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ECONOMY-WIDE MATERIAL FLOW ACCOUNTS, 2019 – 2023

Economy-wide material flow accounts that include domestic extraction, intra-EU and extra-EU import and export as well as domestic processed output for the Republic of Croatia are presented for the period from 2019 to 2023.

In 2023, the value of the direct material input was **66 490 thousand tonnes** (63.4% from domestic sources and 36.6% from import), which was 1.8% more than in 2022.

Domestic material consumption in 2023 was 48 655 thousand tonnes, which was 5.4% more than in 2022.

The import of materials in 2023 amounted to 24 331 thousand tonnes, which means it increased by 1.2% compared to 2022. The export of materials amounted to 17 835 thousand tonnes, which is a decrease of 6.5% compared to the previous year. The physical trade balance amounted to **6 496 thousand tonnes** in 2023.

Raw material consumption in 2023 amounted to 59 910 thousand tonnes, which was a 3.6% increase compared to 2022.

1 DOMESTIC EXTRACTION¹⁾

'000 tonnes

	2019	2020	2021	2022	2023
Total ²⁾	41 460	42 495	42 508	41 235	42 159
Biomass	15 473	16 111	15 327	13 964	14 082
Non-metallic minerals	24 362	25 003	25 885	26 028	26 963
Fossil energy materials/carriers	1 625	1 382	1 296	1 243	1 114

1) New calculations according to the recommended Eurostat methodology are used each year to calculate material flow. Therefore, some data are not comparable to the data from the First Release OEN-2023-1-7.

2) The sum total of some values does not equal the sum of items due to the expression of numbers in thousands.

2 IMPORT OF CROATIA – INTRA-EU + EXTRA-EU TRADE

'000 tonnes

	2019	2020	2021	2022	2023
Total ¹⁾	20 139	21 701	23 428	24 054	24 331
Biomass and biomass products	4 689	4 510	5 016	5 398	5 607
Metal ores and concentrates, raw and processed	2 352	2 437	2 779	2 897	2 909
Non-metallic minerals, raw and processed	4 854	5 265	5 592	5 710	5 877
Fossil energy materials/carriers, raw and processed	6 944	8 190	8 591	8 588	8 498
Other products	1 294	1 275	1 415	1 430	1 405
Waste imported for final treatment and disposal	5	24	35	32	35

1) The sum total of some values does not equal the sum of items due to the expression of numbers in thousands.

3 EXPORT OF CROATIA – INTRA-EU + EXTRA-EU TRADE

'000 tonnes

	2019	2020	2021	2022	2023
Total ¹⁾	17 601	19 488	20 913	19 081	17 835
Biomass and biomass products	7 433	7 617	8 254	7 837	7 344
Metal ores and concentrates, raw and processed	1 477	1 533	1 892	1 948	1 861
Non-metallic minerals, raw and processed	5 380	5 522	5 974	5 404	4 815
Fossil energy materials/carriers, raw and processed	2 723	4 246	4 028	3 262	3 239
Other products	578	558	750	618	554
Waste imported for final treatment and disposal	9	12	16	12	21

1) The sum total of some values does not equal the sum of items due to the expression of numbers in thousands.

4 DOMESTIC PROCESSED OUTPUT¹⁾

'000 tonnes

	2019	2020	2021	2022	2023
Emissions to air	24 890	23 995	25 244	24 958	23 479
Waste disposal to controlled landfills	1 616	1 452	1 593	1 718	1 644
Emissions to water	40	40	45	45	45
Dissipative use of products ²⁾	1 548	1 569	1 598	1 394	1 372
Dissipative losses	1	1	1	1	1

1) New calculations according to the recommended Eurostat methodology are used each year to calculate material flow. Therefore, some data are not comparable to the data from the First Release OEN-2023-1-7.

2) Dissipative use of products includes the use of mineral and organic fertilizers, sewage sludge, compost and pesticides.

5 MATERIAL FLOW INDICATORS, 2023

'000 tonnes

	Domestic extraction	Import	Export	Direct material input	Domestic material consumption	Physical trade balance
	1	2	3	4 = 1 + 2	5 = 4 - 3	6 = 2 - 3
Materials, total ¹⁾	42 159	24 331	17 835	66 490	48 655	6 496
Biomass and biomass products	14 082	5 607	7 344	19 689	12 345	-1 737
Metal ores and concentrates, raw and processed	0	2 909	1 861	2 909	1 048	1 048
Non-metallic minerals, raw and processed	26 963	5 877	4 815	32 840	28 025	1 062
Fossil energy materials/carriers, raw and processed	1 114	8 498	3 239	9 612	6 373	5 259
Other products	0	1 405	554	1 405	851	851
Waste	0	35	21	35	14	14

1) The sum total of some values does not equal the sum of items due to the expression of numbers in thousands.

6 MATERIAL FLOW INDICATORS, 2019 – 2023¹⁾

'000 tonnes

	2019	2020	2021	2022	2023
Domestic extraction used (DEU)	41 460	42 495	42 508	41 235	42 159
Import	20 139	21 701	23 428	24 054	24 331
Export	17 601	19 488	20 913	19 081	17 835
Direct material input	61 600	64 196	65 936	65 289	66 490
Domestic material consumption	43 999	44 708	45 023	46 208	48 655
Physical trade balance	2 538	2 213	2 515	4 973	6 496

1) New calculations according to the recommended Eurostat methodology are used each year to calculate material flow. Therefore, some data are not comparable to the data from the First Release OEN-2023-1-7.

7 RAW MATERIAL CONSUMPTION (MATERIAL FOOTPRINT), 2019 – 2023¹⁾

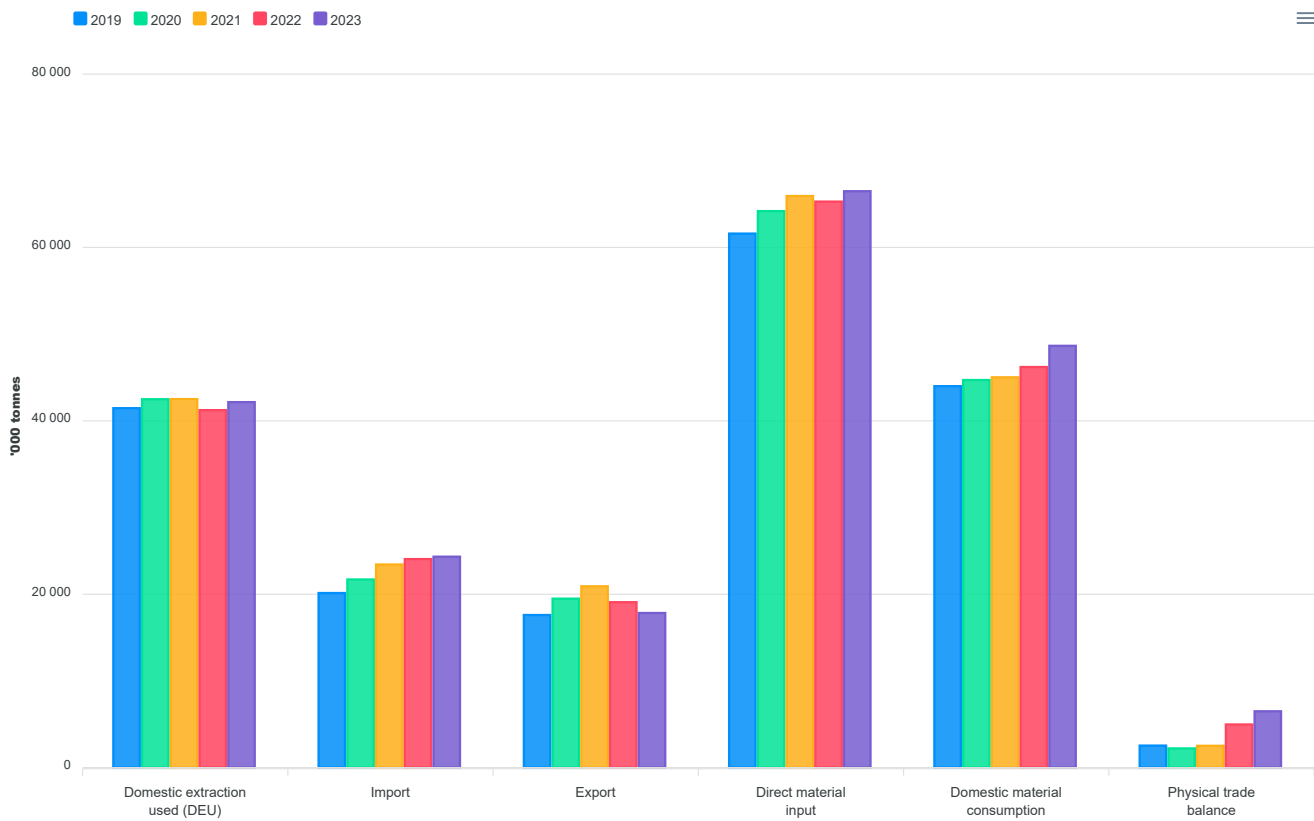
'000 tonnes

	2019	2020	2021	2022	2023
Total ²⁾	61 468	57 986	62 243	57 808	59 910
Biomass and biomass products	15 821	15 135	15 133	13 995	14 153
Metal ores and concentrates, raw and processed	6 557	4 802	7 182	5 122	5 763
Non-metallic minerals, raw and processed	27 728	28 316	29 137	28 451	30 054
Fossil energy materials/carriers, raw and processed	11 362	9 732	10 791	10 239	9 940

1) Since 2025, the Croatian Bureau of Statistics has been publishing data on the material footprint for the Republic of Croatia. The material footprint indicator has been calculated as part of a project co-financed by the European Union.

2) The sum total of some values does not equal the sum of items due to the expression of numbers in thousands.

G-1 MATERIAL FLOW INDICATORS, 2019 – 2023



NOTES ON METHODOLOGY

Sources and methods of data collection

The source of data on economy-wide material flow accounts is the Croatian Bureau of Statistics.

Economy-wide material flow accounts are one of the several physical modules of the Eurostat's programme of European environmental economic accounts. They are covered by the Regulation (EU) No 691/2011 of the European Parliament and the Council of 6 July 2011 on European environmental economic accounts.

Economy-wide material flow accounts (EW-MFA) record flows of natural inputs (domestic extraction of materials) and products (import, export) in a detailed breakdown by approximately 50 material categories. Material flow data presented in this First Release employ the following main material categories:

1. Biomass and biomass products: crops and products thereof, crop residues and fodder crops
2. Metal ores and concentrates and products thereof
3. Non-metallic minerals and products thereof
4. Fossil energy material/carriers and products thereof (coal, petroleum, gas etc.)
5. Other products and waste.

Definitions

Biomass refers to the biodegradable components of products, waste and residue of agriculture (including plant and animal matter), forestry and wood industries, as well as biodegradable parts of municipal and industrial waste, the energy usage of which is allowed.

Minerals are natural homogeneous bodies of permanent chemical composition and determined physical characteristics that occur in specific geometric forms (crystals) or undetermined physical characteristics.

Ore is a mineral aggregate from which it is technically viable and economically justifiable to produce metals and/or other minerals usable in industry.

Concentrates are products of ore enrichment that have a significantly increased metal content compared to ore contents and are appropriate for further metallurgic processing and production of metal.

Non-metallic mineral raw materials are raw materials that do not produce new raw materials as a result of melting, and are usually integrated in sedimentary rocks (quartz raw materials, clay, gypsum, salt, dolomite, phosphorite, graphite, bauxite and cement raw materials).

Fossil energy materials/carriers are produced naturally beneath the Earth's surface from biological remains. Fossil fuels are not renewable energy sources. There are three main forms of fossil fuels: coal, petroleum and natural gas.

Waste is every substance or object that was, is going to be or has to be discarded by its owner. Every discarded object and substance the gathering, transport and processing of which are necessary for the protection of the public interest is considered waste.

Domestic extraction used (DEU) is the annual amount of raw material (except for water and air) extracted from the natural environment to be used in the economy.

Domestic material consumption (DMC) is defined as the total amount of material directly used in the economy.

Domestic material consumption (DMC) = domestic extraction used + import – export

Direct material input (DMI) = domestic extraction used + import

Physical trade balance (PTB) is calculated by subtracting the amount of export in physical units from the amount of import in physical units, as follows:

Physical trade balance (PTB) = import – export.

Raw material consumption (RMC) captures the amount of domestic and foreign extraction of materials needed to produce the final products used by national economy. The material flow indicator RMC is also known as "material footprint."

Abbreviations

EU	European Union
Eurostat	Statistical Office of the European Union
'000	thousand

Symbols

0 value not zero but less than 0.5 of the unit of measure used

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