Instituto Nacional de Estadística

Press Release

15 December 2022

Environmental accounts: Material flow accounts
Preview data 2021

The national consumption of materials increased by 2.8% in 2021, reaching 442.3 million tonnes

Productivity of materials in the Spanish economy increased by 2.7%

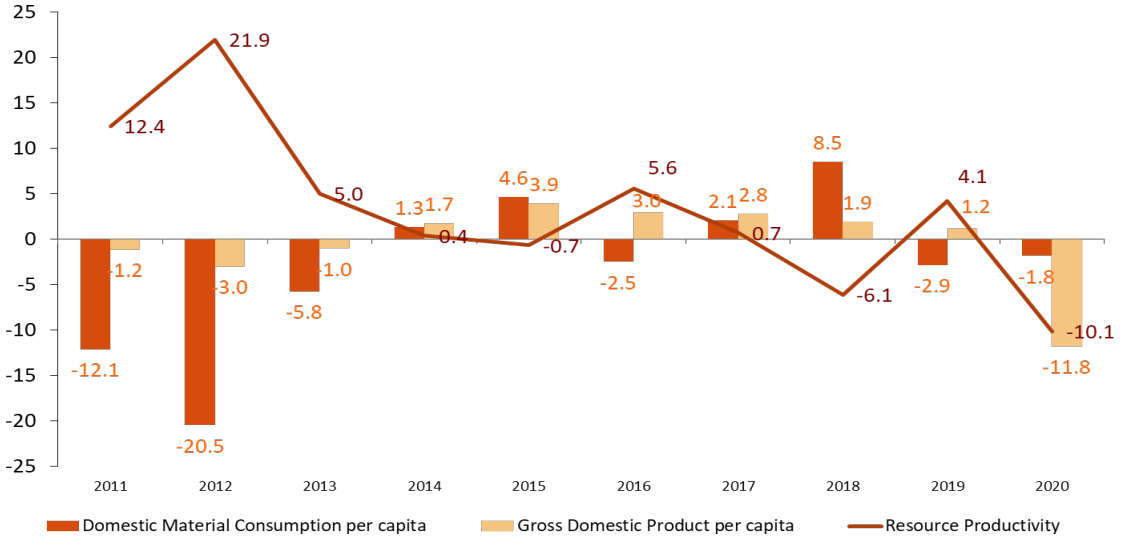
The national consumption of materials, which measures the annual quantity of solid, liquid and gaseous materials (excluding air and water) used directly by the economy, increased by 2.8% in 2021, reaching 442.3 million tonnes.

Productivity of materials, or the amount of Gross Domestic Product (GDP) generated per unit of consumption of materials, reached 2,524.3 euros per tonne, with an increase of 2.7% compared to the previous year.

In turn, per capita material consumption increased by 2.8%, reaching 9.3 tonnes.

The net material consumption in the economy came to 4.9 tons per capita, 1.9% more than the previous year.

Leading Indicators
Annual variation rates



Components of the national consumption of materials

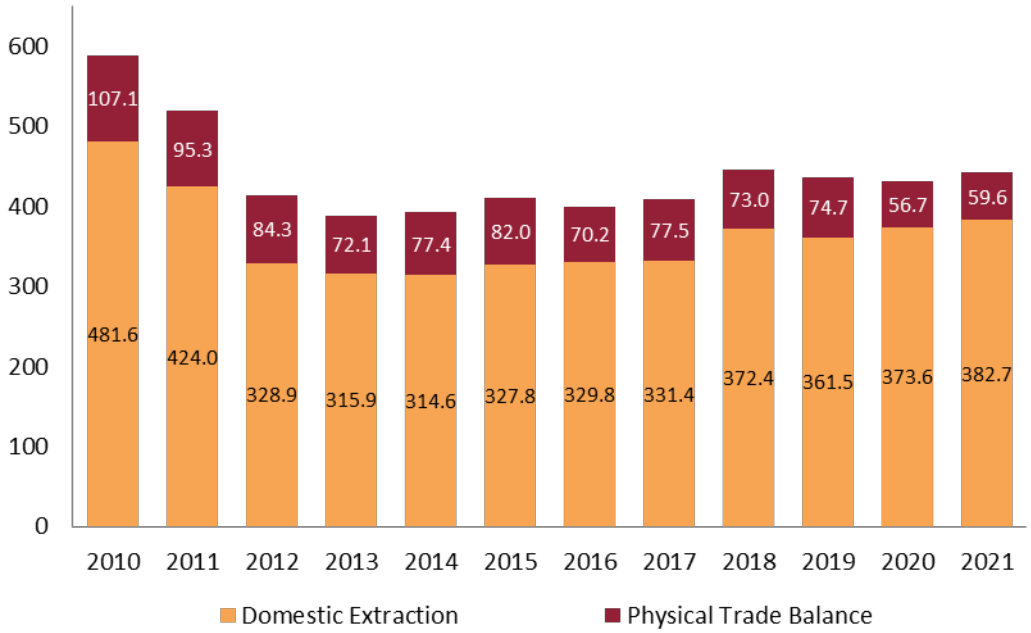
As with previous years, the main component of the consumption of materials was national extraction, with 86.5% of the total. It reached 382.7 million tonnes, 2.4% more than in 2020.

The physical trade balance (imports minus exports) was 59.6 million tonnes in 2021. Imports reached 245.3 million tons, compared to 185.7 million for exports.

Domestic Material Consumption. Year 2021
Unit: Thousand tonnes

	2021	Annual rate
Domestic Material Consumption.	**442,302.7**	**2.8**
Domestic Extraction	**382,696.5**	**2.4**
Physical trade balance	**59,606.2**	**5.0**
Imports	245,333.0	8.8
Exports	185,726.8	10.0

Domestic Material Consumption
Unit: Thousand tonnes



National extraction of materials

The main materials extracted in national territory in 2021 were *Non-metallic minerals*, mainly limestone, plaster and sand, followed by *Biomass* (notably cereals, fruits and vegetables), with 226.4 and 135.3 million tonnes respectively.

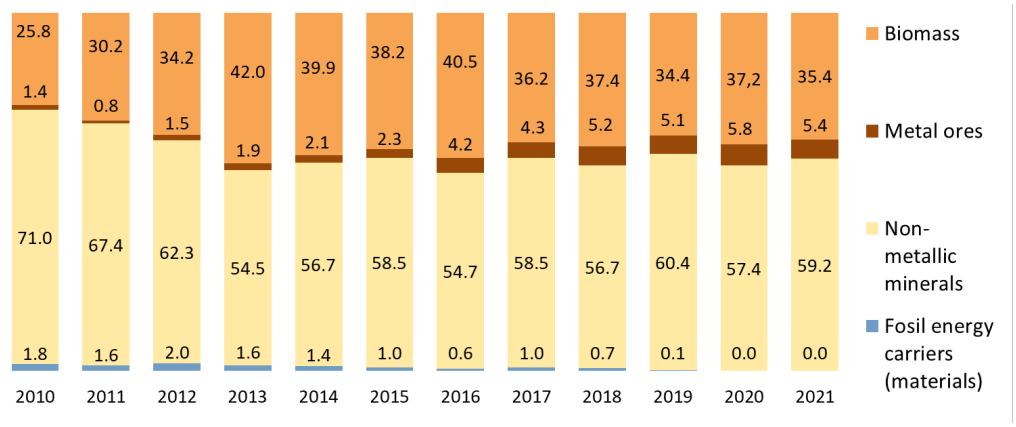
Extraction of non-metallic minerals increased by 5.6% compared to the previous year, while that of biomass decreased by 1.5%.

Domestic extraction. Year 2021

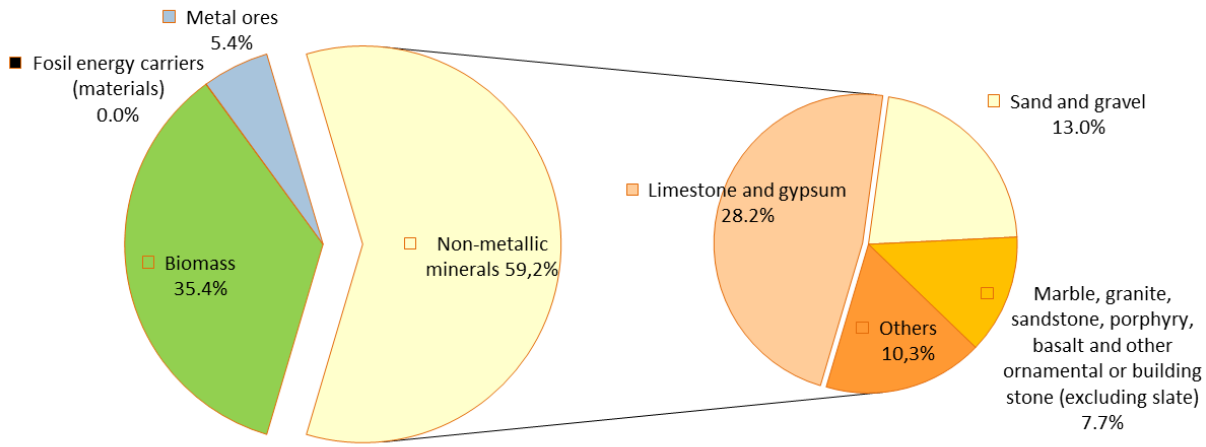
Unit: Thousand tonnes

	2021	%	Annual Rate
Domestic Extraction	**382,696.5**	**100.0**	**2.4**
Non metallic minerals	226,417.9	59.2	5.6
Biomass	135,338.8	35.4	-1.5
Metal ores	20,805.8	5.4	-4.7
Fosil energy carriers (materials)	134.0	0.0	0.3

Distribution of domestic extraction (percentage)



Distribution of domestic extraction (percentage) Year 2021



Components of the physical trade balance

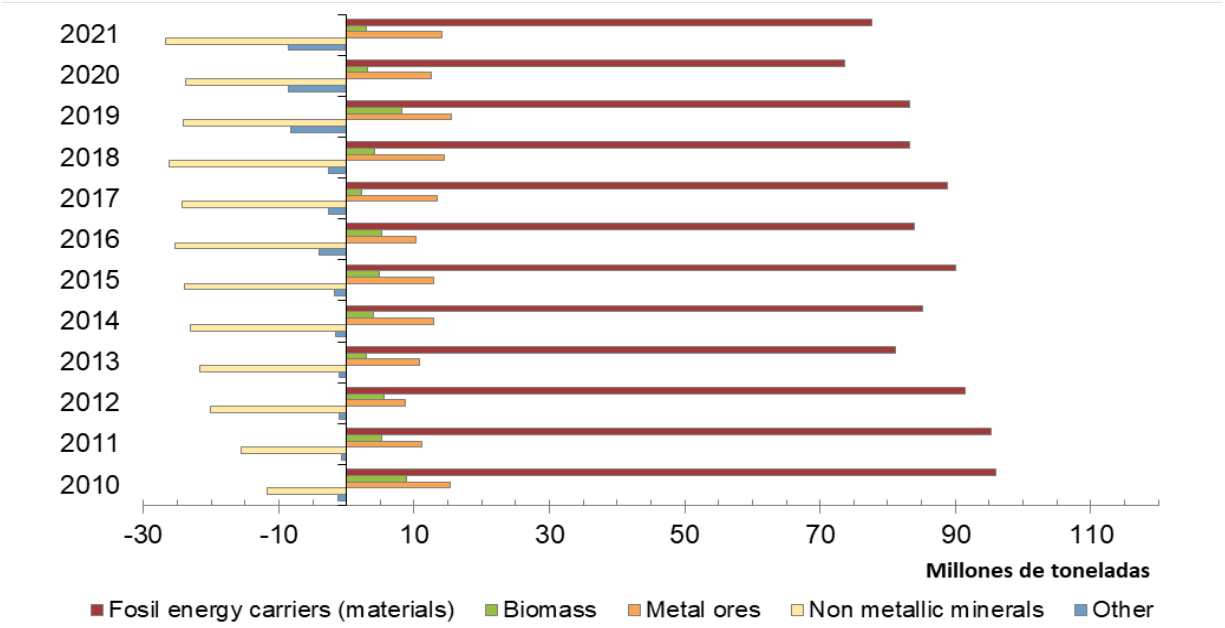
Fossil fuels (coal, crude oil, natural gas and derivatives) were the materials that stood out in the 2021 physical trade balance, due to their weight in imports (49.2% of the total), followed by biomass (21.6 %). The materials with the greatest weight in exports were biomass and non-metallic minerals, with 27.0% and 23.2% of the total, respectively.

Fossil fuels had the most positive physical trade balance (77.6 million tonnes). By contrast, non-metallic minerals registered the most negative balance (-26.7 million).

Components of the physical trade balance. Year 2021
Unit: Thousand tonnes

	Physical trade balance	Imports	%	Exports	%
TOTAL	**59,606.2**	**245,333.0**	**100.0**	**185,726.8**	**100.0**
Fosil energy carriers (materials)	77,640.7	120,617.6	49.2	42,976.9	23.1
Biomass	3,009.7	52,973.9	21.6	49,964.2	27.0
Metal ores	14,136.3	40,730.5	16.6	26,594.2	14.3
Non metallic minerals	-26,664.3	16,414.5	6.7	43,078.8	23.2
Other	-8,516.2	14,596.5	5.9	23,112.7	12.4

Components of the physical trade balance
Unit: Thousand tonnes



National output processed to nature

In 2021, the total amount of materials released into the environment following use in the national economy reached 296.8 million tons, with an increase of 6.4% compared to the previous year.

Air emissions (mainly greenhouse gases) were the materials with the greatest weight in the total (89.7%). On the other hand, the dissipative use of products and losses (organic fertilizers, inorganic and phytosanitary fertilizers, among others) represented 10.0% of the total.

Domestic procesed output (DPO). Year 2021
Unit: Thousand tonnes

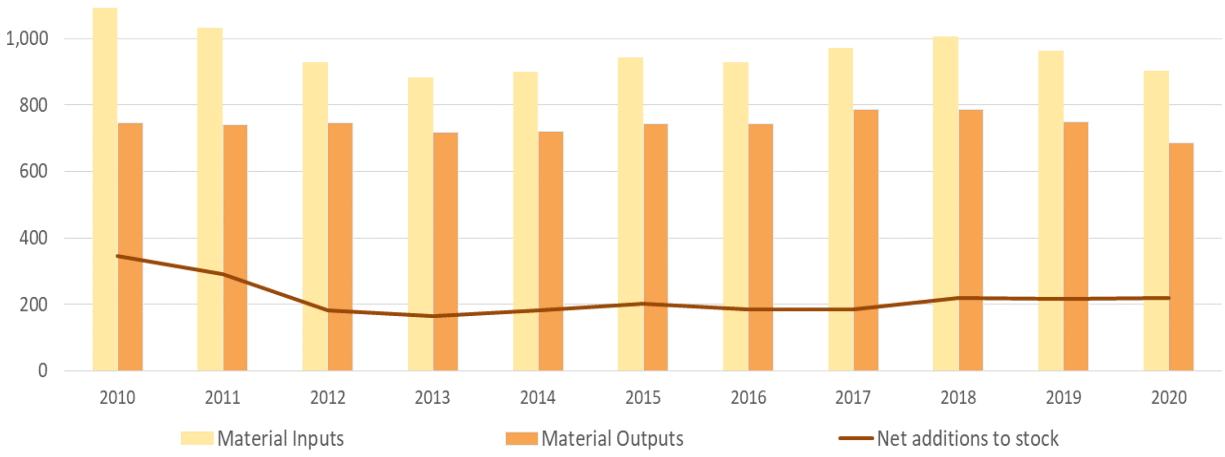
	2021	%	Annual Rate
Domestic procesed output (DPO)	**296,821.3**	**100.0**	**6.4**
Emissions to air	267,717.0	89.7	7.0
Waste disposal to the environment	1,177.6	0.3	39.9
Dissipative use of products and losses	27,926.7	10.0	0.1

Net Material Accumulation

The net accumulation of materials measures the real physical growth of the economy; that is, the weight 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 2021, 234.6 million tons of materials were added to the economy, a total of 4.9 tonnes per capita, representing an increase of 1.9% over the previous year.

Net additions to stock
Unit: Thousand tonnes



Data Review and Update

The INE is also publishing the complete estimates of the Material Flow Accounts for the 2008-2020 series today. The data for the 2017-2021 period are provisional and will be revised when the data for 2022 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 show the interaction 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 more information the methodology can be accessed at:

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

The standardized methodological report is at:

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

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Press office: Telephone numbers: (+34) 91 583 93 63 /94 08 – **gprensa@ine.es**
Information Area: Telephone number: **(+34) 91 583 91 00 – www.ine.es/infoine/?L=1**