



## STATISTICAL DATA ON CRITICAL RAW MATERIALS AND NET-ZERO INDUSTRY GOODS 2021-2023

The Hellenic Statistical Authority presents, for the first time, annual statistical data on enterprises active in the imports of Critical Raw Materials (CRM) and Net-Zero Industry Goods (NZIG), for the 2021–2023 reference period.

The monitoring of CRMs is of strategic importance, as these materials are considered essential for the economy and technology, and entail a high risk of supply disruption. The importance of CRMs has increased significantly in recent years due to the green transition, digitalisation, and the defence and aerospace sectors. The European Union (EU) has adopted the Critical Raw Materials Act, which aims to reduce reliance on CRMs from third countries (non-EU), increase recycling, and secure strategic reserves of CRMs.

The monitoring of NZIGs is of strategic importance, as these consist of goods that facilitate the reduction or elimination of greenhouse gas emissions and are central to achieving the “net zero” target, namely the elimination of CO<sub>2</sub> emissions or the balancing of CO<sub>2</sub> emissions through removal. Within this framework, they are linked to policies concerning climate change mitigation, energy security, and industrial and economic competitiveness. The EU promotes the Net-Zero Industry Act to reduce its reliance on NZIG imports and to accelerate the green transition.

**Table 1: Statistical data on enterprises which had import transactions of CRMs and NZIGs, 2021-2023**

Year	Category of Importing Enterprises	Number of Enterprises	Turnover (million €)	Value of Imports (million €)	Gross Value Added (million €)	Employment (Persons)
2021	CRM	264	33,276.8	1,235.0	4,246.4	37,546.0
	NZIG	1,851	86,021.3	503.0	18,373.3	239,573.5
2022	CRM	274	49,338.8	1,574.2	5,527.3	37,087.8
	NZIG	2,379	116,801.2	1,116.3	20,075.8	230,031.0
2023	CRM	294	55,602.5	671.7	7,068.1	45,884.8
	NZIG	2,458	109,031.5	1,190.6	21,509.2	221,706.2

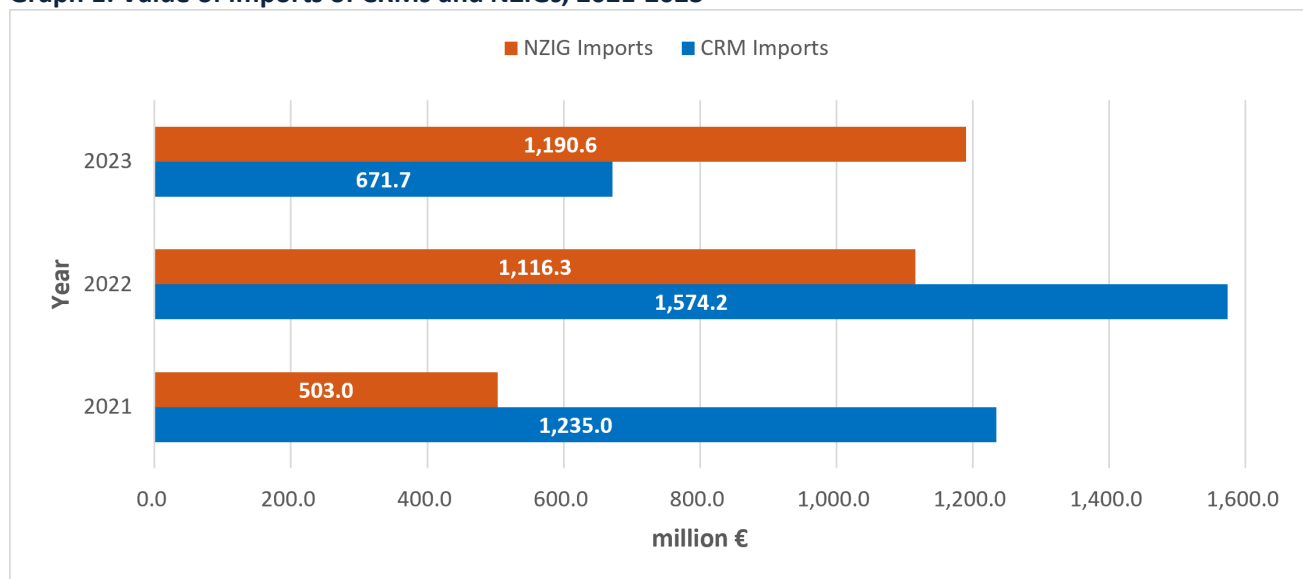
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**Graph 1: Value of imports of CRMs and NZIGs, 2021-2023**



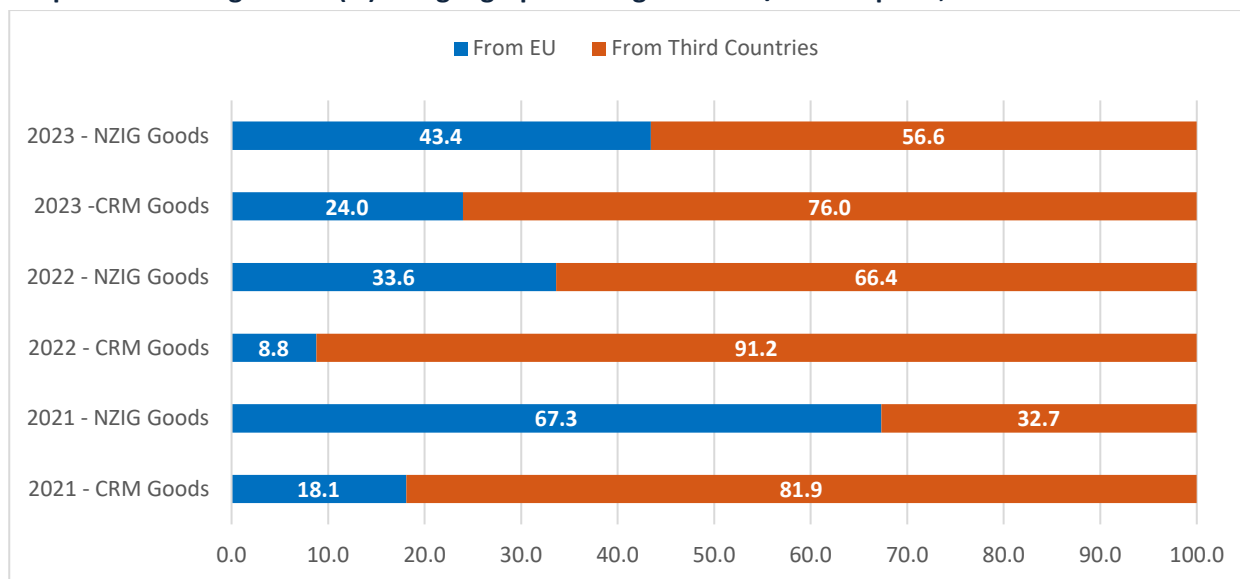
Greek enterprises active in the sectors of industry, construction, trade and services which had import transactions of CRM goods amounted to 294 in 2023. Their imports value stood at 671.7 million euro, their turnover at 55,602.5 million euro and their gross value added at 7,068.1 million euro (Table 1).

As regards NZIG goods, the enterprises which had import transactions of NZIG goods amounted to 2,458 in 2023. Their imports value stood at 1,190.6 million euro, their turnover at 109,031.5 million euro and their gross value added at 21,509.2 million euro (Table 1).

**Table 2. Percentage share of CRM and NZIG imports in total imports and geographical breakdown, 2021–2023**

Year	Category of Imports	Value of Imports (million €)	Share in Total Imports (%)	From EU Member States (%)	From Third Countries (%)
2021	CRM Goods	1,235.0	2.1	18.1	81.9
	NZIG Goods	503.0	0.9	67.3	32.7
	Other goods	56,422.3	97.0	50.9	49.1
	<b>Total imports</b>	<b>58,160.3</b>			
2022	CRM Goods	1,574.2	1.9	8.8	91.2
	NZIG Goods	1,116.3	1.3	33.6	66.4
	Other goods	80,065.0	96.8	44.3	55.7
	<b>Total imports</b>	<b>82,755.5</b>			
2023	CRM Goods	671.7	0.9	24.0	76.0
	NZIG Goods	1,190.6	1.6	43.4	56.6
	Other goods	71,215.5	97.5	50.8	49.2
	<b>Total imports</b>	<b>73,077.8</b>			

**Graph 2. Percentage share (%) and geographical origin of CRM/NZIG imports, 2021–2023**



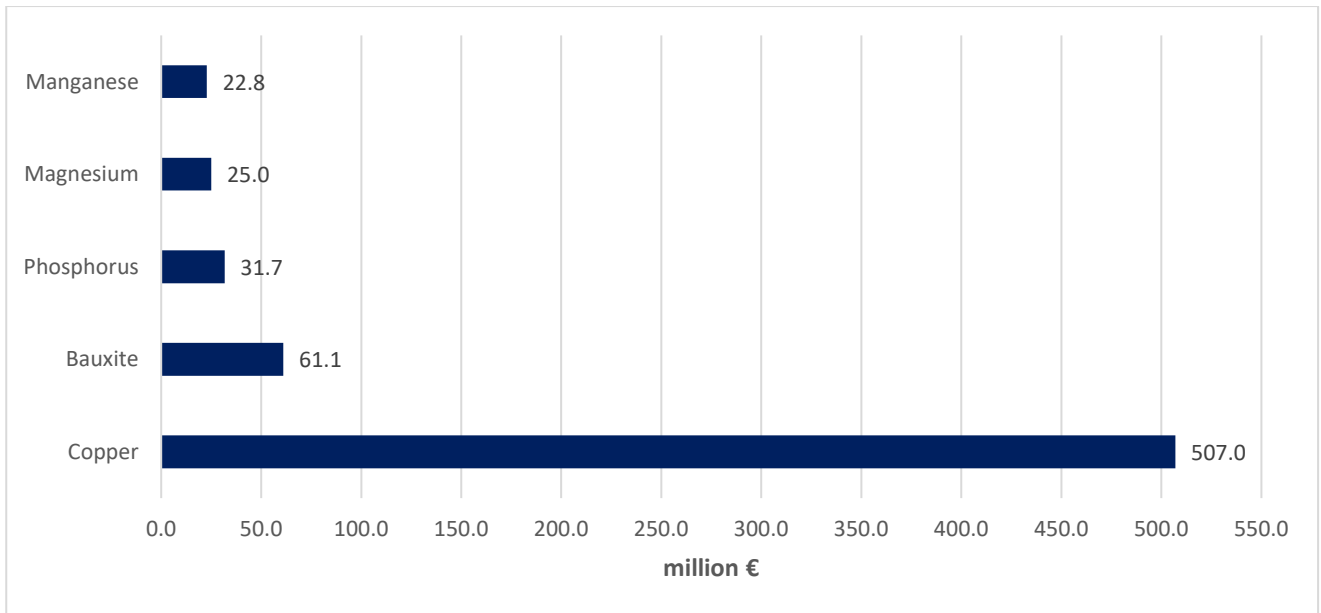
Imports of CRM and NZIG goods account for approximately 3.0% of the total imports value during the 2021–2023 period, with CRM imports showing a downward trend (2.1% in 2021, 1.9% in 2022, and 0.9% in 2023), whereas NZIG imports display an increase (0.9%, 1.3%, and 1.6% respectively) (Table 2 – Graph 2).

**Table 3. Largest product categories of CRM by value of imports, 2021–2023**

Year	Rank	Product Category	Value of Imports (million €)	Share in Total CRM Imports (%)
2021	1st	Bauxite	593.2	48.0
	2nd	Copper	556.1	45.0
	3rd	Manganese	29.0	2.3
	4th	Magnesium	18.1	1.5
	5th	Phosphorus	16.9	1.4
		Other CRM Products	21.7	1.8
		<b>Total Value of CRM Imports</b>	<b>1,235.0</b>	
2022	1st	Bauxite	834.0	53.0
	2nd	Copper	592.6	37.6
	3rd	Manganese	51.7	3.3
	4th and 5th	Phosphorus and Magnesium <sup>(1)</sup>	70.9	4.5
		Other CRM Products	25.0	1.6
		<b>Total Value of CRM Imports</b>	<b>1,574.2</b>	
2023	1st	Copper	507.0	75.5
	2nd	Bauxite	61.1	9.1
	3rd	Phosphorus	31.7	4.7
	4th	Magnesium	25.0	3.7
	5th	Manganese	22.8	3.4
		Other CRM Products	24.1	3.6
		<b>Total Value of CRM Imports</b>	<b>671.7</b>	

<sup>(1)</sup> In 2022, the 4th and the 5th product are presented in aggregate to ensure statistical confidentiality.

**Graph 3. CRM imports 2023: Largest product categories by value of imports**



During the years 2021 and 2022, the total value of the top five largest CRM product categories by value of imports accounted for 98.2% and 98.4% respectively of total CRM imports, whereas in 2023 this share stood at 96.4% (Table 3 – Graph 3).

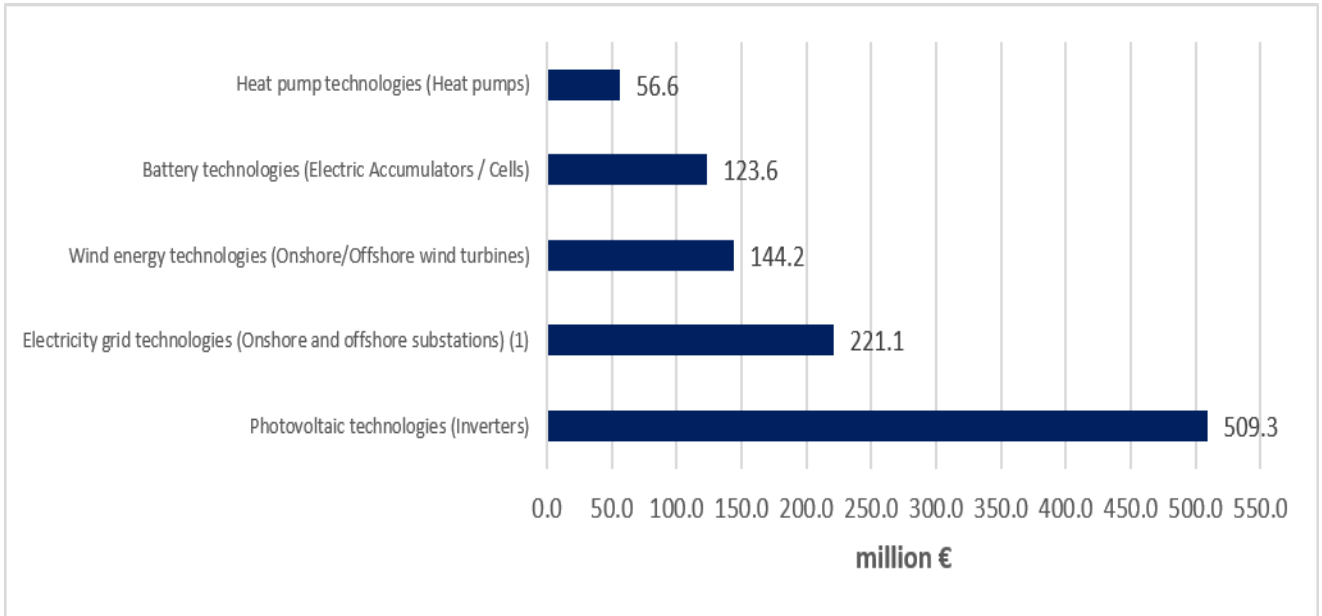
**Table 4. Largest product categories of NZIG by value of imports, 2021–2023**

Year	Rank	Category & Product Name	Value of Imports (million €)	Share in NZIG Imports (%)
2021	1st and 2nd	Wind energy technologies (Onshore/Offshore wind turbines) and Electricity grid technologies (Transmission cables and conductors) <sup>(1)</sup>	228.8	45.5
	3rd	Photovoltaic technologies (Inverters)	73.9	14.7
	4th	Electricity grid technologies (Power transformers)	69.7	13.9
	5th	Electricity grid technologies (Onshore and offshore substations) <sup>(2)</sup>	31.1	6.2
		Other NZIG products	99.5	19.7
		<b>Total Value of NZIG Imports</b>	<b>503.0</b>	
		1st	Photovoltaic technologies (Inverters)	557.5
2022	2nd	Wind energy technologies (Onshore/Offshore wind turbines)	158.5	14.2
	3rd	Electricity grid technologies (Onshore and offshore substations) <sup>(2)</sup>	135.9	12.2
	4th	Battery technologies (Electric Accumulators / Cells)	48.1	4.3
	5th	Heat pump technologies (Heat pumps)	40.5	3.6
		Other NZIG products	175.8	15.8
		<b>Total Value of NZIG Imports</b>	<b>1,116.3</b>	
		1st	Photovoltaic technologies (Inverters)	509.3
2023	2nd	Electricity grid technologies (Onshore and offshore substations) <sup>(2)</sup>	221.1	18.6
	3rd	Wind energy technologies (Onshore/Offshore wind turbines)	144.2	12.1
	4th	Battery technologies (Electric Accumulators / Cells)	123.6	10.4
	5th	Heat pump technologies (Heat pumps)	56.6	4.8
		Other NZIG products	135.8	11.3
		<b>Total Value of NZIG Imports</b>	<b>1,190.6</b>	

<sup>(1)</sup> In 2021, the 1st and the 2nd product are presented in aggregate to ensure statistical confidentiality.

<sup>(2)</sup> The category “Electricity grid technologies (Onshore and Offshore substations)” is derived as a net residual value following the deduction of individual categories of transmission cables and conductors, power transformers, power circuit breakers, disconnectors, electrical distribution boards/enclosures, and photovoltaic system inverters, in order to avoid the double counting of import values.

**Graph 4. NZIG imports 2023: Largest product categories by value of imports**



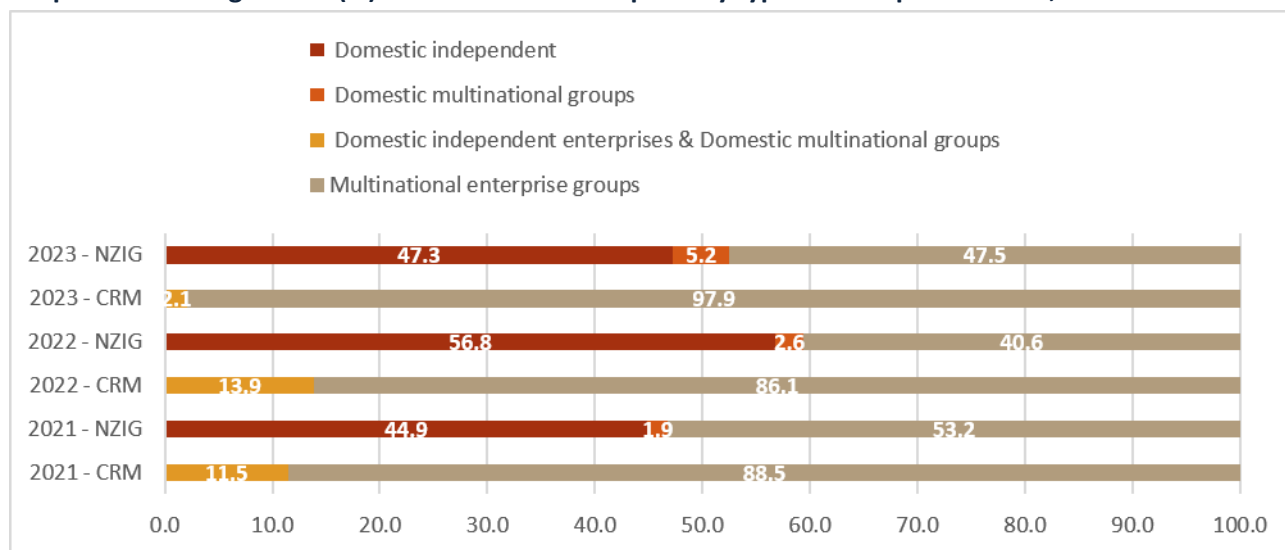
During the 2021–2023 period, the total value of the top five largest NZIG product categories by value of imports accounted for 80.3% in 2021, 84.2% in 2022, and 88.7% in 2023 of total NZIG imports (Table 4 – Graph 4).

**Table 5. Number of enterprises, value and percentage share of CRM and NZIG imports by type of control, 2021–2023**

Year	Type of Control	Number of Enterprises	Value of Imports (million €)	Category's Share in Total Imports (%)
<b>A. CRM Imports<sup>(1)</sup></b>				
2021	Domestic independent enterprises & Domestic multinational groups	181	141.9	11.5
	Multinational enterprise groups (domestically controlled and foreign-controlled)	83	1.093.1	88.5
	<b>Total Enterprises</b>	<b>264</b>	<b>1,235.0</b>	
2022	Domestic independent enterprises & Domestic multinational groups	198	218.1	13.9
	Multinational enterprise groups (domestically controlled and foreign-controlled)	76	1.356.1	86.1
	<b>Total Enterprises</b>	<b>274</b>	<b>1,574.2</b>	
2023	Domestic independent enterprises & Domestic multinational groups	219	14.3	2.1
	Multinational enterprise groups (domestically controlled and foreign-controlled)	75	657.4	97.9
	<b>Total Enterprises</b>	<b>294</b>	<b>671.7</b>	
<b>B. NZIG Imports</b>				
2021	Domestic independent enterprises	1,506	225.7	44.9
	Domestic multinational groups	23	9.6	1.9
	Multinational enterprise groups (domestically controlled and foreign-controlled)	322	267.7	53.2
	<b>Total Enterprises</b>	<b>1,851</b>	<b>503.0</b>	
2022	Domestic independent enterprises	1,990	633.9	56.8
	Domestic multinational groups	30	29.1	2.6
	Multinational enterprise groups (domestically controlled and foreign-controlled)	359	453.3	40.6
	<b>Total Enterprises</b>	<b>2,379</b>	<b>1,116.3</b>	
2023	Domestic independent enterprises	2,044	562.9	47.3
	Domestic multinational groups	29	62.2	5.2
	Multinational enterprise groups (domestically controlled and foreign-controlled)	385	565.5	47.5
	<b>Total Enterprises</b>	<b>2,458</b>	<b>1,190.6</b>	

<sup>(1)</sup> In CRM imports, the categories “Domestic independent” and “Domestic multinational groups” are presented in aggregate to ensure statistical confidentiality.

**Graph 5. Percentage share (%) of CRM and NZIG imports by type of enterprise control, 2021–2023**



Regarding the type of enterprise control for businesses that imported CRMs, multinational enterprise groups accounted for 97.9% in 2023. Correspondingly, domestic independent enterprises and domestic multinational groups accounted for 2.1% of total CRM imports for the year 2023. Concurrently, the number of enterprises active in CRM imports increased to 294 in 2023 (Table 5 – Graph 5).

In NZIG imports, domestic independent enterprises accounted for 47.3% in 2023, while multinational enterprise groups concentrated 47.5%. Domestic multinational groups accounted for 5.2% in 2023 of total NZIG imports. Furthermore, the total number of enterprises implementing NZIG imports increased to 2,458 in 2023 (Table 5 – Graph 5).

## EXPLANATORY NOTES

<b>Generally</b>	This analysis is based on data from the statistical domains of International Trade in Goods and Structural Business Statistics, the Statistical Business Register, and the EuroGroups Register. Its main purpose is to map the economic footprint of enterprises participating in the green and digital transition supply chain.
<b>Legal framework</b>	The compilation of statistics is carried out within the framework of the European MDL Programme 2025–2027 (101197046-2024-DK-MDL). Critical Raw Materials are defined as the materials and metals included in the official list of Annex II of Regulation (EU) 2024/1252 of the European Parliament and of the Council, provided that they meet the technical criteria of supply risk and economic importance as defined in the same Regulation. The monitoring of Net-Zero Industry Act (NZIA) products is implemented in application of Regulation (EU) 2024/1735 of the European Parliament and of the Council on establishing a framework of measures for strengthening Europe’s net-zero technology manufacturing ecosystem and amending Regulation (EU) 2018/1724.
<b>Classification System</b>	Sections of economic activities according to the European classification Nace Revision 2.
<b>Coverage</b>	Sections B, C, D, E, F, G, H, I, J, K, L, M, N, P, Q, P and divisions S95, S96 of the statistical classification of economic activities Nace Revision 2.
<b>Frequency</b>	Annual.
<b>Reference period</b>	2021-2023
<b>Dissemination of Results</b>	The results are available through the website of the Hellenic Statistical Authority and are transmitted to Eurostat within the framework of the joint European MDL programme 2025–2027.
<b>Definitions</b>	<p><b>Import:</b> is considered every import (physical movement) of a good from another country into Greece.</p> <p><b>Net turnover:</b> turnover comprises the totals invoiced by the enterprise during the reference period and corresponds to market sales of goods or services supplied to third parties.</p> <p><b>Value added:</b> corresponds to the gross income from operating activities after adjusting for operating subsidies and indirect taxes.</p> <p><b>Critical Raw Materials:</b> includes 34 different raw materials (e.g., Bauxite, Aluminium, Rare Earths, Lithium), as defined in the European Commission’s list of materials of strategic importance with a high supply risk.</p> <p><b>Net-Zero Industry Goods:</b> includes technological equipment related to energy transition. In this analysis, NZIG are grouped into core categories encompassing solar energy, wind energy, batteries and energy storage, heat pumps, hydroelectric energy, grid infrastructure, industrial decarbonisation technologies, and nuclear energy.</p>
<b>Methodology</b>	<p>For the implementation of this analysis, the National Microdata Infrastructure (MDI) is utilised, and the Micro Data Linking (MDL) method is applied. The statistical population of Structural Business Statistics is defined as the base population for the analysis. Through the linking process, the units of this population are identified in the Statistical Business Register to verify active units and extract their core business characteristics. The linkage is performed using a unique identification key which is common and available across all data sources. For the requirements of this project, microdata from four central statistical domains were consolidated:</p> <ol style="list-style-type: none"><li>1. Statistical Business Register (BR): Provides the principal economic activity of the enterprise at the NACE Rev. 2 4-digit level, and the enterprise group identifier.</li><li>2. Structural Business Statistics (SBS): Provide the reference population and include core economic variables, such as net turnover, value added, gross operating</li></ol>

surplus, total purchases of goods and services, personnel remuneration, as well as the number of persons employed and employees.

3. International Trade in Goods Statistics (ITGS): Provide the statistical value of international transactions, the net mass in kilograms, the direction of the flow (1 for imports), the country of the trading partner, and the 8-digit product code of the Combined Nomenclature.
4. EuroGroups Register (EGR): Provides the structure of multinational groups and the country of the global decision-making centre, enabling classification by type of ownership control.

The processing and analysis of these integrated data are carried out through the application of a common analytical syntax (MDL common syntax). This algorithm has been developed both within the SAS statistical software environment and the R programming language, ensuring that both applications produce identical, transparent, and fully comparable results at the European level. Statistical confidentiality and the protection of business data are fully ensured through the specialized  $\tau$ -ARGUS software.