit GHG inventory data. While some countries have submitted data for a few years between 1990-2017, few have reported a full time series of emissions data for those years, and few have reported data for more recent years. With the disparity in official emissions estimates from Parties to the UNFCCC, we generally take a bifurcated approach to estimating sector-level emissions for Annex I (developed) and non-Annex I (developing) countries.

Our sector-based emissions estimates are derived from a variety of sources, including national inventory reports, the US Environmental Protection Agency, the International Energy Agency, and the UN Food and Agriculture Organization.

Kate Larsen
kmlarsen@rhg.com

Mikhail Grant
mgrant@rhg.com

Alfredo Rivera
Arivera@rhg.com

Shashank Mohan
smohan@rhg.com

Tel: +1.212.532.1157
Fax: +1.212.532.1162
Web: www.rhg.com

New York
5 Columbus Circle
New York, NY 10019

California
312 Clay Street
Oakland, CA 94617

Hong Kong
135 Bonham Strand
Sheung Wan, HK

Paris
33 Avenue du Maine
75015 Paris

Disclosure Appendix

This material was produced by Rhodium Group LLC for use by the recipient only. No part of the content may be copied, photocopied or duplicated in any form by any means or redistributed without the prior written consent of Rhodium Group.

Rhodium Group is a specialized research firm that analyzes disruptive global trends. Our publications are intended to provide clients with general background research on important global developments and a framework for making informed decisions. Our research is based on current public information that we consider reliable, but we do not represent it as accurate or complete. The information in this publication is not intended as investment advice and it should not be relied on as such.

© 2019 Rhodium Group LLC, 5 Columbus Circle, New York, NY 10019. All rights reserved.