

09b Total greenhouse gas emissions (excluding LULUCF) from the national territory

Indicator type **Core indicator**

Published

Versioning

First publication Latest update

Area and sub-area

Area and sub-area

Presentation

Tier

Indicator definition and description

Unit of measure

Coverage

Spatial aggregation

Reference period

Update frequency

Base period

Disaggregation (operational indicators)

Disaggregation (operational indicators)	Comments
<input type="text" value="Spatial"/>	<input type="text"/>
<input type="text" value="Temporal (by month, by season)"/>	<input type="text"/>
<input type="text" value="IPCC sector"/>	<input type="text"/>

Other related -indicators (e.g.contextual, proxy, other core indicators)

ID	Subindicator	Type
<input type="text" value="09a"/>	<input type="text" value="Total greenhouse gas emissions from the national economy"/>	<input type="text" value="Core indicator"/>
<input type="text" value="10b"/>	<input type="text" value="CO2 emissions from fuel combustion within the national territory"/>	<input type="text" value="Core indicator"/>
<input type="text" value="11"/>	<input type="text" value="Greenhouse gas emissions from land use, land use change and forestry (LULUCF)"/>	<input type="text" value="Core indicator"/>
<input type="text" value="07"/>	<input type="text" value="Greenhouse gas emissions intensity of agricultural commodities"/>	<input type="text" value="Contextual indicator"/>

Relevance

Policy context and rationale

Related SDG indicator (SDG I.)

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Relation w SDG-I. Related (e.g. part of the indicator calculation)

Related Sendai Framework I. Not applicable

Policy references

Document title	Link
Transforming our world: the 2030 Agenda for Sustainable Development (General Assembly of the United Nations, 2015)	https://sustainabledevelopment.un.org/post2015/transformingourworld
Kyoto Protocol (United Nations Climate Change, 1997)	https://unfccc.int/process-and-meetings/the-kyoto-protocol/what-is-the-kyoto-protocol/kyoto-protocol-targets-for-the-first-commitment-period
Paris Agreement (United Nations, 2015)	https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement

Methodology

Methodology for indicator calculation	<p>This indicator is calculated as the sum of individual greenhouse gas emissions emitted on the national territory.</p> <p>Total GHG emissions are calculated as the sum of individual greenhouse gas emissions: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), sulphur hexafluoride (SF₆) and nitrogen trifluoride (NF₃), measured in units of CO₂-equivalent, by using a common weighting factor, the so-called Global Warming Potentials (GWP). The enhanced transparency framework for action and support of the Paris Agreement (see Article 13), further set out in the modalities, procedures and guidelines (see part D. Metrics), establishes that each Party shall use the 100-year time-horizon GWP values from the IPCC Fifth Assessment Report. GWP values are listed in Table 8.A.1 in Appendix 8.A of Chapter 8 – “Anthropogenic and natural radiative forcing”</p> <p>The GWP values for the main direct GHGs are as follows: CO₂ = 1, CH₄ = 28, N₂O = 265, SF₆ = 23500, NF₃ = 16100. GWP values for HFCs and PFCs vary for individual species. These values are to be used for reporting on GHG emissions under the Paris Agreement.</p> <p>Reporting by Annex I Parties under the UNFCCC is still on the basis of GWP values of the Fourth IPCC AR (see Table 2.14 of the IPCC Fourth Assessment Report). These GWP values are: CO₂ = 1, CH₄ = 25, N₂O = 298, SF₆ = 22800, NF₃ = 17200.</p> <p>Note: most non-Annex I Parties still use the Revised 1996 IPCC Guidelines for reporting and therefore use a different set of GWPs (from the IPCC Second Assessment Report).</p> <p>The gases listed in the first paragraph are the so-called direct GHGs. There exist also precursor gases: carbon monoxide (CO), nitrogen oxides (NO_x), non-methane volatile organic compounds (NMVOCs), as well as sulphur oxides (SO_x). The emissions of precursor gases are not included in total emissions and are therefore not part of this indicator.</p>
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Methodology references

Document title	Link
Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement (UNFCCC, 2018)	https://unfccc.int/documents/184700

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IPCC Fourth Assessment Report: The Physical Science Basis (Intergovernmental Panel on Climate Change (IPCC), 2007)	https://www.ipcc.ch/report/ar4/wg1/
IPCC 5th Assessment Report: Chapter 8 - Anthropogenic and natural radiative forcing (IPCC, 2013)	https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf
IPCC Fifth Assessment Report: Climate Change 2014 (Synthesis Report) (Intergovernmental Panel on Climate Change (IPCC), 2014)	https://www.ipcc.ch/report/ar5/syr/
Decision 17/CP.8 Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention (United Nations Climate Change, 2002)	https://unfccc.int/process-and-meetings/transparency-and-reporting/support-for-developing-countries/guidelines-and-manuals-for-the-preparation-of-non-annex-i-national-reports-and-international-eq-5
Decision 24/CP.19 Revision of the UNFCCC reporting guidelines on annual inventories for Parties included in Annex I to the Convention (United Nations Climate Change, 2013)	https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/reporting-requirements
2006 IPCC Guidelines for National Greenhouse Gas Inventories (Intergovernmental Panel on Climate Change, 2007)	https://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html

Classification syst. IPCC Common Reporting Format Tables, see: http://unfccc.int/files/national_reports/annex_i_ghg_inventories/application/octet-stream/2006_ipcc_guidelines.7z

Data sources

Main source	Other than official statistics
Explanation	National GHG inventory submission under the UNFCCC (in some countries part of official statistics)
SEEA Accounts that can serve as data sources	
UN-FDES	3.1.1: Emissions of greenhouse gases

International databases containing this indicator

Eurostat database	https://ec.europa.eu/eurostat/data/database
UNFCCC GHG data portal	https://unfccc.int/process/transparency-and-reporting/greenhouse-gas-data/ghg-data-unfccc/ghg-data-from-unfccc
UNFCCC database	https://unfccc.int/process-and-meetings/transparency-and-reporting/greenhouse-gas-data/ghg-data-unfccc/ghg-data-from-unfccc
UNFCCC website for National Inventory Submissions for Annex I Parties	https://unfccc.int/ghg-inventories-annex-i-parties/2021

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UNFCCC website for National Communication submissions from Non-Annex I Parties	https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/national-communications-and-biennial-update-reports-non-annex-i-parties/national-communication-submissions-from-non-annex-i-parties
UNFCCC website for Biennial Update Report submissions from	https://unfccc.int/BURs
EEA greenhouse gas - data viewer	https://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer

Comments

Comments

A base year for this indicator can be defined when presenting a trend or reporting on compliance within the context of the UNFCCC or its Kyoto Protocol. The base year under Convention is a year chosen as the reference/starting point of the historical level of anthropogenic emissions in accordance with Article 4.6 of the Convention. For the EU countries, the base year under the Kyoto Protocol is 1990 or 1995 for all gases, except NF3 where base year is either 1995 or 2000 (depending on what the EU member States use).