SDG 13 - Climate action (statistical annex)

Statistics Explained

Take urgent action to combat climate change and its impacts (statistical annex)

Data extracted in May 2021.

EU trend of SDG 13 on climate action

This article provides an overview of statistical data on SDG 13 'Climate action' in the European Union (EU) . It is based on the set of EU SDG indicators for monitoring of progress towards the UN Sustainable Development Goals (SDGs) in an EU context.

This article is part of a set of statistical articles , which are based on the Eurostat publication 'Sustainable development in the European Union — Monitoring report on progress towards the SDGS in an EU context — 2021 edition' . This report is the fifth edition of Eurostat's series of monitoring reports on sustainable development, which provide a quantitative assessment of progress of the EU towards the SDGs in an EU context.

Indicator	Long-term trend (past 15 years)	Short-term trend (past 5 years)
Climate mitigation		
Greenhouse gas emissions	↘ (1)	↘ (1)
Greenhouse gas emissions intensity of energy consumption	↑	↑
Share of renewable energy in gross final energy consumption (*)	↑	↗
Average CO_2 emissions from new passenger cars (*)	↘ (2)	↘
Climate impacts		
Mean near-surface temperature deviation	↓ (3)	:
Climate-related economic losses	↓ (4)	↓
Global mean ocean surface acidity (*)	↘	↘
Support to climate action		
Contribution to the international USD 100bn commitment on climate-related expenditure	:	↑
Population covered by the Covenant of Mayors for Climate and Energy signatories	↑ (4)	↑

(*) Multi-purpose indicator.
(1) Assessed against the 55 % net emission reduction target for 2030. Note that this assessment is based on past progress and not on projections of future emissions based on planned legislation and policy measures.
(2) Past 12-year period.
(3) Change over the two most recent decades (2010–2019 compared with 2000–2009); assessment is the same for global and European temperature.
- (4) Past 10-year period.

Table 1: Indicators measuring progress towards SDG 13, EU

Symbol	With quantitative target	Without quantitative target
🎯	Trends for indicators marked with this 'target' symbol are calculated against an official and quantified EU policy target. In this case the arrow symbols should be interpreted according to the left-hand column below. Trends for all other indicators should be interpreted according to the right-hand column below.	
↑	Significant progress towards the EU target	Significant progress towards SD objectives
↗	Moderate progress towards the EU target	Moderate progress towards SD objectives
↘	Insufficient progress towards the EU target	Moderate movement away from SD objectives
↓	Movement away from the EU target	Significant movement away from SD objectives
:	Calculation of trend not possible (for example) time series too short)	

Table 2: Explanation of symbols for indicating progress towards SD objectives and targets

Greenhouse gas emissions

This indicator measures man-made greenhouse gas (GHG) emissions as well as GHG removals[1]. They are integrated into a single indicator — the net GHG emissions — expressed in units of CO2equivalents using the global warming potential (GWP) of each gas. At present, GHG removals are realised only in the land use, land use change and forestry (LULUCF) sector. Emissions and removals data, known as GHG inventories, are submitted annually by Member States to the EU and the United Nations Framework Convention on Climate Change (UNFCCC). The European Environment Agency (EEA) compiles the EU aggregate data and publishes data for the EU and all Member States. Eurostat republishes the EEA data.

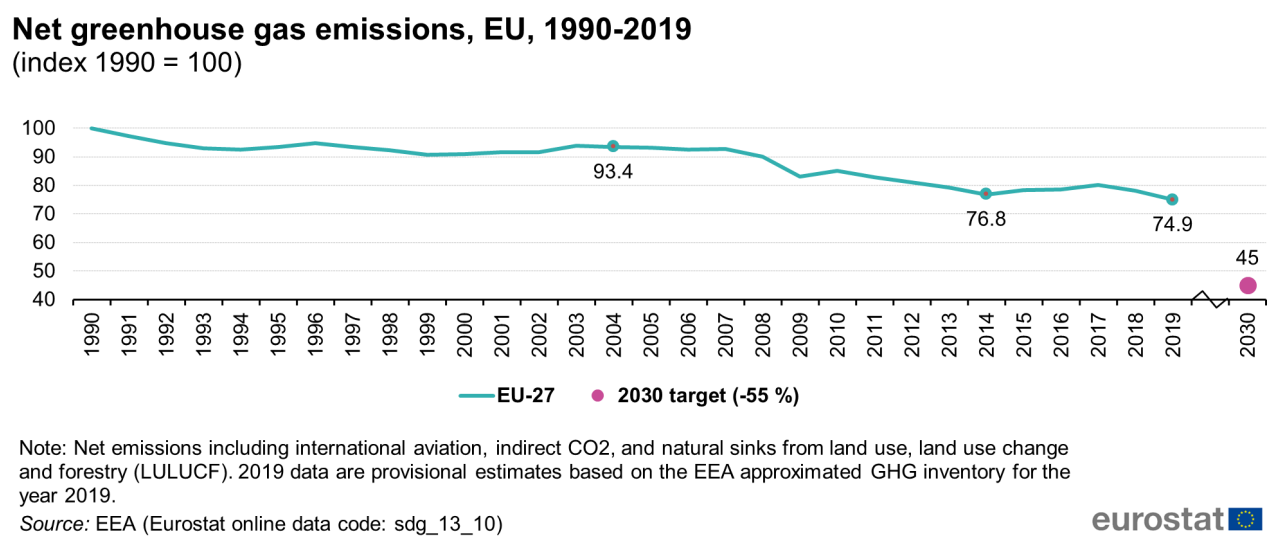
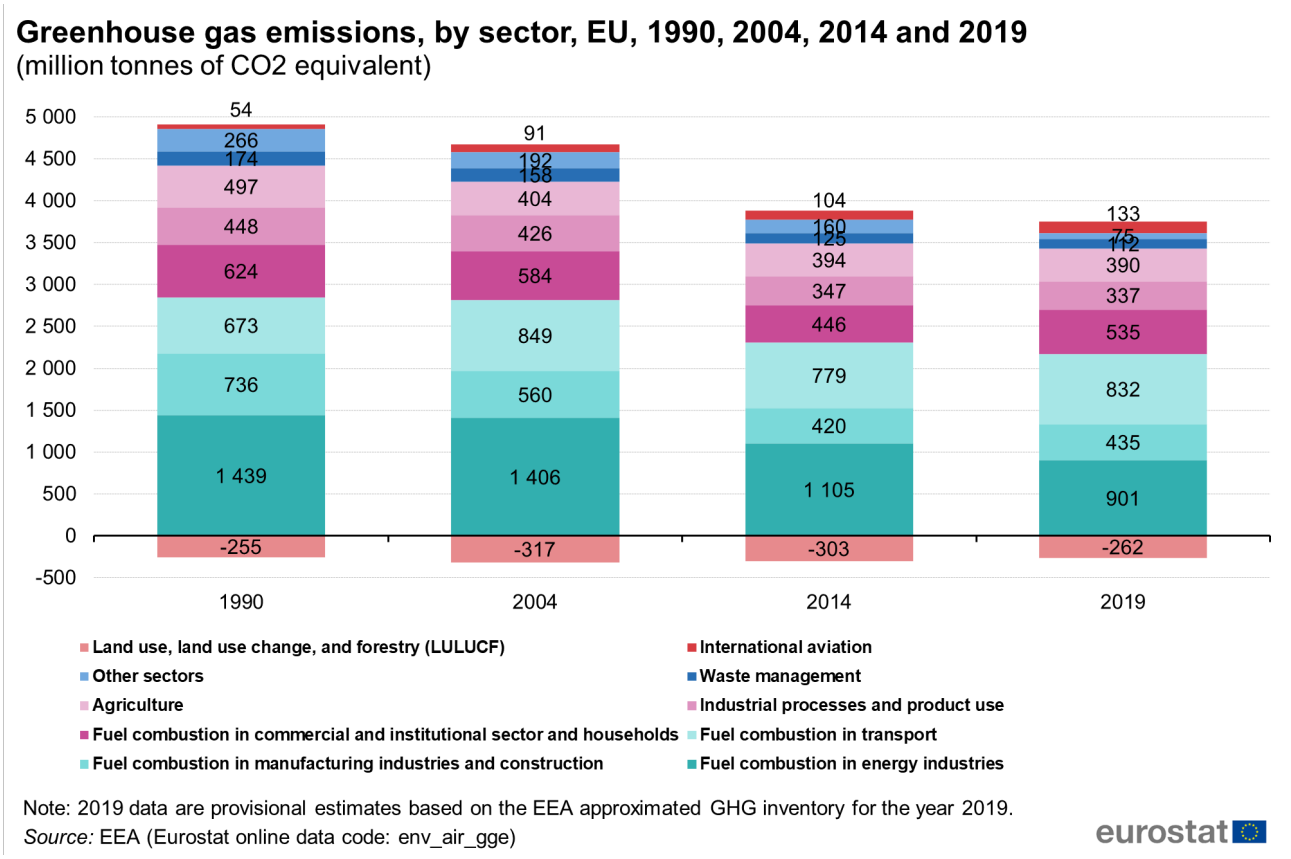


Figure 1: Net greenhouse gas emissions, EU, 1990-2019 (index 1990 = 100) Compound annual growth rate (CAGR): – 1.5 % per year (observed) and – 2.8 per year (required to meet target) in the period 2004–2019; – 0.7 % per year (observed) and – 3.4 % per year (required to meet target) in the period 2014–2019. Source: EEA, Eurostat (sdg_13_10)

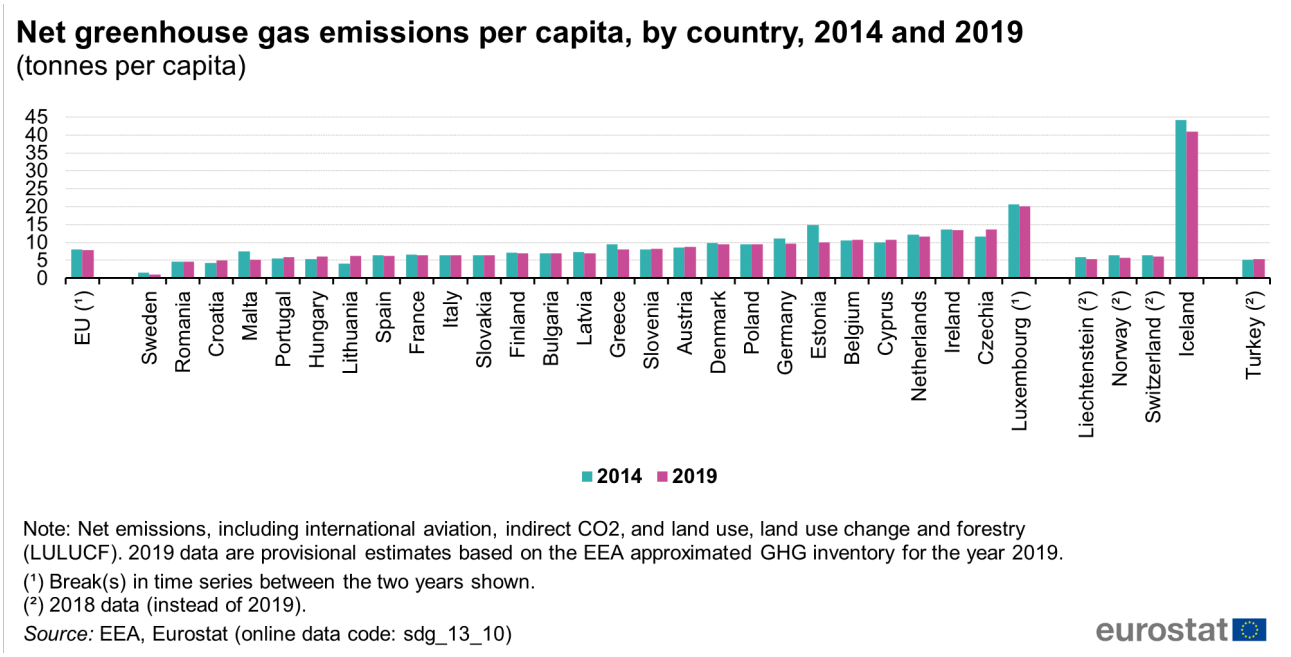
[1]The 'Kyoto basket' of GHGs includes carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O) and the so-called F-gases F-gases, i.e., hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride (NF3) and sulphur hexafluoride (SF6).



Note: 2019 data are provisional estimates based on the EEA approximated GHG inventory for the year 2019.
Source: EEA (Eurostat online data code: env_air_gge)

eurostat

Figure 2: Greenhouse gas emissions by sector, EU, 1990, 2004, 2014 and 2019 (million tonnes of CO2 equivalent) Source: EEA, Eurostat (env_air_gge)



Note: Net emissions, including international aviation, indirect CO2, and land use, land use change and forestry (LULUCF). 2019 data are provisional estimates based on the EEA approximated GHG inventory for the year 2019.
(1) Break(s) in time series between the two years shown.
(2) 2018 data (instead of 2019).
Source: EEA, Eurostat (online data code: sdg_13_10)

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Figure 3: Net greenhouse gas emissions per capita, by country, 2014 and 2019 (tonnes per capita) Source: EEA, Eurostat (sdg_13_10)

Greenhouse gas emissions intensity of energy consumption

The GHG intensity of energy consumption is the ratio between energy-related GHG emissions and gross inland consumption of energy. It expresses how many tonnes of CO2equivalent of energy-related GHGs are emitted in a certain economy per unit of energy consumed. The data on energy emissions are sourced from the GHG emissions reported to the UNFCCC. Gross inland consumption is reported by each Member State to Eurostat and is the sum of final energy consumption, distribution losses, transformation losses and statistical differences.

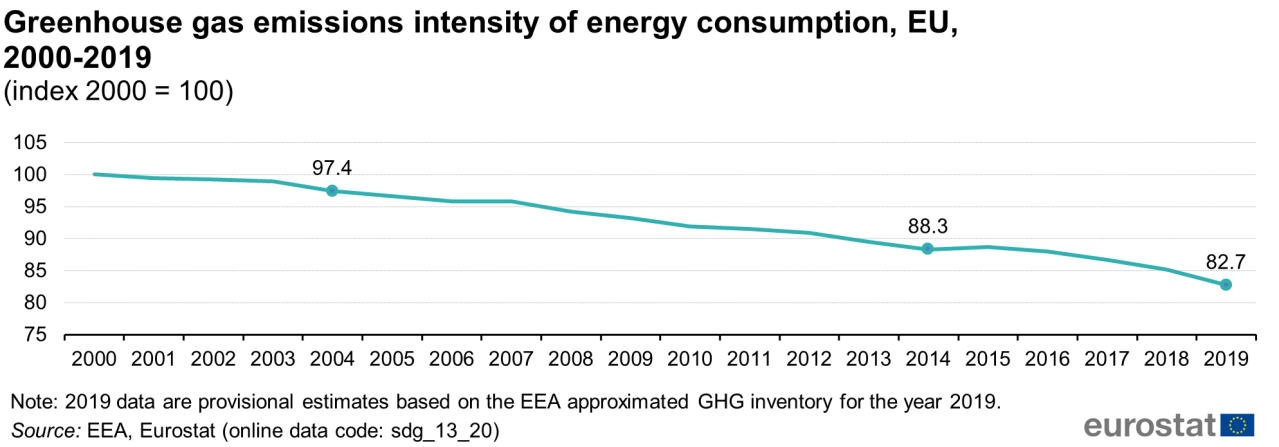
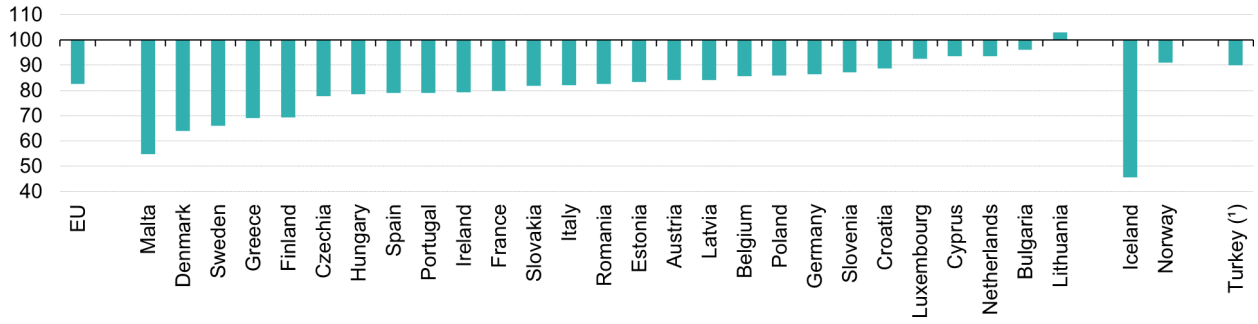


Figure 4: Greenhouse gas emissions intensity of energy consumption, EU, 2000–2019 (Index 2000 = 100) Compound annual growth rate (CAGR): – 1.1 % per year in the period 2004–2019; – 1.3 % per year in the period 2014–2019. Source: EEA, Eurostat (sdg_13_20)

Greenhouse gas emissions intensity of energy consumption, by country, 2019
(index 2000 = 100)



Note: Data are provisional estimates based on the EEA approximated GHG inventory for the year 2019.
(1) 2018 data.
Source: EEA, Eurostat (online data code: sdg_13_20)

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Figure 5: Greenhouse gas emission intensity of energy consumption, by country, 2019 (index 2000 = 100)
Source: EEA, Eurostat (sdg_13_20)

Mean near-surface temperature deviation

This indicator tracks deviations in the average near-surface temperature worldwide and for Europe compared with the 1850 to 1899 average. These measurements have been taken for decades by stations forming a dense network across the globe. The data are monitored using standardised measurements, and quality control and homogeneity procedures are used to ensure data are compatible and comparable. The average annual temperature shown here is expressed in relation to the 'pre-industrial' baseline period of 1850 to 1899, when widespread temperature measurement was first established[2]. In addition to annual data, decadal averages are shown, as they form the basis for the indicator assessment. Data presented

[2]European Environment Agency (2020), Global and European temperature .

in this section stem from the EEA , based on the Met Office Hadley Centre and Climatic Research Unit (HadCRUT4).

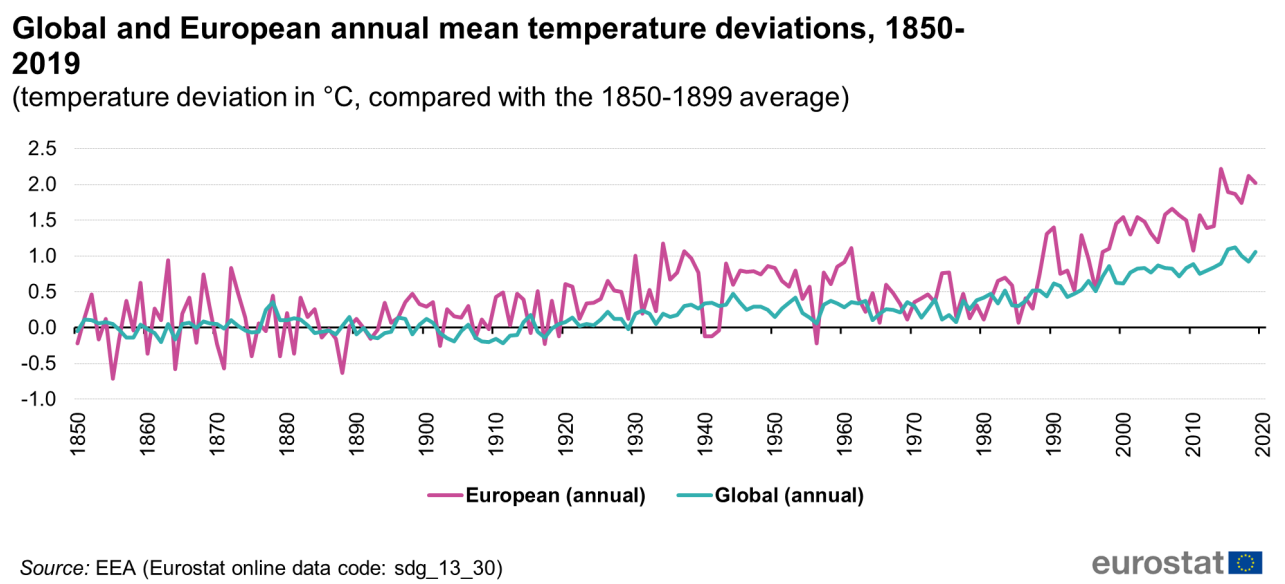


Figure 6: Global and European annual mean temperature deviations, 1850-2019 (temperature deviation in °C, compared with the 1850-1899 average) Source: EEA, Eurostat (sdg_13_30)

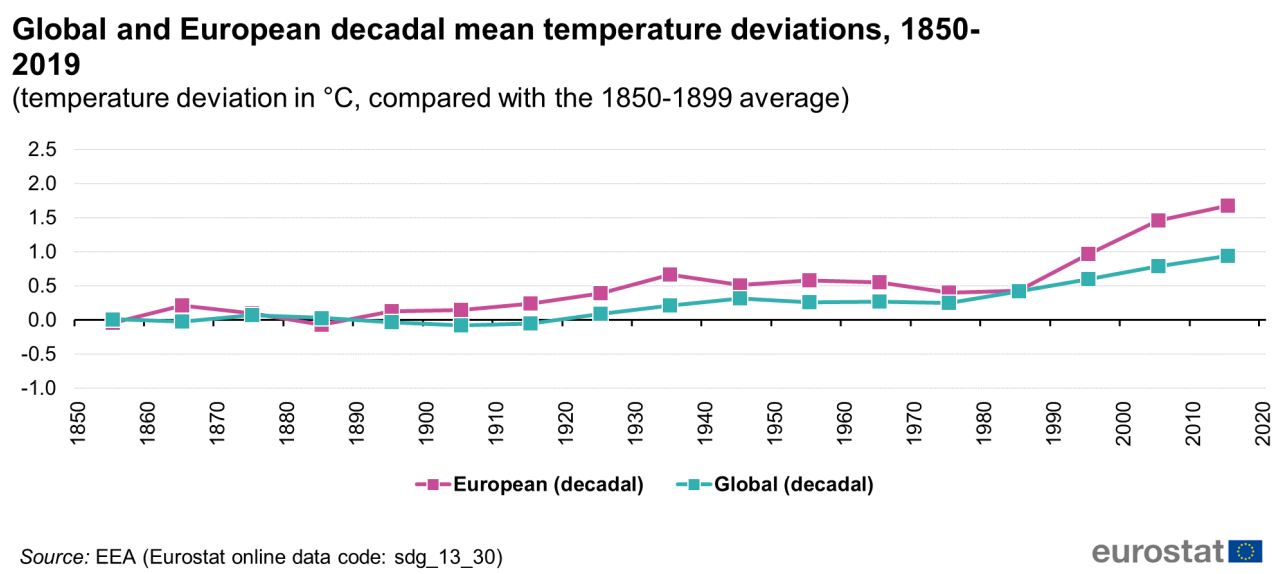
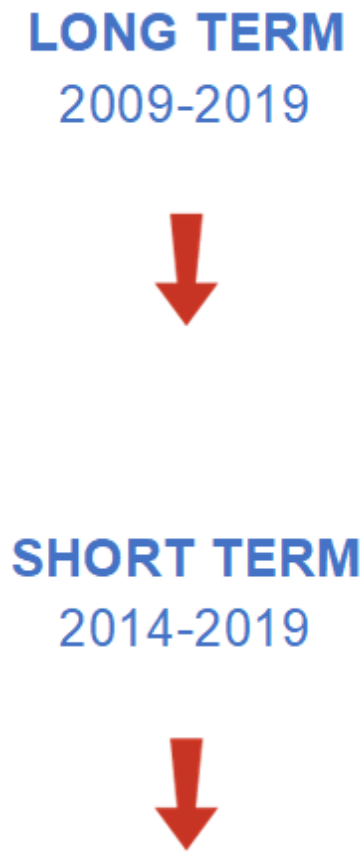


Figure 7: Global and European decadal mean temperature deviations, 1850-2019 (temperature deviation in °C, compared with the 1850-1899 average) Source: EEA, Eurostat (sdg_13_30)

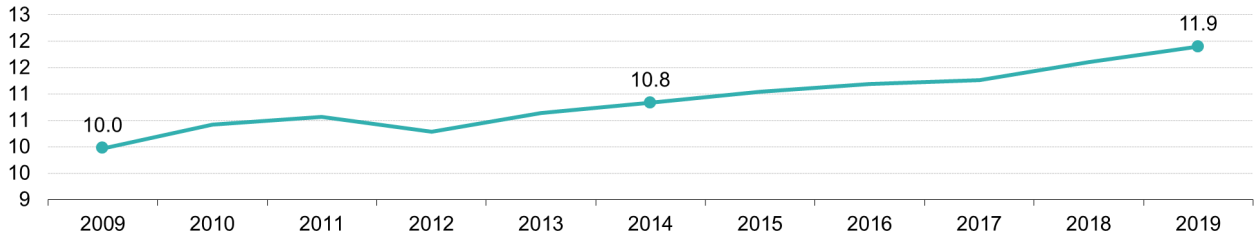
Climate-related economic losses



This indicator includes the overall monetary losses from weather- and climate-related events. It is based on data from the NatCatSERVICE managed by Munich Reinsurance Company[3]. The NatCatSERVICE is a global database of natural catastrophe data around the world, collected since 1974. Due to the variability of the annual figures, the data are also presented as a 30-year moving average to facilitate the analysis of historical trends.

[3]Munich RE, NatCatSERVICE .

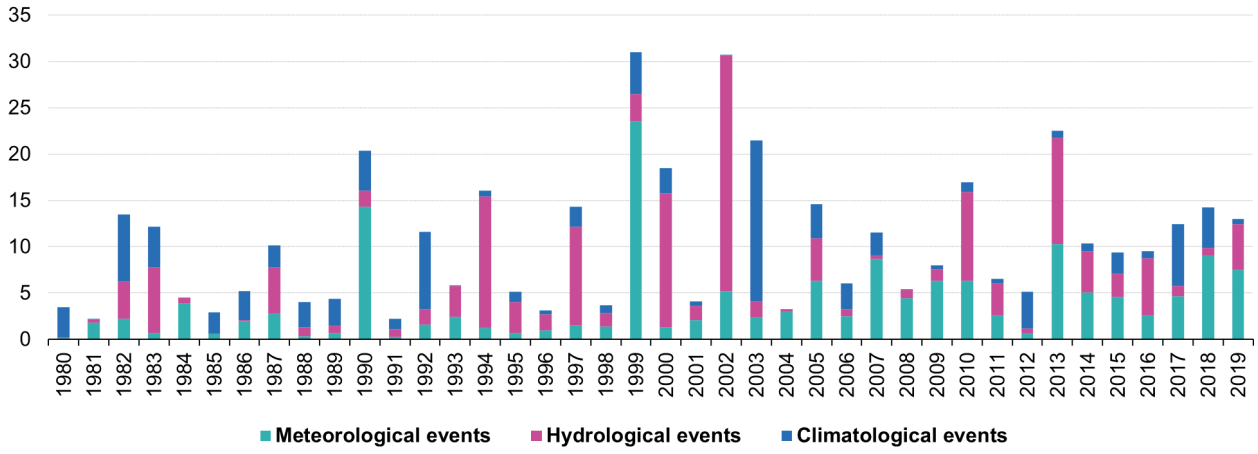
Climate-related economic losses (30 year moving average), EU, 2009-2019
(billion EUR, current prices)



Note: Data are shown as 30-year moving average (annual data points refer to the 30-year period up to that year).
Source: EEA, Eurostat (online data code: sdg_13_40)

Figure 8: Climate-related economic losses (30 year moving average), EU, 2009–2019 (EUR billion, current prices) Compound annual growth rate (CAGR): 1.8 % per year in the period 2009–2019; 1.9 % per year in the period 2014–2019. Source: EEA, Eurostat (sdg_13_40)

Climate-related economic losses, by type of event, EU, 1980-2019
(billion EUR, current prices)



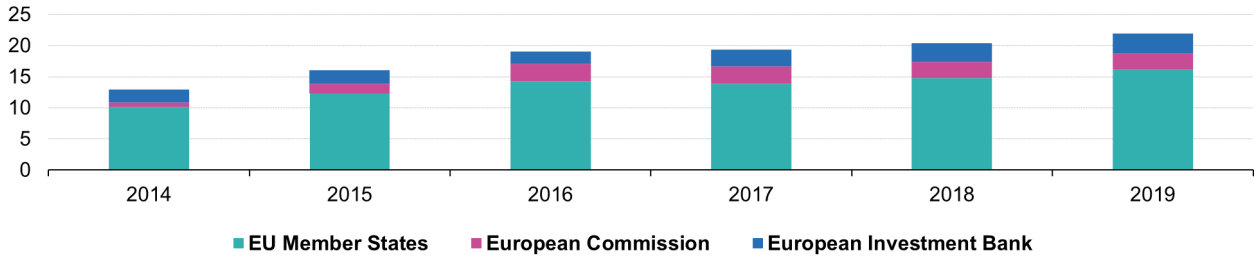
Source: EEA (Eurostat online data code: sdg_13_40)

Figure 9: Climate-related economic losses by type of event, EU, 1980–2019 (EUR billion, current prices) Source: EEA, Eurostat (sdg_13_40)

Contribution to the international USD 100bn commitment on climate-related expending

The intention of the international commitment on climate finance under the UNFCCC is to enable and support enhanced action by developing countries to advance low-emission and climate-resilient development. The data presented in this section are reported under the Monitoring Mechanism Regulation (MMR) to the European Commission.

Contribution to the international USD 100bn commitment on climate-related expenditure, EU, 2014-2019
(billion EUR, current prices)



Source: European Commission services and EIONET (Eurostat online data code: sdg_13_50)

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Figure 10: Contribution to the international USD 100bn commitment on climate-related expenditure, EU, 2014–2019 (EUR billion, current prices) Compound annual growth rate (CAGR): 11.1 % per year in the period 2014–2019 Source: European Commission services and EIONET, Eurostat (sdg_13_50)

Contribution to the international USD 100bn commitment on climate-related expenditure, by country, 2014 and 2019
(million EUR, current prices)

Country	2014	2019
EU Member States	**10 163.9**	**16 205.8**
European Commission	**677.0**	**2 534.8**
European Investment Bank	**2 098.5**	**3 184.3**
Belgium	142.7	99.7
Bulgaria	0.1	:
Czechia	7.7	7.5
Denmark	222.0	246.9
Germany	5 130.6	6 811.8
Estonia	0.5	0.5
Ireland	41.4	70.2
Greece	0.0	0.7
Spain	498.8	740.1
France	2 921.4	5 958.8
Croatia	0.0	0.0
Italy	143.2	417.6
Cyprus	0.0	:
Latvia	0.4	0.0
Lithuania	0.3	2.0
Luxembourg	36.3	51.4
Hungary	2.7	3.4
Malta	0.1	0.1
Netherlands	340.0	580.8
Austria	141.3	332.8
Poland	4.2	12.9
Portugal	9.5	0.9
Romania	0.0	0.2
Slovenia	2.4	5.8
Slovakia	1.2	5.9
Finland	132.3	146.8
Sweden	384.8	708.9

eurostat

Source: European Commission services and EIONET (Eurostat online data code: sdg_13_50)

Table 3: Contribution to the international USD 100bn commitment on climate-related expenditure, by country, 2014 and 2019 (million EUR, current prices) Source: European Commission services and EIONET, Eurostat (sdg_13_50)

Population covered by the Covenant of Mayors for Climate and Energy signatories

LONG TERM

2010-2020

SHORT TERM

2015-2020

The Covenant of Mayors for Climate and Energy in Europe, now part of the Global Covenant of Mayors for Climate and Energy, represents a growing climate initiative at multiple levels of governance with actors all across the globe pledging to deliver comprehensive climate change mitigation and adaptation and energy action plans and establish a regular monitoring process. Here the number of citizens living within regions that act as signatories to the Covenant of Mayors in Europe is monitored as an indication of the initiative's reach.

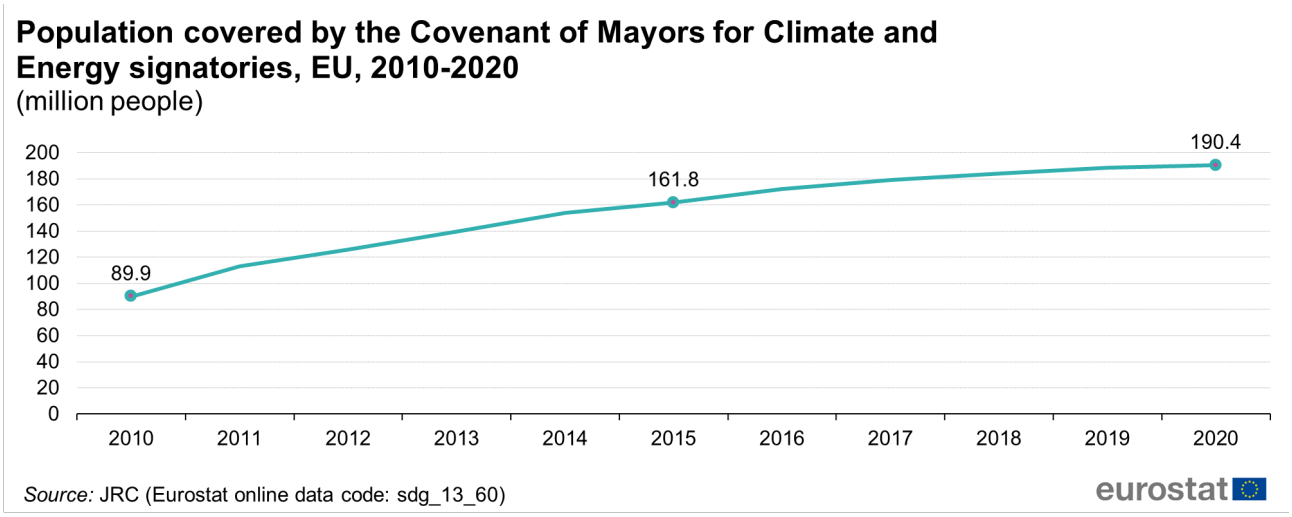

Figure 11: Population covered by the Covenant of Mayors for Climate and Energy signatories, EU, 2010-2020 (million people) Compound annual growth rate (CAGR): 7.8 % per year in the period 2010–2020; 3.3 % per year in the period 2015–2020. Source: Covenant of Mayors for Climate and Energy (sdg_13_60)

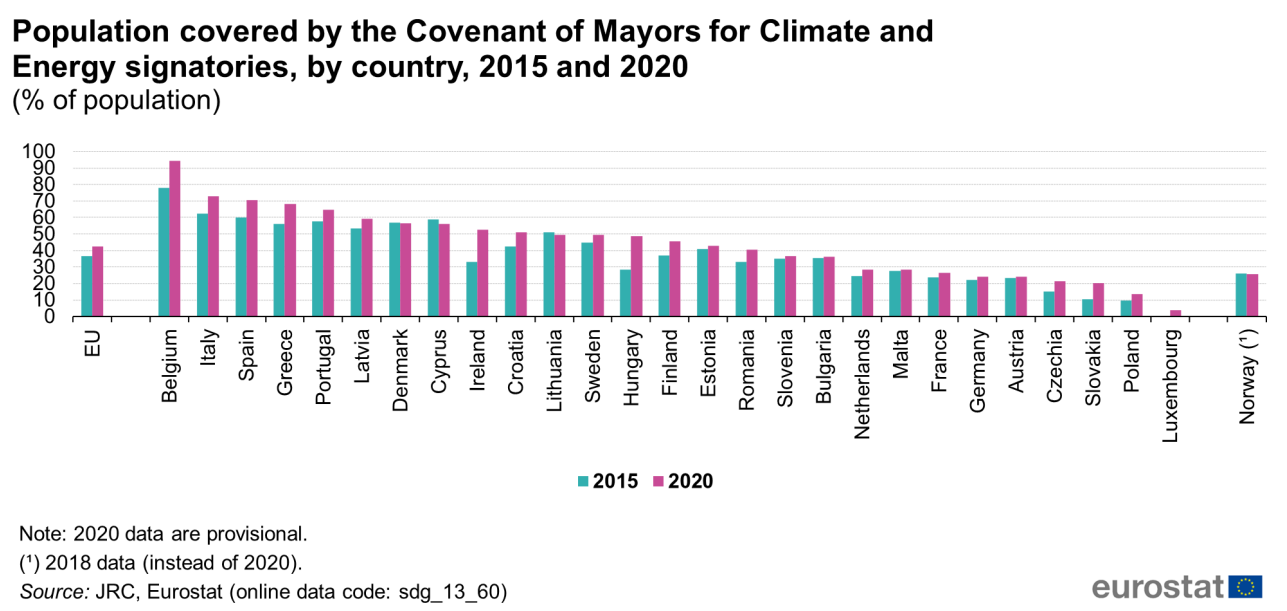

Figure 12: Population covered by the Covenant of Mayors for Climate and Energy signatories, by country, 2015 and 2020 (% of population) Source: Covenant of Mayors for Climate and Energy (sdg_13_60)

See also

- All articles on sustainable development

Database

- Sustainable Development Indicators

Dedicated section

- Sustainable Development Indicators

Methodology

More detailed information on EU SDG indicators for monitoring of progress towards the UN Sustainable Development Goals (SDGs), such as indicator relevance, definitions, methodological notes, background and

potential linkages, can be found in the introduction of the publication 'Sustainable development in the European Union — Monitoring report on progress towards the SDGS in an EU context — 2021 edition' .