## 14 Direct greenhouse gas emissions from households

Indicator type Core indicator

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**Published** 

VCISIOIIIIIg					
First publication	1/26/2017	Latest update	9/25/2020		
Area and sub-area					
Area and sub-area	Emissions	Consumption			
Presentation					
Tier	1				
Indicator definition and description	Greenhouse gas (GHG) emissions from households consumption activities that directly cause emissions: fuel use for transport, heating, cooking, and other purposes; other activities such as the use of solvents.				
Unit of measure	Kilotonnes (kt) of CO2 equivalent				
Coverage	Consumption by households				
Spatial aggregation	National economy				
Reference period	Calendar year				
Update frequency	Annual				
Base period	Not applicable				
Disaggregation (operational indicators)					
Disaggregation (operational indicators)			Comments		
Spatial					
Temporal (by month, by season)					
Other related -indicators (e.g.contextual, proxy, other core indicators)					

ID	Subindicator	Туре
09a	Total greenhouse gas emissions from the national economy	Core indicator
12	Total greenhouse gas emissions from production activities	Core indicator

### Relevance

Policy context and rationale

Excessive greenhouse gas emissions (GHG) by humans are the reason why our climate is changing. Reducing GHG emissions is the main course of action in our efforts to limit the change. High-quality monitoring of GHG emissions is hence essential.

In addition, information is needed to better understand who emits, what they emit, and for which purposes. Extensive analyses of emission are needed to find the most cost-effective methods to reduce them. Air emission accounts and their derived indicators can be used to model and investigate, for example, potential efficiency gains and macro-economic links. These analyses helps us to work towards the goals set in international agreements, including the Paris Agreement and the UNFCCC. At European level, emissions targets are set in Europe 2030: the EU policy, stategy and legislation for 2030 environmental, energy and climate targets.

Environmental accounts, such as air emission accounts, are used in economic-environmental modeling, for example for studies on eco-efficiency and resource and waste intensities, for environmental indicators, and for trade negotiations related to environmental impacts.

Compatibility with the traditional national economic accounts greatly facilitates the integration of the environmental data into macroeconomic models and analysis.

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	Indirect links to SDGs 7, 12 and 13.
Related SDG indicator (SDG I.)	Not applicable
Relation w SDG-I.	
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
Paris Agreement (United Nations, 2015)	https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement
United Nations Framework Convention on Climate Change (United Nations Climate Change, 1994)	https://unfccc.int/process-and-meetings/the- convention/what-is-the-united-nations-framework- convention-on-climate-change
European Union Climate Strategies and Targets (European Commission, 2008)	https://ec.europa.eu/clima/policies/strategies_en

#### Methodology

Methodology for indicator calculation

The indicator is calculated as the sum of direct GHG emissions from households for 1) transport, 2) heating and 3) other purposes and can be derived from air emission accounts.

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"

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.

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.

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).

The gases listed in the first paragraph are the so-called direct GHGs. There exist also precursor gases: carbon monoxide (CO), nitrogen oxides (NOX), non-methane volatile organic compounds (NMVOCs), as well as sulphur oxides (SOX). The emissions of precursor gases are not included in total emissions and are therefore not part of this indicator.

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	Document title	Link	
	or and guidelines for the transparency on and support referred to in Article 13 of t (UNFCCC, 2018)	https://unfccc.int/documents/184700	
	ment Report: The Physical Science Basis Panel on Climate Change (IPCC), 2007)	https://www.ipcc.ch/report/ar4/wg1/	
IPCC 5th Assessmen natural radiative for	nt Report: Chapter 8 - Anthropogenic and rcing (IPCC, 2013)	https://www.ipcc.ch/site/assets/uploads/2018/02/W G1AR5_Chapter08_FINAL.pdf	
	ent Report: Climate Change 2014 Intergovermental Panel on Climate 1)	https://www.ipcc.ch/report/ar5/syr/	
Manual for air emission accounts (Eurostat, 2015)		https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-GQ-15-009	
Air emissions accounts and intensities, Reference Metadata in Euro SDMX Metadata Structure (ESMS) (Eurostat, 2018)		https://ec.europa.eu/eurostat/cache/metadata/en/env_ac_ainah_r2_esms.htm	
System of Environmental Economic Accounting 2012 Central Framework (United Nations, European Commission, Food and Agriculture Organization of the United Nations, OECD, World Bank, 2014)		https://seea.un.org/content/seea-central-framework	
Classification syst.	The European standard statistical classifi Individual Consumption by Purpose (COI	cation of products by activity (CPA), Classification of COP)	
Data sources			
Main source	Official statistics: SEEA and/or SNA		
Explanation	National SEEA air emission accounts		
SEEA Accounts that o	can serve as data sources		
SEEA Account		Comments	
Air emission accounts			
UN-FDES	3.1.1: Emissions of greenhouse gases		
International databa	ses containing this indicator		
Eurostat database		https://ec.europa.eu/eurostat/data/database	

<u>EA</u>

https://stats.oecd.org/Index.aspx?DataSetCode=A

## Comments

**OECD Air Emissions Accounts** 

Comments