


General data

Population	50,794	 www.dupnitsa.bg/
Surface	329 km ²	
Density	158 inh/km ²	
Urbanisation class	B (30 – 49% multi-family houses)	
Paper & cardboard recycling rate	N/A	

National and regional system

Legislation & targets	<p>According to the National Law on Waste Management, mayors are in charge of household and construction waste management on their territory including organisation of collection activities and putting in place separate collection (for at least paper and cardboard, metals, plastics and glass). Systems for separate collection of packaging waste organised by recovery organisations, respectively the mayors of municipalities, should cover all settlements with a population of over 5,000 inhabitants.¹</p> <p>There are no specific recycling targets additional to those set by the EU legislation.</p>
EPR system	<p>As a result of the legislative requirements, each municipality contracts companies which are authorised to engage in waste-related activities and conducts yearly campaigns directed to citizens on separate waste collection. There are several organisations for recovery of packaging waste in Bulgaria. Currently Dupnitsa municipality has signed a contract with one of them – Ecopack, which in turn has pledged to carry out the collection and transport of separately collected waste (including graphic paper) through a subcontracted company. Ecopack collects separately collected waste free of charge from the municipality. Every year Ecopack prepares an updated plan for separate collection of packaging waste, which requires the approval of the mayor of Dupnitsa. This plan includes the total number of containers for separate collection, delivery schedule for the current year, various initiatives and campaigns ahead of the year and a summary analysis of the past year.</p>

Waste collection scheme

The municipality consists of 17 settlements, largest of which is the City of Dupnitsa.

The two systems for mixed waste and separate collection apply to all citizens, shops and businesses in the municipality of Dupnitsa.

Residual waste is collected in bring bank large metal bins (on wheels). Currently, there is no separate collection of bio-waste but it is foreseen to introduce it by 2020².

Dupnitsa municipality has a system for separate collection of packaging waste since 2006³. Also graphic paper is accepted within the system. The mayor of the municipality determines the locations to deploy the necessary elements of the system for separate collection and sorting of packaging waste. Currently Dupnitsa Municipality has 85 sets of containers for selective collection (blue, yellow and green) in the city of Dupnitsa and 42 sets of containers distributed throughout the six villages that are included in the separate collection system. Separate collection system includes solely settlements with over 400 inhabitants.

¹ "Systems for separate collection of packaging waste, organised by recovery organizations, respectively the mayors of municipalities, should cover not less than 6 million residents of the country and must include resort settlements and all settlements with a population of over 5,000 inhabitants." Source: [Law on Waste Management](#), Art. 33 (1)

² This is expected to cover 38% to 48% of the households in the municipality and to compost 15% to 22% of food and garden waste.

³ The year before Bulgaria's accession to the EU (2007)



Figure 1: Bring bank containers for separate collection of packaging



Figure 2: Bring bank bins for residual waste

The frequency of service vessels for separate collection of recyclable waste is as follows:

- Blue container (paper and cardboard) - 3 times a month;
- Yellow containers (plastic and metal) - 2 times a month;
- Green containers (glass) - once every three months.

According to the legislation, settlements with more than 10,000 inhabitants (such as the City of Dupnitsa) should have in place site(s) for handing over separately collected household waste, including bulky and hazardous waste. However, there are no such recycling yards in place yet.

In addition to the bring bank system, citizens can also bring recyclable waste (paper, cardboard, PET and plastic films) to special “shops for secondary raw materials” for which they can get a small financial compensation. There are four such shops in the Municipality.



Figure 3: Weighing of paper at a secondary raw materials shop

Information and communication

All relevant information related to legislative changes at national and local level in the field of waste management can be obtained by the citizens of Dupnitsa Municipality through the official website of the municipality (however, information on waste management activities is rarely published on the website⁴); local media (TV and radio); various types of brochures that the municipality provides for separate collection of packaging waste and household waste.

The contract between the Municipality and the Packaging Recovery organisation Ecopack and the yearly programmes they submit for approval contain a description of the information campaigns for the upcoming year. These take place on local level and are financed by Ecopack.

Apart from these, there are several national and European campaigns, taking place every year, in which the Municipality takes active part (ex. “Let’s clean up Bulgaria together”, “Earth’s hour”, “Forest week”, “World water day”).

Evolution paper & cardboard waste collected

Waiting for numbers to be reviewed and corrected

Paper and cardboard waste treatment

Paper and cardboard collected separately in street bring banks is treated by the local company Phoenix Dupnitsa. The company also has direct contracts with around 600 private companies and some administrations of other cities (such as the regional court) for the collection of their paper and cardboard. It generally gets PfR of very high quality

⁴ Source: Waste management Plan for Dupnitsa municipality 2015 – 2020, p. 20

from this type of waste producers. The material is mainly separated into two grades (1.04.00/ 1.05.55 and 1.11.00).⁵ The end users of the sorted paper and board are cardboard producers in Bulgaria, Turkey and Hungary.



Figure 4: Landfill site of Dupnitsa municipality

Municipality Dupnitsa has no data about the total quantity of paper generated by the population at its entire territory since the separate collection system covers only 7 of a total of 17 populated areas within the municipality. Significant amount of the paper is being burnt by the population (ex. for heating purposes) and important quantities further get in the general flow of residual waste that is not being separated and ends up at the municipal landfill for solid municipal waste in the town of Dupnitsa. Sorting at the landfill site is done by informal groups of collectors and is not officially counted. The landfill site does not correspond to the European and national standards.

There are proposals for the building of new regional center for treatment of municipal waste. It would include a landfill site (according to the standards), separation installation with manual sorting for residual and separately collected waste; installation for open composting of separately collected bio-waste and a civic amenity site. However, currently there is no agreement on the exact location of the site and the investment plan is stopped.

Evolution of PfR treatment

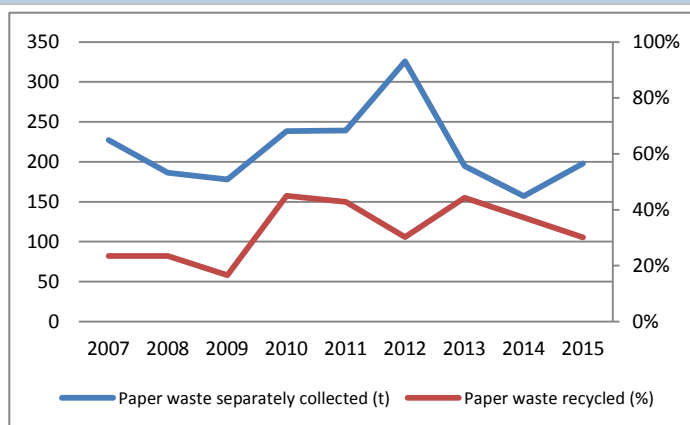


Figure 5: Evolution of PfR recycling

Table 1: Evolution of PfR recycling

	Paper waste separately collected (t)	Paper waste recycled (t)	Paper waste recycled (%)
2007	227.2	53.3	23.46%
2008	186.2	43.8	23.52%
2009	177.9	29.5	16.58%
2010	238.6	107.5	45.05%
2011	239.3	102.5	42.83%
2012	325.9	98.4	30.19%
2013	194.7	86.3	44.32%
2014	156.9	58.3	37.16%
2015	197.8	59.5	30.08%

The recycling rate above is calculated on the basis of quantities collected in bring bank containers. However, as mentioned, these are under-representative of the total amount of generated waste.

Costs and revenue, resources

Taxpayers are charged a "garbage fee" determined by the Law on Local Taxes and Fees. This is used to finance the services for collection, transport and disposal of household waste to the municipal landfill, and to maintain the cleanliness of public areas.

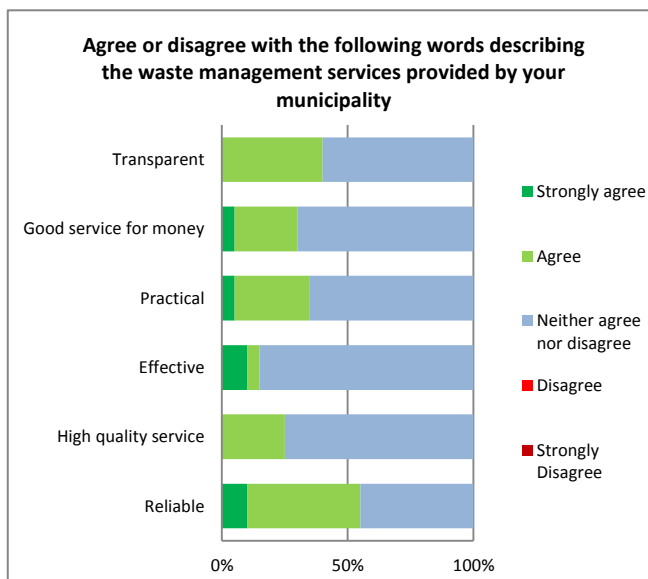
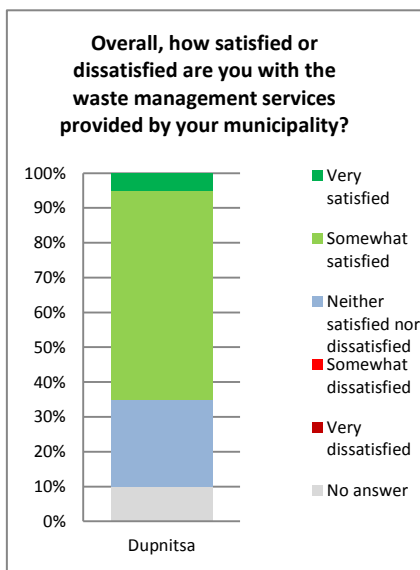
The fees for household waste are determined by the Municipal Council based on a property tax assessment or based on the waste amounts of the previous year. An individual typically pays an annual waste fee of €7 and a 4-person household a fee of €29.

Businesses and shops in the municipality of Dupnitsa need to use the system of separate collection.

According to the Waste Management Plan for the period 2015-2020, the amounts collected from waste taxes cover the expenses related to waste management activities.

⁵ According to the EN643 standard

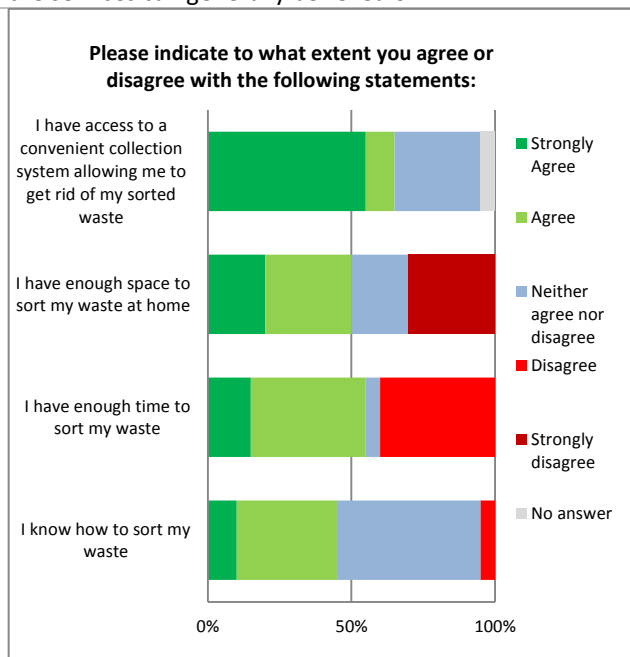
Stakeholder satisfaction



6: Overall satisfaction with WM services (citizens)

7: WM services characteristics (citizens)

Overall, citizens⁶ seem to be rather satisfied with the waste management services offered by the Municipality of Dupnitsa. Most of the respondents do not have a clear-cut opinion on the different aspects of these services (transparency, good service for money, practicality, effectiveness, high quality). However, more than half agree that the services can generally be relied on.



8: Sorting waste at home (citizens)

their home, door-to-door waste collection and collection bins that are comfortable for use are indicated solutions able to facilitate citizens' everyday sorting efforts.

There seems to be a good level of general awareness on waste-related issues. The large majority of respondents (95%) agree that waste production is a major environmental issue and that sorting waste is important. The same number of respondents feels well informed about how to sort their waste (both general and specifically paper-cardboard).

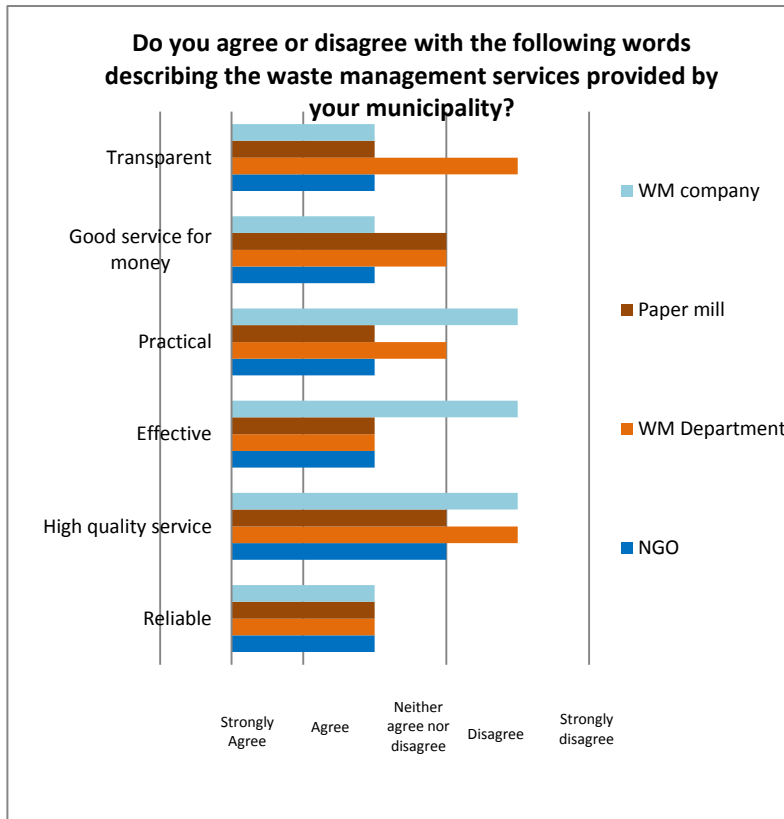
However, when it comes to the practice, only half state that they always or very often sort their waste, whereas 40% only sort from time to time. Furthermore, it seems that specific information on paper-cardboard is not very visible since only 25% know for sure that such information is available whereas more than half state not knowing whether such information exists and 25% state it does not exist.

Most of the citizens find the collection system convenient enough for them to get rid of their sorted waste (65% agree, 30% do not have a clear-cut opinion and 5% have not given their opinion on this issue). It seems that insufficient space at home and amount of time dedicated to sorting waste are serious concerns that citizens have. Collection bins in closer proximity to

⁶ Based on a sample of 20 citizens of the Municipality of Dupnitsa who have filled in the IMPACTPAPEREC citizens questionnaire

Apart from the citizens, also other stakeholders⁷ had given their opinion on the different aspects of the waste management services provided by the municipality.

Overall, they agree that the services are reliable and offer good value for money. The WM company has expressed some concerns related to the practicality, quality and effectiveness of the services. In its opinion the motivation and environmental awareness of the citizens is very low and should be addressed. From the point of view of the paper mill the weak points are the quality and value for money of the services. He points to the presence of impurities in the paper and cardboard material he receives from the municipality and thinks that information campaigns are important to reduce such problems.



9: Evaluation of municipal WM services by key stakeholders

Main problems/challenges

The stakeholders have identified the following main problems with the separate collection of paper/ cardboard waste in bring bank containers:

	Citizens (questionnaire)	Municipality (excel)	Employees of WM department (questionnaire)	WM company (questionnaire)
Unpleasant surrounding/littering		X	X	X
Lack of/inadequate signage	X		X	
Impurities/contamination	X	X	X	X
Vandalism	X	X	X	X
Blocked access to bins/containers	X			X
Overflowing bins/containers	X			
Theft/ scavenging		X		

- Vandalism is a problem not only in the municipality of Dupnitsa, but as a whole in Bulgaria. Frequent act of vandalism is burning of containers (the majority are plastic containers) and its contents (paper and cardboard are burnt)
- Contamination: because citizens do not pay attention to the colour of the containers they use or because the material from the different containers gets mixed because of scavengers
- Littering around collection points: insufficient compression and faster filling of the containers; citizens not paying attention to where they throw their waste; littering after scavenging

⁷ 4 small shops and businesses, 1 waste management company, 1 paper mill, 2 employees of the Municipality waste management department, 1 NGO

- Insufficiently good compression of paper and cardboard waste before throwing it in the separate collection containers that results in faster occupation of complete volume and their shortage.
- Large-size cardboard waste (cardboard boxes, paper cassettes) from households and sales points is being placed around, inside and near the containers for mixed municipality waste, since the separate collection containers are of small volume and opening.
- Paper and cardboard being taken away from the separate collection containers by scavengers who deliver it to secondary raw materials' points.
- Citizens indicate that containers for separate collection of paper and cardboard are placed at an inconvenient distance (too far from their homes) and have inadequate openings (too small)

Furthermore, a serious problem is the insufficient paper collectability from the households:

- Most of the population of Municipality Dupnitsa uses solid fuel for heating (wood and coal) and thus also uses the paper and cardboard raw material for lighting their fire-places.
- Big quantities of paper and cardboard are still found in residual waste. The waste composition analysis made in 2015 shows that 71% of residual waste consists of food, paper and cardboard, plastics, garden and inert waste (construction and demolition). The percentage of recyclable waste (paper and cardboard, glass, metals, plastics) is 41,46%.
- The achieved rates for preparing for reuse and recycling of paper and cardboard, metals, plastics and glass from households are not high enough and put at risk the achievement of the targets for 2016, 2018 and 2020.⁸

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⁸ Source: Waste management Plan for Dupnitsa municipality 2015 – 2020, p. 17

