9TH IMF Statistical Forum

MEASURING CLIMATE CHANGE

THE ECONOMIC AND FINANCIAL DIMENSIONS

# Eurostat's climate change related statistics

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# Overview

1. Eurostat current climate change related statistics
2. Pilot review of European official statistics related to climate change
3. New quarterly greenhouse gas emissions estimates
4. Improvements in carbon footprints
5. Climate change related activities in monetary environmental accounts

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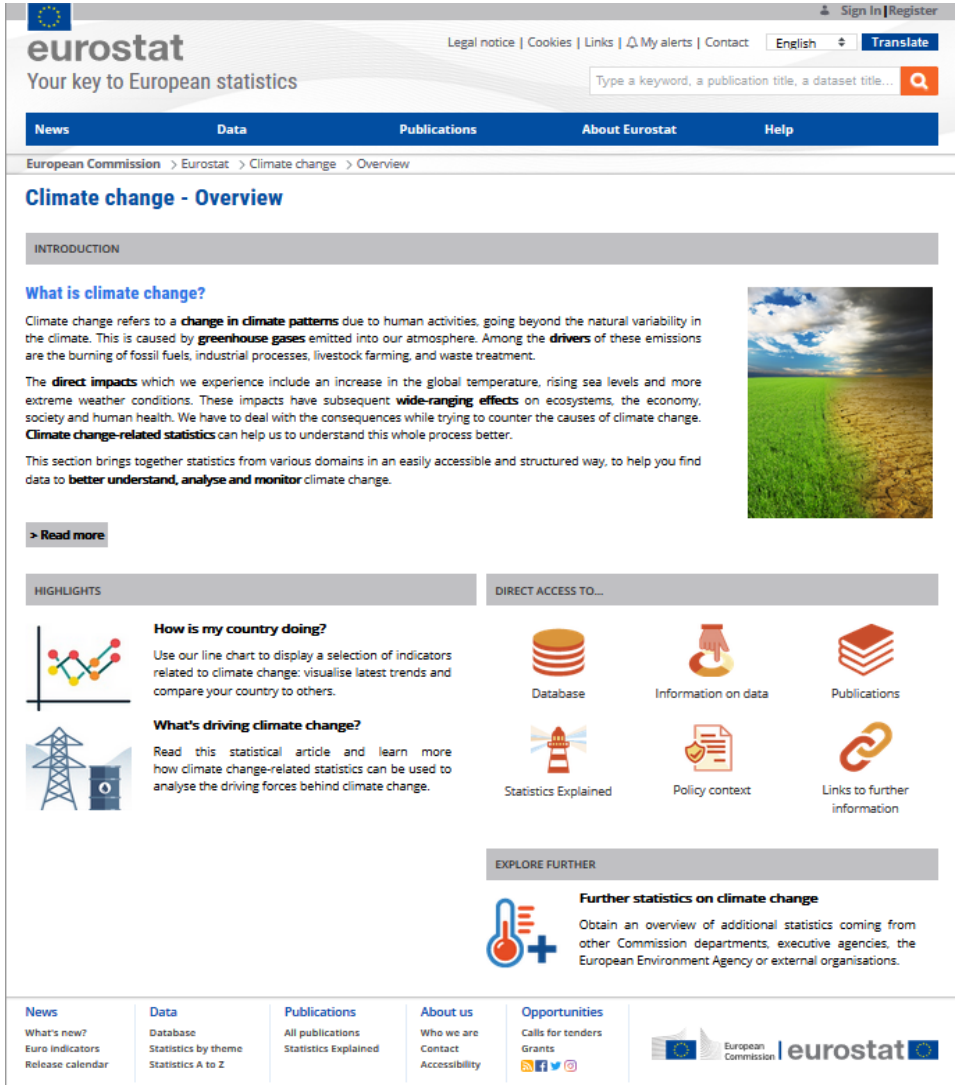
# 1. Eurostat's climate change related statistics




Dedicated website

https://ec.europa.eu/eurostat/web/climate-change

Online article ´climate change driving forces

https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Climate_change_-_driving_forces

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# Eurostat's online data offer about climate change related statistics

- Emissions
- Drivers
- Impacts
- Mitigation
- Adaptation

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# 2. Pilot review of European official statistics related to climate change

- The senior management of Eurostat and the EU national statistical offices (ESS Committee) agreed in October 2020 to launch a review of our climate change related statistics
  - The review includes stakeholder consultations at different levels and three workshops (April, July & September 2021)
  - The outcome will be a report including findings, recommendations and lessons for future reviews on other topics
- The review is being finalised in November 2021 (final report). Recommendations will address:
  1. Communication of European statistics on climate change
  2. Eurostat institutional cooperation with international agencies
  3. Gaps in the data offer
- Results point that users are frequently asking for methods and data that already exists
  - Indicates we need more & better communication of existing data

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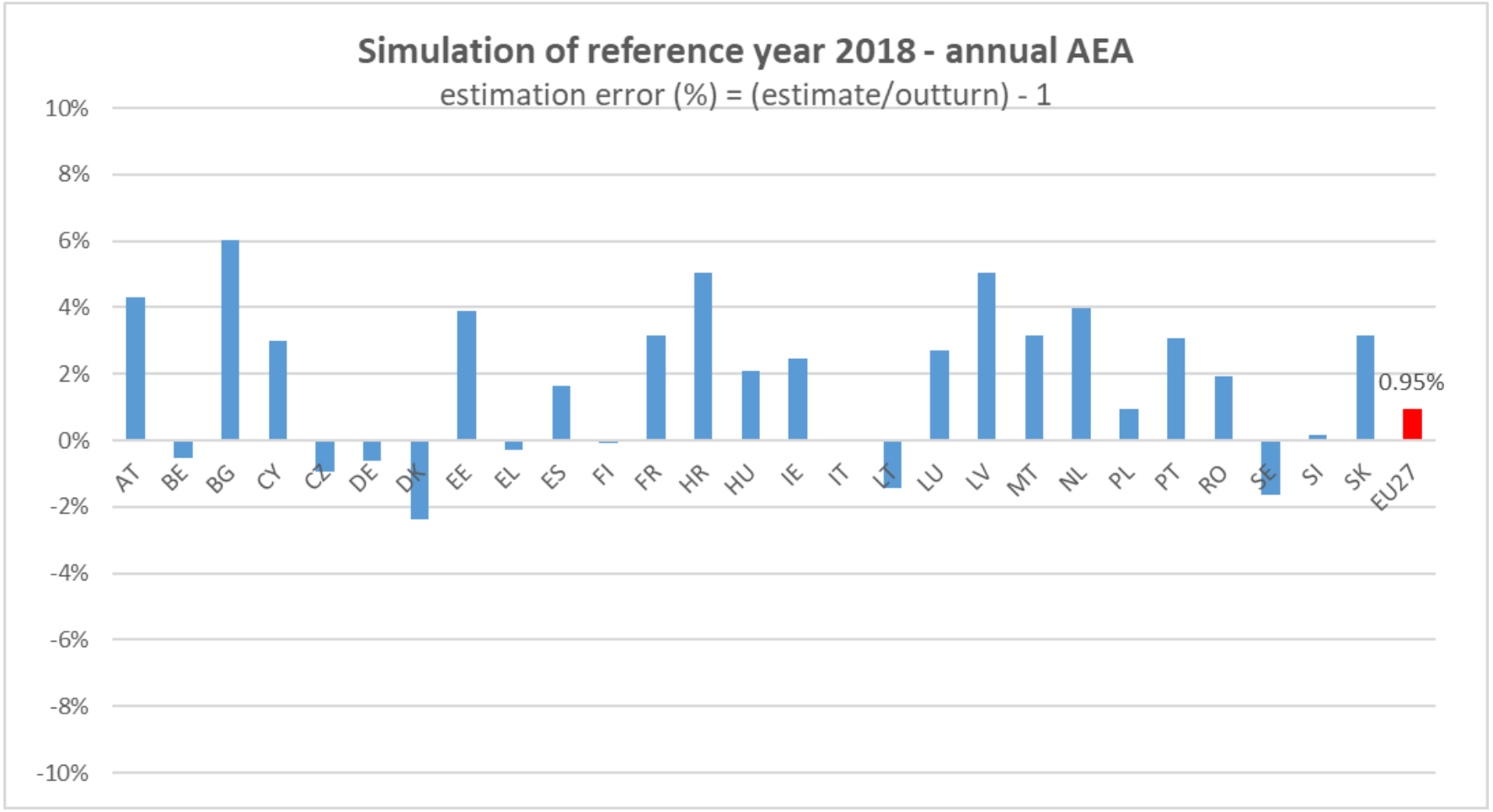
# 3. Quarterly greenhouse gas emissions (1/3)

- Eurostat publishes since many years EU-wide *annual* estimates of air emissions (greenhouse gases and air pollutants). There are two datasets:
  - Air emission accounts, based on SEEA methodology, produced by Eurostat & NSIs
  - Greenhouse gas inventories, coordinated and produced by the European Environmental Agency. Eurostat re-publishes them
- In addition, Eurostat produces early estimates of *annual* $CO_2$ emissions from fuel combustion (released at T+4 months)
  - Based on cumulated monthly energy statistics

# Quarterly greenhouse gas emissions (2/3)

- In June 2021 Eurostat joined an international task team with IMF, OECD, IEA and UNSD
- Quarterly estimation in two steps: (1) temporal disaggregation of the available annual accounts; (2) extrapolate most recent quarters
- Eurostat using temporal disaggregation techniques
  - Same basic technique as used for the EU quarterly national accounts
  - Quarterly estimates benchmarked to annual air emission accounts
- Model simplifications: full multidimensional data cube of about 500 data points per country & year (i.e. gas/industry/sector) is reduced to the 20 most relevant combinations of greenhouse gases and groupings of economic activities ('data points')
  - Afterwards, sub-annual predictors (independent variables) used to estimate the aggregated data points
- Available sources in EU to feed model : annual SEEA environmental accounts and body of solid official statistics about energy, transport, agriculture, short-term business stats, etc.

# Quarterly greenhouse gas emissions (3/3)




**(Unpublished data. Do not quote)**

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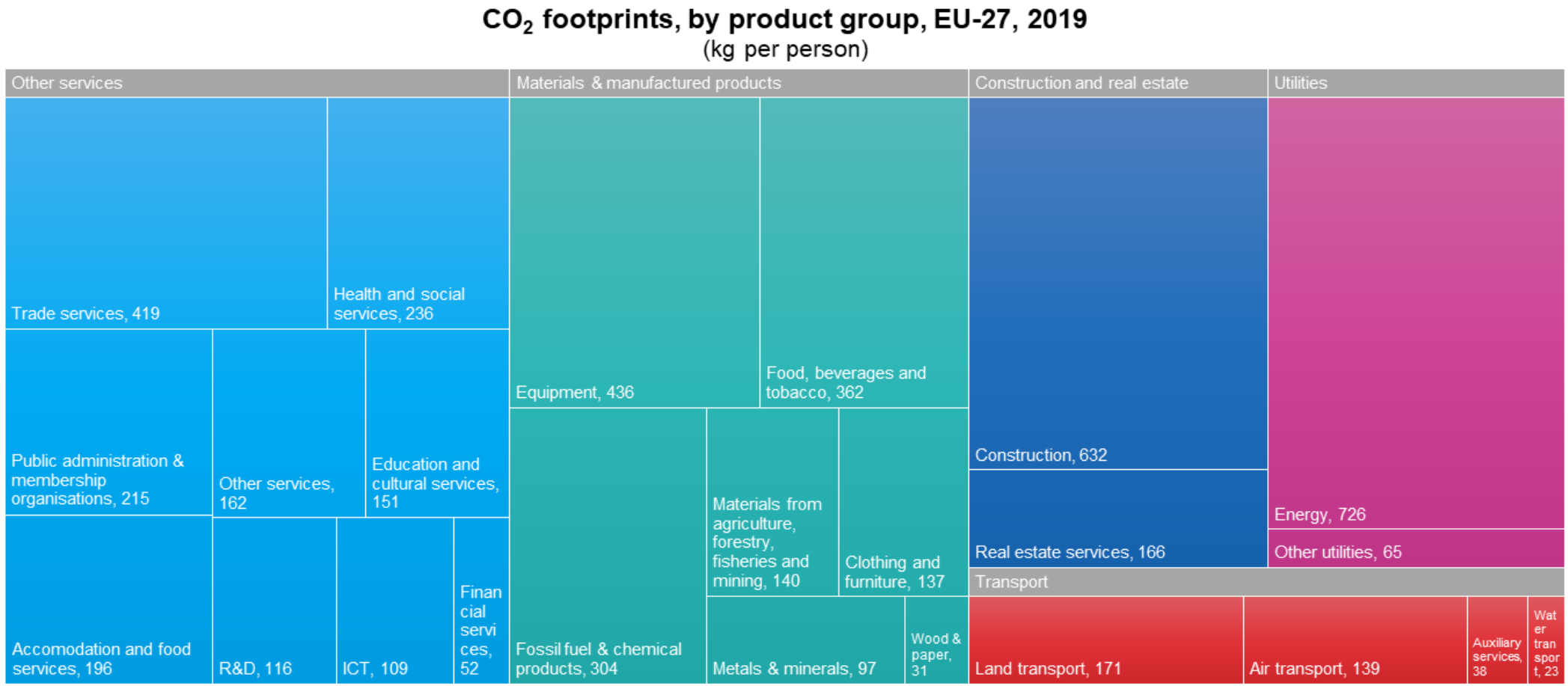
# 4. Eurostat greenhouse gases footprints (1/2)




Source: Eurostat (env_ac_io10). Breakdowns by product categories

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# Eurostat greenhouse gases footprints (2/2)

- Eurostat footprint estimates based on SEEA accounts plus input-output modelling
- Eurostat uses a single region input-output model. It applies the ‘domestic technology assumption’
  - It was best possible estimate until now
- Eurostat rolling out improved estimates based on multi-regional input-output modelling
  - Building up multi-regional data set in the project FIGARO (by Eurostat & European Commission Joint Research Centre)
- Eurostat also compiling $CO_2$ emissions accounts for non-European countries and a rest of the world block. These will be added to the FIGARO data set to estimate carbon footprints. First results expected before the end of 2021

# 5. Climate change related activities in monetary environmental accounts

- Eurostat also has EU-wide SEEA accounts about environmental expenditure (consumption, investment), environmental gross value added, jobs, exports and environmental taxes
  - We are updating their specifications: disclose carbon taxes by payer, government tax revenue in relation to the EU Emission Trading System, shorter reporting/publication deadlines
  - Also developing 3 new SEEA accounts on forests, environmental subsidies and ecosystem accounts, all related to climate change. Will be mandatory for EU Member States starting from circa 2025. Negotiations ongoing
- Developing metrics of climate change mitigation and adaptation-related economy based on our experience on environmental accounts (EGSS)
- Enhancing functional classifications environmental activities (CEPA/CReMA) to better capture climate change, exploring links with sustainable finance taxonomy
- The Committee on monetary, financial and balance of payments statistics (CMFB) task force on the statistics on sustainable finance and climate change risks

# Conclusions

- Eurostat already produces many climate change related statistics
- There is a pilot review of European official statistics related to climate change
- Eurostat preparing new quarterly greenhouse gas emissions estimates
- Improving EU carbon footprints estimates
- Ongoing climate change related activities in monetary environmental accounts to better delineate climate change related aspects

# References

- Eurostat climate change dedicated section
- Air emissions
- Eurostat environment dedicated section
- Eurostat online database
- SEEA environmental accounts methodology
- European Commission dedicated website about sustainable development taxonomy

# Thank you!

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