Accounts for primary material flows by branches and material categories

-methodological concepts, results and applications-

Paper presented at the 9th London Group Meeting in Copenhagen

22 – 24 September 2004

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1. Introduction
2. Methodological concept of German primary material flow accounts
3. Results
4. Conclusion and Outlook

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Political background:

Initiative of the OECD environmental ministers and the OECD council for establishing an OECD-wide system of comparable international material flow accounts

National Strategy on Sustainable Development

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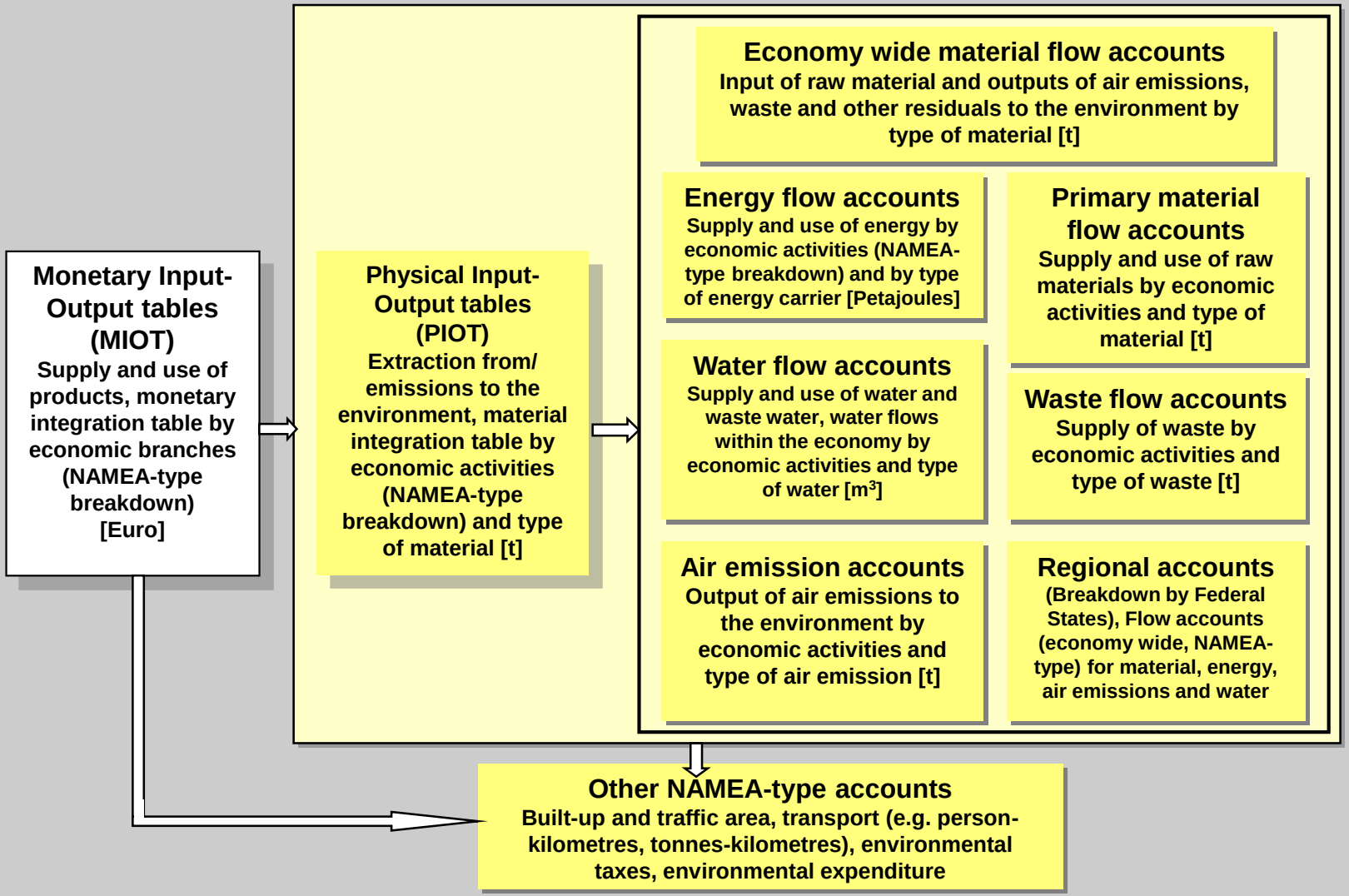
Aim of this project:

Providing disaggregated accounting data for the headline indicator of the National Strategy on Sustainable Development on “raw material productivity”

The German system of physical flow accounts



Methodological concept:

Supply tables

Domestic extraction of raw materials by type of raw material
and the imported products by homogeneous product groups (= primary material)

Use tables

Use of primary products by homogeneous production branches and by private households.

Methodological concept:

Example: Sand (domestic extraction)

Supply tables

Sand is extracted by

primary production branch

“Other mining and quarrying”

Use tables

Sand is used by branches

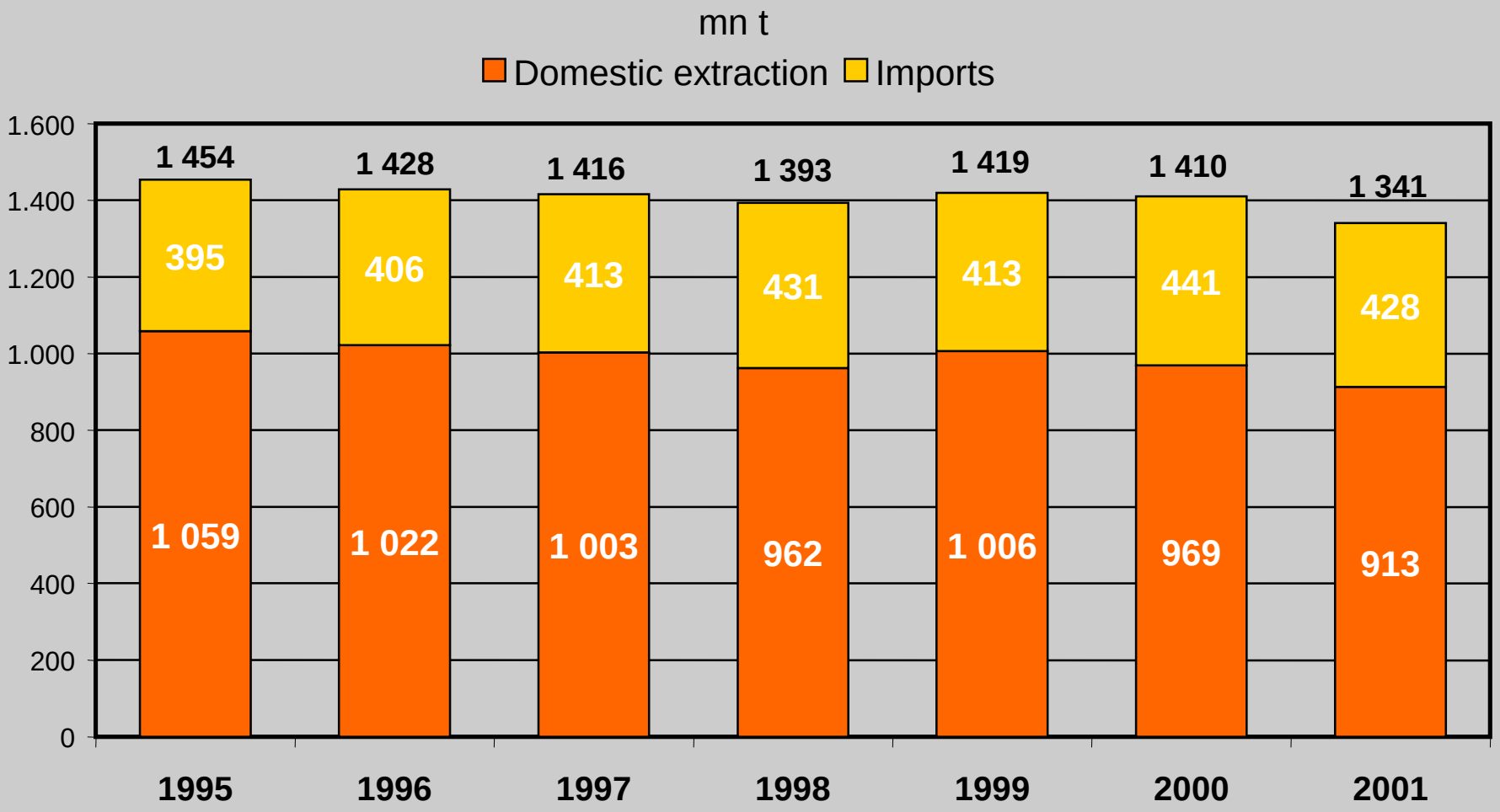
“Other non-metallic mineral products”,

“Glass and glass products”,

“Site preparation work, structural and civil engineering work” and

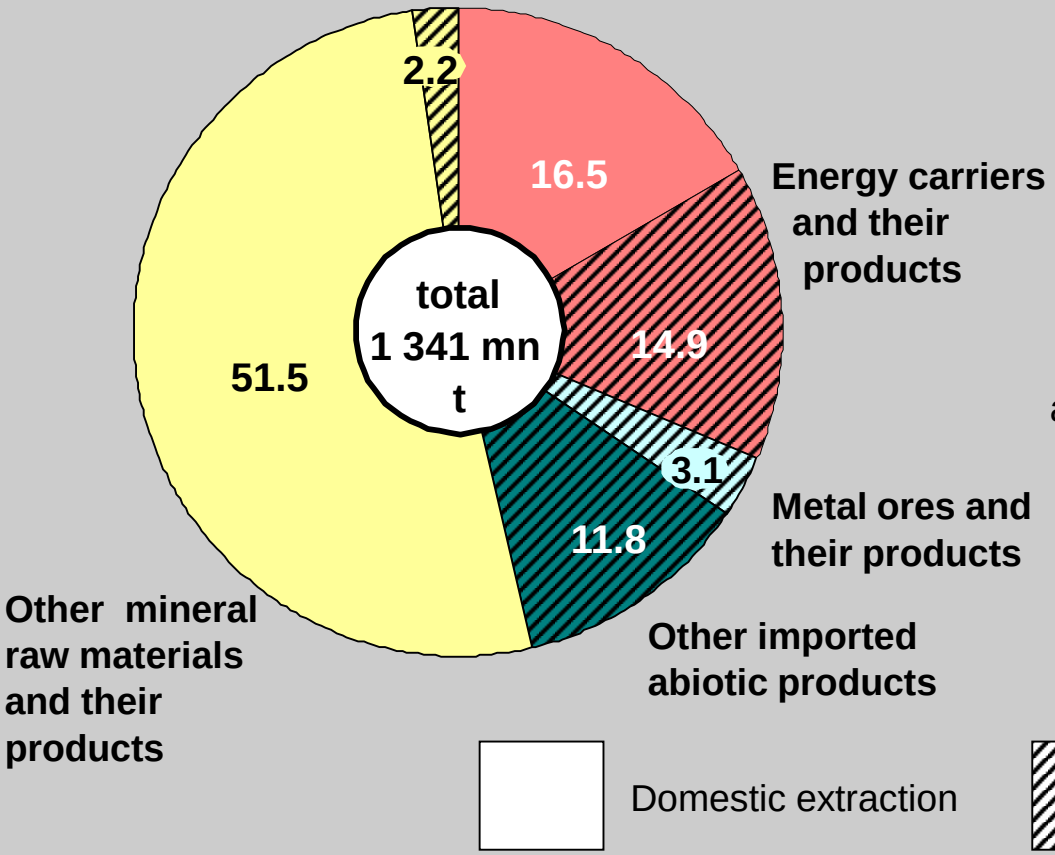
“Chemical products”

Abiotic primary material 1995 - 2001

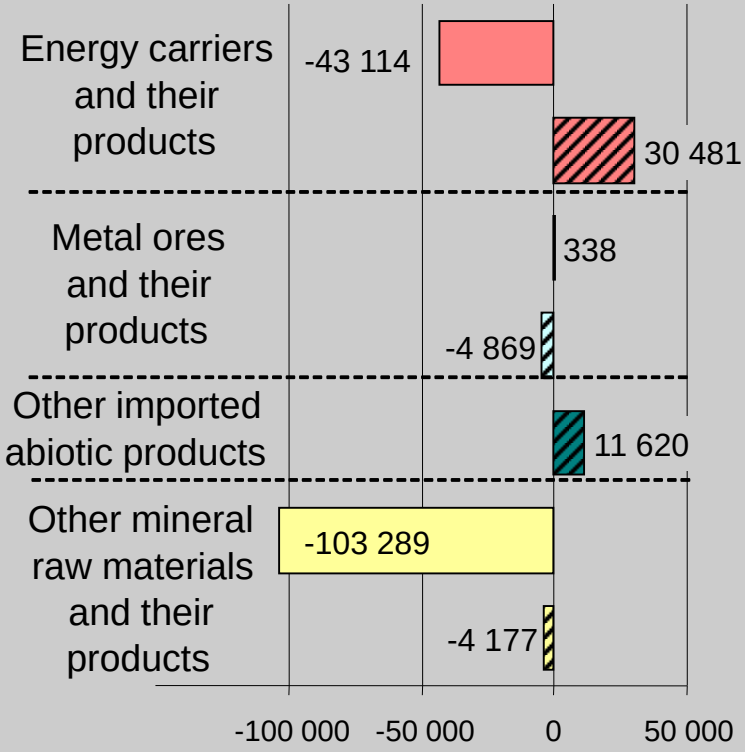


Abiotic primary products by material categories

Shares 2001 in %



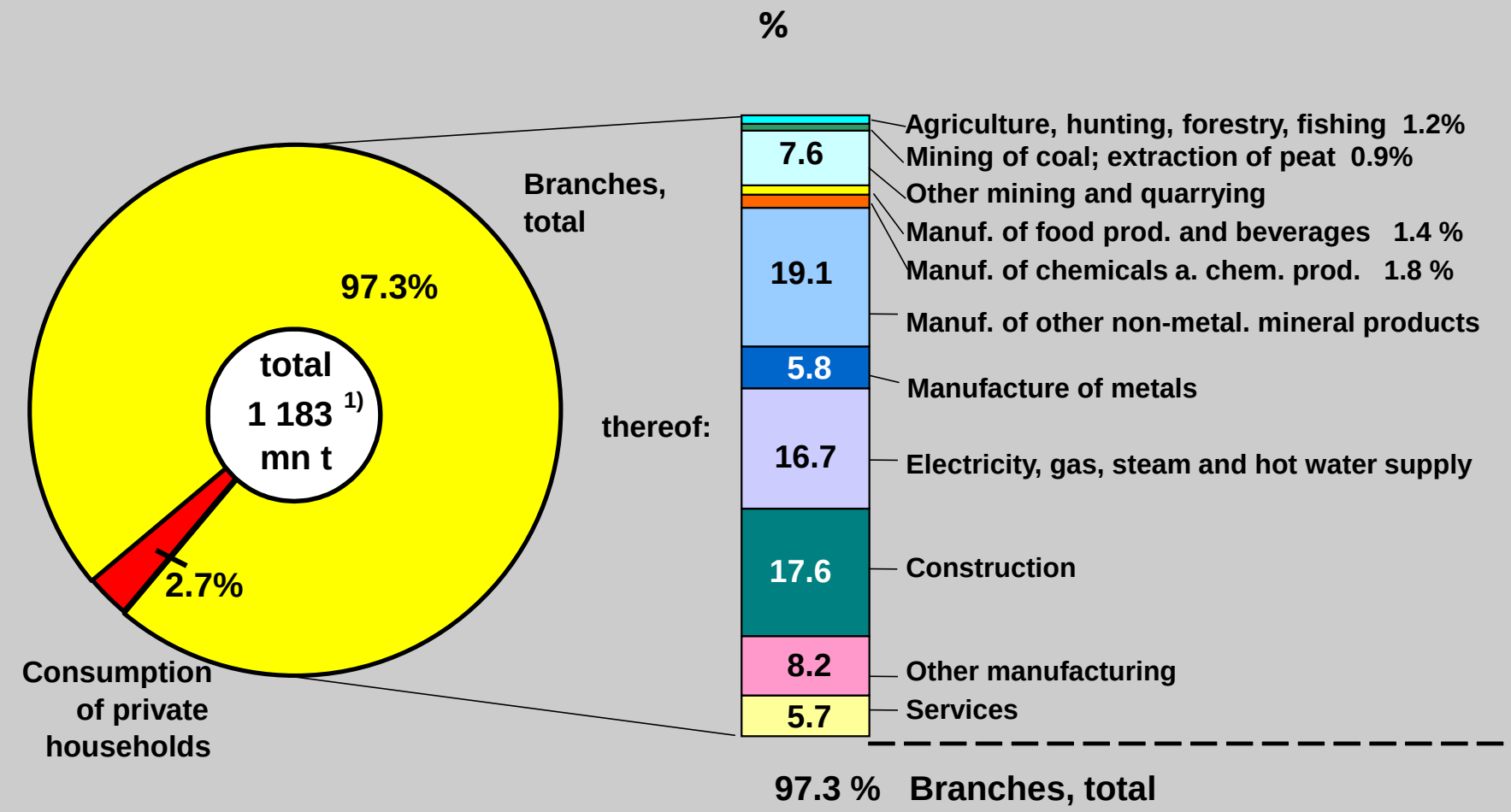
Change 2001 to 1995 in 1 000 t



Domestic extraction

Imports

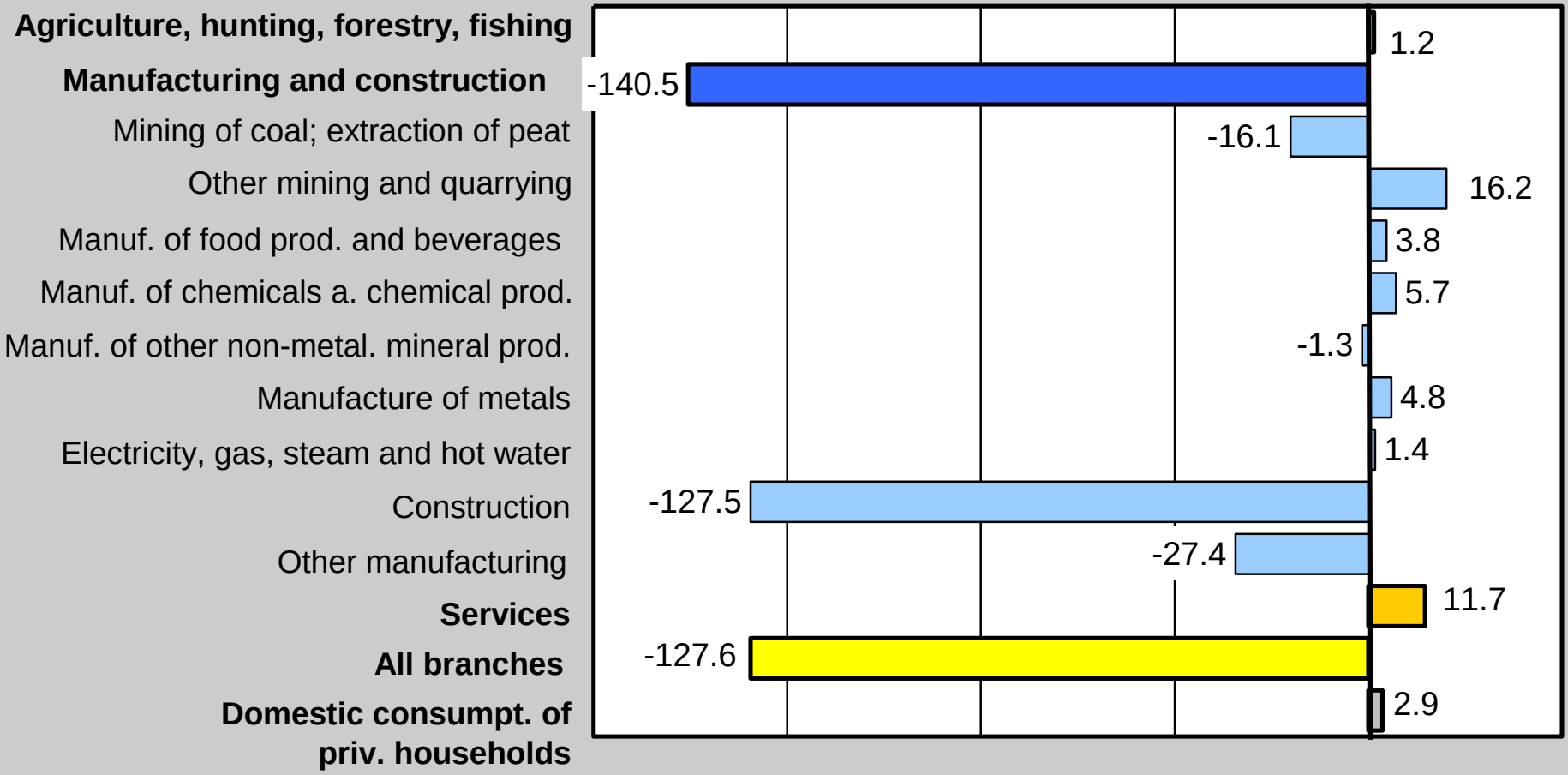
Use of abiotic primary products by branches 2001



1) without not classified imported products (157 mn t)

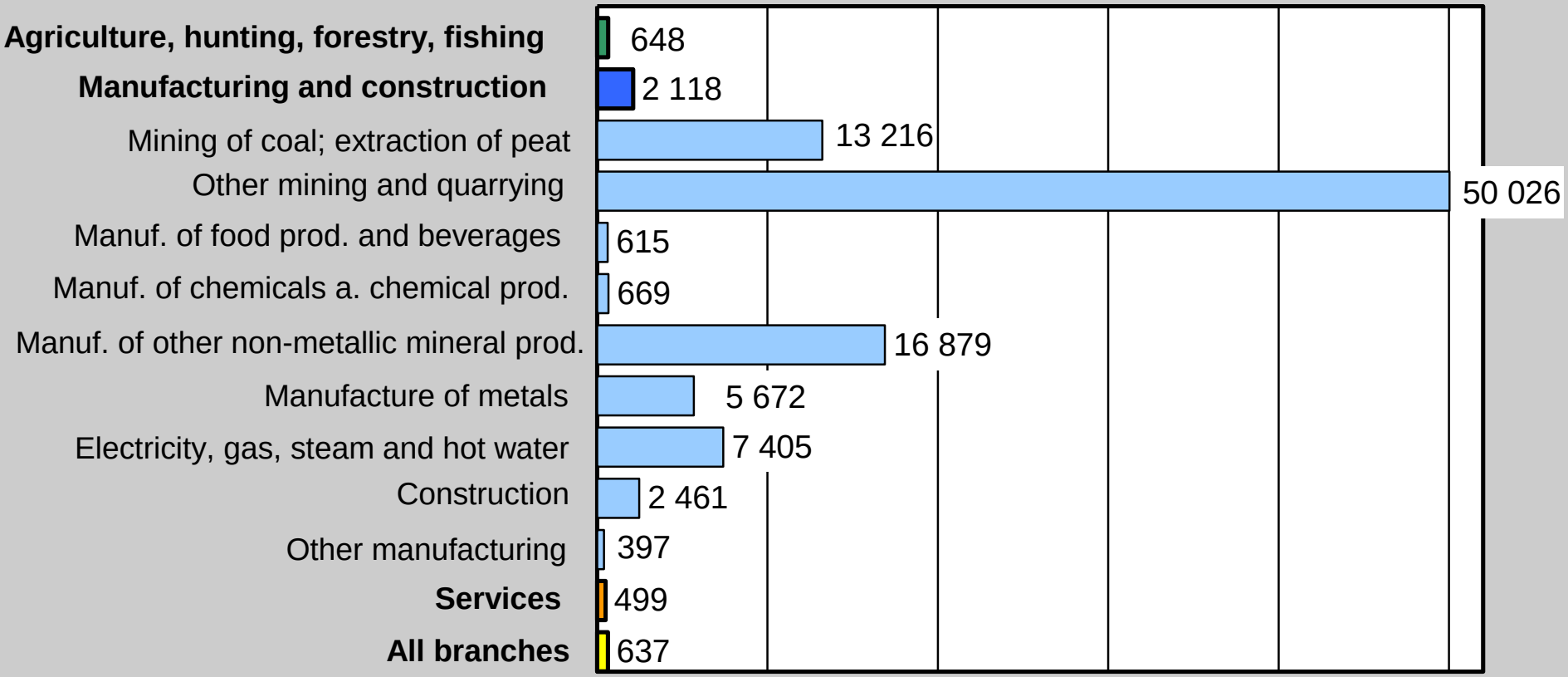
Use of abiotic primary products by branches

Change 1995 to 2001 in mn t



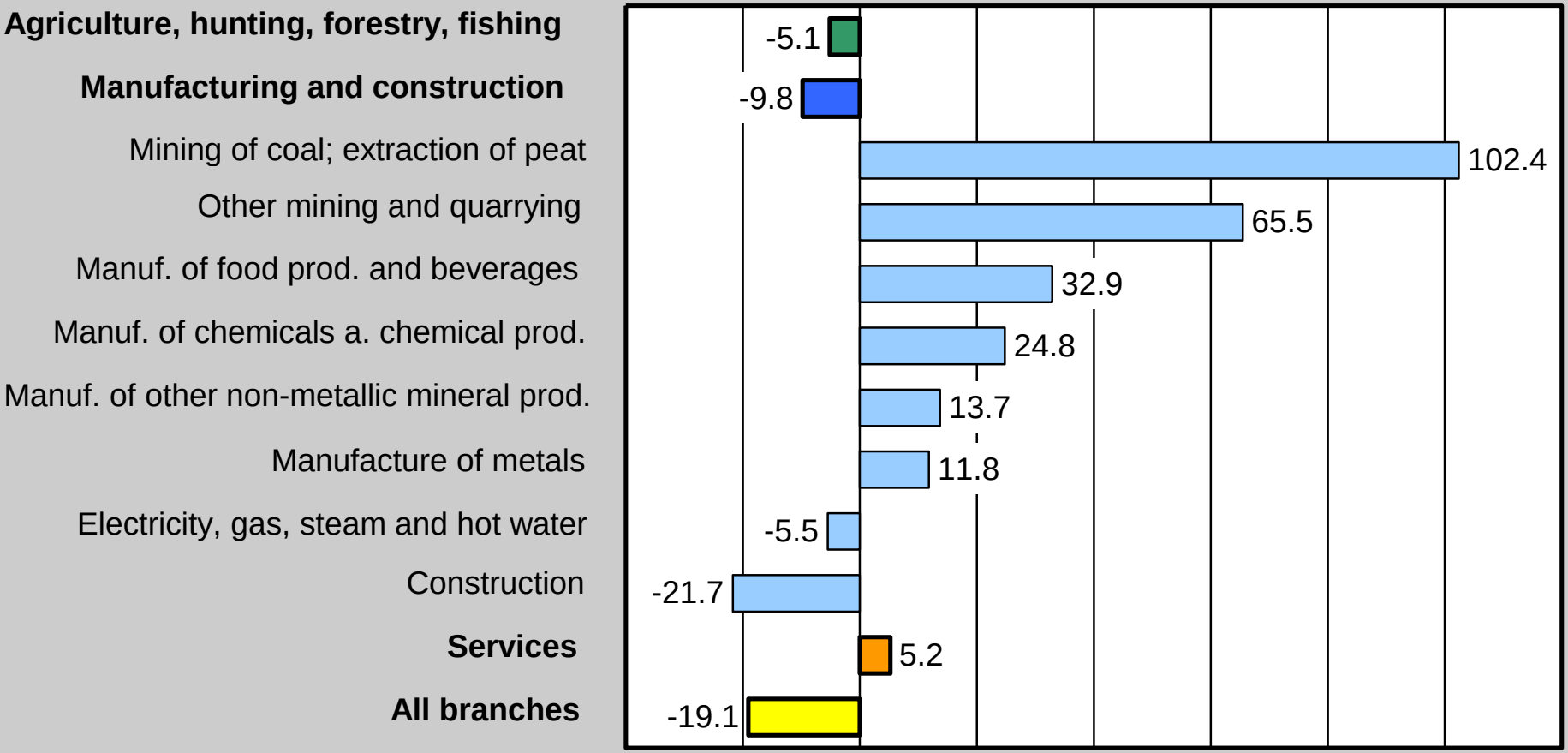
Intensity of use of abiotic primary products by branches 2001

kg/1 000 Euro gross value added



Intensity of use of abiotic primary products by branches

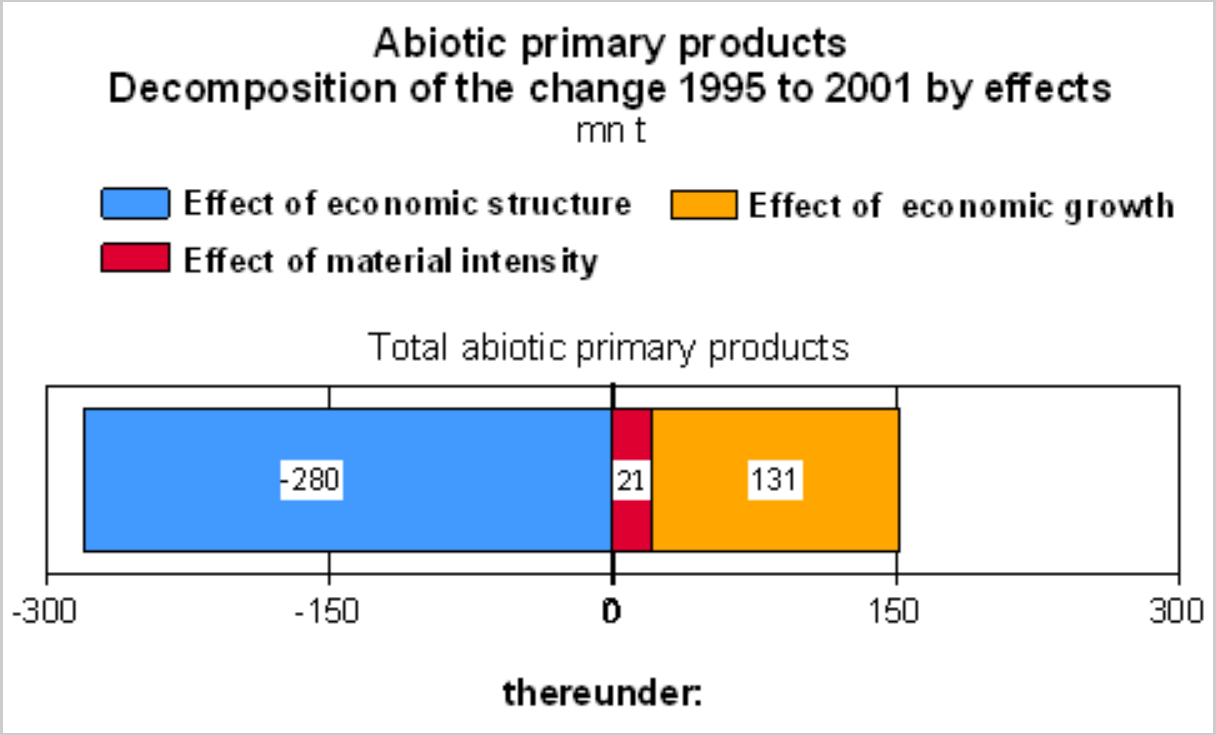
Change 1995 to 2001 in %

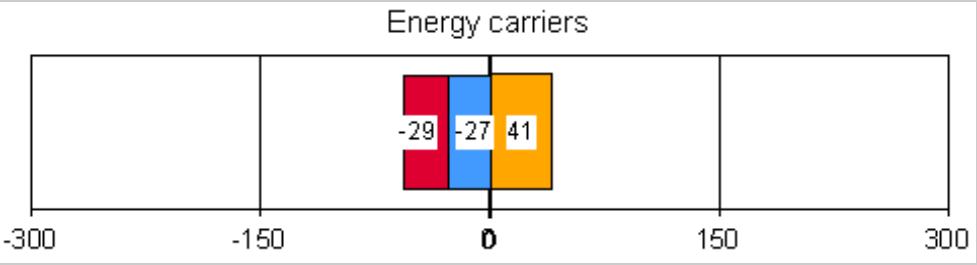


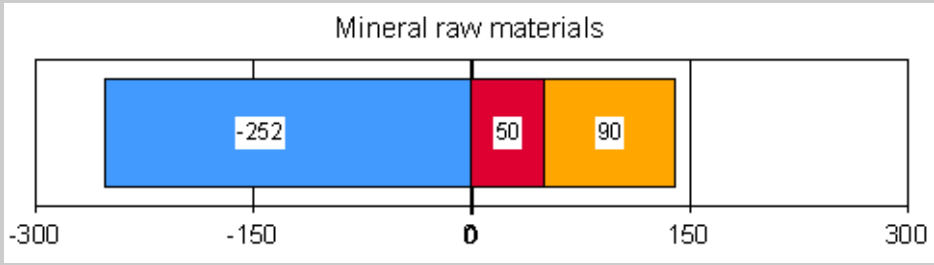
Decomposition analysis

Breakdown of the development of use of primary products into the 3 factors:

- economic growth,
- structural development and
- intensity of use of primary products by branches.







Conclusion:

PMFA data can be used for various analytical purposes:

- Analysis of use of primary material in a breakdown by individual economic branches and by types of material

- Compilation of eco-efficiency indicators (e.g. use of primary product per unit gross value added)

- Analysis with decomposition analyses

<u>Advantage:</u> Compilation of PMFA data is quite easy and offers lots of analytical possibilities

Outlook:

Future work to be done is:

- Completing the module by calculating also use tables for biotic primary products like wood and agricultural products

- Calculation of indirect effects by combining physical data with monetary input-output tables, e.g. for estimating raw material equivalents for imports and exports.

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Thank you very much for your kind attention

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Economy-wide use of energy carriers and energy consumption

1995 = 100