

PRIMAP-crf: UNFCCC CRF data in IPCC categories (2019v2, April, 2020)

Recommended citation

These data are freely available under a Creative Commons Attribution 4.0 International Licence ([CC BY 4.0](#)).

When using the data, please cite:

Gütschow, J.; Jeffery, L.; Guenther, A. (2019): PRIMAP-crf: UNFCCC CRF data in IPCC categories (2019v2). <https://doi.org/10.5281/zenodo.3775575>, 2020

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Use of the dataset and full description

A full description of a previous version of the dataset can be found in:

Jeffery, M. L., Gütschow, J., Gieseke, R., and Gebel, R.: PRIMAP-crf: UNFCCC CRF data in IPCC 2006 categories, *Earth Syst. Sci. Data*, 10, 1427-1438, <https://doi.org/10.5194/essd-10-1427-2018>, 2018

A description paper for this dataset is in preparation.

If you use this dataset, we would appreciate a brief notification to the lead author (johannes.guetschow@pik-potsdam.de) with a description of how the data was used. This information can help to guide the production of future updates to the dataset.

New versions of the UNFCCC CRF data are released annually with an additional year of data. Some countries also submit revised versions of their data through the year. Where possible, the PRIMAP-crf data will be updated accordingly and a revised dataset released. Data releases with an additional year of data are indicated in the naming of the data - the year of data publication is indicated by the dataset name, e.g. PRIMAP-crf-2019 data includes data first released by countries in 2019. Inclusion of subsequent data revisions from the same year are indicated by the version number, for example PRIMAP-crf-2019-v2 will include all CRF2019 data published until 27th April 2020.

When using this dataset or one of its updates, please cite the DOI of the precise version of the dataset used and also the data description article which this dataset is supplement to (see above).

Support

If you need support in using the dataset or have any other questions regarding the dataset, please contact Dr. Johannes Gütschow at johannes.guetschow@pik-potsdam.de.

If you wish to use the .csv file in excel but the data does not appear to display correctly, you need to set the delimiter character. To do so:

- highlight the first column
- Under the 'Data' tab, select 'Text to columns'
- In the first pop-up window, select 'Delimited'
- In the second pop-up, select 'comma' separated values
- No selection needed in the third pop-up, click Finish and the data should display correctly.

Abstract

PRIMAP-crf is a processed version of data reported by countries to the United Nations Framework Convention on Climate Change (UNFCCC) in the Common Reporting Format (CRF). The processing has three key aspects: 1) Data from individual countries and years are combined into one file. 2) Data is re-organised to follow the IPCC 2006 hierarchical categorisation. 3) 'Baskets' of gases are calculated according to different global warming potential estimates from each of the three most recent IPCC reports.

Sources

The original CRF data is all freely available via the UNFCCC website <https://unfccc.int/process/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/national-inventory-submissions-2019>. Please consider also citing this source in any work that you produce using PRIMAP-crf.

This dataset includes all 2019 CRF data available as of 27th April, 2020. For later data updates, please check the PRIMAP-crf page of the Paris Reality Check website <https://www.pik-potsdam.de/paris-reality-check/primap-crf/>.

Files included in the dataset

Guetschow-et-al-2019-PRIMAP-crf_2019-v2.csv : primary data file with data in IPCC 2006 categories

Guetschow-et-al-2019-PRIMAP-crf96_2019-v2.csv : additional data file with data in IPCC 1996 categories

PRIMAP-crf-IPCC2006-category-codes.csv : definitions of IPCC 2006 category codes used in PRIMAP-crf

All comma-separated values (CSV) files are also provided as Excel (.xlsx) files for ease of use.

Data format description (columns)

The PRIMAP-crf data in the comma-separated values (CSV) and Excel files is formatted consistently with other PRIMAP emissions datasets, including PRIMAP-hist (Gütschow et al., 2016, 2017 and 2019).

The data contained in each column is as follows:

version

The version refers to the year of release of the dataset (in this case 2019), and the revision number (here v2). 2019-v2 includes all 2019 data released until 27th April 2020. Previous versions are available for the emissions data reported in 2017 (Jeffery et al., 2018) and 2018 (Gütschow et al., 2019).

country

ISO 3166 three-letter country codes.

Additionally, the European Union is included as the sum of its 28 pre-Brexit member states with the code “EU28” and as the sum of its 27 post-Brexit member states with the code “EU27BX”. The EU data is the sum of the data of its member states, not the data officially reported to the UNFCCC by the EU.

category

IPCC (Intergovernmental Panel on Climate Change) 1996 or 2006 category codes. Please see the accompanying file PRIMAP-crf-IPCC2006-category-codes.csv for a definition of codes used for IPCC 2006 categories.

Data for 1996 categories are shared for the top level categories only, as defined below. Note that ‘IPC’ is used to indicate 2006 categorisation, and ‘CAT’ for 1996.

Category code Description

Table 1: Category descriptions using IPCC 1996 terminology.

CAT0	National Total
CATM0EL	National Total, excluding LULUCF
CAT1	Total Energy
CAT1A	Fuel Combustion Activities
CAT1B	Fugitive Emissions from Fuels
CAT2	Industrial Processes
CAT3	Solvent and Other Product Use
CAT4	Agriculture
CAT5	Land Use, Land Use Change, and Forestry (LULUCF)
CAT6	Waste
CAT7	Other

entity

Gas categories using global warming potentials from either IPCC Second Assessment Report (SAR), Assessment Report 4 (AR4), Assessment Report 5 (AR5), or Assessment Report 5 with carbon-cycle feedbacks (AR5CCF). Where no global warming potential is specified, quantities are given in absolute weights of the gas.

Table 2: Gas category names and global warming potential used

Code	Description
CH4	Methane
CO2	Carbon Dioxide
N2O	Nitrous Oxide
SF6	Sulfur Hexafluoride
NF3	Nitrogen Trifluoride

Code	Description
HFC125	Pentafluoroethane, HFC-125
HFC134	Tetrafluoroethane, HFC-134
HFC134A	Tetrafluoroethane, HFC-134a
HFC143	Trifluoroethane, HFC-143
HFC143A	Trifluoroethane, HFC-143a
HFC152A	1,1-Difluoroethane, HFC-152a
HFC227EA	Heptafluoropropane, HFC-227a
HFC23	Trifluoromethane, HFC-23
HFC236FA	1,1,1,3,3,3-hexafluoropropane, HFC-236fa
HFC245CA	1,1,2,2,3-pentafluoropropane, HFC-245ca
HFC245FA	Enovate, HFC-245fa
HFC32	Difluoromethane, HFC-32
HFC365MFC	1,1,1,3,3-pentafluorobutane, HFC-365mfc
HFC41	Fluoromethane, HFC-41
HFC4310	1,1,1,2,3,4,4,5,5,5-decafluoropentane, HFC-43-10
OTHERHFCS	Unspecified mix of HFCs (GWP as in reporting)
OTHERHFCSAR4	Unspecified mix of HFCs (GWP as in reporting)
OTHERHFCSAR5	Unspecified mix of HFCs (GWP as in reporting)
OTHERHFCSAR5CCF	Unspecified mix of HFCs (GWP as in reporting)
HFCS	Hydrofluorocarbons (SAR)
HFCSAR4	Hydrofluorocarbons (AR4)
HFCSAR5	Hydrofluorocarbons (AR5)
HFCSAR5CCF	Hydrofluorocarbons (AR5CCF)
C2F6	Hexafluoroethane, C2F6
C3F8	Octafluoropropane, C3F8
C4F10	Perfluorobutane, C4F10
C5F12	Dodecafluoropentane, C5F12
C6F14	Perfluorohexane, C6F14
CC4F8	Octafluorocyclobutane, cC4F8
CF4	Tetrafluoromethane, CF4
OTHERPFCs	Unspecified mix of PFCs (GWP as in reporting)
OTHERPFCsAR4	Unspecified mix of PFCs (GWP as in reporting)
OTHERPFCsAR5	Unspecified mix of PFCs (GWP as in reporting)
OTHERPFCsAR5CCF	Unspecified mix of PFCs (GWP as in reporting)
PFCs	Perfluorocarbons (SAR)
PFCsAR4	Perfluorocarbons (AR4)
PFCsAR5	Perfluorocarbons (AR5)
PFCsAR5CCF	Perfluorocarbons (AR5CCF)
FGASES	Fluorinated Gases (SAR)
FGASESAR4	Fluorinated Gases (AR4)
FGASESAR5	Fluorinated Gases (AR5)
FGASESAR5CCF	Fluorinated Gases (AR5CCF)
KYOTOHG	Kyoto greenhouse gases (SAR)
KYOTOHGAR4	Kyoto greenhouse gases (AR4)
KYOTOHGAR5	Kyoto greenhouse gases (AR5)
KYOTOHGAR5CCF	Kyoto greenhouse gases (AR5CCF)
NMVOC	Non-Methane Volatile Organic Compounds
NOX	Nitrogen Oxide
SO2	Sulfur dioxide
CO	Carbon Monoxide

unit

Units are either t, kt, GgCO₂eq, or MtCO₂eq. The CO₂-equivalent is calculated according to the global warming potential indicated by the entity (see above).

Remaining columns

All remaining columns are years from 1986 to 2017. These columns contain the relevant data for that year. All data are given to three significant figures and displayed in scientific notation.

Missing data

In the final dataset there are some missing data where no data was originally reported. For years 1990 onward, this either means that emissions of that gas, in that category were negligible or too difficult for the country to measure. However, please see the individual country national inventory reports (UNFCCC, 2019) for country specific information.

Only a few countries report data prior to 1990, for all other countries there is no data given in PRIMAP-crf. This does not, however, mean that emissions were zero or negligible in those years for those countries.

Missing data are ignored, or treated as zero, when calculating sums for baskets of multiple greenhouse gases or country groups. This means that any Kyoto-GHG baskets are sums across reported data only. Similarly, emissions from the EU for years prior to 1990 reflect the sum of emissions only for those countries that report data for those years, and not the true total for the EU.

References

Jeffery, M. L., Gütschow, J., Gieseke, R., and Gebel, R.: PRIMAP-crf: UNFCCC CRF data in IPCC 2006 categories, *Earth Syst. Sci. Data*, 10, 1427-1438, <https://doi.org/10.5194/essd-10-1427-2018>, 2018

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