Polish Presidency
of the Visegrad Group
July 2024–June 2025

Circular economy in V4 countries

Warsaw, 2025

CZECH STATISTICAL OFFICE

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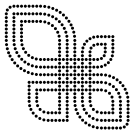
STATISTICAL OFFICE OF THE SLOVAK REPUBLIC



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Dear Readers,

The Polish presidency of the Visegrad Group (V4) offers an excellent opportunity to strengthen regional cooperation and highlights the shared priorities of Central European countries. Key areas of focus include security, infrastructure development, support for innovation and regional partnerships, with particular emphasis on assistance for Ukraine and the EU enlargement process.

In the face of global challenges related to climate change and resource security, the V4 countries remain committed to promoting circular economy as a key EU policy. These efforts align with the objectives of the Polish presidency, which serve as the foundation for a modern, sustainable development policy that takes into account environmental, economic, and social aspects.

The publication presents selected indicators from the EU's monitoring framework for the transition towards a circular economy. These illustrate the individual situation of the V4 countries, as well as their position in comparison to other EU Member States and the EU average. We believe that the selected statistics, presented in an engaging and accessible format, will serve as a valuable source of knowledge for policymakers, entrepreneurs, researchers, and all those interested in the circular economy.

We hope you enjoy reading this publication!

Note to the Reader

This publication provides statistical information on the progress of the Visegrad Group countries (Czechia, Hungary, Poland and Slovakia) in transitioning to a circular economy. The content is based on indicators selected to monitor changes in areas such as resource efficiency, waste management, secondary raw materials, competitiveness and innovation. The part on circular economy is preceded by general information about the V4 initiative, along with statistical data on V4 countries, making the overall picture more complex.

Data presented in this publication come from official statistics produced within the European Statistical System and disseminated through the Eurostat database. The indicators have been selected to ensure comparability between the Visegrad Group countries and the European Union as a whole. However, slight differences may occur when compared to national publications issued by the statistical offices of the V4 countries.

The publication includes the most recent data available as of March 2025. The core reference period covers years 2015–2024, though in some cases, figures may refer to other years due to limited data availability. Some figures have been rounded, which may result in slight discrepancies between aggregated totals and the sum of individual values. The calculations and methodological consistency have been ensured by the Statistical Products Department of Statistics Poland.

Detailed methodological information on the indicators presented in this publication may be found on the Eurostat website (ec.europa.eu/eurostat), both in the database and in the Statistics Explained section. The descriptions of the indicators are based on methodological guidelines and reports from international organisations such as Eurostat, the European Commission, the OECD, the United Nations, the World Bank, and the European Environment Agency.

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Part 1

Cooperation in European integration

The Visegrad Group (also known as the 'Visegrad Four' or 'V4') is a regional political and economic cooperation between Czechia, Hungary, Poland and Slovakia, which began in 1991. The partnership and convergence of goals of these countries are based not only on their neighbourhood in Central Europe, and similar geopolitical determinants, but also on their common history, traditions, culture, and values.

Data refer to 2024.

Since 2016, International Visegrad Day has been celebrated on 15 February, marking the anniversary of the meeting of the Presidents of Poland and Czechoslovakia and the Prime Minister of Hungary at Visegrad Castle in 1991.

Cooperation as a challenge and chance for progress

The Visegrad Four plays a key role in regional policy, aiming to strengthen ties and promote shared interests, including the development of unified positions within the EU. V4 cooperation focuses primarily on Central European issues, information exchange and cooperation in political, economic and social matters. Key areas include transport infrastructure, energy security, as well as activities in culture, science, tourism and border support. The Visegrad Group also cooperates with other regional bodies and countries including the 'V4 plus' format.

The International Visegrád Fund (IVF) is the only institutionalised form of regional cooperation of the Visegrád Group countries. Starting from 2025, IVF will have an increased annual budget of €11 million.

Polish presidency

Each of the V4 countries rotates the Group's annual leadership, with the presidency programme for the year adopted by the Prime Ministers of the Visegrad countries. From 1 July 2024 to 30 June 2025, Poland leads the Group.

The motto of our seventh presidency, 'V4: Back to Basics', aims to promote initiatives that enhance citizens' well-being, focusing on improving multidimensional security, developing infrastructure connectivity, and fostering broader connectivity.

The Polish presidency of the Visegrad Group in the first half of 2025 coincides with Poland's presidency of the EU Council (from 1 January to 30 June, 2025), with the main priority being various aspects of security.

Pillars of the presidency programme:

Citizens' safety
security in its internal and external dimensions

MAIN TOPICS
support for Ukraine; refugee and migration crises; border security; rescue services and protection of the population; countering hybrid threats; consular, police, defence cooperation; cooperation in justice, and cybersecurity know-how exchange

ADDITIONAL TOPICS
health care; security of medical data and technologies; support for digital transition of small and medium-sized enterprises (SMEs)

Connectivity
strengthening regional infrastructural and energy connections

MAIN TOPICS
road traffic safety, north-south axis transport; railway transport, intermodal transport of goods, public transport; promotion of Polish sea port connections with V4 markets; challenges faced by the industry during the transition to zero-emission transport

ADDITIONAL TOPICS
digitisation, transformation of industrial sites, waste management, circular economy, raw materials security, nuclear energy, power generation and gas, as well as oil and transport fuels

Unleashing the potential
regional horizontal topics such as: cohesion policy; agricultural policy; forestry; financial and fiscal cooperation; promotion of the 2030 Agenda

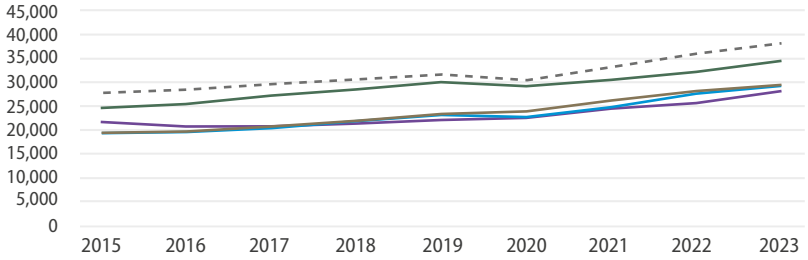
MAIN TOPICS
development aid for border areas; strengthening academic cooperation and R&D activity; youth activation; exchange of experiences in educating children in need, especially Ukrainian refugees; actions in justice administration, social and family policy as well as disability policy

ADDITIONAL TOPICS
culture and cultural heritage; intellectual property (Visegrad Patent Institute), sports, tourism and statistics

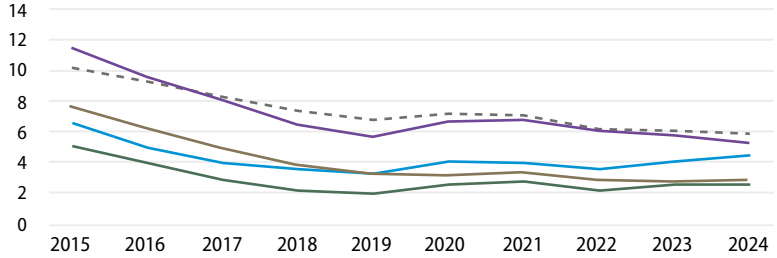
Source: www.visegradgroup.eu/home

V4 Summary statistics
Main indicators

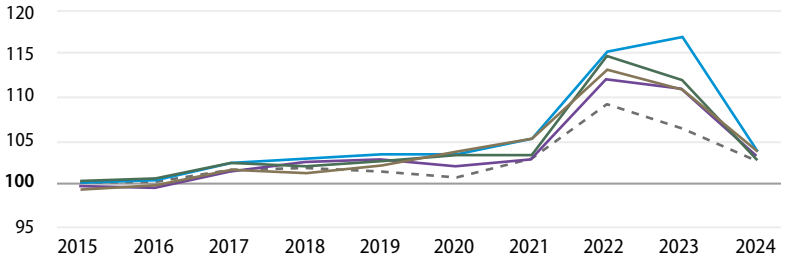
Gross Domestic Product per capita
(in PPS, current prices)



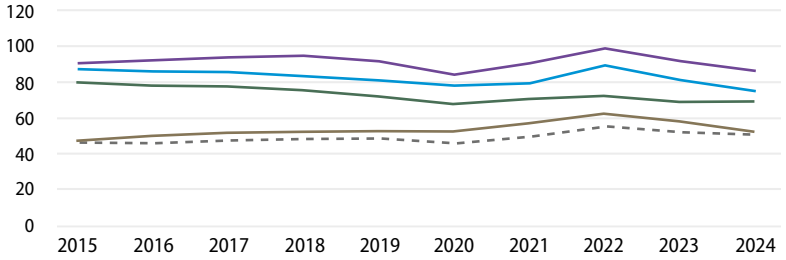
Unemployment rate of persons aged 15–74
(in %)



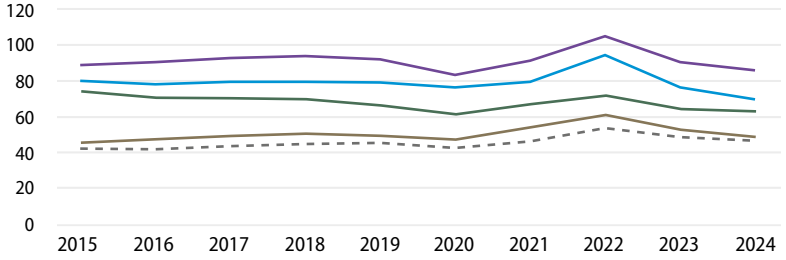
Harmonised Index of Consumer Prices
(previous year=100)



Exports of goods and services
(in % of GDP)



Imports of goods and services
(in % of GDP)



Part 2

Circular economy indicators

1 **Production and consumption**

2 **Waste management**

3 **Secondary raw materials**

4 **Competitiveness and innovation**

5 **Global sustainability and resilience**

1

Production and consumption

Resource productivity

Resource productivity **provides information** on whether, in the economy, there is a separation of economic growth from the increased consumption of natural resources (decoupling), and thus a reduction in the negative impact of the economy on the environment.

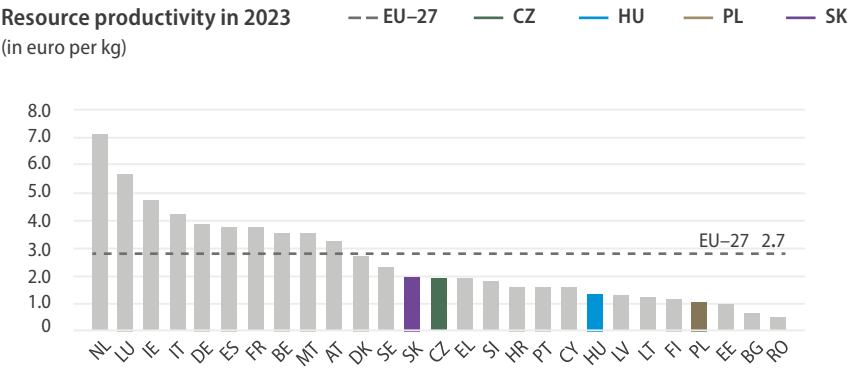
Resource productivity **is calculated** by dividing gross domestic product (the total economic output of all entities in the national economy) by domestic material consumption (the total amount of materials directly used by an economy).

- Gross domestic product (GDP) is calculated as the sum of the gross value added by all national institutional units, plus taxes on products, minus subsidies on products.
- Domestic material consumption (DMC) is defined as the annual quantity of raw materials extracted within the domestic territory, plus all physical imports, minus all physical exports.

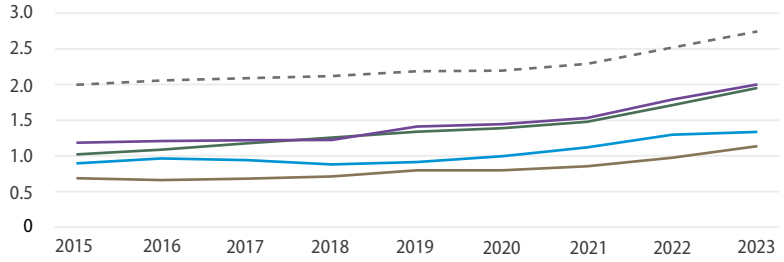
i

How to interpret it? The higher the value of this indicator, the fewer materials are used to produce one unit of GDP. The increased value of the indicator may result from changes in the structure of the economy and the greater use of modern technologies enabling the sustainable use of raw materials. In contrast, a lower value of the indicator means a high material intensity of the economy.

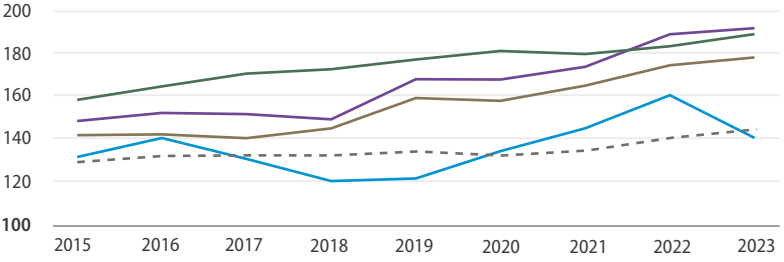
Resource productivity in 2023
(in euro per kg)



Resource productivity
(in euro per kg)



Resource productivity
(2000=100)



1

Production and consumption

Material footprint

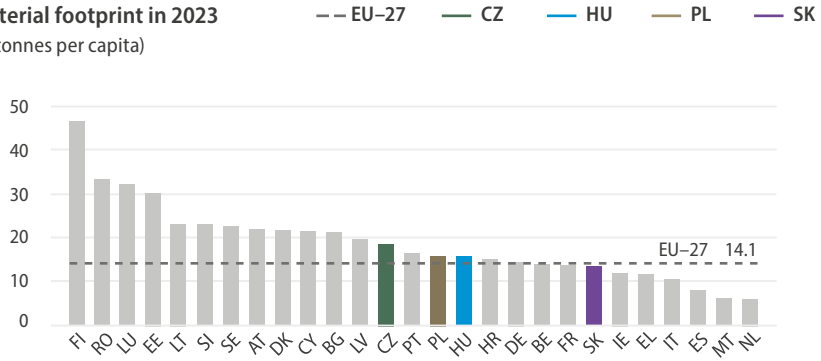
Material footprint **allows for a better understanding** of the relationship between distant locations of production and consumption. It adjusts the national material balance for international trade, taking into account both domestic and foreign material extraction.

Material footprint (raw material consumption) **is calculated** as domestic extraction of primary materials (biomass, fossil energy materials/carriers, metal ores and non-metallic minerals) plus raw material equivalent of imports, minus raw material equivalent of exports. It is the virtual amount of primary materials required along the supply chain to serve final demand.

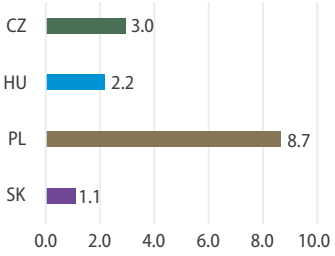
i

How to interpret it? The higher the value of this indicator, the greater the amount of primary materials required along the supply chain to meet final demand. The increased value of the indicator may result from changes along the supply chain or in the structure of exports and imports, and it may indicate better material living conditions or a higher level of capitalisation of the economy. In contrast, a lower value of the indicator may be interpreted as a lower material standard of living or a lower level of economic capitalisation.

Material footprint in 2023
(in tonnes per capita)

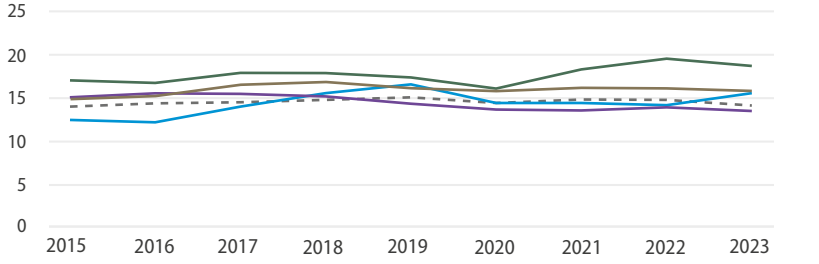


Share of material footprint in V4 countries in the total material footprint in the EU in 2023
(in %)



In 2023, material footprint of **V4 member states represented 15.0% of EU–27 total material footprint** (in thousand tonnes).

Material footprint
(in tonnes per capita)



2

Waste management

Recycling rate of municipal waste

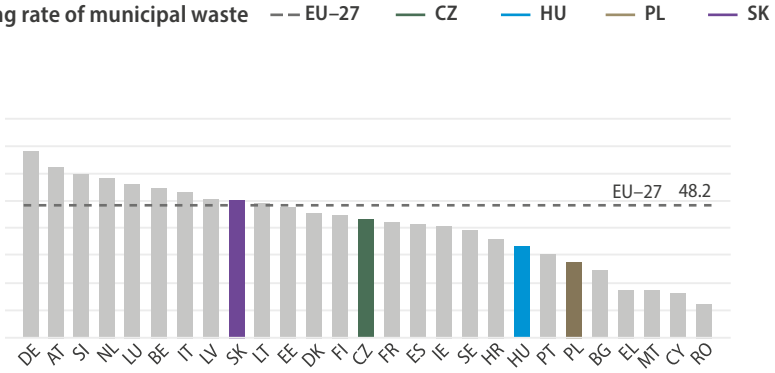
The recycling rate of municipal waste **provides information** on whether the economy is making progress towards a circular economy which aims to reduce resource use, minimise waste, and improve environmental outcomes.

This **indicator measures** the share of recycled municipal waste in total generated municipal waste (the sum of municipal waste collected by units responsible for waste collection and the estimated mass of generated municipal waste not covered by waste collection). Recycling is any recovery operation in which waste materials are reprocessed into products, materials, or substances, whether for original or other purposes (it includes material recycling, composting, and anaerobic digestion).

i

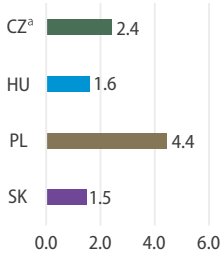
How to interpret it? The higher the recycling rate of municipal waste, the greater the efficiency of waste management and the higher the level of resource recovery. The increased value of the indicator may reflect the success of policies, infrastructure, and societal behaviors in promoting recycling. Whereas a lower value of the indicator may suggest that the country still faces challenges in waste separation, recycling infrastructure, or public participation in recycling initiatives.

Recycling rate of municipal waste in 2023[a]
(in %)



a 2022 data for AT, IT, LV, DK, BG, EL and RO; 2021 data for CZ and 2020 data for IE.

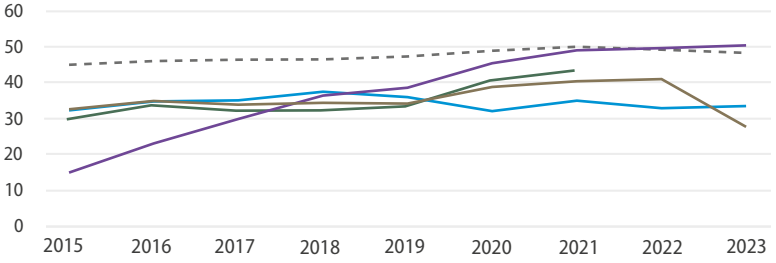
Share of recycled municipal waste in V4 countries in the total recycled municipal waste in the EU in 2023
(in %)



a 2021 data.

Recycling rate of municipal waste
(in %)

The decline in PL results in 2023 is caused by methodological changes and adjustments in the indicator calculation.



2

Waste management

Recycling rate of separately collected waste electrical and electronic equipment (WEEE)

The recycling rate of separately collected WEEE **provides information** on whether in the economy there is progress towards a circular economy which aims to recover valuable resources, reduce waste, and manage hazardous substances responsibly. In other words, it indicates whether there is an improvement in resource efficiency, a reduction in dependence on raw materials, and a decrease in the environmental impact of electronic waste.

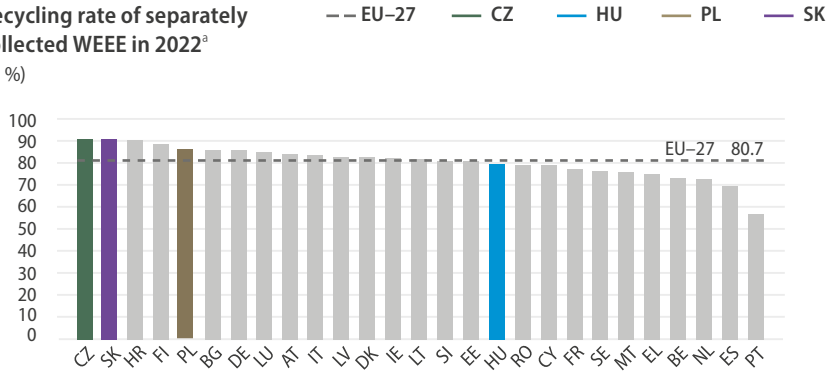
This indicator **measures** the share of WEEE (includes discarded equipment or components that rely on electrical currents or electromagnetic fields to operate, such as household appliances, IT equipment, and consumer electronics) recovered through material recycling or reuse (any treatment process that recovers materials, such as metals, plastics, and glass, while ensuring the safe handling and disposal of hazardous components, such as batteries or refrigerants) in the total amount of separately collected WEEE.

i

How to interpret it? The higher the recycling rate of separately collected WEEE, the greater the efficiency of WEEE management systems and the higher the proportion of valuable materials being recovered and reintroduced into production cycles. The increased value of the indicator may reflect the success of policies, improved recycling infrastructure, and increased societal participation in WEEE recycling programmes. In contrast, a lower value of the indicator may suggest that the country still faces challenges in WEEE collection systems, has insufficient recycling capacity, or low compliance with regulations.

Recycling rate of separately collected WEEE in 2022[a]

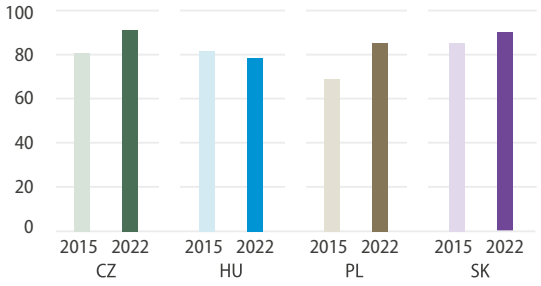
(in %)



a 2021 data for RO and SE.

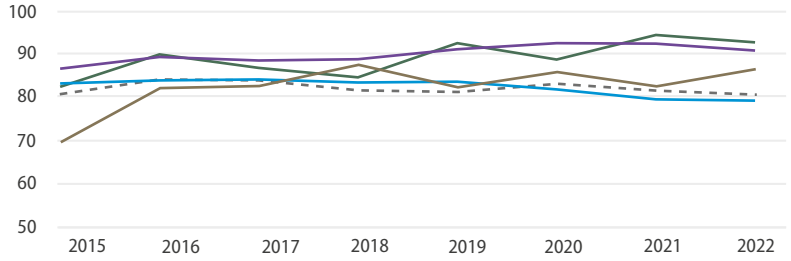
Recycling rate of separately collected WEEE

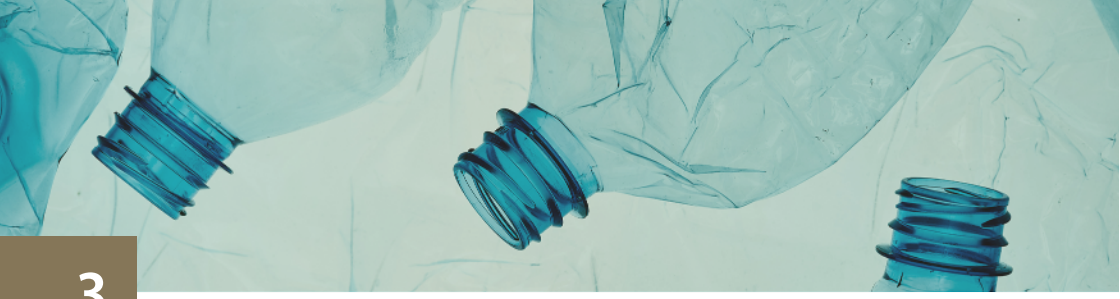
(in %)



Recycling rate of separately collected WEEE

(in %)





3

Secondary raw materials

Circular material use rate

Circular material use rate (circularity rate) **provides information** on how efficiently an economy recycles and reuses materials. It shows progress in reducing dependence on virgin materials and achieving more sustainable resource management. This indicator is crucial for assessing the transition to a circular economy, where materials are kept in use for as long as possible, waste is minimised, and natural resource depletion is reduced.

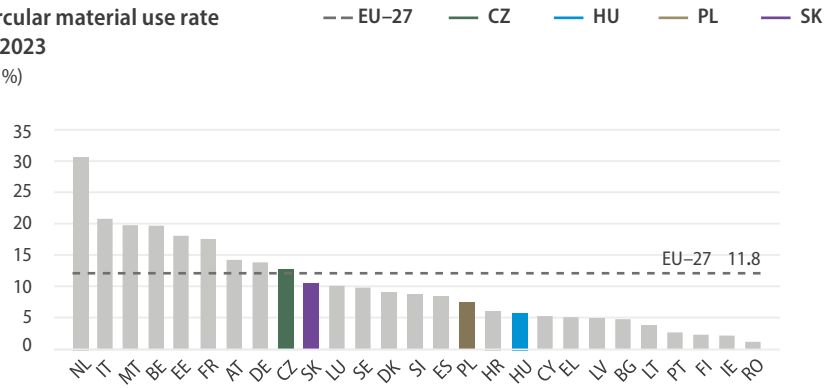
Circularity rate **measures** the percentage of materials recovered and reintroduced into the economy as secondary raw materials (materials recovered through recycling processes and reintroduced into production and consumption systems) compared to the total material use (total quantity of materials used in an economy, including both primary or extracted raw materials and secondary or recycled and reused raw materials. It reflects the efficiency of recycling and reuse in supporting a circular economy and reducing dependence on primary resources.

i

How to interpret it? The higher the value of this rate, the better the recycling systems, the higher the material reuse, and the more secondary materials substitute for primary raw materials. An increase in the value of the indicator may reflect enhanced resource efficiency, the success of circular economy policies, and advancements in recycling technologies and industrial symbiosis. Whereas a lower value of this rate highlights opportunities for improvement in recycling processes, resource efficiency, and the reduction of waste and environmental pressures.

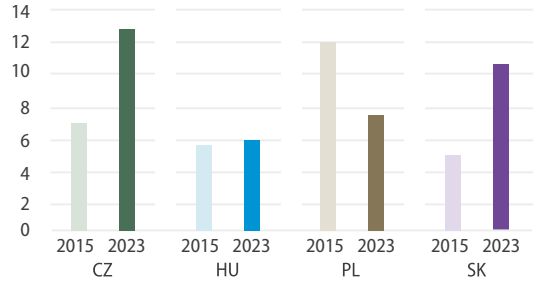
Circular material use rate in 2023

(in %)



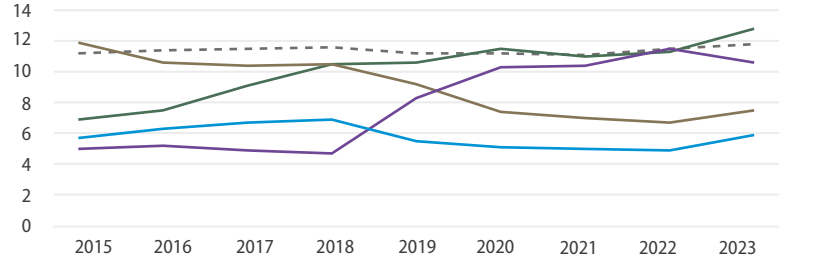
Circular material use rate

(in %)



Circular material use rate

(in %)



4

Competitiveness and innovation

Private investment related to circular economy sectors

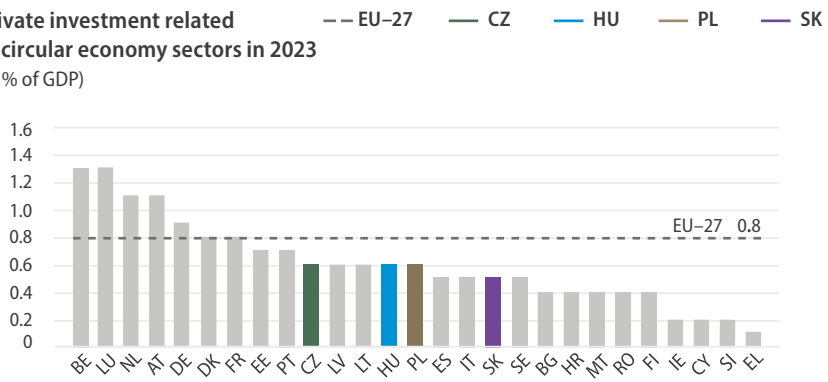
This indicator **provides information** on whether the transition to a circular economy, as measured by the level of investment, is delivering the anticipated results.

It **measures** the volume of private investment related to the circular economy, which plays a significant role in job creation and driving economic growth. Private investments in circular economy sectors may include, among others, renewable energy, innovative materials and technologies, infrastructure, and other fixed assets and resources which can be used to create conditions for development and sustainable growth.

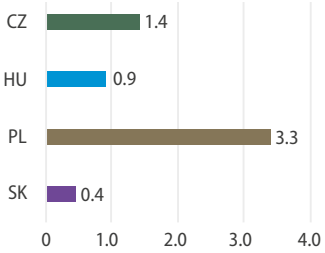
i

How to interpret it? The higher the value of this indicator, the greater the value of investments related to the circular economy that have been implemented. An increasing value of the indicator reflects changes in circular economy sectors, and may result from a high level of investment in these areas. Increased investment could be driven by a favourable economic and legal environment, growing innovation and a desire to be more competitive, and greater business awareness of the importance of sustainable growth and environmental responsibility. In contrast, a lower value of the indicator indicates a low level of investment in circular economy sectors, which may reflect stagnation in the economy, lack of innovation, or inadequate or poorly aligned legislation.

Private investment related to circular economy sectors in 2023
(in % of GDP)

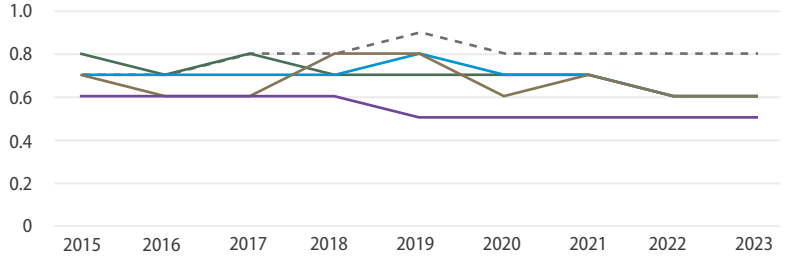


Share of private investment related to CE sectors in the total private investments related to CE in EU in 2023
(in % of EU total)



In 2023, private investment related to circular economy sectors in **V4 member states represented 6.0% of EU–27 total share.**

Private investment related to circular economy sectors
(in % of GDP)



4

Competitiveness and innovation

Gross added value related to circular economy sectors

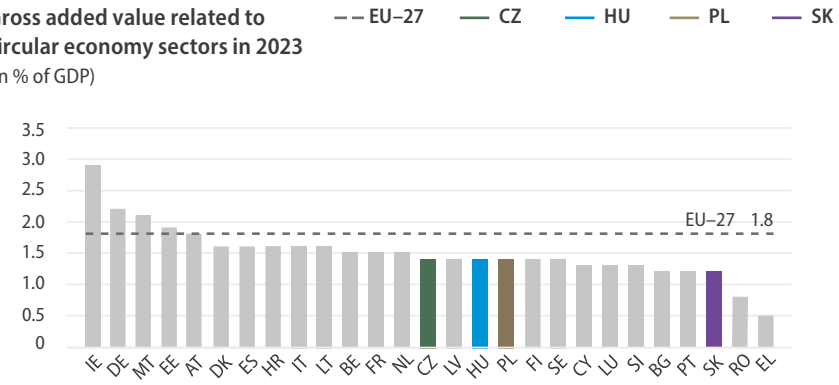
The indicator **provides information** on the effectiveness of the transition to a circular economy, as measured by gross added value. It reflects changes in specific sectors related to innovation (such as eco-design, secondary raw materials, recycling processes, and industrial symbiosis), taking into account the volume of gross added value in circular economy sectors.

It **measures** the gross value added generated in circular economy sectors, i.e. the value of all goods and services produced by domestic entities, with the costs associated with their production subtracted.

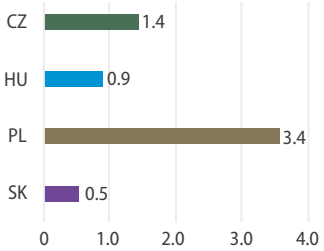
i

How to interpret it? The higher the value of this indicator, the more advanced the transition to a circular economy. An increase in the value of this indicator may result from changes within the circular economy sectors, primarily due to the higher value of goods produced in these sectors. These changes may be driven by, for example, the growing use of sustainable technologies and eco-friendly materials, or increased investment in these sectors. On the other hand, a lower value of the indicator shows a low level of gross value added, which may stem from insufficient investment in circular economy sectors, a lack of use of advanced and sustainable technologies, limited innovation, or low efficiency within the circular economy.

Gross added value related to circular economy sectors in 2023
(in % of GDP)

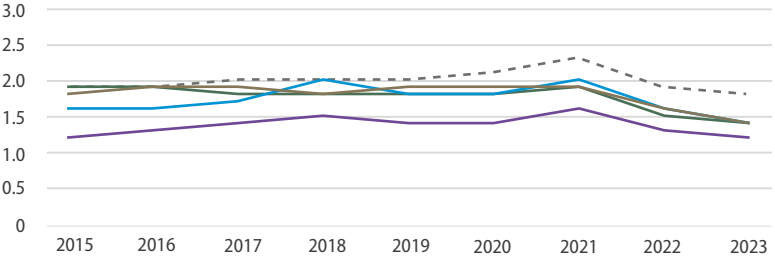


Share of gross added value related to CE sectors in the total gross added value related to CE in the EU in 2023
(in % of EU total)



In 2023, gross added value related to circular economy sectors in **V4 member states represented 6.2% of EU–27 total share.**

Gross added value related to circular economy sectors
(in % of GDP)



5

Global sustainability and resilience

Greenhouse gas emissions from production activities

This indicator **measures** production-related greenhouse gas (GHG) emissions. It helps assess the effectiveness of actions taken to reduce emissions (e.g. due to the implementation of obligations under the United Nations Framework Convention on Climate Change and the Kyoto Protocol).

The indicator **is calculated** as the sum of individual GHG emissions from production activities of national economy. GHG emissions include carbon dioxide, methane, nitrous oxide, perfluorocarbons, hydrofluorocarbons, sulphur hexafluoride, and nitrogen trifluoride. The amount of these gases is measured in units of CO2 equivalent, converted and reported on a per capita basis, allowing for data comparability.

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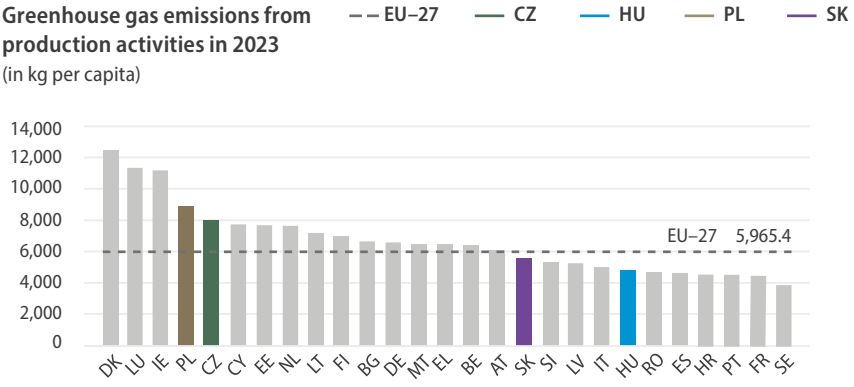
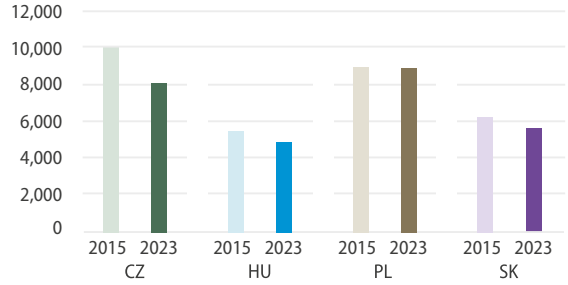
How to interpret it? The higher the value of this indicator (per capita), the more GHG emissions are emitted from production activities. The level of GHG emissions in an economy depends on its specific characteristics. Economies oriented towards industry are more likely to emit more GHG than those based on agriculture or services (although this also depends on the type of activities). A lot depends on the types of energy sources used, the percentage of the country's land area covered by forests (which absorb some of the gases), and other factors. A lower value of the indicator means a lower level of emissions. This may be due to a low-carbon economy, pro-environmental regulations, etc. When analysing long-term trends in GHG emissions, changes in the economy and the rate of economic growth should also be considered.

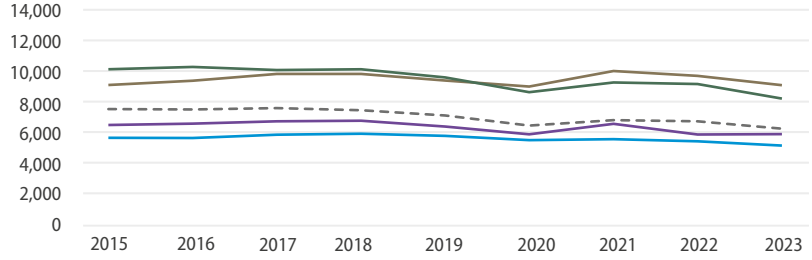
Greenhouse gas emissions from production activities in 2023
(in kg per capita)



Greenhouse gas emissions from production activities
(in kg per capita)



Greenhouse gas emissions from production activities
(in kg per capita)



COUNTRY CODES

European Union–27	EU–27
Austria	AT
Belgium	BE
Bulgaria	BG
Croatia	HR
Cyprus	CY
Czechia	CZ
Denmark	DK
Estonia	EE
Finland	FI
France	FR
Germany	DE
Greece	EL
Hungary	HU
Ireland	IE
Italy	IT
Latvia	LV
Lithuania	LT
Luxembourg	LU
Malta	MT
Netherlands	NL
Poland	PL
Portugal	PT
Romania	RO
Slovakia	SK
Slovenia	SI
Spain	ES
Sweden	SE