Towards a National Circular Economy Strategy for Hungary

HIGHLIGHTS

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"Hungary has made a commitment to develop a national circular economy strategy and an action plan in order to unleash the resource efficiency potential of its economy by 2040. The OECD has been privileged to have supported the Hungarian government in embarking on this important endeavour, through analytical work and a stakeholder consultation process. Our report provides an analysis of the main challenges for the country's transition, as well as a set of concrete measures that can be incorporated into the strategy and later implemented across the identified priority sectors and areas. Once adopted, I expect the strategy to be instrumental in accelerating Hungary's circular economy transition and achieving greater resource efficiency."

JO TYNDALL, Director of the OECD Environmental Directorate

"The transition to a circular economy offers an opportunity to transform the economy and to further increase the competitiveness of Hungary in the coming years. In the circular economy the value of products, raw materials, and resources are maintained for as long as possible, and waste generation is minimised. The circular transition appears as a priority in the Hungarian government's objectives: the goal is to create an innovative, green, digitalised economic system, capable of processing its own waste. We believe that building a healthy environment and a sustainable future is our joint mission, therefore we are working on economic policy measures that connect economic and ecological development. In order to fulfil our vision and to preserve prosperity, sovereignty, security and a clean environment, the Hungarian government pays special attention to the enforcement of sustainability aspects."

ANIKÓ RAISZ, State Secretary For Environmental Policy and Circular Economy, Hungarian Ministry of Energy

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"The circular economy is one of the main building blocks of the European Green Deal. DG REFORM has supported Hungary and other Member States on their transition to a circular economy, sharing best practices and ensuring a European approach. By moving to a circular economy, Hungary can boost its resource productivity and efficient use of natural resources, generate cost savings and create jobs."

MARIO NAVA, Director General – Directorate-General for Structural Reform Support (REFORM), European Commission

Key messages

Hungary has made notable progress in achieving a relative decoupling of environmental pressures from its economic growth. This was mainly driven by structural and technological changes in the economy.

Despite these positive trends, several challenges remain related to the country's relatively low performance in resource productivity, circular materials use and waste recycling. In the absence of new policy measures, future materials consumption in the country is projected to increase by one-third in 2050 compared to 2017 levels.

The continued increase in materials consumption would generate significant pressure on the environment, including an increase in greenhouse gas emissions. This, in turn, might put Hungary at risk of missing important environmental goals, as well as missing opportunities to strengthen the competitiveness and resilience of its economy.

To make the consumption of materials more sustainable and generate additional economic value for the country, Hungary will need to adopt a comprehensive circular economy policy framework. Fostering a transition towards a circular economy will require more stringent policies along value chains to speed up circular economy practices, incentivise resource efficiency measures and introduce new business models.

This report identifies a set of priority areas and high-impact actions that are deemed critical to the Hungarian circular economy transition, including:

- **Biomass and food**
- **Construction**
- **Plastics**

Horizontal approaches, including education, research and development, and circular business models, that cut across product and material life cycles, can further accelerate the economy-wide circular transition.

When implemented, the recommended policy measures will contribute to lower materials consumption and related environmental externalities, help enhance Hungary's competitive advantages, accelerate eco-innovation and investments in green products and services, generate local green jobs, and make the economy less dependent on imports.

1 There is a strong rationale for transitioning towards a circular economy in Hungary

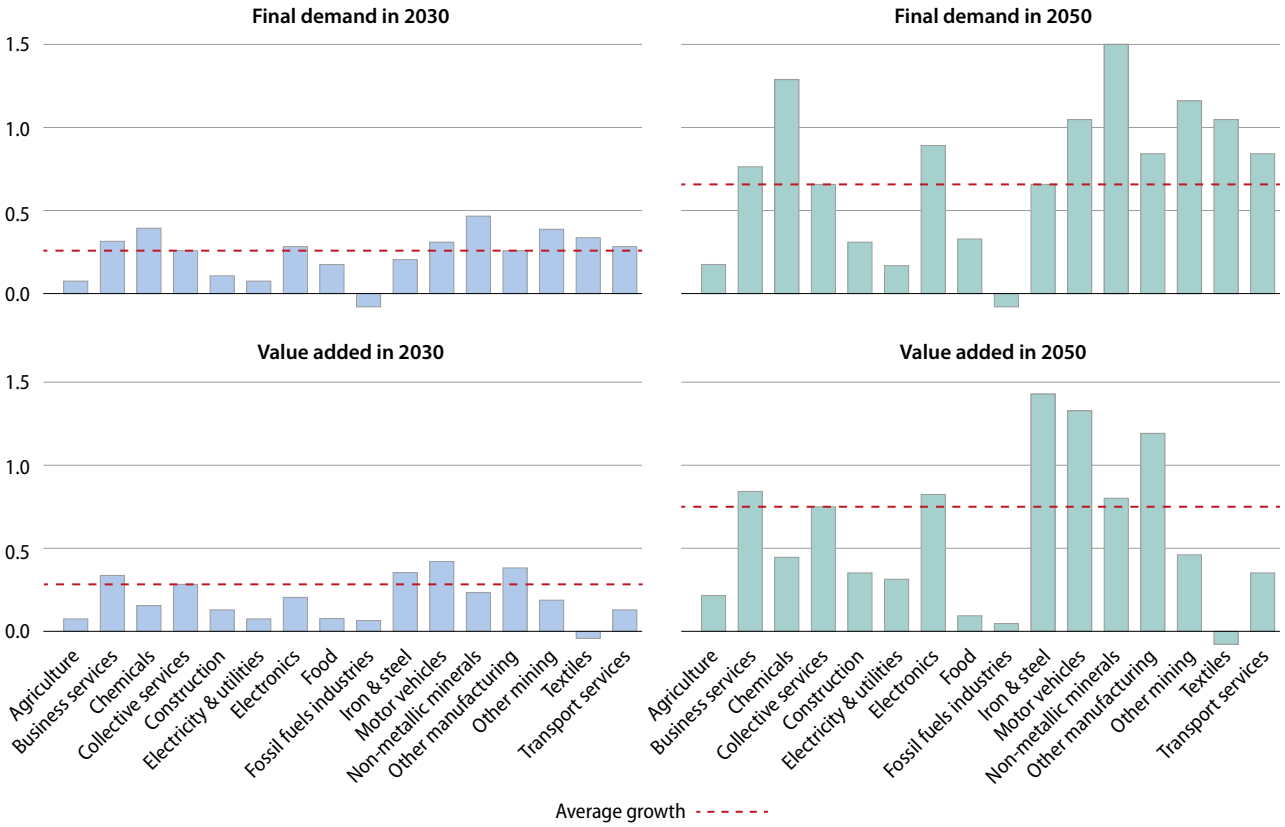
Despite some positive trends, several challenges remain in Hungary's resource productivity, circular materials use and waste recycling

Although Hungary has achieved relative decoupling of economic growth from resource and energy uses as well as from waste generation, the country remains a below average performer in the EU. Hungary's material productivity has been low (at USD 1.8 per kg compared to the EU average of at USD 2.9 per kg in 2019), implying that Hungary does not use its materials efficiently to generate economic value. Moreover, the share of material resources used from recycled waste materials reached only 6.8% (well below the EU average at 11.9% in 2019). At the same time, Hungary's domestic material consumption has been higher than the EU average, while recycling rates remained low.

Economic growth and increasing consumption will drive Hungary's demand for raw materials

As wealth increases and living standards in Hungary converge towards the EU and OECD averages, demand for resources and materials will increase. In particular, the sectors where Hungary holds a comparative advantage (including electronics, motor vehicles, and other manufacturing) are projected to experience faster growth over the next three decades. In construction, high infrastructure investments will maintain resource demand, whilst the growth in services reflects the sector's growing importance in its economy

Figure 1. **Changes in production modes, preferences and international trade patterns are projected to alter the structure of the Hungarian economy**



Note: A change of 1 means a doubling of the quantity.

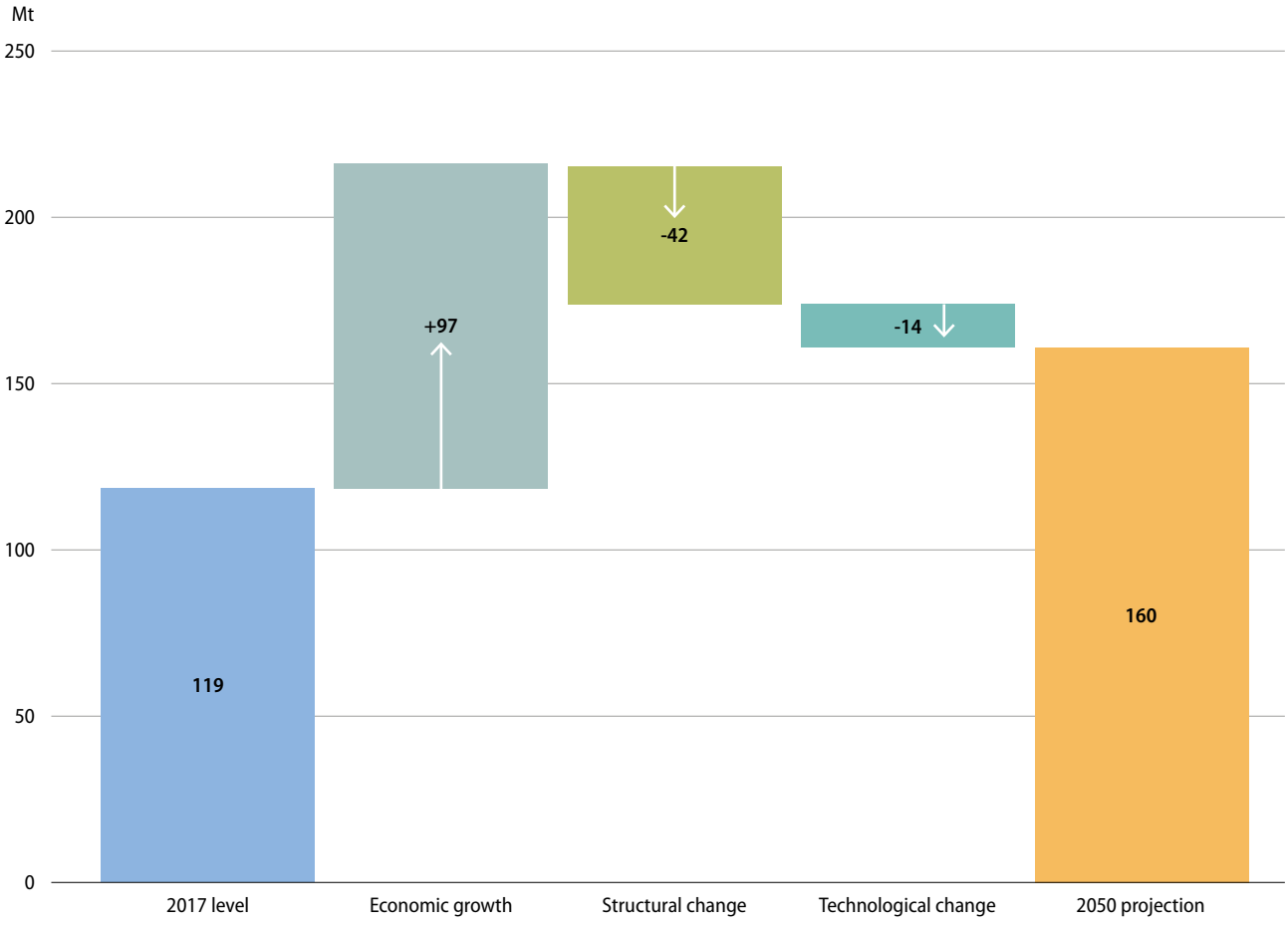
Structural and technological change will partly mitigate the rise in consumption

Structural changes and changes in production modes are projected to partially mitigate the increase in materials consumption. Notably, changes towards more servitisation will increase resource efficiency, while material-intensive sectors will show below average growth. At the same time, changes in production modes, such as the uptake of technological progress and digitalisation, will further increase resource efficiency of production, shifting the production process away from primary materials towards secondary materials and recyclables.

Despite structural and technological changes, materials consumption in Hungary is projected to increase significantly to 2050

Although changes in Hungary's economic structure partially mitigate the increase in materials consumption, they are not sufficient to offset the rising demand. On current trends, the overall materials consumption in the country is projected to increase by one-third in 2050 compared to 2017 levels (from 119 Mega tonnes to 160 Mega tonnes).

Figure 2. **Despite structural and technological changes, overall materials consumption in Hungary is projected to increase**



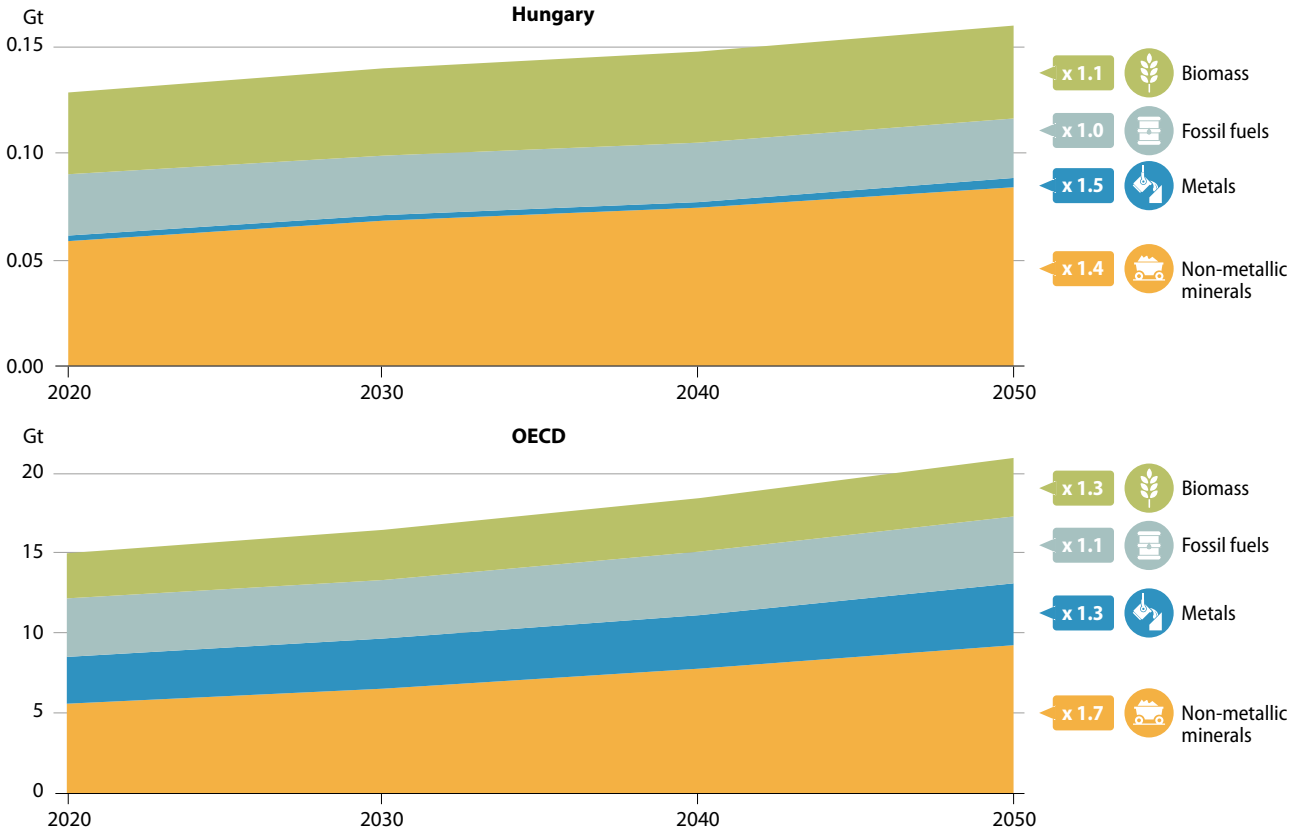
Increased demand for materials generates negative environmental impacts

The continued increase in materials consumption is expected to generate significant pressure on the environment, putting Hungary at risk of missing important environmental goals, as well as missing opportunities to strengthen the competitiveness and resilience of the economy. The overall use of primary materials is expected to increase by one-quarter, driven by an increase in the use of metals and non-metallic minerals. Non-metallic minerals constitute the bulk of materials, with demand for construction minerals expected to double by 2050. The increased use of construction minerals is likely to lead to increased acidification, greenhouse gas emissions and climate warming, and put an extra burden on cumulative energy demand.

The circular economy can make materials consumption more sustainable and generate additional economic value for the country

Additional policies are needed to curb the business-as-usual trends described above, improve environmental protection and generate economic value for the country. Improvements in resource efficiency and waste management can lower negative environmental impacts related to the use of materials and enhance Hungary's competitive advantages. Fostering and investing in recycling and promoting eco-design can increase the availability of green jobs, products and services. The development of product reuse and repair can generate local product loops that create local jobs and make the economy less dependent on imports.

Figure 3. **Metals and non-metallic minerals are increasing at a fast rate due to the importance of manufacturing and construction sectors in Hungary's economy**



2 A national circular economy strategy is needed to unleash the circular potential of Hungary's economy

A national circular economy strategy can focus policy efforts

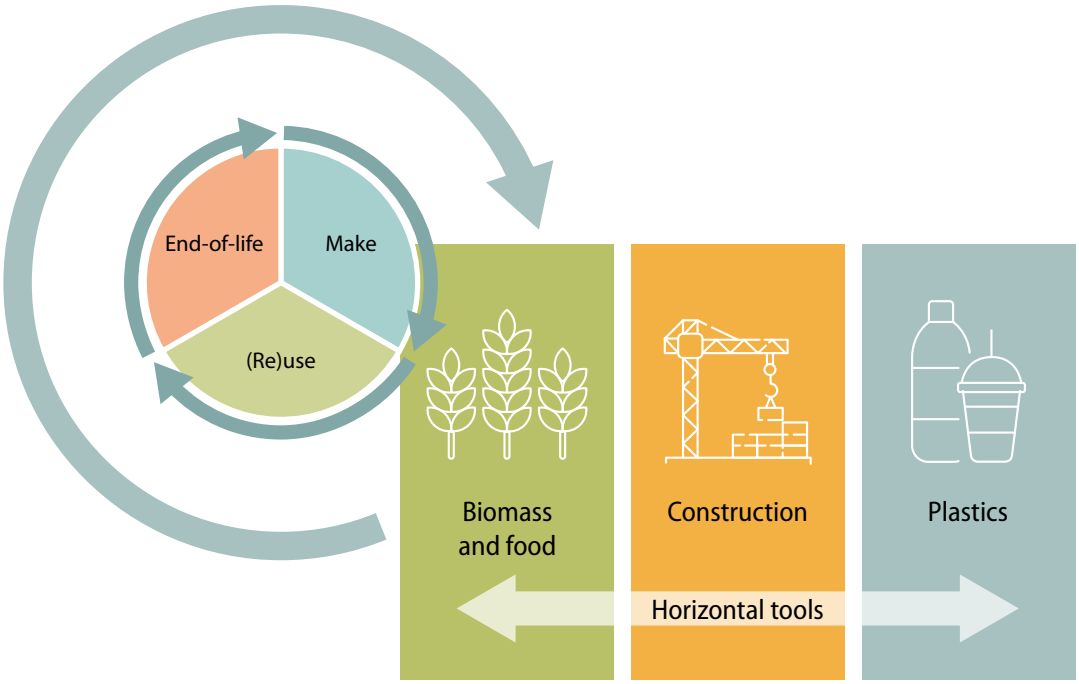
To fully realise the circular potential of the economy, Hungary will need to adopt a comprehensive circular economy policy framework. Although Hungary has a long established policy and legal framework for waste management, it has struggled to finance high-quality municipal waste management, and has not yet succeeded in integrating circular economy principles into its sectoral policies nor has it adopted a whole-of-government approach to the circular economy transition. A national circular economy strategy can help to identify how the existing policy framework needs to be complemented and focus policy efforts where they are most needed.

The strategy should target areas that are critical to the country's circular economy transition

The analysis in this report, combined with a stakeholder dialogue and a multi-criteria assessment, identified a set of priority areas and high-impact actions that are deemed critical to the Hungarian circular economy transition. The selected areas include biomass and food, the construction sector, and plastics. At the same time, horizontal tools cutting across the product and material life cycles are also crucial for accelerating the economy-wide circular transition.

To achieve the vision and strategic goals of Hungary's circular economy transition by 2040, the report outlines 45 policy recommendations and suggests specific implementation actions across the priority areas for the short-, medium-, and long-term. Besides priority-area specific measures, these also include supporting measures, aimed at education, research and development and circular business models (with focus on small and medium-sized enterprises and digitalisation), to further accelerate the uptake of circular activities across the economy.

Figure 4. **Circular economy opportunities have been identified for biomass and food, construction, and plastics priority areas with focus on design, production, (re)use, and end-of-life stages, as well as for horizontal topics cutting across the product and material life cycles**



Circular business models

Achieving real progress in transitioning to a circular economy will require greener modes of production and consumption. There are five types of business models that support the transition to a more resource efficient and circular economy:

- ***Circular supply models*** replace traditional material inputs derived from virgin resources with bio-based, renewable or recovered materials.
- ***Resource recovery models*** recycle waste and scrap into secondary raw materials, diverting waste from final disposal while displacing demand for extraction and processing of virgin natural resources.
- ***Product life extension models*** extend the use period of existing products, slow the flow of constituent materials through the economy, and reduce the rate of resource extraction and waste generation.
- ***Sharing models*** facilitate the sharing of under-utilised products, and reduce demand for new products.
- ***Product service system models***, where services rather than products are marketed, improve incentives for green product design and more efficient product use.

Source: OECD, 2019a.

3 An inspiring vision with strategic goals will steer Hungary's circular economy transition by 2040

Hungary has developed an integrated vision with clear goals

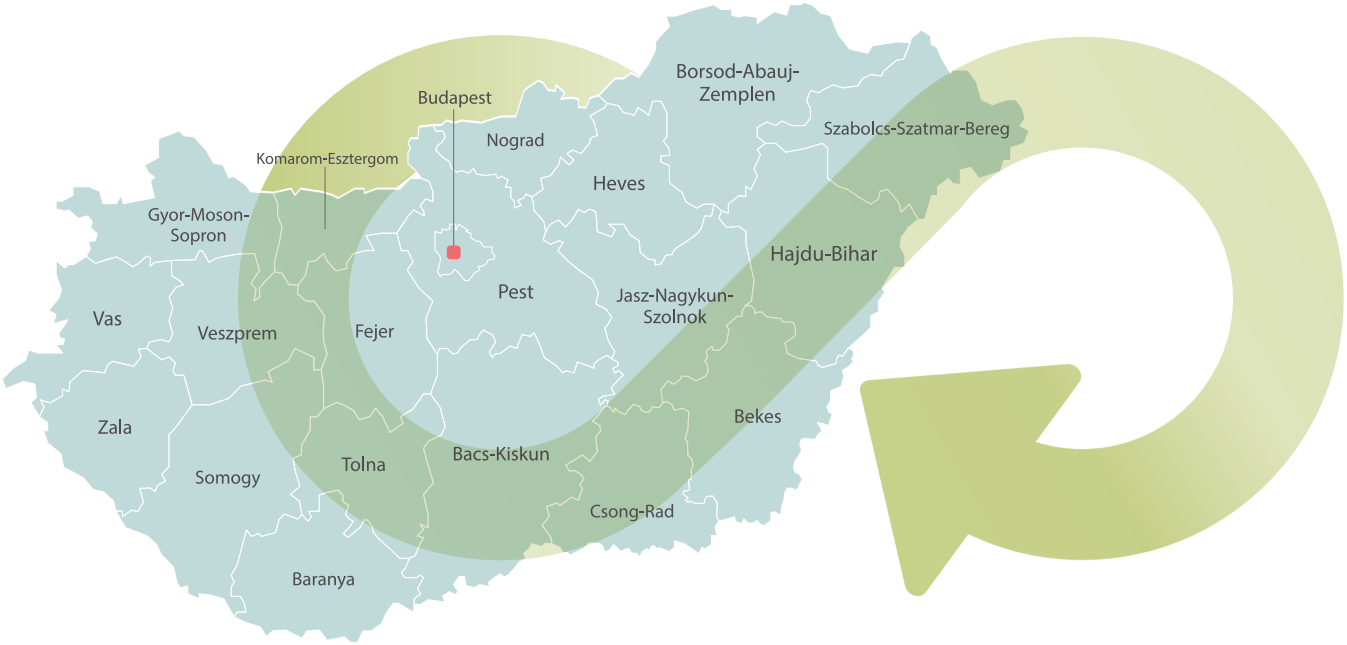
The report proposes a strategic vision and goals for Hungary's circular economy transition, developed in consultation with the project steering committee, the stakeholder working group, and the Prime Minister's Office:

- By 2040, Hungary will become a more competitive and sustainable economy having adopted a holistic approach to the circular economy transition, focusing on industrial, agricultural and service sectors, as well as waste management.
- As a small open economy with few domestic material sources available, Hungary can secure and improve its competitiveness by encouraging circularity throughout its production and consumption patterns. Education and digital technologies will be critical to create green jobs and resource-efficient value chains.
- Realising this vision requires the support from all levels of government in order to facilitate the adoption of circular business models by the private sector and incentivise citizens to take ownership of the transition through a shift in behaviour.

Quantified targets make Hungary's vision more tangible and foster implementation

Hungary's strategic vision is supported by the following targets by 2040 (compared to 2019 levels):

- To restrict the amount of materials consumed, the government will invest in research and implement incentives to encourage resource efficiency through innovation, eco-design, product sharing and reuse. Hungary aims to **double its resource productivity (GDP/DMC)**.
- To close the loop of materials use and to use materials more sustainably, measures will be taken to **double Hungary's circular material use rate to 15%**.
- To capture a broader array of benefits related to the transition to a circular economy, the government will implement support mechanisms for innovation and new business models. Hungary aims to **increase the number of circular jobs by 30% across industry, agriculture and service sectors, to achieve 2.5% of total national employment**.

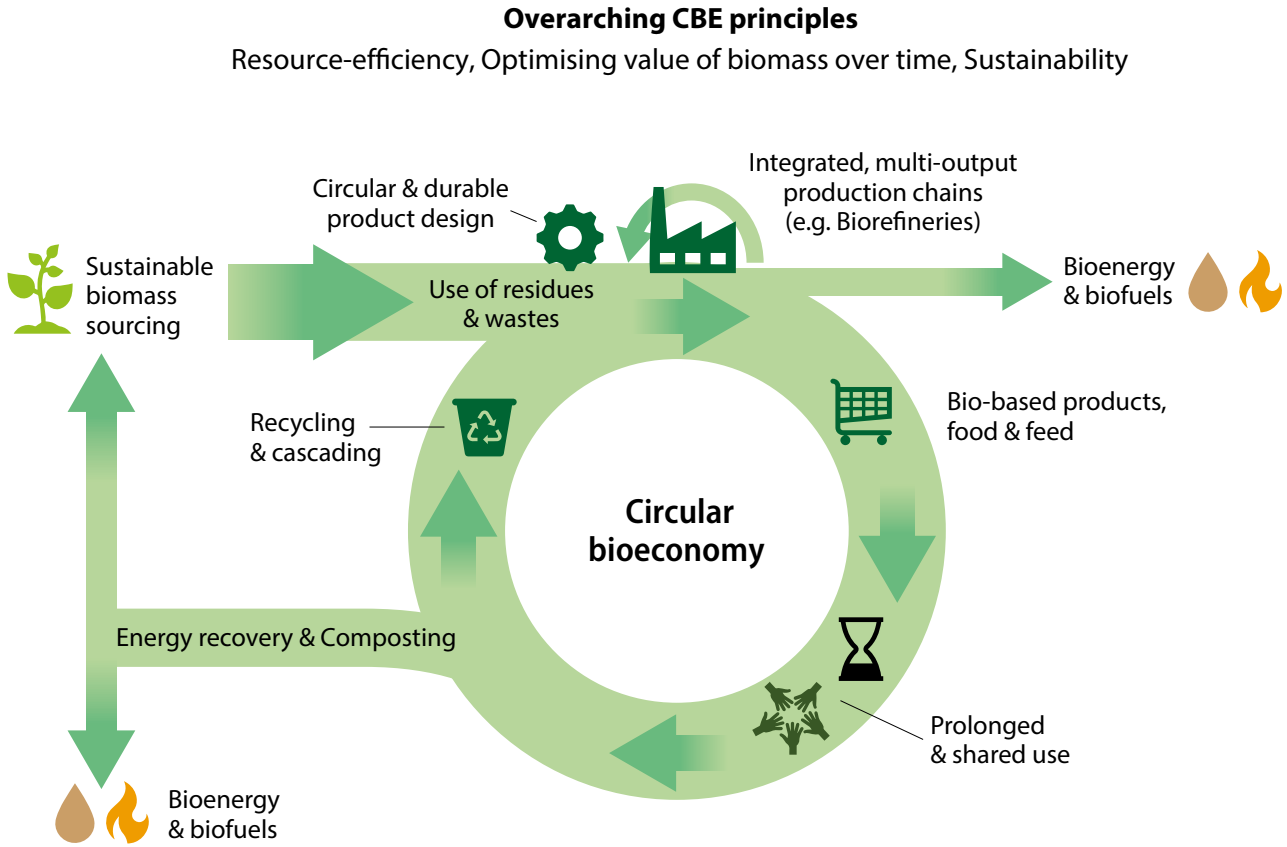


4 Circularity in biomass and food supports Hungary's socio-economic development and is critical for environmental protection

Developing a circular bioeconomy requires strengthened regulations, increased use of economic instruments and policy coherence across objectives and instruments

The circular transition of biomass and food has significant potential to contribute to Hungary's economic development, to climate change mitigation and environmental protection, and is critical to achieving the EU municipal waste targets and obligations. The value added in Hungary's agricultural sector already outperforms that of the rest of the EU, while the industrial processing and distribution of food products, beverages and tobacco represents the third largest sector of Hungary's economy. However, the current policy framework does not sufficiently encourage circular approaches. To accelerate sustainable consumption and production of biomass and food, Hungary's long-term policy efforts will need to shift focus from waste management (composting and anaerobic digestion) towards strategies aimed at supporting the use of bio-based resources in agricultural practices and the development of the circular bioeconomy.

Figure 5. **Circular bioeconomy can be achieved through more resource efficient and sustainable primary production, industrial processing and distribution, changing consumption patterns, and improving end-of-life treatment of materials and products when they become waste**



Source: Stegmann, P., M. Londo and M. Junginger (2020), "The circular bioeconomy: Its elements and role in European bioeconomy clusters", Resources, Conservation & Recycling: X, Vol. 6, p. 100029, https://doi.org/10.1016/j.rcrx.2019.100029.

Key policy recommendations to support the transition towards a circular approach in Hungary's biomass and food sectors:

- Developing a regulatory framework to support the use of quality compost and digestate in agriculture.
- Providing additional economic incentives for the separate collection of municipal bio-waste by supporting "pay-as-you-throw"-based household waste charges and by increasing landfill taxes.
- Redefining the policy approach for bioenergy production to ensure its coherence with the transition to a circular bioeconomy.
- Strengthening education, information and training tools to raise awareness and skills in the area of circular bioeconomy.

DID YOU KNOW?

Hungary produced 749 000 tonnes of agricultural and industrial food waste in 2020, half of which, on average, was treated by material recovery in the last decade. Almost half of the 68 kg of food waste generated by Hungarian households in per capita terms annually in 2016 could have been avoided.

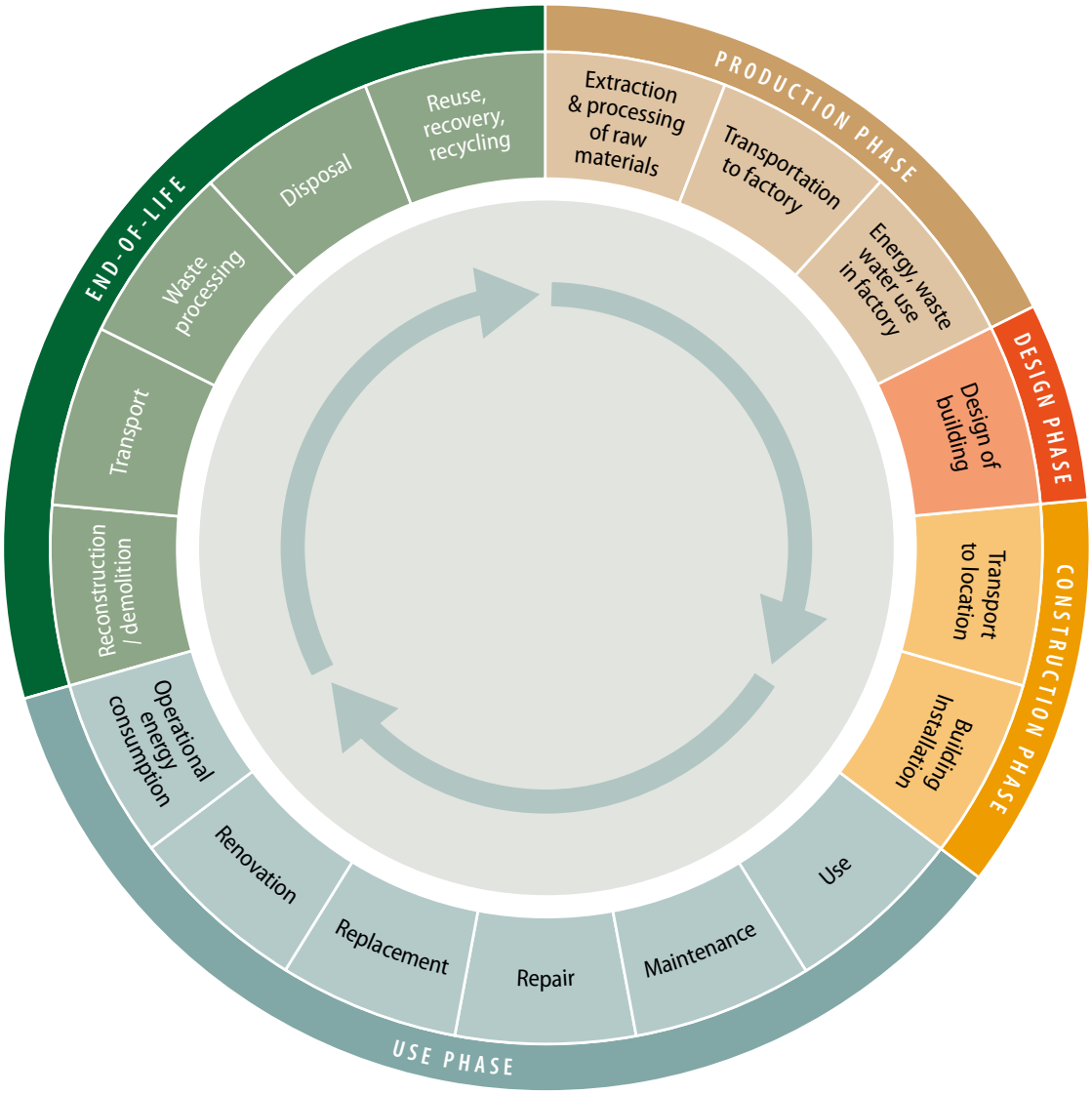
Source: Kasza, G. et al., 2020 and the Hungarian Central Statistical Office.

5 Circularity in the construction of buildings plays an important role in reducing the country's material and energy consumption, minimising waste generation, and lowering pressure on imports

Disrupting linear practices in the construction of buildings necessitates policies to stimulate new ways of material sourcing and end-of-life management of resources, as well as enhancing guidance for a more circular design, construction and use of buildings

The construction sector offers a large untapped opportunity for Hungary's transition to a circular economy. More than half of all raw materials consumed by the Hungarian economy were used within built environment. Construction is also responsible for about one-third of Hungary's waste generation. The current Hungarian construction policy framework has a strong focus on the end-of-life phase, while measures are missing upstream in the value chain. To fully unleash the potential of a circular construction sector, Hungary will need to strengthen existing measures targeting construction, renovation and waste management in the short-term, and introduce new policies to tackle the production of materials and the design of buildings and cities in the long-term.

Figure 6. **Reshaped approaches along life cycle stages of buildings can drive their circular transformation**



Key policy recommendations to support the transition to circularity in the construction of buildings in Hungary:

- Developing a new quality standard and a quality label for secondary construction materials to increase demand for them.
- Extending existing renovation support schemes and tailoring them to promote circular economy principles.
- Establishing a mandatory selective demolition scheme to enhance material recovery.
- Promoting digitalisation of the industry to enhance reuse and recycling.

DID YOU KNOW?

There were more than 3.7 million residential dwellings in Hungary in 2021, with a total floor area of approximately 274 million square meters. However, nearly one-quarter of housing stock was built before 1945, with another half built between 1946 and 1980. Houses built after 2001 represent only about 8% of the total stock. Despite the rather ageing stock of residential buildings, Hungary's annual renewal rate of residential buildings remains at around only 1%.

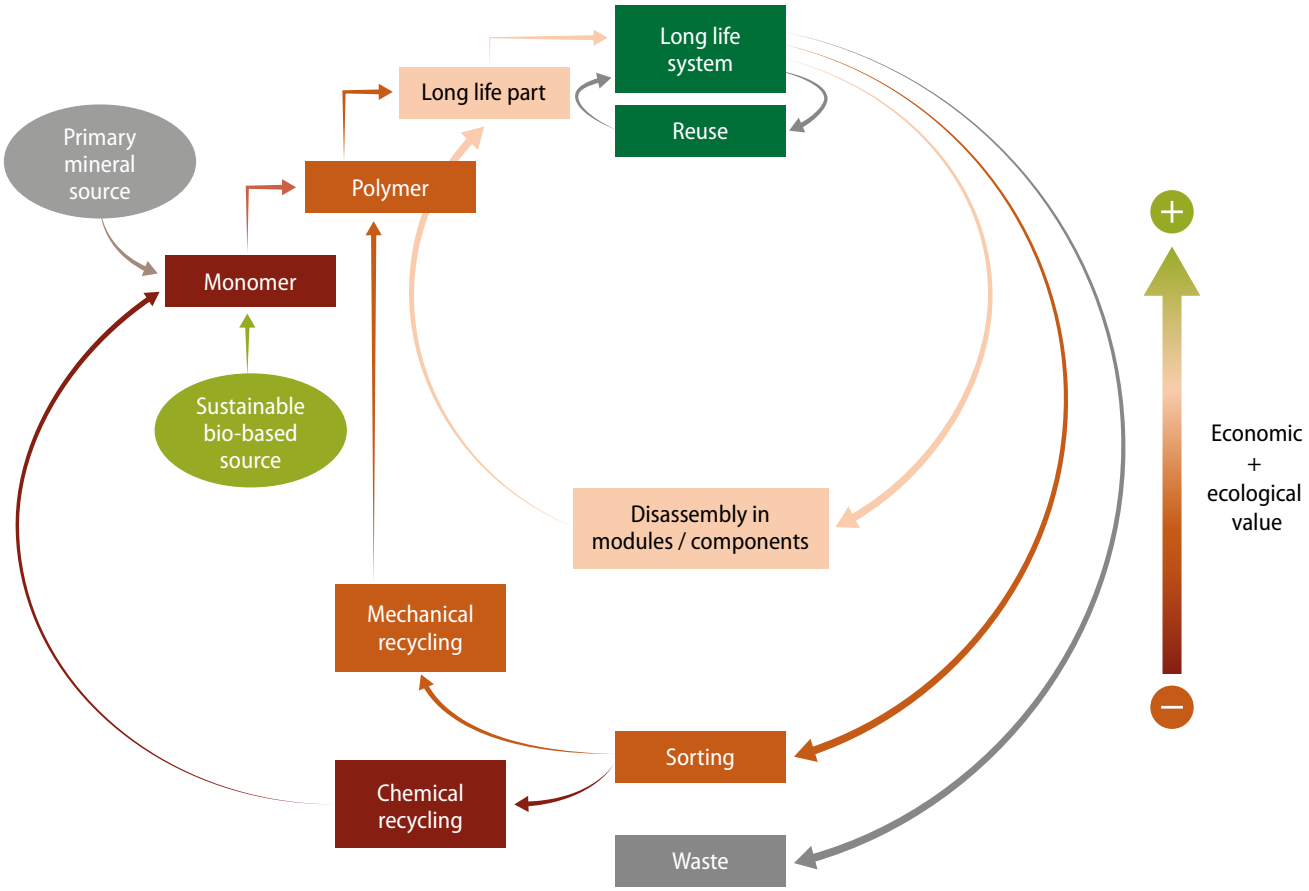
Source: Ministry for Innovation and Technology, 2021.

6 Closing the plastics loop can reduce the reliance of the Hungarian economy on primary plastics and help curb waste generation

Plastics use is pervasive and growing in several economic sectors, requiring the strengthening of existing policy frameworks to promote a circular plastics life cycle

Plastics have a high strategic importance for Hungary, as well as a significant circularity potential. They are a key input to several sectors in Hungary's economy, most importantly in packaging, construction and transportation. Plastic packaging currently makes up one-quarter of total packaging used in Hungary. Only about one-third of plastic packaging waste is recycled. Hungary faces a potential challenge in meeting relevant EU targets on plastics because its few plastics specific laws were only recently introduced. To encourage a shift away from primary plastics, promote sustainable alternatives and bolster recycling, Hungary would benefit from a mix of policy instruments, targeting the most frequently used polymers in the most problematic applications.

Figure 7. **The circular plastics life cycle keeps materials in a closed loop**



Key policy recommendations to support a more circular plastics life cycle:

- Promoting design for recyclability among businesses.
- Eco-modulating extended producer responsibility (EPR) fees on plastic packaging to create economic incentives for recyclability.
- Expanding Green Public Procurement (GPP) and introducing mandatory GPP to disincentivise the use of primary plastics and promote the use of secondary plastics and sustainable alternatives.
- Increasing landfilling taxes and strengthening enforcement of waste the regulation.

DID YOU KNOW?

The strong demand for packaging products is exemplified by the rise in consumption of bottled water, which has grown almost five-fold within two decades, from 28 litre/capita in 1999 to 131 litre/capita in 2019. Emerging trends, such as the uptake of e-commerce and take-away foods, especially in the wake of the pandemic, have led to an even greater demand for plastic packaging.

Source: Pogány, 2020 and Hungarian Mineral Water, Juice and Soda Association, 2022.

7 Setting up indicators helps to monitor progress and steer the process to impactful changes and structural reforms

Indicators allow measuring key trends and long-term patterns in Hungary's circular economy transition

A monitoring framework for a circular economy transition helps understanding and measuring the progress towards specific strategic objectives and quantitative targets set out within the strategy. A set of indicators that allow for the monitoring of key trends and patterns helps policymakers understand how the various elements of the circular economy have developed over time, assess whether sufficient action has been taken, and identify areas for further intervention. Monitoring also provides guidance for setting new long-term priorities, and delivers feedback to strategy and planning development for the different actors in the economy.

The proposed monitoring framework for Hungary to consider during the preparation of the strategy rests on a three-tiered structure of indicators:

- A set of ***three key indicators to measure the attainment of strategic objectives*** formulated in the vision for circular economy transition in Hungary – resource productivity, circular material use, and number of circular jobs.
- A ***specific list of indicators for the three vertical priority areas*** to monitor the progress of the circular transition within biomass and food, construction, and plastics.
- A ***set of complementary indicators*** to monitor the economy-wide circular transition in Hungary, grouped into five cross-cutting themes – production and consumption, waste management, secondary raw materials, competitiveness, and horizontal tools.

Figure 8. **Since the concept of circular economy cuts across a variety of sectors, material streams, and horizontal tools, the circular economy monitoring framework includes three sets of indicators**

8 Financial resources are needed to drive the uptake of new business models, support the development of innovative technologies and motivate behavioural change

The government provides funding to support the circular economy transition in Hungary

Financing circular economy projects and initiatives through grants and loans helps decrease the cost of capital for circular investments and helps overcome financial and information barriers. The three principal public funding mechanisms to stimulate development of new circular business models, innovative technologies and strategic partnerships are:

- ***Shared management funds*** are funds that are shared with Member States and regions. The operational programmes, co-funded through these funds and by the Hungarian government, relevant for circular economy include:
  - The Environmental and Energy Efficiency Operational Programme Plus (EEEOP Plus)
  - The Economic Development and Innovation Programme Plus (EDIOP Plus)
  - The Digital Renewal Operational Programme Plus (DROP Plus)
  - Territorial and Settlement Development Operational Program Plus (TSDOP Plus)
- ***Horizon Europe*** is the EU's Research and Innovation programme, which includes four pillars and 15 components to support several areas of research and innovation. The relevant cluster and partnership targeting circular economy are:
  - Cluster 6: "Food, bioeconomy, natural resources, agriculture and environment"
  - Circular Bio-based Europe Joint Undertaking (CBE JU)
- ***The LIFE programme*** is the EU's funding instrument for the environment and climate action. The sub-programme which co-finances circular economy projects is:
  - "Circular economy and quality of life"

There are several other public funding opportunities for the circular economy transition Hungarian stakeholders could benefit from, including ***Interreg Europe*** and ***Interreg Central Europe***, ***Single Market Programme***, the ***New European Bauhaus***, the ***Digital Europe Programme***, the ***Innovation Fund***, and the ***Recovery and Resilience Facility***, to name a few.

The OECD's contribution

Within the context of the OECD's collaboration with the DG REFORM of the European Commission on country specific policy reform projects, the OECD has been supporting Hungary's Prime Minister's Office in developing a national circular economy strategy and action plan. The role of the OECD in this project was to provide a set of key elements for the future strategy, including the development of analytical inputs and stakeholder consultation. For instance, the OECD provided an in-depth analysis of three priority areas: biomass and food, construction, and plastics. It also developed 45 policy recommendations and suggested specific actions to help implement the future strategy, along with a monitoring framework to measure the progress made and an overview of public funding mechanisms to finance the transition.

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Further reading

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These Highlights are based on the OECD publication ***Towards a National Circular Economy Strategy for Hungary***.

This publication lays out some of the key elements of the future Hungarian National Circular Economy Strategy and Action Plan. It presents the rationale for transitioning to a circular economy in Hungary, outlines the vision and objectives for the transition, providing examples of key policy measures and specific implementation actions across selected priority areas, lists some of the indicators to monitor the progress made and the principal public funding mechanisms to finance the transition.

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OECD Environment Directorate, March 2023