

Environmental accounts: Material flow accounts
 Preview data 2022

Domestic material consumption decreased by 4.4% in 2022, to 419.2 million tonnes

Resource productivity in the Spanish economy increased by 10.6%

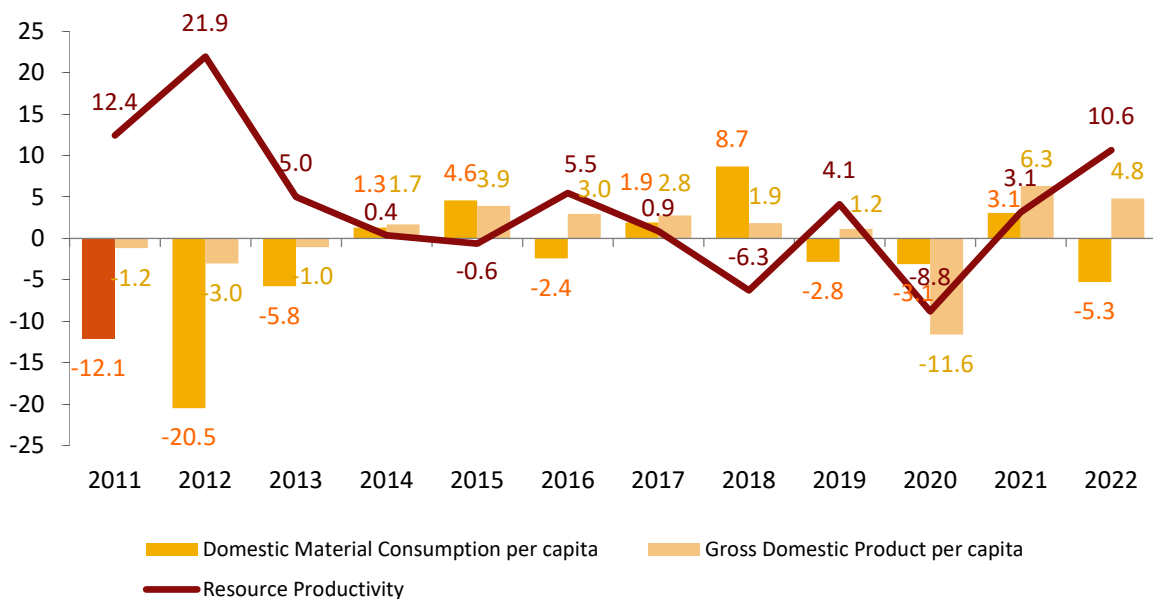
Domestic material consumption, which measures the annual quantity of solid, liquid and gaseous materials (excluding air and water) used directly by the economy, decreased by 4.4% in 2022, to 419.2 million tonnes.

Resource productivity, or the amount of Gross Domestic Product (GDP) generated per unit of consumption of materials, reached €2,845.6 per tonne, an increase of 10.6% compared with the previous year.

In turn, per capita material consumption decreased by 5.3%, standing at 8.8 tonnes. The net material consumption in the economy came to 4.3 tons per capita, 8.8% less than the previous year.

Main indicators

Annual variation rates



Components of domestic material consumption

As in previous years, the main component of material consumption was domestic extraction, which accounted for 83.6% of the total. It reached 350.3 million tonnes, 7.6% less than in 2021.

The physical trade balance (imports minus exports) was 68.9 million tonnes in 2022. Imports reached 256.9 million tons, compared with 188.0 million for exports.

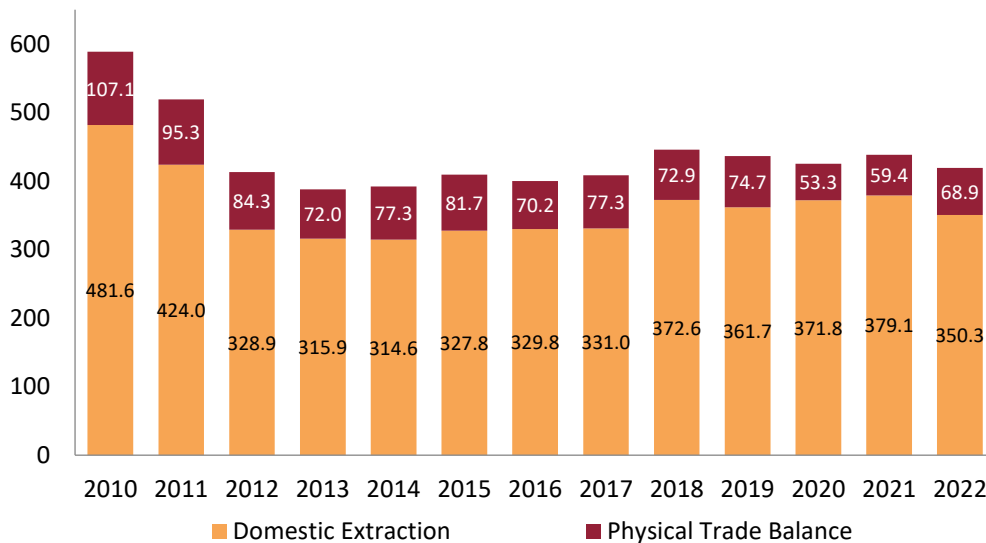
Domestic material consumption. 2022

Thousands of tonnes

	Total	Annual rate (%)
Domestic material consumption	419,226.5	-4.4
Domestic extraction	350,342.7	-7.6
Physical trade balance	68,883.8	16.0
Imports	256,915.3	4.3
Exports	188,031.5	0.7

Domestic material consumption

Millions of tonnes



Domestic material extraction

The main materials extracted in the national territory in 2022 were *Non-metallic minerals*, mainly limestone, plaster and sand, followed by *Biomass* (notably cereals, fruit and vegetables), with 213.8 and 117.9 million tonnes respectively.

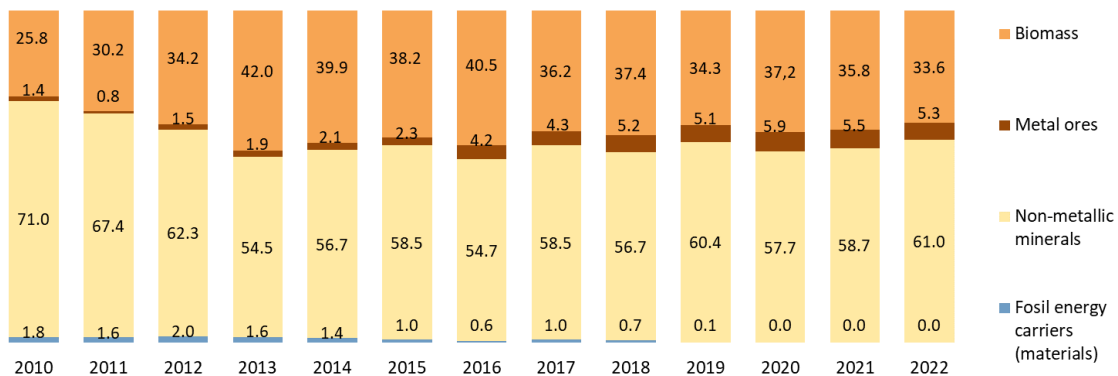
Extraction of *Non-metallic minerals* increased by 3.9% compared with the previous year, while that of biomass decreased by 13.2%.

National extraction in thousands of tonnes. 2022

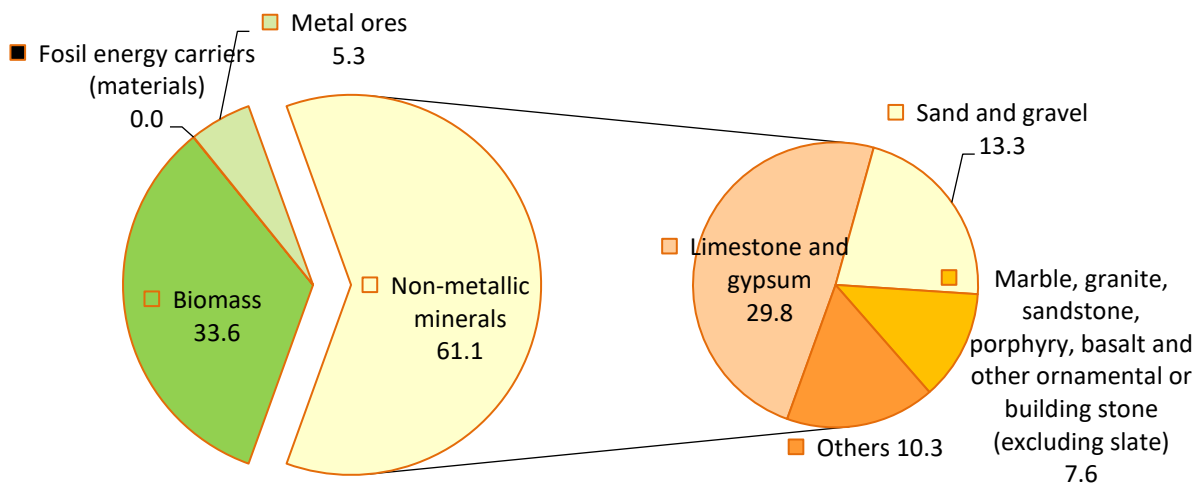
Thousands of tonnes

		Percentage	Annual rate (%)
Domestic extraction	350,342.7	100.0	-7.6
Non-metallic minerals	213,803.3	61.1	-3.9
Biomass	117,875.8	33.6	-13.2
Metal ores	18,548.2	5.3	-10.9
Fossil energy carriers	115.4	0.0	-5.8

Distribution of domestic extraction. Percentage



Distribution of domestic extraction, 2022. Percentage



Components of the physical trade balance

Fossil energy carriers (coal, crude oil, natural gas and derivatives) were the materials that stood out in the 2022 physical trade balance, due to their relative weight in imports (50.5% of the total), followed by *Biomass* (21.4 %). The materials with the greatest relative weight in exports were *Biomass* and *Fossil energy carriers*, with 26.8% and 24.9% of the total, respectively.

Fossil fuels presented the most positive physical trade balance (82.8 million tonnes). *Non-metallic minerals* showed the most negative one (-25.6 million).

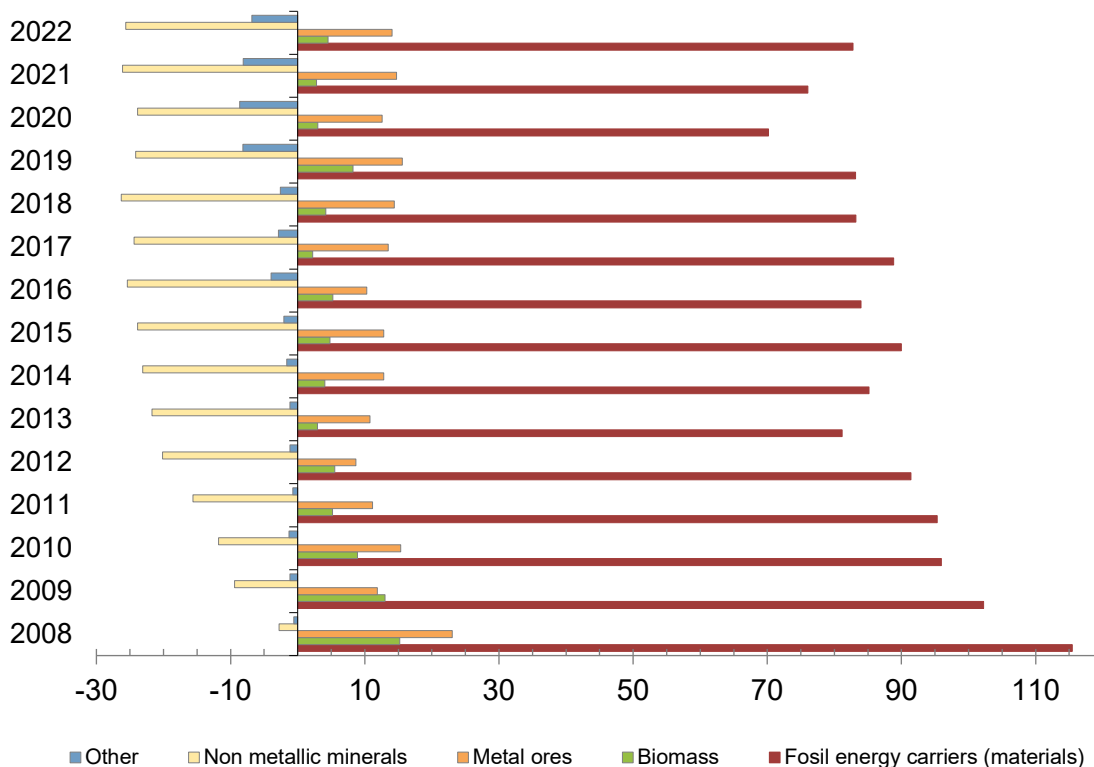
Components of the physical trade balance. 2022

Thousands of tonnes

	Physical trade balance	Imports	%	Exports	%
TOTAL	68,883.8	256,915.3	100.0	188,031.5	100.0
Fossil energy carriers	82,751.1	129,623.6	50.5	46,872.5	24.9
Biomass	4,537.6	54,852.5	21.4	50,314.9	26.8
Metal ores	14,086.6	40,960.8	15.9	26,874.2	14.3
Non-metallic minerals	-25,648.4	17,027.1	6.6	42,675.5	22.7
Other products	-6,843.1	14,451.3	5.6	21,294.4	11.3

Components of the physical trade balance

Millions of tonnes



National output processed to nature

In 2022, the total amount of materials released into the environment following use in the national economy reached 313.8 million tons, an increase of 5.1% compared with the previous year.

Atmospheric emissions (mainly greenhouse gases) were the materials with the highest relative weight in the total (91.5%) followed by dissipative use of products and losses (organic fertilisers, inorganic and phytosanitary fertilisers, etc.), which accounted for 8.2% of the total.

National output processed to nature. 2022

Thousands of tonnes

		Percentage	Annual rate (%)
TOTAL	313,814.1	100.0	5.1
Air emissions	286,872.3	91.5	6.1
Air emissions and waste disposal to the environment	1,058.3	0.3	13.5
Dissipative use of products and losses	25,883.5	8.2	-5.4

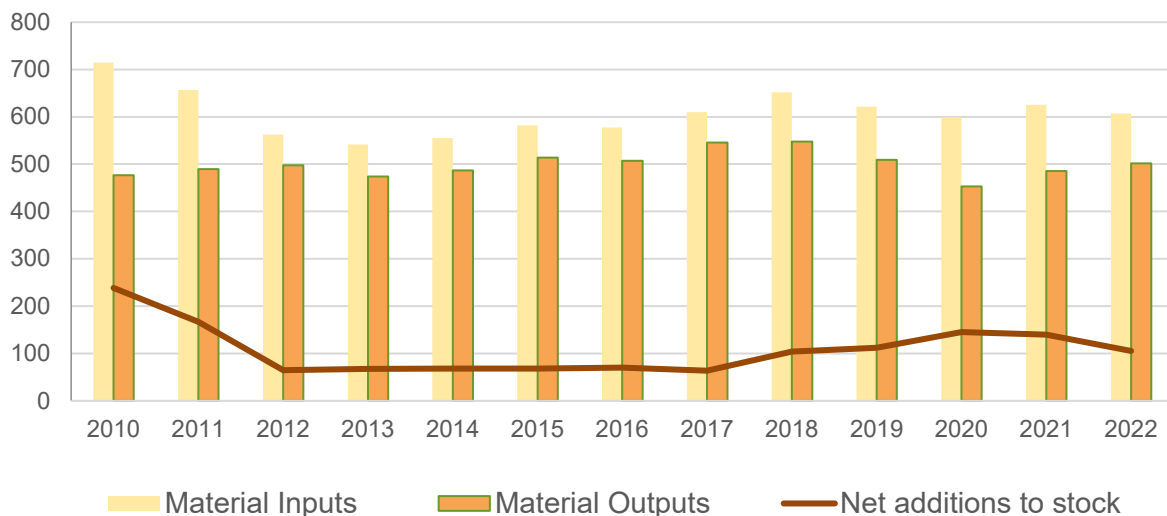
Net Material Accumulation

Net material accumulation measures the real physical growth of the economy; that is, the proportion of construction materials used in buildings and other infrastructure, and of materials used in durable goods such as vehicles, industrial machinery, etc. It is obtained as the balance between inputs (national extraction, imports and balance sheet items) and outputs (output processed to nature, exports and balance sheet items).

In 2022, 204.0 million tons of materials were added to the economy, a total of 4.3 tonnes per capita, representing a decrease of 8.0% over the previous year.

Net Material Accumulation

Millions of tonnes



Data reviews and updates

The INE is also publishing the complete estimates of the Material Flow Accounts for the 2008-2022 series today. The data for the 2018-2022 period are provisional and will be revised when the data for 2023 are released. All results are available on INEBase.

Methodological note

The objective of the Environmental Accounts (EA) is to integrate environmental information into the central system of National Accounts in a coherent way. They include a set of satellite accounts, which are transmitted annually, compiled using the accounting formats applicable to the different sectoral and territorial areas, with a strong use of physical data. They display the interactions between the economy, households and environmental factors.

The *Material Flow Accounts* show the physical inputs of materials that enter into the national economic system in physical units (tonnes). This makes it possible to obtain a set of aggregate indicators on the use of natural resources, from which indicators can be derived on the productivity of resources (eco-efficiency) in relation to GDP and other economic and employment indicators, in addition to indicators on intensity of materials from lifestyles, considering the size of the population and other demographic indicators.

For further information, the methodology can be accessed at:

https://www.ine.es/dynqs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176943&menu=metodologia&idp=1254735976603

And the standardised methodological report at:

<https://www.ine.es/dynt3/metadatos/es/RespuestaDatos.html?oe=30086>

INE statistics are produced in accordance with the Code of Good Practice for European Statistics, which is the basis for the institution's quality policy and strategy. For more information, see the section [Quality at INE and the Code of Best Practices](#) on the INE website.

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