

Executive summary

This roadmap aims to assist the government of North Macedonia in establishing a robust policy framework for a successful transition to a circular economy. Grounded in a thorough diagnostic of the country's circular economy landscape, it provides a set of key policy measures for this transition, strategically incorporating ongoing policy initiatives and promoting strong alignment across the sectors, policy measures and stakeholders involved in this transformative process.

There is a compelling case for a circular economy transition in North Macedonia

Propelled by its commitment to sustainable economic growth, addressing environmental challenges, and advancing regional and European Union (EU) integration, North Macedonia is increasingly embracing a circular economy.

North Macedonia must address economic and environmental challenges arising from growing demand for raw materials. While material consumption has declined since 2015, there has been a worrisome reversal in resource productivity trends since 2019. If unaddressed, this could pose a significant threat to the environment and hinder efforts to enhance the competitiveness and resilience of the economy. Given North Macedonia's heavy reliance on fossil fuels for energy, particularly oil and coal, which constitute around 70% of its energy supply, increasing demand for raw materials from industries like automotive and metallurgy could elevate the share of fossil energy materials in domestic consumption while giving rise to material extraction and aggravating import dependencies. Urgent action is needed to intensify efforts in high-energy sectors, emphasising better reuse efficiency to encourage circular material use throughout the lifecycle.

In addition to tackling economic and environmental challenges, North Macedonia's pursuit of EU membership and commitment to the Green Agenda for the Western Balkans serve as key motivators for its efforts in the circular economy realm. In its journey towards EU membership, the country is strategically aligning its environmental policies and practices with established EU standards and regulations. There is a noticeable surge in initiatives aimed to boost energy and resource efficiency, minimise waste, promote recycling, and adopt eco-friendly practices, underscoring a shared dedication to mitigating environmental impact. Nonetheless, these endeavours require further intensification.

A cohesive approach is imperative to guide North Macedonia towards a circular economy. This involves constructing the necessary infrastructure, cultivating awareness of the concept and offering financial incentives to drive the transformation.

Proposed priority areas and key policy recommendations

The OECD analysis and stakeholder consultations identified five priority areas where circular economy reforms would have the greatest impact in North Macedonia: **1) circular business models for small and medium-sized enterprises (SMEs); 2) construction; 3) biomass and food; 4) textile industry; and**

5) mining and metallurgy sectors. This roadmap puts forward 41 policy recommendations and an accompanying monitoring framework, intended to track their implementation across the five priority areas. Incorporating these recommendations into national policies and implementing them can additionally help North Macedonia attain its climate change mitigation goals.

Enabling the shift from traditional linear business models to circular business models for small and medium-sized enterprises

Circular business models reduce material extraction and use, minimise waste production, and use secondary materials and products as inputs for production through reuse and recycling. Consequently, they play a key role in mitigating negative environmental impacts linked to material consumption.

Key policy recommendations to support the adoption and scaling up of circular business models include:

- Raise SMEs' awareness and understanding of the circular economy through tools such as communication campaigns, training, mentoring or acceleration programmes.
- Improve multi-stakeholder co-operation within/across value chains by improving collaboration (e.g. grants for collaborative research and development, stakeholder platforms, investor-entrepreneur matchmaking events).
- Provide financial support for scaling up circular business models by introducing calls for SMEs within existing funding programmes and offer corresponding non-financial support.
- Implement supportive legislation and economic instruments to support circular business models and resource recovery (e.g. extended producer responsibility schemes, green public procurement, ecodesign requirements).

Towards a circular construction sector to improve waste management and reduce the use of virgin raw materials

The Macedonian construction sector can significantly contribute to reducing overall reliance on virgin raw materials and boost the use of recycled materials. There are vast opportunities to transform the construction life cycle through new projects and renovations involving design, manufacturing of components, building construction and secondary material supply. The absence of comprehensive circular economy measures signals untapped potential to cut material consumption and reduce the environmental impacts related to waste and emissions.

Key recommendations to support a circular construction sector include:

- Improve stakeholder engagement and collaboration, and ensure that funding is available for circular construction projects.
- Manage construction and demolition waste in a more environmentally sound manner, including increasing its recovery and reuse through information-driven processes (e.g. systemic data collection) and legal tools (e.g. mandatory selective demolition, end-of-waste criteria).
- Boost the production and uptake of sustainable construction materials in construction and renovation by leveraging green public procurement and introducing quality standards for secondary and recycled construction materials.

A circular food and bio-waste value chain to support waste prevention and management

Integrating circular strategies into North Macedonia's biomass and food value chain can contribute to environmental protection and climate change mitigation by maximising the value of bio-based products and resources. Furthermore, embracing a circular bioeconomy can drive advancements in sectors like the agri-food industry through targeted specialisation, enhanced resource efficiency and innovation.

Key recommendations for advancing a circular food and biomass sector include:

- Improve the management of agricultural waste and bio-waste and close their biological cycle by improving infrastructure and incentives for separate collection, investing in composting facilities, and strengthening the regulatory framework by developing quality assurance systems.
- Move towards a sustainable consumption of food by preventing waste (e.g. through tax incentives for food donations) and create demand for sustainable food products (e.g. through green public procurement).
- Incentivise the development of the circular bioeconomy through better funding and technical support in research and innovation projects.
- Improve stakeholder engagement and collaboration, and awareness raising.

Advancing a circular textile industry through sustainable practices for waste reduction and resource efficiency

Textiles present significant environmental challenges ranging from chemical release to water and soil systems to high rates of landfilling. Positively, there is a growing momentum to address such issues via circular textile design and changes in consumption and production practices, including repair, reuse and recycling. Moreover, the European Union is set to enforce more stringent requirements with the goal of promoting circularity in textiles. These initiatives, though still in their infancy, present a significant opportunity for North Macedonia to prioritise the transformation of its textile industry, particularly in light of its ongoing EU accession process and competitive position as a key exporter of textiles to the European Union.

Key recommendations for making textiles more circular include:

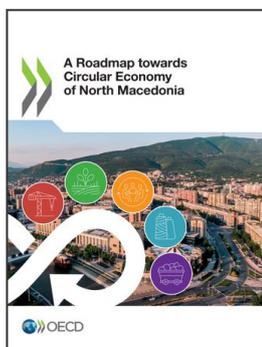
- Develop a national strategy for sustainable and circular textiles that covers the entire textile value chain.
- Reduce and better manage textile waste through improved production processes (e.g. provide financial and technical support) and increased recycling and reuse of textiles.
- Strengthen the circular design of textiles by introducing ecodesign requirements and supporting innovations (e.g. support local projects and innovation for circular textile design).

Cultivating circular practices in mining and metallurgy to support sustainable innovation and environmental stewardship

Mining and metallurgy are critical to the green transition, as the demand for critical raw materials increases with the shift towards greener practices, such as electrification and renewable energy expansion. However, conventional mining practices cause significant environmental harm. A shift to more sustainable practices in mining and metal processing will be critical in North Macedonia's transition to a low-carbon economy, with the circular economy playing a vital role in ensuring a sustainable supply and environmentally responsible management of mineral resources.

Key recommendations for achieving more circularity in mining and metallurgy include:

- Improve stakeholder engagement, education and collaboration, and raise awareness (e.g. develop a circularity potential study, assess data to map out material flows, facilitate industrial symbiosis in green industrial zones).
- Provide financial support and economic incentives for upstream eco-innovation and research and development to enhance metal and mineral value chains for a low-carbon economy.
- Support legislation and policies for circular value chains in mining and metallurgy by mainstreaming circularity principles in strategic documents, procedures for permits and concessions, and considering material recovery obligations.



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