

G20

DATA GAPS INITIATIVE 3

Dissemination of GHG emissions data: The French case

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Building “greenhouse gases accounts” fully integrated with monetary national accounts

Our goal: offer a fully consistent official statistics framework to study the decoupling between GHG emissions and economic activity

- **Partnership between**

- INSEE, the national statistical office (NSO)
→ *compiles the monetary national accounts*
- The SDES, statistical office of the ministry of the environment
→ *compiles the Air emission accounts (AEA) and the carbon footprint*

- **Focus on consistency between monetary and physical information**

- To allow relevant analysis of coupling / decoupling at economy and sector level, both for national emissions and footprint

Intended uses

- **Support national policy-making (monitoring and evaluation)**
 - National low-carbon strategy
 - National monitoring of the Sustainable Development Goals (SDGs)
 - Carbon footprint is one of the 10 indicators complementing GDP in the national dashboard *“New wealth indicators”*
- **A foundation to develop new environmental and economic analyses**
 - Support analytical work by environmental and macro-economists, in the public sector and other research institutions
 - Possible extensions: distribution of the carbon footprint by household category, consumption sustainability indicator, emission reduction plan by economic sector, etc.

The accounts will regroup three sets of tables

Three hybrid sets of tables to link the physical and monetary accounts:

- **Production approach**

- Air emission accounts with monetary production and value added
→ *carbon intensity of resident production*

- **Demand approach**

- Carbon footprint with monetary final demand
→ *carbon content of final demand*

- **International carbon transfers**

- Carbon embedded in imports, exports and domestic production
→ *bridge between the production and demand approaches*

Production approach: purpose and content

Illustrate the coupling / decoupling between resident economic activity and energy consumption and GHG emissions

- **(Energy and) emission intensity of GDP**
 - At the economy level: intensity of value added
 - At the industry level: intensity of value added or output
- **Monetary series in current and constant prices**
- **Level of detail**
 - Up to 64 industries (NACE), more aggregated for years N-2 and N-1
- **Offer bridge tables to reconcile AEA with UNFCCC inventory (total emissions and possibly main categories)**

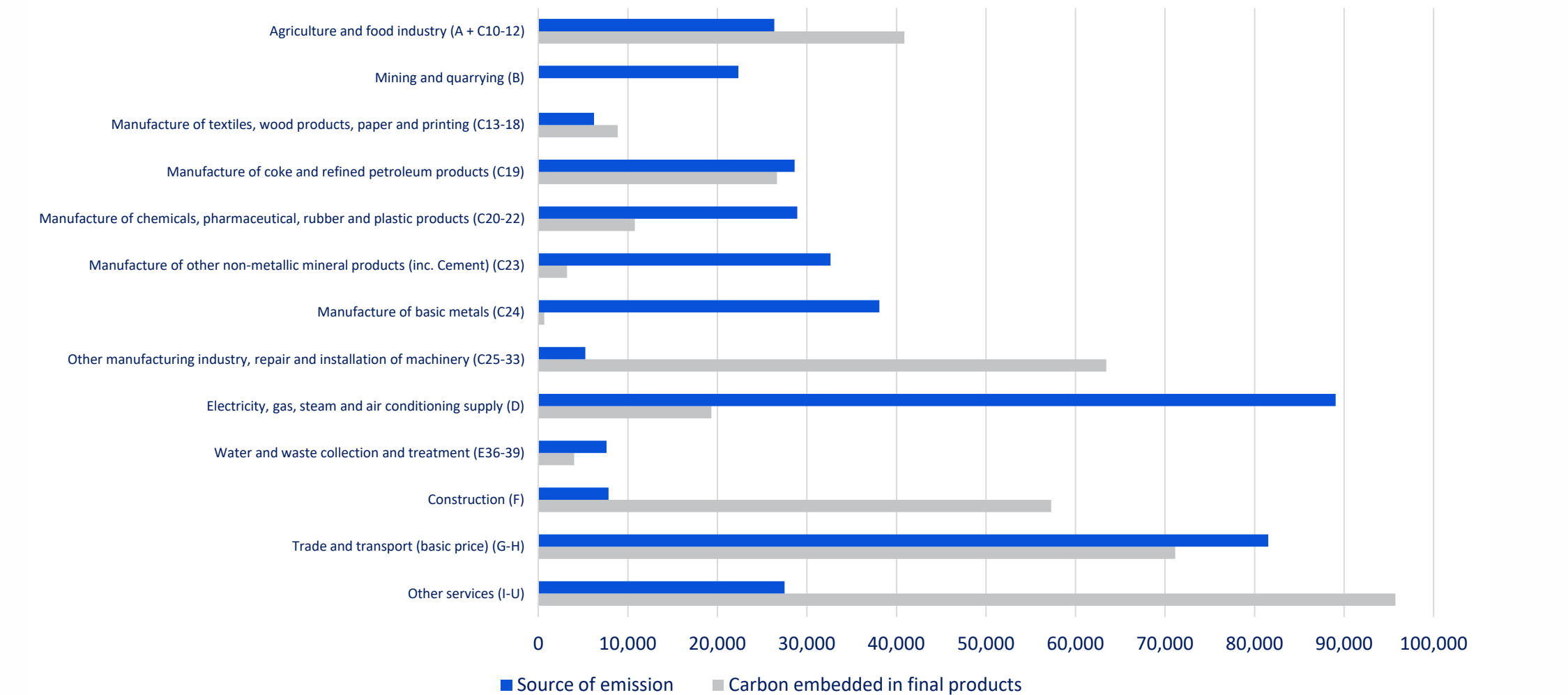
Demand approach tables: purpose and content

Analyzing the GHG content of the French final demand (consumption and investment)

- **GHG content of the French final demand with two breakdowns**
 - GHG content of final goods and services
 - GHG emissions at the source (initial production in all countries)
- **Estimation of the carbon footprint up to year N-1**
 - Some forecasting needed for the GHG content per euro of finished products in N-1 (MRIO not available)
- **Level of detail**
 - GHG content of final goods and services: up to 64 products (CPA), more aggregated for years N-2 and N-1
 - GHG emission at the source: ~ 12 industries X 10 regions

Two complementary breakdowns of the carbon footprint: source of emission and carbon embedded in final products

CO2 footprint by industry (in tons - year 2019)



Improving the official French carbon footprint calculation: « simplified SNAC » method based on FIGARO

Currently, the official French carbon footprint estimate is based on a so called single region input-output (SRIO) model → transitioning to a multi regional input-output (MRIO) model to improve the precision and analytical relevance of the results

- **FIGARO is developed by Eurostat and the JRC**
 - 64 industries x 46 regions (45 countries + rest of the World)
 - Annual update, up to year N-2
- **Solves the main limitations of the current estimation method**

To retain a complete consistency with French national accounts, we plan to use a so called « simplified single national accounts consistent » (simplified SNAC) method

- **The carbon content per euro of imported goods and services comes from FIGARO, but is applied to the official French national accounts aggregates**

Why the simplified SNAC and not a direct FIGARO estimate?

Many advantages to the simplified SNAC in our view

- **Consistency of the footprint results with French national accounts final use vectors at a fine level of detail (typically 128 products = A64 X domestic / imported)**
- **Very practical framework to make N-1 estimates of the total footprint**
 - The forecasting part is limited to the carbon content per euro of imported goods and services
 - All the rest (= nationally compiled IOT and national AEA) can be used as is, and covers a large part of the volatility of the carbon footprint
- **Final use vectors can be more detailed than in FIGARO. For example : GFCF of general government / firms / households**

Full GHG footprint: CO₂, CH₄, N₂O and F-gases

Calculating the French footprint requires GHG emission vectors for each Figaro country, at 64 industries level

- Significant data gaps in the primary data available
- We appreciate and support the efforts by international organizations to fill the gap, by interim estimates or longer-term capacity building !
- In the short-term, we will mainly rely on emission vectors estimated by Eurostat in the context of FIGARO applications
+ our own internal estimates from publicly available database (UNFCCC, EDGAR, PRIMAP, IEA, ...)

Intended dissemination

Dissemination in early November 2024

- **At least two papers**
 - Statistics : annual publication of main results of resident emissions and carbon footprint up to 2023, with the corresponding economic developments (4 pages)
 - Analysis : longer time-series decomposition of the decoupling between economic activity and GHG emissions, from both production and consumption perspectives
- **A detailed methodological working paper**
- **Detailed data tables on INSEE and SDES websites**

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