

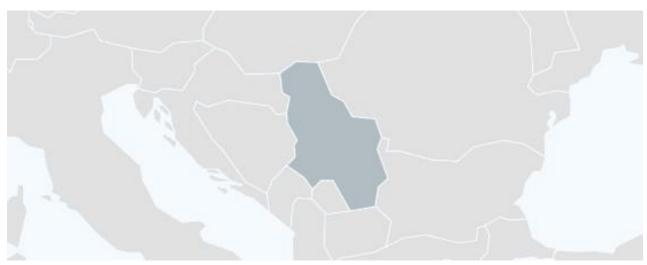
Andreas von Schoenberg Consulting

FACTSHEET: WASTE MANAGEMENT IN THE REPUBLIC OF SERBIA



Area and Population

The Republic of Serbia is a country located in the West-Central Balkans in Southeast Europe, encompassing an area of 88,499 km². Serbia has a population of 6,95 million. 1,694,500 inhabitants reside in its largest city and capital Belgrade.



Government

The incumbent Government of Serbia, the second one led by Prime minister Ana Brnabić, was elected on 28.10.2020. The government's priorities include strengthening and digitising health care, combatting organized crime, implementing incentives to encourage entrepreneurship and the start-up ecosystem, accelerating environmental protection and the energy transition from coal to renewables. In addition, the government supports development in mining, tourism and infrastructure. Serbia is pursuing European integration while maintaining good relations with Russia and China.

Key Economic Data

Currency: Serbian dinars (RSD), average exchange rate 2020 RSD 117.59 = 1 EUR

GDP per capita: \$7,392 in 2019, \$7,652 in 2020

GDP growth: 4.2 % in 2019, - 1% in 2020 Unemployment 10.4 % in 2019, 8.98% in 2020

Inflation: 1.9% % in 2019; 1.6 % 2020

National debt as % of GDP: 52% in 2019; 56.8 % estimated 2020

Average monthly wage: RSD 54,908 in 2019 Foreign direct investment: \$ 4,281 m in 2019

World Bank Ease of Doing Business Index: Serbia is ranked 44th overall out of 190 countries in

2020.

Main industries: Agriculture and food processing, mining, automotive, machinery, chemicals and pharmaceuticals. The IT sector is growing fast.

Waste Volumes

The Environmental Protection Agency of Serbia (SEPA) reports that 2.35 million tonnes of municipal solid waste (MSW) were generated in 2019, equivalent to 338 kg per inhabitant. Of the

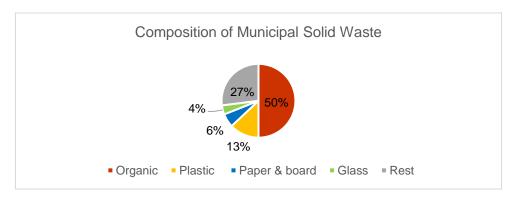


total, 2.02 m tonnes or 86% were collected by the municipalities and their contractors, while the rest was disposed of or recycled locally. It should be noted that over the years the MSW statistics show some fluctuations and inconsistencies, which are probably the result of estimates provided by municipalities with inadequate weighing and registration procedures.

Commercial and industrial waste excluding wastes from mining, thermal processes and waste treatment plants amounted to approx. 420,000 t. 78,000 t of hazardous waste was generated. Construction and demolition waste totalled 328,000 t. Thermal processes were responsible for more than 8 million t of waste in 2019, mainly in the form of fly ash and slag.

Waste Composition

The pie chart below shows the potential for recycling and composting or anaerobic digestion in Serbia. The high organic fraction in particular needs to be addressed to reduce greenhouse gas emissions from landfill.



Source: SEPA, Report on the Environment in the Republic of Serbia, 2020

Disposal and Recycling Routes

Only about 3% of collected MSW is recycled, the rest is landfilled.

Extended producer responsibility (EPR) schemes for packaging do achieve considerably better recycling rates. Of the 369,250 tonnes of packaging placed on the market in 2019 nearly 60% was recycled.

Moreover, as in most countries in Southeast Europe there is a large informal sector engaged in the collection and trading of recyclables. These activities are not reflected in the official waste statistics.

Waste Management Infrastructure

Much of the equipment used for the collection and transport of waste is outdated, but progress has been made in developing the recycling and disposal infrastructure. A number of transfer stations and recycling centres have been built as well as 11 sanitary landfills. 500,000 tonnes of waste were disposed at these sites in 2019. However, there are also 136 authorised landfills that do not meet modern sanitary requirements located in Serbia, of which 106 are still operational. In additional, there are 2,212 illegal dumpsites throughout the country.

The city of Belgrade is in the process of establishing a new waste management system through a public-private partnership for the treatment and disposal of over 500,000 tonnes of solid municipal



waste annually. The project includes the remediation of the existing landfill in Vinča and the construction of a new sanitary landfill. A new waste-to-energy plant with a capacity of 340,000 tonnes p.a. is also under construction, as is a facility for the recycling of construction and demolition waste.



Construction of waste-to-energy facility at Vinča. Source: Beo Čista Energija

Plans are being developed for a further waste-to-energy incinerator in Niš. New regional waste treatment and disposal centres are planned at existing landfill sites in Krusevac and Vranje. Information on recycling facilities is contained in the next section on key players.

Key Players

Municipal waste is largely managed by public utility companies (PUCs), the largest of which is Gradska čistoća with 2,000 employees in Belgrade. Other large PUCs are Mediana in Niš and Čistoća in Novi Sad. One major private company engaged in municipal waste management is FCC Environment CEE (formerly A.S.A.), part of the Spanish FCC Group, which collects MSW in 9 municipalities. FCC operates modern landfills in Kikinda and Lapovo. PWW, a joint venture of Austrian companies PORR Umwelttechnik und Werner & Weber, operate landfills in Leskovac and Jagodina. The Austrian waste management firm Brantner is engaged in waste collection at four locations in northern Serbia. Beo Čista Energija, a Suez France and Itochu Japan joint venture, has entered into a PPP with the city of Belgrade to provide services for the treatment and disposal of 500,000 tonnes MSW per annum.

Recycling companies focused on paper and cardboard include Kappastar Recycling and Hamburger Recycling, the latter part of the Austrian group Prinzhorn Holding. Eko Unija Belgrade is also engaged in paper/cardboard as well other secondary raw materials. Greentech Novi Sad



operates a PET packaging recycling facility in Mladenovo. A.K.O. International produces flakes from discarded PET bottles in Belušić. Another PET recycler is ALWAG in Nova Gajdobra. Eco Plastics in Belgrade uses recycled plastics to manufacture construction materials. Waste electrical and electronic equipment (WEEE) recycling facilities are operated by Božić i sinovi in Omoljica and E-Reciklaža in Niš. Eco Recycling in Novi Sad processes waste tires. Centar za reciklažu in Belgrade is part of the German Scholz AG scrap metals recycling group. Glass is recycled at Srpska Fabrika za Reciklažu in Grejač. LafargeHolcim uses refuse derived fuel at its cement plants in Beočin and Novi Popovac. MITECO Kneževac, Belgrade is active in hazardous waste management.

Sekopak, established by amongst others Coca Cola, Tetra Pak, Knjaz Milos and Carlsberg, is one of the main producer responsibility organisations (PRO) for packaging waste in Serbia. Other PROs include Tehno Eko Pak, Ekostar Pak and Delta Pak.

Waste Management Strategy

The Ministry of Environmental Protection published the *Roadmap for the Circular Economy in Serbia* in 2020, which confirms the strategy to harmonise Serbian and EU waste legislation, in particular the waste framework, landfill, packaging and plastics directives. The *Roadmap* contains recommendations on the sustainable use of resources, waste prevention and circular product design, as well as more specific measures for manufacturing, agricultural, packaging and construction waste. Serbia is also developing a *New Waste Management Strategy* 2020 – 2025 with concrete plans for individual waste streams.

Legal Framework

The legal framework for waste management in the Republic of Serbia includes:

- Law on Waste Management
- Law on Environmental Protection
- Law on Communal Activities
- Law on Strategic Environmental Impact Assessment
- Law on Environmental Impact Assessment
- Law on Ratification of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- Law on Integrated Prevention and Control of Environmental Pollution
- Law on Packaging and Packaging Waste
- Law on Transport of Hazardous Goods

In addition, laws dealing with foreign investments may be relevant for investors in Serbian waste management projects:

- Investment Law
- Law on Public-Private Partnership and Concessions
- Law on Public Procurement
- Law on Free Zones etc.



Opportunities for Investors

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

- Upgrading of the collection infrastructure (vehicles and containers) for the increased source segregation of recyclables.
- Construction and operation of waste transfer stations and materials recovery facilities.
- Construction and operation of composting and/or anaerobic digestion facilities for biowaste from households and food waste from industrial and commercial sources, such as retailers, hotels etc.
- Strengthening of EPR schemes for packaging and development of systems for WEEE, batteries and end-of-life vehicles.
- Closure and after-care of non-compliant municipal and industrial waste landfills.
- Construction and operation of facilities for treatment and/or recycling of hazardous waste.
- Construction and operation of waste derived fuel facilities to increase supplies for the cement industry and other applications.
- Construction and operation of facilities for the recycling of construction and demolition waste.

The development and execution of these projects will also provide business opportunities for consultants, engineers, equipment suppliers and waste management companies.



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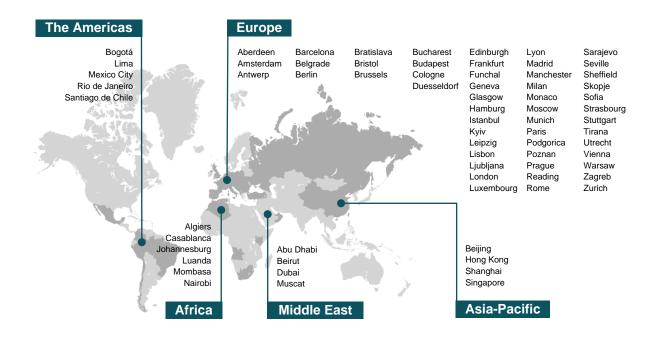
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