2025

6th INTERNATIONAL CONFERENCE

Date

29 - 30 may 2025

Location

Skopje,
N. Macedonia

"THE ROAD TO SUSTAINABLE WASTE MANAGMENT"

Macedonian Solid Waste Association (MaSWA)

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Conclusions from the Conference

The sixth biennial conference of MASWA was held on May 29 and 30, 2025, in Skopje. A total of 120 participants attended the conference, including representatives from national and local authorities in the country, representatives of the diplomatic corps, the business community, the non-governmental sector, and experts in waste management, environmental issues, climate action, circular economy, and sustainable development. During the first part of the conference, there were introductory speeches and presentations from the main supporters of the conference, as well as 5 panel discussions, namely:

1. Circular economy and waste as a resource
2. Inter-municipal waste management, budgeting, and financial sustainability
3. Climate change, decarbonization, and ESG principles in waste management
4. Extended producer responsibility
5. The future of waste management

On the second day, there were 9 expert presentations and two field visits were organized: to "Rade Konchar", a facility for decontamination of PCBs, and to "TITAN Usje", a waste co-processing installation.

The conclusions from the conference are as follows:

1. North Macedonia is working on integrating the concepts of a circular economy to reduce resource consumption, promote reuse, and improve recycling practices. However, reforms in waste management are necessary:

• Waste management needs to align with European Union directives to increase recycling rates, ensure proper waste treatment, and reduce landfill disposal;

• It is necessary to stimulate initiatives that involve establishing recycling centers, encouraging waste sorting at the source, and campaigns to raise public awareness to promote environmentally responsible behavior.

The legislative framework of North Macedonia is aligned with the regulations and strategies of the EU, focusing on improving the infrastructure for waste collection, processing, and recycling. However, there are challenges and opportunities; despite progress, issues such as illegal dumping, insufficient waste sorting capacities, and a lack of public participation persist. Nevertheless, there is significant potential for economic growth through resource recovery and sustainable waste practices, and support from EU financing and technical assistance is still necessary for North Macedonia to develop projects for sustainable waste management and the circular economy.

2. North Macedonia has developed regional waste management plans for establishing central waste management facilities (such as regional landfills and transfer stations) and closing inappropriate locations that are being used for disposal.

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3. It is necessary to establish regional waste management centers with capacities such as MBT, biostabilization, and material processing facilities, and to utilize co-processing capacities for waste. Although the country aims to move away from landfilling and towards more circular processes, the construction of several standard landfills is still a necessity. Landfills remain essential because they provide a controlled and regulated method for disposing of waste that cannot be recycled, reused, co-processed, or composted. This helps to protect public health and the environment by preventing the spread of diseases, reducing pollution, and ensuring proper waste management. Although landfills are a necessary component of waste management, efforts to reduce waste that would end up in landfills through recycling, co-processing, composting, and other waste reduction strategies are also key.

4. Collaboration and partnerships are essential for developing the regional system. Regional waste management involves cooperation between municipalities, government agencies, and the private sector through public-private partnerships. Raising public awareness about waste management practices and promoting sustainable behavior is a key component of the regional waste management strategy. Gaining public support for new waste management infrastructure and changes in waste disposal practices is crucial for success. Additionally, data collection and monitoring of waste flows and treatment processes are fundamental for effective waste management. Utilizing modern remote control systems can greatly aid in creating a more efficient system. Economic issues require a change in mindset, focusing on the well-being of people over profit, along with long-term campaigns, especially for the younger population.

5. Climate change, decarbonization, and ESG in waste management. According to data from Climate Watch for 2022, more than 3% of the total amount of greenhouse gases globally comes from waste. This amounts to more than 1.7 billion tons of greenhouse gas emissions expressed as CO2 equivalent. In our country, according to the greenhouse gas inventory, the waste sector contributes 6% to the total greenhouse gas emissions, of which 76% are due to the disposal of municipal waste in unregulated landfills. The Republic of North Macedonia is a signatory to the Paris Agreement and the Sofia Declaration, committing ourselves to reduce greenhouse gas emissions; proper waste management can certainly contribute to achieving these goals, especially considering that methane is the most prevalent greenhouse gas emitted from the waste sector in the country. It is necessary to reduce greenhouse gas emissions from waste by focusing on reducing the amount of waste generated, recycling, circular economy, as well as smart investments in infrastructure. Waste should be seen as a resource, but without installing excessive capacities for converting waste into energy. Key to improving waste management and its impact on climate is to apply an Integrated solid waste management model. This implies, in addition to technical solutions, good governance, finances, and a focus on people. No technical solution will work without strong institutions and public involvement; this is a prerequisite for proper waste management, promotion of circular economy, and achieving decarbonization goals.

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Co-processing of waste as alternative fuel and the use of waste as an alternative raw material is a proven practice in the cement industry in developed countries, contributing to the reduction of greenhouse gas emissions from waste. Cement kilns are part of the solution for proper waste management because they can safely co-process non-recyclable materials. Modern cement production units in the EU demonstrate the replacement of more than 80% of energy sources with waste. This not only reduces greenhouse gas emissions at landfills but also replaces part of conventional fossil fuels. In Europe, 24 million tons of CO2 emissions are avoided each year, solely from co-processing waste in cement kilns, saving about 7.8 million tons of coal. Approximately 5% of the raw materials needed for producing cement clinker in Europe consist of recycled material and ash from alternative fuels. It is essential to consider the issues of reduction of the emissions of greenhouse gases and climate vulnerability in the early phase of waste infrastructure design. This is particularly important when designing large installations with a lifespan of several decades such as landfills or waste recycling centers, in order to timely include measures for mitigating climate change and/or adaptation measures to climate risks. When assessing the risk of climate vulnerability, it is necessary to consider the effective functionality of the proposed waste systems and to suggest mitigation measures already in the preliminary phase of the projects.

The Republic of North Macedonia has a well-developed legislation in the field of waste management and is a leader in the region in the regulation of extended producer responsibility. The relevant EU legislation has been transposed, and national goals are defined in the laws, allowing for a more efficient approach to EU waste management goals. However, the regulation does not take into account real business practices, which in some situations results in unfair competition and inconsistency with the goals it aims to achieve. Nevertheless, despite the amount of funds collected on the account of extended responsibility, the results are lacking. This is primarily due to insufficient financial control by the institutions or financial audit by a certified auditor. Given that collective entities mainly compete with each other on price, it is necessary to carry out financial oversight and conduct cross qualitative and quantitative checks, as well as audits of the financial operations of these legal entities. This seriously hinders effective oversight and results in uncertainty regarding the actual performance of the parties involved, including the collective entities. The system relies on an outdated paper-based reporting method, there is no standardized method for data submission, and the ICT infrastructure is inadequate, which are the key obstacles that need to be urgently addressed. These issues are further complicated by the lack of clear guidelines for the recording of waste collection and recycling, as well as suitable precise equipment for measuring waste, which together create inaccuracies in reporting and data management.

It is necessary to monitor the performance of collective operators, producers, and waste management companies, whereby, in addition to environmental performance, financial operations should also be checked. Support should be given to collective operators by incorporating quality standards into contracts with waste management operators, defining the criteria for collection, transportation, sorting, processing, and recycling of waste in accordance with the extended producer responsibility.We were pleased to also receive the presentation on the dismantling of an old facility - a coal power plant, ensuring proper removal of asbestos panels, roofing, as well as all parts of the former facility and cleaning of the site according to strict environmental standards, presented by an expert from EVN Austria. The second day of the Conference was dedicated to professional presentations and showcasing examples of good waste management by international and domestic experts.

- Experiences from the Republic of Hungary (management of contaminated areas, introduction to monitoring systems for river pollution, sophisticated devices for monitoring air quality and odors in urban environments),

- Republic of Croatia (ecomodularity and introduction of criteria and experiences from calculations for packaging materials, experiences in long-lasting procedures for opening a waste processing center),

- Republic of Serbia (the state of municipal waste management and landfills in the country and major challenges),

- Netherlands (examples of circular economy that ensures zero waste landfilling) as well as experiences from our country regarding textile recycling.

On the second day, there were also two thematic visits to two renowned socially responsible companies: 'Rade Konchar Service' – the plant for decontamination of transformer oils with PCBs, and 'TITAN-USJE' – co-processing of textile waste for energy purposes. Both visits were excellently organized, and the participants were very satisfied with the good practices in our country and the hospitality of the employees. The conference was rated as very successful, both by local participants and those from abroad. It was followed by several journalistic teams, and the messages were transmitted through several TV stations and electronic media.

Together with all of you, MaSWA can create a better future for the next generations. Thank you for your presence, and we look forward to the next meeting.