



MATERIAL FLOW ACCOUNTS: year 2024

The Hellenic Statistical Authority (ELSTAT) announces data on Material Flow Accounts, for the year 2024.

Economy-wide material flow accounts (EW-MFA) describe the physical interaction between the natural environment and the economy in terms of flows of materials and resources.

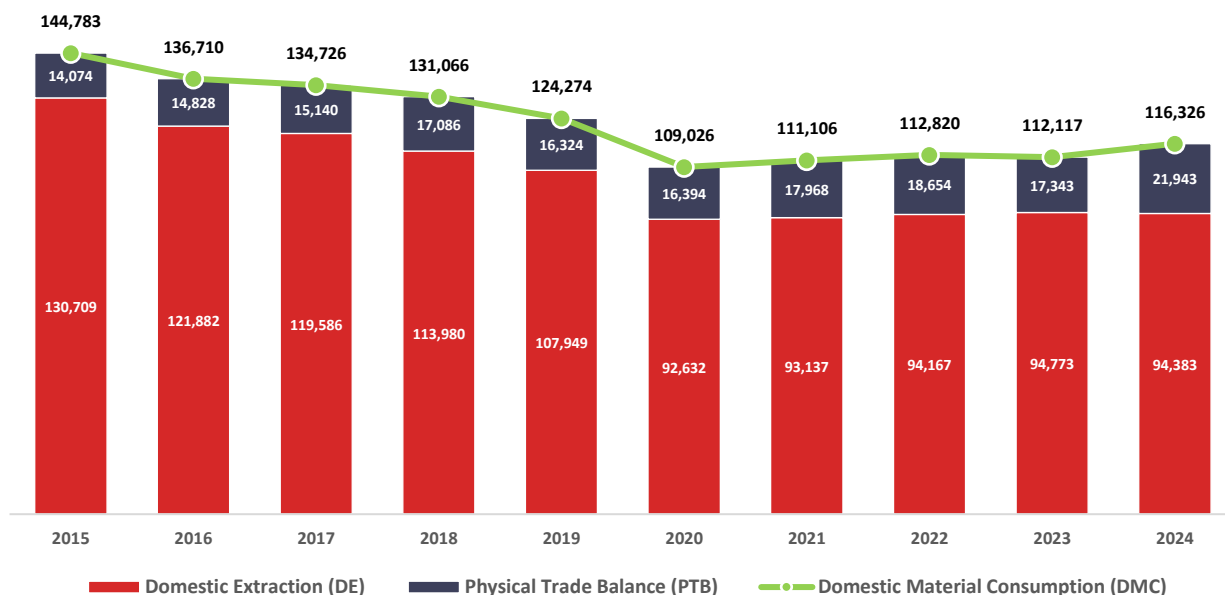
The data presented in the announcement, refer to:

- ▶ Domestic material consumption (DMC), in thousand tonnes
- ▶ Domestic extraction (DE), in thousand tonnes
- ▶ Physical trade balance (PTB), in thousand tonnes
- ▶ Resource productivity (RP), in euros per tonne
- ▶ Material import dependency (MID), percentage (%)

Domestic Material Consumption (DMC)

Domestic Material Consumption amounted to 116,326 thousand tonnes in 2024, 3.8% higher compared to 2023 (112,117 thousand tonnes). Domestic Extraction (DE) accounts for 81.1% of Domestic Material Consumption with 94,383 thousand tonnes and the Physical Trade Balance (PTB) accounts for 18.9% with 21,943 thousand tonnes (Tables 1-2, Graph 1).

Graph 1. Domestic Material Consumption (DMC) and components in thousand tonnes, 2015 – 2024



Information on methodological issues:

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Domestic Extraction (DE)

Domestic extraction amounted to 94,383 thousand tonnes in 2024, 0.4% lower compared to 2023 (94,773 thousand tonnes). Extraction of non-metallic minerals accounted for 61,644 thousand tonnes (65.3% of total DE), followed by biomass with 24,550 thousand tonnes (26.0%) and fossil energy materials with 6,665 thousand tonnes (7.1%). Finally, metal ores extraction amounted to 1,524 thousand tonnes with a share of 1.6% of total DE (Tables 1-3, Graphs 1-2).

Physical Trade Balance (PTB)

Physical trade balance exhibited a positive value of 21,943 thousand tonnes in 2024. Imports amounted to 66,630 thousand tonnes and exports to 44,687 thousand tonnes. Compared to 2023, PTB increased by 26.5% (Tables 1-2, Graph 3).

The category of fossil energy materials was the main component of imports in 2024 with 43,690 thousand tonnes and a share of 65.6% of total imports. Biomass and metal ores contributed with 10,031 and 6,878 thousand tonnes and respective shares 15.1% and 10.3% (Table 3, Graph 4).

Regarding exports in 2024, the leading category was fossil energy materials that amounted to 22,943 thousand tonnes (51.3% of total exports) followed by non-metallic minerals and biomass with 8,712 (19.5%) and 7,029 (15.7%) thousand tonnes respectively (Table 3, Graph 4).

Resource Productivity (RP)

Resource productivity reached the value of 1,733 euros per tonne in 2024, compared with 1,761 euros per tonne in 2023, decreased by 1.6% (Table 4, Graph 5).

Material Import Dependency (MID)

The overall material import dependency was 41.4% in 2024, increased by 1.5 percentage points compared to 2023 (39.9%).

Fossil energy materials exhibited the highest import dependency (86.8%) followed by metal ores (81.9%). MID of Biomass was 29.0%, while the less import-dependent material was the category of non-metallic minerals with a MID of 5.4% (Table 5, Graph 6).

Table 1. Components of the Domestic Material Consumption (DMC) in thousand tonnes and percentage (%) of total, 2015 – 2024

Thousand tonnes	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic Material Consumption (DMC)	144,783	136,710	134,726	131,066	124,274	109,026	111,106	112,820	112,117	116,326
Domestic Extraction (DE)	130,709	121,882	119,586	113,980	107,949	92,632	93,137	94,167	94,773	94,383
Physical Trade Balance (PTB)	14,074	14,828	15,140	17,086	16,324	16,394	17,968	18,654	17,343	21,943
Imports (IMP)	54,698	58,697	60,976	62,721	61,311	59,683	63,861	63,477	62,895	66,630
Exports (EXP)	40,624	43,869	45,837	45,635	44,986	43,289	45,892	44,824	45,552	44,687
Share (%)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic Extraction (DE)	90.3%	89.2%	88.8%	87.0%	86.9%	85.0%	83.8%	83.5%	84.5%	81.1%
Physical Trade Balance (PTB)	9.7%	10.8%	11.2%	13.0%	13.1%	15.0%	16.2%	16.5%	15.5%	18.9%

Table 2. Annual change of the components of the Domestic Material Consumption (DMC), 2015 – 2024

Annual change (%)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Domestic Material Consumption (DMC)	-	-5.6%	-1.5%	-2.7%	-5.2%	-12.3%	1.9%	1.5%	-0.6%	3.8%
Domestic Extraction (DE)	-	-6.8%	-1.9%	-4.7%	-5.3%	-14.2%	0.5%	1.1%	0.6%	-0.4%
Physical Trade Balance (PTB)	-	5.4%	2.1%	12.9%	-4.5%	0.4%	9.6%	3.8%	-7.0%	26.5%
Imports (IMP)	-	7.3%	3.9%	2.9%	-2.2%	-2.7%	7.0%	-0.6%	-0.9%	5.9%
Exports (EXP)	-	8.0%	4.5%	-0.4%	-1.4%	-3.8%	6.0%	-2.3%	1.6%	-1.9%

Table 3. Components of the Domestic Material Consumption (DMC) by material category in thousand tonnes and percentage (%) of total, 2024

2024	Biomass		Metal ores		Non-metallic minerals		Fossil energy materials		Other products and waste		Total materials	
	Thousand tonnes	Share (%)	Thousand tonnes	Share (%)	Thousand tonnes	Share (%)	Thousand tonnes	Share (%)	Thousand tonnes	Share (%)	Thousand tonnes	Share (%)
Domestic Material Consumption (DMC)	27,551	23.7%	4,953	4.3%	56,457	48.5%	27,412	23.6%	-47	0.0%	116,326	100.0%
Domestic Extraction (DE)	24,550	26.0%	1,524	1.6%	61,644	65.3%	6,665	7.1%	0	0.0%	94,383	100.0%
Imports (IMP)	10,031	15.1%	6,878	10.3%	3,525	5.3%	43,690	65.6%	2,506	3.8%	66,630	100.0%
Exports (EXP)	7,029	15.7%	3,449	7.7%	8,712	19.5%	22,943	51.3%	2,553	5.7%	44,687	100.0%

Table 4. Resource Productivity (RP) in euros per tonne and annual changes, 2015 – 2024

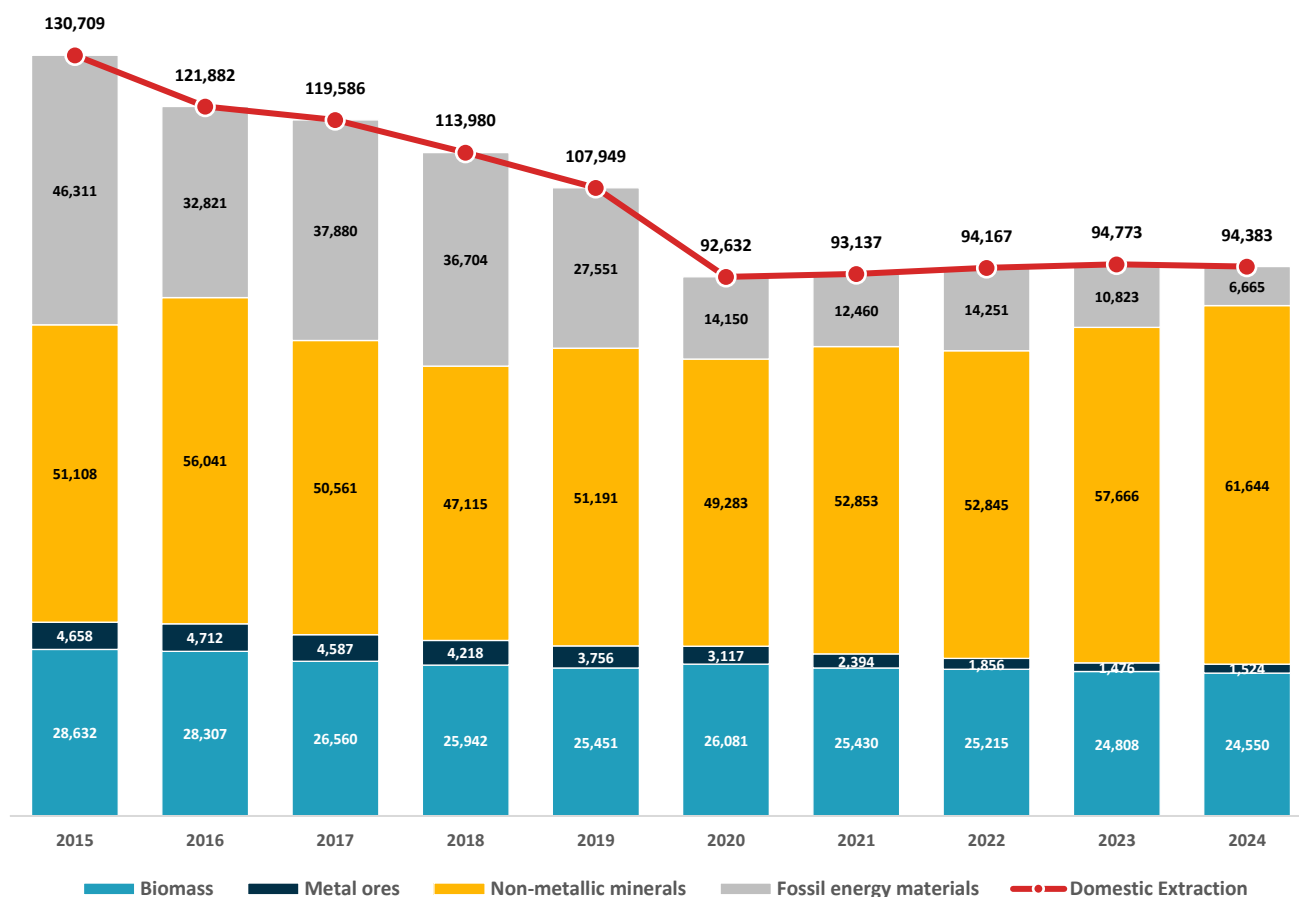
Resource Productivity	2015	2016	2017	2018	2019	2020	2021	2022	2023*	2024*
Euros per tonne	1,211	1,282	1,320	1,385	1,494	1,547	1,649	1,714	1,761	1,733
Annual change (%)	-	5.9%	3.0%	4.9%	7.9%	3.5%	6.6%	3.9%	2.8%	-1.6%

* *Provisional data*

Table 5. Material Import Dependency (MID), percentage (%) by material category, 2015 – 2024

Percentage (%)	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total materials	29.5%	32.5%	33.8%	35.5%	36.2%	39.2%	40.7%	40.3%	39.9%	41.4%
Biomass	22.0%	23.8%	25.7%	25.0%	25.9%	23.9%	25.9%	26.6%	26.9%	29.0%
Metal ores	45.2%	49.7%	51.3%	54.9%	57.3%	61.3%	70.6%	76.0%	80.1%	81.9%
Non-metallic minerals	5.3%	5.0%	5.7%	5.7%	5.3%	5.3%	5.2%	5.8%	5.0%	5.4%
Fossil energy materials	45.1%	55.1%	52.5%	54.5%	60.6%	74.6%	77.9%	74.9%	79.7%	86.8%

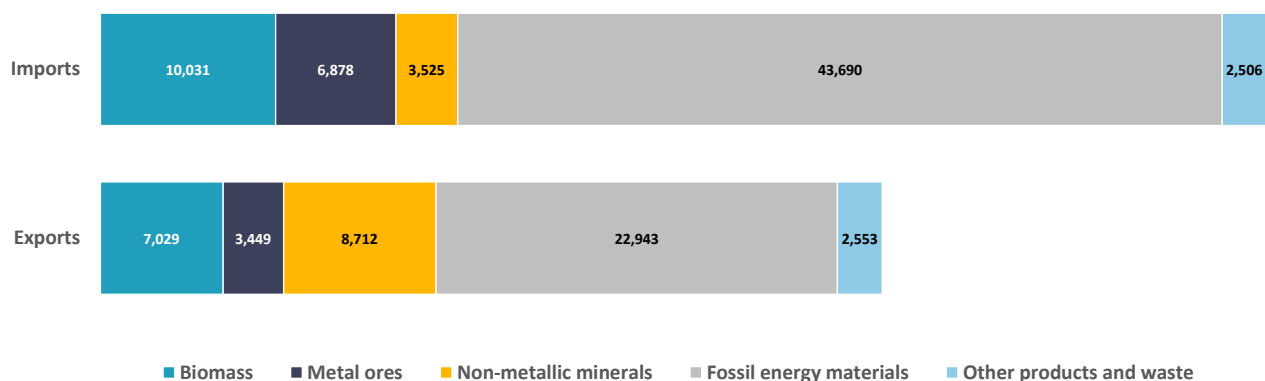
Graph 2. Domestic Extraction (DE) by material category in thousand tonnes, 2015 – 2024



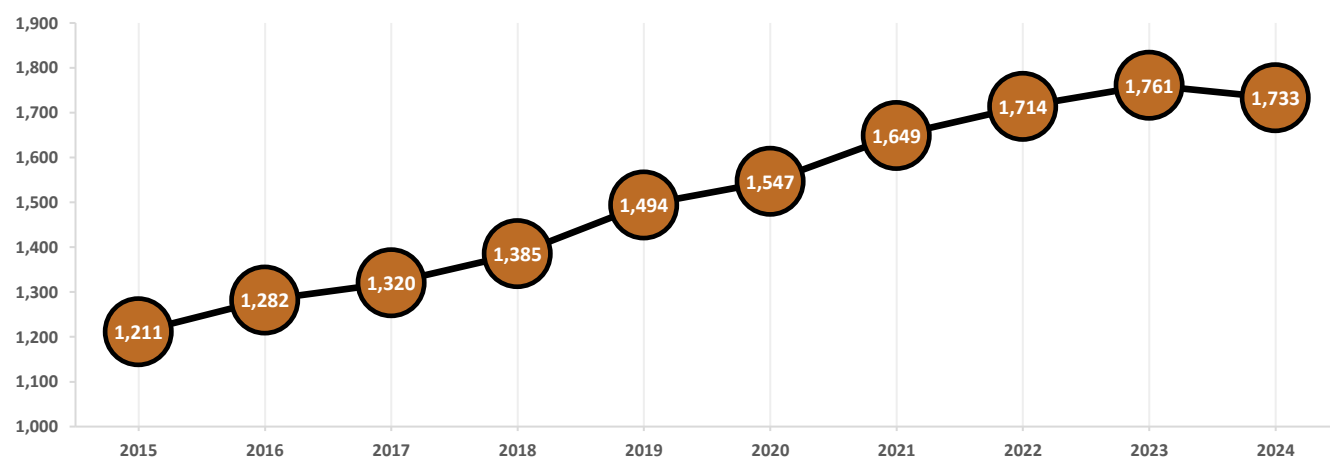
Graph 3. International trade (imports, exports and physical trade balance) of materials in thousand tonnes, 2015 – 2024



Graph 4. Imports and exports by material category in thousand tonnes, 2024

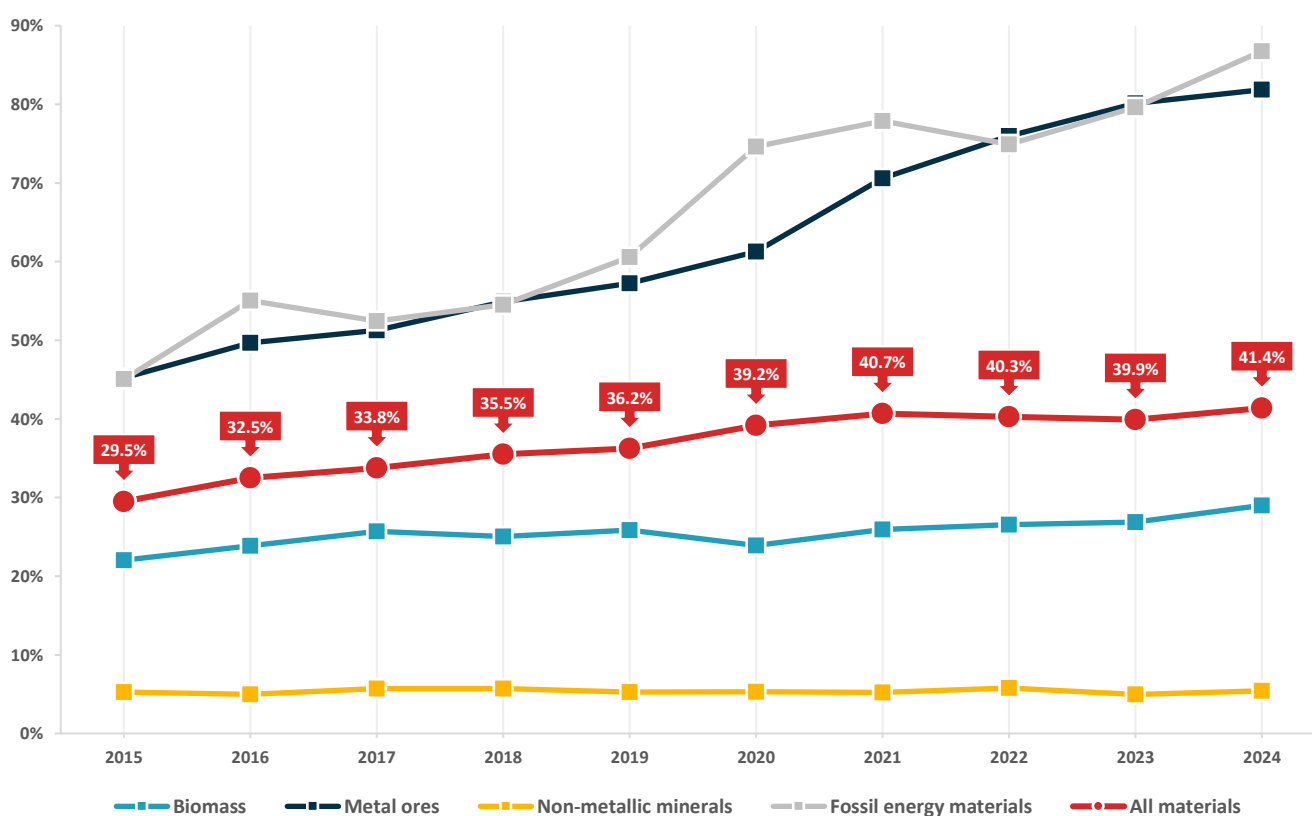


Graph 5. Resource Productivity (RP) in euros per tonne, 2015 – 2024



*Provisional data

Graph 6. Material Import Dependency (MID) in % by material category, 2015 – 2024



EXPLANATORY NOTES

Legal framework:	The Material Flow Accounts are compiled pursuant to Regulation 691/2011 of the European Parliament and of the Council (Section 1) which provides for and lays down the methodological frame for the compilation of Material Flow Accounts.
Methodology:	The main sources of primary data for the compilation of Material Flow Accounts are (a) data from administrative sources e.g. the Ministry of Rural Development and Food, the Ministry of Environment and Energy etc. (b) surveys of official ELSTAT statistics such as "Production and Sales of Manufacturing Products", "International Trade Statistics" etc and (c) statistical estimations procedures. Data are presented by type of flow and material category. Flows refer to "Domestic Extraction", "Imports" and "Exports" while materials are classified to four main categories i.e. "Biomass", "Metal ores", "Non-metallic minerals" and "Fossil energy materials/carriers". An additional category of materials is added to the flows of Imports and Exports concerning "Other products and waste". Possible small deviations in sums are due to rounding.
Concepts and Definitions:	1. <u>Domestic Material Consumption (DMC)</u>: corresponds to the total amount of materials used within an economy and is comprised of Domestic Extraction (DE) plus Physical Trade Balance (PTB) [$DMC = DE + PTB$]. 2. <u>Domestic extraction (DE)</u>: represents the amount of extracted natural materials that have been transferred from the environment to the economy. 3. <u>Physical Trade Balance (PTB)</u>: represents the difference between imports (IMP) and exports (EXP) of materials and products [$PTB = IMP - EXP$]. 4. <u>Resource Productivity (RP)</u>: it is defined as the ratio of Gross Domestic Product (GDP) over Domestic Material Consumption (DMC) in euros per tonne. It expresses the amount of GDP that is generated from the materials that are directly used in the national economy [$RP = GDP / DMC$]. GDP refers to chain linked volumes 2015. 5. <u>Material Import Dependency (MID)</u>: provides the ratio of imports (IMP) over the sum of imports and domestic extraction in percentage. It shows the extent to which an economy relies upon imports in order to meet its material needs [$MID = IMP / (IMP + DE)$]. <u>Resident Principle</u>: Material Flow Accounts follow the resident principle for fuels bunkered (Imports: by resident units abroad and Export: by non-residents units domestically). In contrast with the territory principle, the residence adjustment is applied to record the amount of fuels purchased from (a) resident units abroad (imports) and (b) non-residents on the national territory (exports).
References:	Complete datasets and metadata information are available on ELSTAT's portal (www.statistics.gr), at the following link: http://www.statistics.gr/en/statistics/-/publication/SOP09/-