

**Institute for Waste Management and Circular Economy
of the Technische Universität Dresden**

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Area and Population

Belarus is a landlocked country in Eastern Europe with a population of 9.4 million people and a surface area of 207,595 km². The capital and largest city Minsk has approx. 2 million inhabitants. Belarus' neighbors are Russia, Ukraine, Poland, Lithuania, and Latvia.



Fig. 1: Belarus and its neighbors

Belarus is a presidential republic. Alexander Lukashenko has served as president since 1994.

Key Economic Data 2020

Currency: Belarusian ruble (BYN), average exchange rate 2020: 1 EUR = 3.0648 BYN

GDP in current US\$: 60.26 billion

GDP per capita in current US\$: 6,411

GDP growth: - 0.9 %

Unemployment rate: 5.28 % of total labor force

Inflation: 5.5% based on average consumer prices

General government gross debt as % of GDP: 48%

Adjusted net national income per capita (current US\$): 5,284 (2019)

Foreign direct investment, net inflow in current US\$: 1,273 million

World Bank Ease of Doing Business Index: 49th of 190 economies

Main industries: Automotive and agricultural equipment, electrical equipment and household appliances, chemicals, fertilizers, textiles



Energy

Until 2020 Belarus relied on thermal power plants for its energy production. However, with the commissioning of the first two units at the Ostrovets nuclear power plant, electricity production from nuclear reached 2.6 billion kWh in 2020. By 2025 nuclear power generation will increase to 18 billion kWh. According to the International Energy Agency renewables accounted for 6% of Belarus’s overall energy mix and only 2% of electricity generation in 2018.

Total solar power generation capacity amounted to 154 MW in 2018, wind contributed 102 MW, biogas 34 MW and small hydropower plants 7 MW. Renewable thermal energy was produced by 118 heat pumps (10 MWth) and 287 solar heating installations (4 MWth).

Waste Volumes, Composition and Disposal

Total municipal solid waste (MSW) generation was 3.8 million tons or 404 kg per inhabitant in 2019. The following diagram shows the breakdown by region:

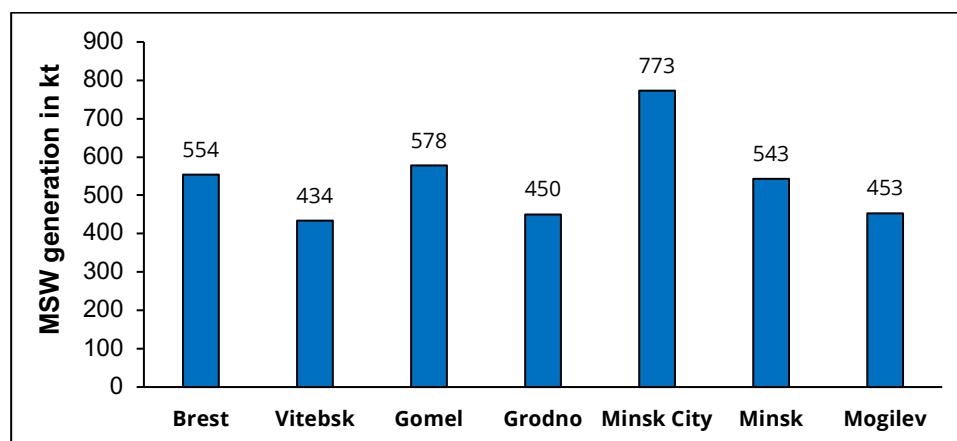


Fig. 2: Municipal solid waste generation (MSW) by region (2019)
 Source: National Statistical Committee of the Republic of Belarus

The relatively high municipal waste generation rates reported by the National Statistical Committee of the Republic of Belarus are partly based on estimates by municipalities that may have inadequate weighing and registration procedures.

Current national data on the composition of MSW is not available. The data shown in **Figure 3** is for 2014. To the best of our knowledge, the situation has not changed significantly. The highest proportion still consists of organic waste, a tremendous resource that remains largely unused.

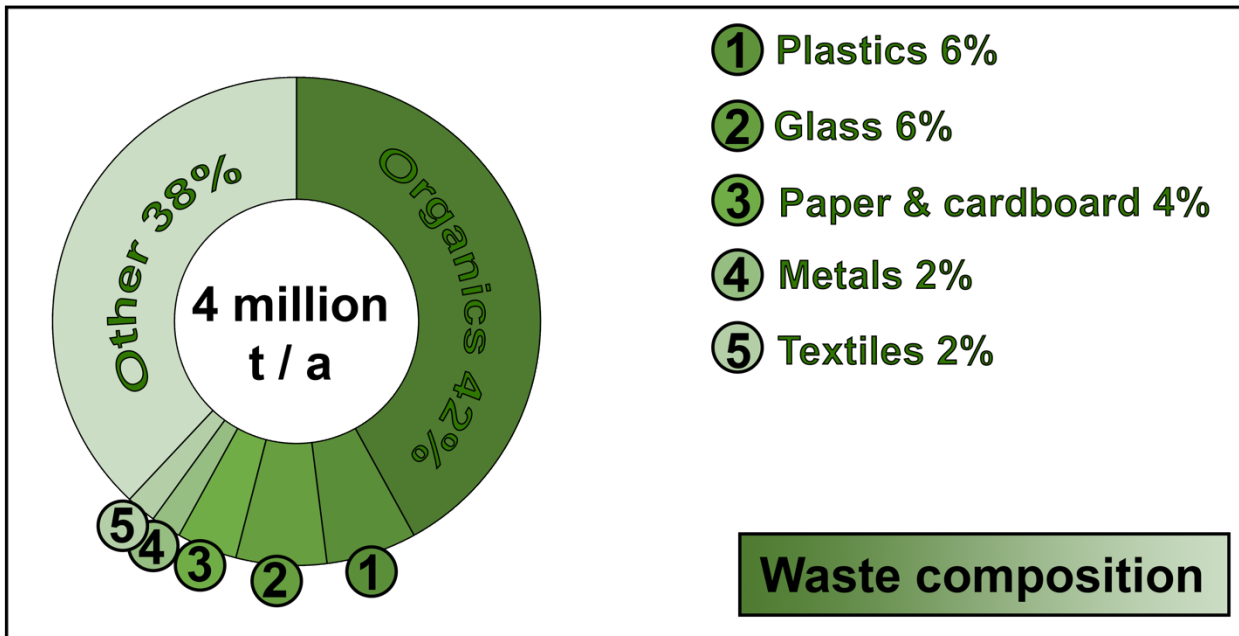


Fig. 3: Waste composition and disposal routes in Belarus (2014). Source: Skryhan *et al.* (2018)

Whilst MSW generation has only increased modestly in recent years – from 3.68 m tons in 2013 to 3.78 m tons in 2019 – the recovery rate for secondary raw materials has grown steadily from 12% of arisings to more than 22% over the same period.

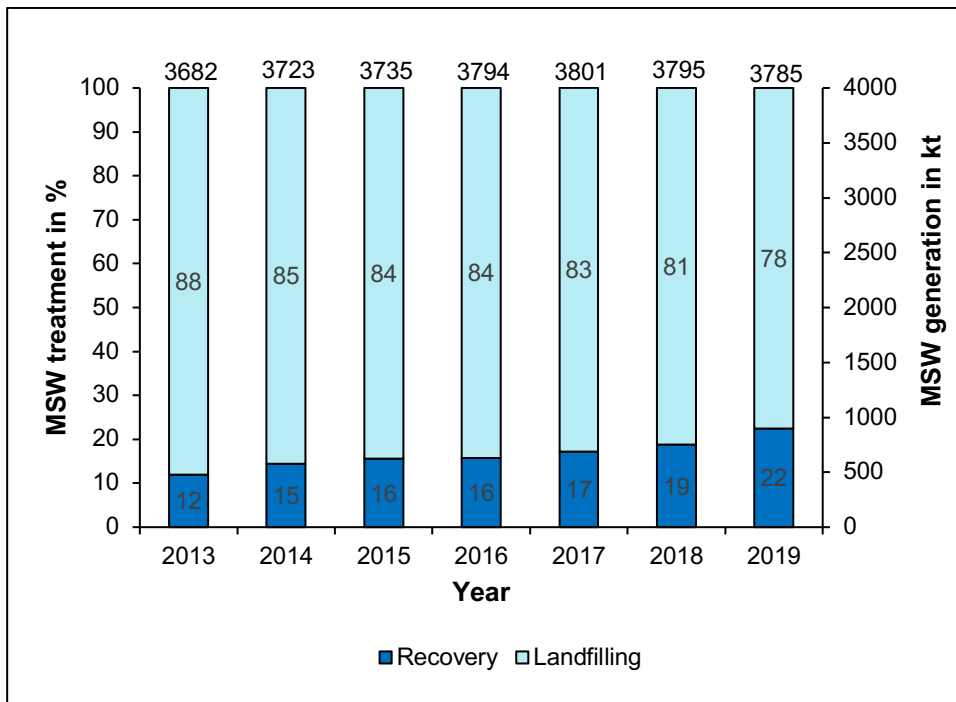


Fig 4: Waste generation (in kt) and treatment (in %) in Belarus 2013-2020
Source: National Statistical Committee of the Republic of Belarus



Industrial waste arisings totaled 60.8 million tons in 2019. Most was generated by the chemical industry. Construction waste amounted to 1.98 m tons.

Waste Management Infrastructure

Several lighthouse projects for environmentally friendly waste management have emerged over the last decade, highlighting the country's interest in improving its circular economy. Separate collection of secondary raw materials from MSW has increased, but is still hampered by inadequate funding and incentivization, a lack of logistics infrastructure (containers and vehicles), and by the waste chute system that is in common use in apartment buildings. Materials recovery facilities (MRFs) with a total capacity of 300,000 tons have been installed in Gomel, Mogilev, Baranovichi, Brest, and Novopolotsk. In addition, a large materials recovery facility with a capacity of 120,000 tons per annum was opened in Grodno in 2016. However, it should be noted that many of these facilities process mixed municipal waste resulting in a low recyclables yield.

Overall, more than 75% of country's MSW is still disposed in 165 landfills, many of them built in Soviet times, and around 1,700 small, local dumpsites. Currently there are no composting or anaerobic digestion facilities for organic waste. Neither are there refuse derived fuel plants or waste-to-energy incineration plants for MSW. In summary, it can be said that there is still considerable potential for optimizing the circular economy in Belarus, a good starting point for investors in this area.

Major Players

Municipal solid waste (MSW) is generally collected, processed and landfilled by municipal service enterprises in Belarus. In the capital Minsk MSW is collected by the municipal enterprise SpecKommunAvtoTrans and by Remondis Minsk, a public-private partnership between the German Remondis Group and the city. Smaller quantities are collected from housing associations by Ecologia and Datcom, two private companies that are also engaged in construction, demolition, commercial and industrial waste management. Minsk's sole operating landfill at Trostenetsky is run by the municipal enterprise Ekores, which also operates a materials recovery facility at the site.

In addition to MSW collection, Remondis provides hazardous, medical and construction waste management services in Belarus. The company collects used batteries, trades secondary raw materials and operates a composting facility for green wastes near Minsk.

Vtoroperator (Secondary Raw Materials Operator) is an organization established by the Ministry of Housing and Municipal Services to implement extended producer responsibility schemes in Belarus. This organization receives product fees and distributes payments for collected recyclables and packaging. Vtoroperator also publishes a register of recycling businesses on its website.

BelVTI Minsk is specialized on the collection and dismantling of waste electrical and electronic equipment (WEEE). RePlus-M in Mogilev is engaged in PET and PE recycling. Other plastic recyclers



include Artpolimer in Minsk, Vostochny in Mogilev and ChPTUP PoliVek in Brest. Forestry and paper group Bellesbumprom uses recovered paper at its Spartak, Slonim and Albertin paper and board mills. Polish waste paper company TSC maintains an office in Borisov. Glass cullet is processed in Minsk by Belresursy. Belvtormet operates in the scrap metals sector.

Recovia AB, a Swedish waste-to-energy company, operates landfill gas projects in Vitebsk, Orsha, Novopolotsk, Gomel and Mogilev.

Waste Management Strategy

In the past few years, the Belarusian government has developed strategies to address a number of environmental issues. Fundamental documents, designed to reform policy and practice, deal with climate change, environmental protection, energy efficiency, the bioeconomy and sustainability. Belarus is Annex I - State party to the United Nations Framework Convention on Climate Change (UNFCCC). It ratified the Paris Climate Agreement in 2016.

Waste policy is defined in the "National Strategy for the Management of Municipal Solid Waste and Secondary Material Resources in the Republic of Belarus for the Period up to 2035", which was confirmed by the Council of Ministers in July 2017. The National Strategy outlines the need to minimize the impact of MSW on health and the environment and confirms the European waste hierarchy – prevention, reuse, recycling, recovery and disposal. Waste prevention and the extraction of secondary raw materials should be maximized. Organic waste should be composted. Energy should be recovered from waste by the production of refuse derived fuel (RDF) for use in cement kilns and in the form of waste-to-energy incineration.

Performance indicators of government policy for waste management are shown in **Table 1**.

Tab. 1:	2015	2020	2025	2030
Recovery incl. recycling of MSW in % of total generation	15,6	25	35	40

Source: National Strategy for the Management of Municipal Solid Waste and Secondary Material Resources in the Republic of Belarus for the Period up to 2035

To improve its waste management infrastructure, Belarus is planning to increase the use of raw material resources. Measures include:

- Recovery of 25 % of secondary raw materials through separate collection and deposit systems
- Conversion of 34–38 % of mixed MSW and packaging to RDF
- 60–65 % of mixed MSW and packaging will be converted into energy by incineration
- Recycling of 10–15 % of organic waste through composting

Specifically, the National Strategy defines a number of modules for modernizing Belarus’ waste management infrastructure that are to be implemented progressively between 2017 and 2035:



Module 1 includes improvements in record keeping and personnel training, improvements in the separate collection of recyclables, the remediation of older landfills, and the construction of new landfills and transfer stations

Module 2 defines the implementation of a deposit and refund system for packaging waste

Module 3 involves the construction of RDF facilities in Grodno and Mogilev

Module 4 covers the development of composting facilities initially in Grodno and Mogilev and subsequently in other areas with populations exceeding 50,000 inhabitants

Module 5 involves the construction of a waste incineration facility in Minsk

Total investments for these modules in 2017 - 2035 are estimated at € 1,224.1 million. The investment breakdown over the period is as follows: € 277.6 m in 2017 – 2020, € 382.2 in 2021 – 2025 and € 564.3 m in 2026 – 2035.

One of the main items of capital expenditure is for the construction of a waste-to-energy incinerator in Minsk (€ 200 m), for which the government will seek to attract international investors. Significant amounts of capital will also be invested in the modernization of the waste collection infrastructure, the planned deposit scheme for packaging, and landfill remediation and construction projects. In addition, the planned transfer stations, RDF and composting facilities will need large investments.

Legal Framework

Waste management in Belarus is governed by the law on waste management from 2007. It defines municipal solid waste (MSW) as waste from consumption and industrial waste as waste from production processes. The law mandates the collection and standardized disposal of waste in all residential areas. The law was last amended in 2016, however, there is a wide range of secondary laws to regulate the collection/disposal and to implement technical and sanitary standards. These secondary laws are issued by the Council of Ministers or by the Ministry of Natural Resources and Environmental Protection, the Ministry of Housing and Communal Services or the Ministry of Health.

Other relevant and recent government decisions are:

- Decree of the President No. 357 of September 24, 2019 – on renewable energy sources. Feed-in tariffs are available for renewable electricity for ten years
- Decree of the Council of Ministers No. 715 of October 23, 2019 – on the construction of objects for sorting and recycling of solid municipal waste and landfills for its storage
- Decree of the Council of Ministers No. 7 of January 13, 2020 – gradually reducing the use of plastic packaging



- Decree of the President No. 16 of January 17, 2020 – on the improvement of the situation and practice in dealing with food waste and packaging
- Decree of the Council of Ministers on a National Action Plan for the introduction of the principles of a green economy into the industry of the national economy of the Republic of Belarus by 2020

Opportunities for Investors

As policy implementation improves and funding mechanisms are strengthened, there are opportunities for investors along the entire waste management value chain from collection and recycling to final disposal. Examples:

- Modernization of the collection infrastructure (vehicles and containers) for the increased source segregation of recyclables
- Implementation of a deposit and refund scheme for packaging incl. the supply of reverse vending equipment
- Construction of sorting, composting and RDF facilities
- Closure and after-care of older municipal landfills and construction of modern landfills and transfer stations
- Construction and operation of a waste-to-energy incineration plant in Minsk

Belarus has expressed interest in developing public-private partnerships and attracting foreign direct investment for its waste management infrastructure. The development and execution of projects will also provide business opportunities for consultants, engineers, equipment suppliers and waste companies. Foreign investors, equipment suppliers and engineering companies can benefit from well-trained professionals working in waste management in Belarus.



ABOUT

The „Greening Belarus Initiative“



Greening Belarus is an initiative of the Institute for Waste and Circular Economy at the Technische Universität Dresden. The project is funded with EUR 200,000 by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety as part of the export initiative for environmental technologies. The aim is to promote bilateral exchange in industry, research and teaching.

www.greeningbelarus.info

ABOUT

ANDREAS VON SCHOENBERG CONSULTING



Andreas von Schoenberg Consulting is a Berlin based advisory firm specializing on waste management and recycling, renewable energy and climate protection. Our clients from the public and private sectors benefit from decades of experience, a vast network and our passion for cleantech. We provide first-rate analysis, solutions and execution support.

Our core expertise covers market intelligence, internationalization, sales and marketing, foreign trade promotion and public relations services. We work in the DACH region, UK and Ireland, Eastern Europe and Central Asia.

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Sources

To avoid cluttering the factsheet, we have dispensed with precise details of sources in the relevant places in the text. However, we gratefully acknowledge accessing information from the following sources, which have been invaluable in preparing this factsheet: National Statistical Committee of the Republic of Belarus (Belstat), eurostat, the World Bank, the International Energy Agency (iea), and the European Environment Agency's Shared Environmental Information System (SEIS). We also gratefully acknowledge the following specific documents and reports:

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