



BURGAS MUNICIPALITY

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REPORT on PEER REVIEW on Environment and resource efficiency hosted by Burgas Municipality

Topic: Improving the use of Burgas Municipality potential to reduce the quantities of landfilled waste by implementing practices to prevent their formation and increasing the share of separately collected recyclable waste

Dates: 2-3 December 2020

Venue: Online meeting per Zoom

1. Background information for Burgas Municipality

Burgas Municipality, with an area of 559 sq. km., is located in South-eastern Bulgaria, on the Black Sea coast, surrounding the most extensive bay along the Bulgarian Black Sea coast - Burgas Bay. By its geographical location, the municipality occupies a significant place in the transport and communication system of the country. Important transport corridors pass through its territory in the directions east and west, as well as connections to the northern and southern part of Bulgaria. The city of Burgas is the last point of the Trakia Highway Route (A1) – providing a fast connection to the Capital.

The total number of the population in Burgas municipality according to data of the NSI /National statistical institute/as of 31.12.2019, amounts to 208,235 people, which represents 50.9% of the population of Burgas district and 3% of the total population of the country. The municipality ranks fourth in number of populations in Bulgaria.

Burgas Municipality consists of 12 settlements, two cities – Burgas and Balgarovo and 10 villages. In the municipal centre - the city of Burgas live 97,6% of the inhabitants of the municipality, and the remaining 2.4% in the other settlements of the territory.

Burgas Region covers an area of 7748.1 km² and has a population of 409,018 inhabitants. It is one of the most developed regions in Bulgaria. It is situated in the south-eastern part of the country and is the second biggest after Sofia Region. It is bounded by the regions of Varna, Shumen, Sliven and Yambol; the eastern and southern boundaries to the Black Sea and Turkey coincide with the national borders.

The established **regional waste management system** serves nine municipalities in the region Aytos, Burgas, Kameno, Karnobat, Pomorie Ruen, Sungurlare Nesebar and Sredets with total with 208 settlements (including 12 cities). The territory it covers is 5,573.8 sq. km. (about 5% of the territory of Bulgaria).

Figure 1 Burgas municipality within Bulgaria and Burgas region



Figure 2 Burgas municipality (google maps)

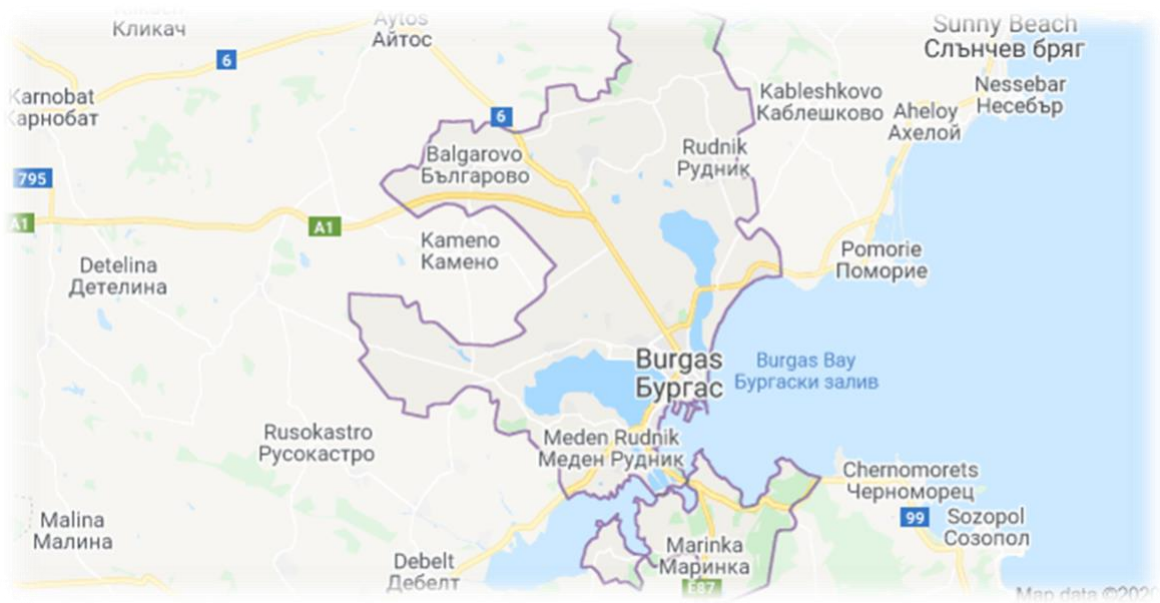
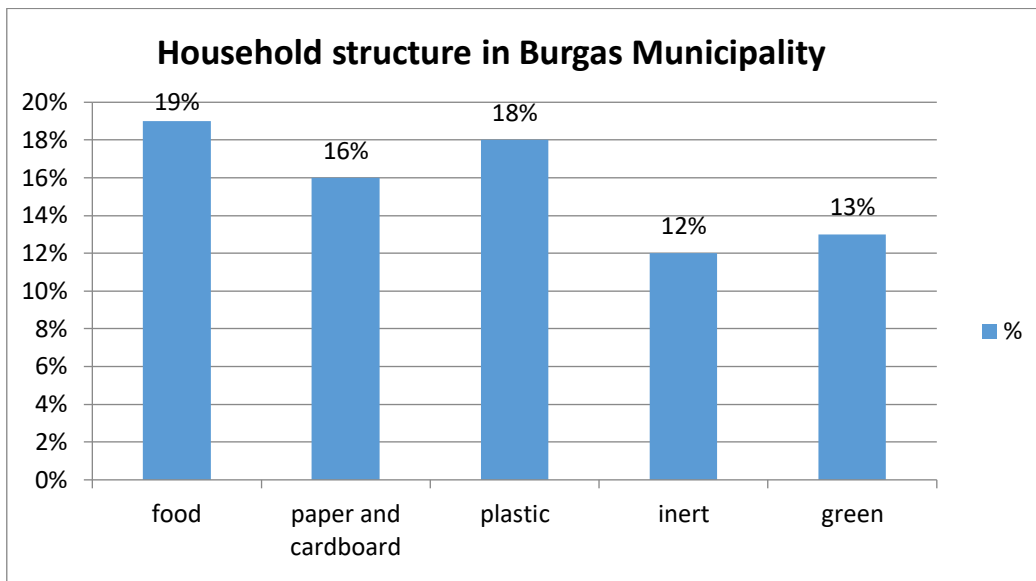


Figure 3 Household structure in Burgas Municipality



According to the 2011 census of the Republic of Bulgaria, there are 87,667 households in the municipality of Burgas. The household structure in Burgas municipality shows a share of 57% single-member and two-member households (28% single-member, 29% two-member), 39% three- and four-member households (24% three-member, 15% four-member) and 4% households with five or more members. By comparison, households with 1-2 members in the country are 59% (31% single-member, 28% two-member), 3-4 members - 34% (20% three-member and 13% four-member), with 5 or more members – 7%.

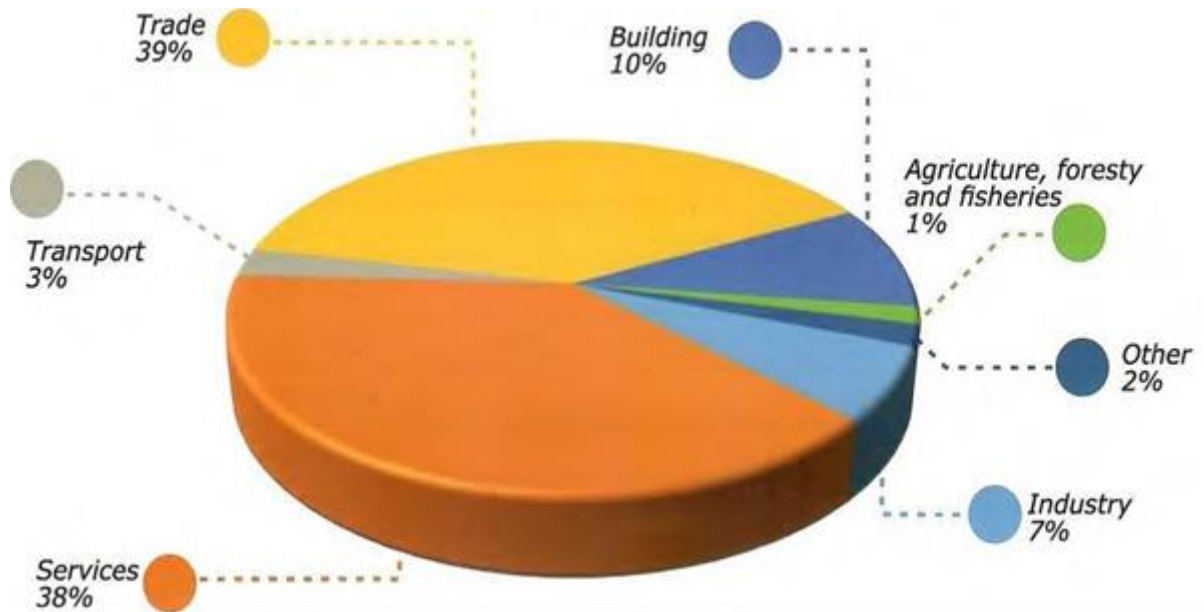
The total waste amount entered at the landfill in 2019 is 119,096 t with 18,094 t from tourism, with a share of biodegradable waste of 868 t.

Structure of the local economy

The structure of the enterprises in Burgas municipality is identical to that in the country and the other largest municipalities in Bulgaria with 99.0% of the small and medium-sized enterprises (SMEs) sector.

Burgas is an important industrial, commercial, transport and tourist centre. Some of the productions are unique or country-defining, such as dark and light oil products, chemical fibres, plastics and other chemical products; shipbuilding, ventilation and treatment equipment, freight wagon construction, fish processing industry, electrical and electronic industries, as well as mechanical engineering and metalworking.

Figure 4 Companies within Burgas municipality: industrial sectors

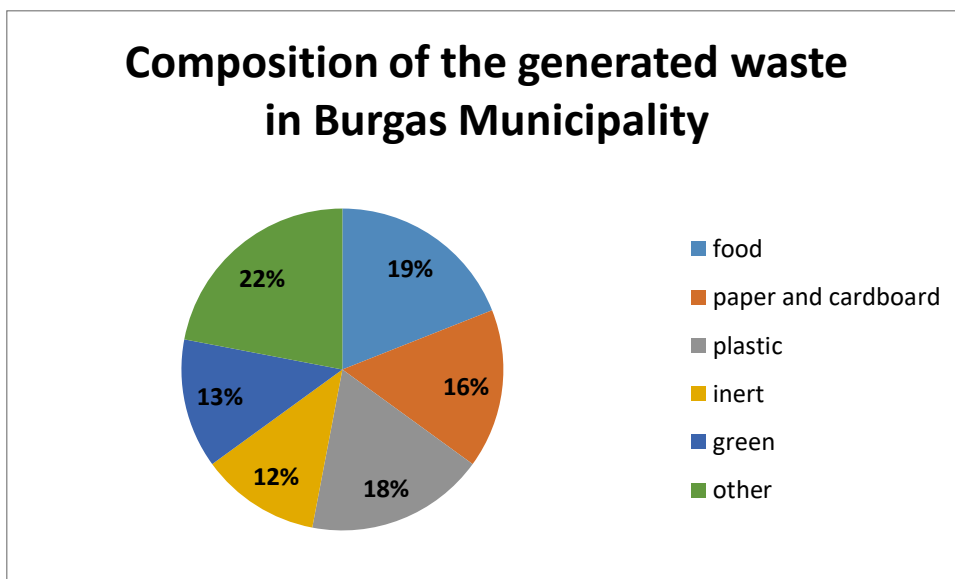


Source : <https://www.burgas.bg/uploads/7e48963b9a5d312c8e13c9f70fa0adc1.pdf>

2. Review of the municipal waste management policy

In Burgas Municipality, about 95,000 tonnes of mixed municipal waste are generated annually. The forecasts for the next 20-year period predict a slight increase in the generated waste. Its composition includes mainly: food – 19%; paper and cardboard – 16%; plastic – 18%; inert – 12%; green – 13%. Biodegradable waste makes up a total of 49% of the generated waste.

Figure 5 Composition of the generated waste in Burgas Municipality



The objectives set in national legislation by 2020 match the municipal ones and these are at least 50% of the generated waste of paper and cardboard, metal, plastic and glass from households and

similar waste from other sources to be separately collected for recycling and limiting the amount of landfilled biodegradable household waste to 35% of the total amount of the same waste generated in the Republic of Bulgaria in 1995.

Waste received at the regional landfill in 2019 – 119 096 t of which 2,554 tons were separated and handed over to recycling companies. Landfilled 116 542 t. The total amount of biodegradable waste received from the current system for their separate collection is 2658 tons, which are utilized in the composting plant.

The EU targets set for future periods are aimed at minimising the waste generated and increasing the share of recycled waste.

Basic steps taken until now:

1. Waste treatment in Burgas district

- Since 2015 a regional principle of waste management applies in Burgas Region.
- **Regional landfill** was built in 2015 - cell 2 with a capacity of 400,000 tons with the following installations:
 - **separation of mixed municipal waste with a pre-separation module for the separation of inert impurities and crushed plant and biodegradable waste with a capacity of 160,000 t/year;**
The installation includes the following modules: Receiver with waste bag breaker, two sieves for cleaning inert waste, two drum sieves with hole sizes up to 15 mm and up to 7 mm for separating the recoverable fraction of waste, followed by each production line with 12 places for manual separation of separate fractions from the recoverable waste. The separated waste by fractions is fed to a baler which forms them in the form of bales. The residual fraction falls into a transport container of 20 m³, which is transported to a landfill.
 - Part of the generated biodegradable waste is treated in the composting plant, which has a capacity of 5000 t / year. The rest is landfilled. We expect that with the construction of the anaerobic installation a quantity of 30,000t/year will be utilized. **Installation for composting of plant waste from maintenance of green areas** (mowed grass, branches, leaves, etc.) with a capacity of 12,000 t / year;
The composting is carried out according to a typical aerobic process (windrow). At the composting plant enters green waste from the maintenance of public gardens and parks, incl. (leaves branches mowed grass), as well as partially fruits and vegetables from markets. The green waste is crushed and sifted to a certain particle size and then poured into longitudinal piles, which are turned over for a certain period of time by means of a compost turner, and water is added. The process temperature is automatically monitored. The finished product is sieved again.
 - **installation for the treatment of construction waste from households;**
 - **installation for shredding of large-sized waste.**

2. Separate waste collection systems on the territory of Burgas Municipality:

- Separate collection system for packaging waste, with three coloured containers with operator "ECOPACK" recovery organisation;
- Packaging waste is collected in the coloured containers placed by "ECOPACK", incl. in blue - paper and cardboard, in yellow - plastics and metal and in green glass. The containers are

- igloo type and are serviced on schedule, yellow and blue once a week, green once every two weeks. The system of containers and vehicles is owned and serviced by "ECOPACK".
- System for separate collection of recyclable waste / plastic, metal, paper, including packaging waste/ from households in underground containers with operator "Nelsen Burgas";
 - The system of underground vessels includes 64 containers distributed by 4 pcs. at a point of which two for mixed household waste, one for paper and one for plastics. The containers are opened by means of a hydraulic lid and lifted and emptied into the vehicle by means of a crane. Each of the vessels has a volume of 3 m³. the vessels are emptied twice a week.
 - System for collection of recoverable and widespread waste from households with operator "Chistota Eco" in 19 pcs. – mobile centres; the following household waste enters into the mobile centres, accepted separately - paper, plastic, metal, obsolete electrical and electronic equipment, medicines, shoes, textiles etc.
 - On the territory of Burgas municipality and the neighbourhoods there are a total of 19 Mobile centres. They collect 24 types of waste that can be generated in one household, incl. (all recyclable waste, expired medicines, frying grease, electrical and electronic equipment, old car tires, mercury and fluorescent lamps, packs of paints and chemicals, etc.) of the waste and weigh it. A vehicle travels around the mobile centres every day and collects fractions determined for the day, transporting them to the site of the Regional landfill- Bratovo
 - System for separate collection of large-sized waste and construction waste from small construction repairs in households;
 - Waste from small construction repairs in homes and oversized is collected after a prior request from the one who generates them and within 48 hours on a specified day and time a car of the service company "Nelsen Chistota" collects the construction and bulky waste.
 - System for separate collection of obsolete electrical and electronic equipment;
 - The Municipality of Burgas has a contract with a company for collection of obsolete electrical and electronic equipment. A mobile group of the company after a request from the waste generator on a certain day and time visits the address and collects the waste.
 - Separate collection system for of obsolete batteries and accumulators;
 - A company with which the municipality has concluded a contract has placed specialized vessels in shops and public buildings on the territory, which it periodically serves.
 - System for separate collection of old clothes in specialized containers.
- A company with which the municipality has concluded a contract has deployed 30 units. special and locked vessels on the territory of the city, which it serves once a week.
 - Infrastructure for anaerobic treatment of biodegradable waste with a capacity of 30,000 tons/year is being built.
 - A system for separate collection of biodegradable waste is being built, including containers and trucks – waste buckets 120 l – 115 pieces and bins 1,1m³ – 9 pieces;
 - Smart waste management, collection and analysis systems for waste management are being built and upgraded.
 - Availability of national and local strategic and regulatory documents.

SEPARATELY COLLECTED WASTE 2017-2019

Separately collected waste	2017	2018	2019
Paper	320 855kg.	325 505kg.	375 916
Plastic	143 429kg.	145 835kg.	191 505
Glass	275 640kg.	359 780kg.	339 989
EEE Electrical and Electronic Equipment	307 495kg	558 042kg.	1104475
Unusable batteries and accumulators	10 067kg.	18 908kg.	23861.5

3. Waste prevention examples in Burgas

- Burgas municipality project was approved for financing in July, 2020. Project proposal consists of introduction of a **model for preparation for re-use of bulky household waste, specifically prepared for disposal household furniture**. It is combined with a targeted campaign and development of an information platform named “Guide for separated collection of household waste” that will encourage and motivate to prevention and separate collection of waste in everyday life.
Main activities: study of the population’s attitudes and needs for separate waste collection (preparatory activity); construction and operation of a Centre for repair and reuse of used furniture; developing an information platform and conducting a campaign to disseminate project results to the general public. The project activities relate to the highest priority order in the waste hierarchy, namely waste prevention and preparation for reuse. Their implementation is a contribution to the achievement of the goals set out in Art. 31 (1) of the Waste Management Act regarding municipal waste.
- **Compost** - against a note for paid taxes each resident can get 5 litres of compost in the Mobile Centre and use it for garden and indoor flowers. The initiative has been launched in 2016. The interest in participating in the initiative increases annually. This year has been handed about 25 tonnes of compost.

4. Challenges:

The EU produces more than 2.5 Billion tonnes of waste per year. In this regard, the new legislation, implementing circular economy policies and in line with the Green Deal, puts to the fore reducing waste to a minimum, reuse, repair and recycling of materials and products as by 2025, 55% of municipal waste should be recycled and by 2035 landfilled not more than 10%.

Burgas Municipality has built a multifunctional infrastructure for various waste streams, but nevertheless encounters difficulties in implementing the policies and the final results do not meet

our expectations, as a result of which the economy still "loses" a significant part of potential "secondary raw materials". Obviously, the human factor plays a major role in this process.

Difficulties in implementing this policy:

- **Difficulties in communicating with the target groups**, which should be involved in the process - citizens and businesses;
- **Insufficient motivation of the population / households, businesses / to participate in systems for separate waste collection.**
- **Insufficient awareness and knowledge for waste generation impact over the environmental elements.** Citizens do not make connection between waste generated in their households and their global impact on water, air and climate. Citizens do not perceive waste as a resource.
- **Difficulties in the realisation of separate groups of widespread waste** - e.g. car tyres, large packaging materials, incl. boxes, cartons, etc.
- Difficulties in encouraging citizens and businesses to implement separate waste collection. Lack of appropriate incentives
- **Changing consumer attitudes towards goods and products.** Appropriate policies are not applied by chain stores and manufacturers of packaged goods to promote a separate understanding of packaging waste
- Difficulties in providing separately collected biodegradable waste to ensure the operation of the anaerobic installation and achieving its capacity, respectively, achieving the targets for biodegradable waste.

5. CHALLENGES ADDRESSED DURING THE PEER REVIEW

In view of the difficulties defined above, several main strands were formed, for which the experience in other EU countries was shared:

5.1 Regulatory:

Waste management regulations and legislation in other regions:

Waste prevention, regulation and monitoring of waste / material flows

- Specific waste prevention and preparation for reuse and repair practices in other regions that have worked particularly well;
- How are local regulations applied with regard to waste management - control bodies;
- What human and financial resources are involved in the process;
- How is the monitoring of waste and material flows performed?

5.2 Separate waste collection and specific waste streams:

- Innovative waste management regulations existing in other regions especially with regards to separate waste collection; Sanctions in the case of non-compliance and enforcement tools used; human and financial resources involved in the process.
- Innovative and effective approaches used to motivate the population (households, business) to participate in separate waste collection systems with a focus on biodegradable waste and other

widespread waste streams; Other existing measures for increasing the share of separately collected waste;

- Sharing examples of innovative and effective strategies for improving the knowledge of the population of the circular economy;
- Measures implemented for separate collection of specific systems biodegradable waste, end-of-life tyres, bulky household waste, and household appliances packaging.

▪ **Peer review participants:**

Interreg Europe Policy Learning Platform

- Astrid Severin, Thematic Expert, Environment and resource efficiency / Low Carbon Economy
- Katharina Krell, Thematic Expert, Low Carbon Economy
- Elena Ferrario, Thematic Manager
- Raluca Toma, Communication Manager
- Marco Citelli, Thematic Expert, Environment and resource efficiency

Peers:

- Sergio de Lucas de Benito, EMULSA, Spain
- Berthold Schleich, ARGE, Austria
- Susana Lopes, Lipor, Portugal
- Clyde Falzon Bouvett, WASTESERV, Malta
- Manuel Antonio Rodriguez Suarez, Enxamio & Eixoecologia, Spain

Interreg Europe Programme

- Eilish O’Loughlin, Interreg Europe Policy Officer
- Marie Guitton, Interreg Europe Policy Officer
- Magda Anagnostou, Interreg Europe Policy Learning Platform Coordinator

Burgas Municipality – host

Burgas Municipality

- Vesna Baltina, Deputy Mayor Strategic Development, Environment, Digitalization and Adaptation to Climate Change, Burgas Municipality
- Veselina Dimitrova, Chief Expert Strategic Development
- Experts from Burgas Municipality: Maya Ruseva – Head of Directorate Strategic Development; Pavlin Mihov – Head of Directorate Environment; Marineta Nikolova – Head of Department Climate, Energy and Environment, Adaptation to Climate Changes; Galina Stoyanova – Chief expert Climate, Energy and Environment; Nedyalko Stoyanov – Chief expert Climate, Energy and Environment

Local stakeholders:

- Mr. Stiliyan Georgiev – Representative of Nelsen Ltd. – the company responsible for the underground separate collection containers;
- Mrs. Keti Mileva – Head of Department for Waste management and Soil conservation from Regional Inspectorate on the Environment and Waters – Burgas

- Mrs. Tonka Atanasova – Director of Regional Inspectorate on the Environment and Waters – Haskovo;
- Mr. Stefan Kalchev – Director of Eco Depot – the operator of the landfill;
- Representatives of the municipalities using the Regional Waste Management System - Aytos, Burgas, Kameno, Karnobat, Pomorie, Ruen, Sungurlare, Nesebar and Sredets:
- Mrs. Stefka Ivanova - Deputy-mayor, Karnobat Municipality
- Mr. Nikolay Kapriev – Chief inspector Environmental protection at Pomorie Municipality
- Mr. Biser Petkov – junior expert Environmental protection activities – Sredets Municipality.

Other stakeholders: Assoc. Prof. Alexander Dimitrov – University Prof. Dr. Asen Zlatarov – Burgas

Municipal councillors from Environmental Protection, Agriculture and Food Committee – Ms. Kaloyana Zhivkova.

Due to the circumstances imposed by the pandemic, the Peer review was carried out as an online meeting on 2-3 December 2020.

6. MAIN RECOMMENDATIONS

During the discussions some directions towards improvement of the waste management system came out and possible steps to undertake were proposed.

6.1. Strategic cooperation:

- Involve stakeholders in a strategy development, and establish a cooperation with them to achieve coordination between packaging waste scheme and municipal waste collection;

- Establishment of a Intermunicipal Waste Council for creation of larger systems with harmonized rules;

- A targeted campaign and work with citizens:

Use bold slogans as motivation messages towards the public;

Work towards behaviour change of citizens and business through informing, motivating, enabling and dissuading;

Use different tools and approaches – for example introducing waste advisors at municipal level, introducing and promoting repair centres, competitions and reward schemes;

Regular feedback from citizens to design and improve systems through surveys;

6.2. Pay-as-you-throw scheme (PAYT)

Preliminary step: Optimisation of the system of collection and treatment to reduce costs.

- Costs for households should differ according to throwing behaviour;
- Provide citizens with different options – preventing biodegradable waste to enter the rest of waste, combined with lowering the charge for the rest waste; separate waste containers for recyclables in comfortable distance;
- Focus on quantity and quality of separated waste.

6.3. “Know our waste”

- What is the waste composition, establish a benchmark and monitor regularly, develop a waste observatory, waste collection database – measures that will improve waste management.
- Promote re-use and old items exchange – virtual market place, and a hub to collect old usable items;
- Repair centres and repair networks, promote repair centre providers, link citizens with repair centres;
- Accent on electrical appliances and electronic devices that can be repaired and re-used;
- Food-waste prevention – involving restaurants and citizens, encouraging home composting and community composting.

6.4. Improving circular approach on waste

- Biodegradable waste - Introducing separate containers for bio-waste; Communicate and inform citizens.
- Use extended producer's responsibility – on example for the used car tyres;
- Separate collection of medical waste – cooperation with pharmacies;
- Training on improving of repair skills;
- Using of municipal waste advisors;
- Awareness raising on food waste, on bio-waste as a resource, promoting waste separation through specialized waste collection and regular presence within localities of mobile separate collection trucks.

3. Follow-up

Following the recommendations made by the experts, Burgas municipality has made the first steps to set up a stakeholder Committee on waste management issues.

In the beginning of January 2021, five experts from the municipality were designated by order of the Mayor, and on 18 January a first working meeting was held, for drafting following steps and define some time frames and possible approach to the different stakeholders.

In February a meeting with stakeholders will be organized in order to establish a Waste Management Council with a broad representation including chain stores, hotels, restaurants and large food stores. There is a possible postponing of this event for April 2021, as we are planning a non-virtual but live event with representatives of the stakeholders. We prefer this format since it allows a real interaction and makes less possible the sole passive presence with no participation in the discussions.

Following steps are to draft a plan for waste management improvement with the stakeholders and involve them in the application of the measures. The plan has to be drafted in cooperation with stakeholders within 4 months from the meeting in February (or April, depending on the circumstances). Key factor for success is the active participation of stakeholders and broad promotion of the actions, and for this reason some of the measures planned, which will be presented and discussed with the stakeholders are:

- Developing a new slogan for Burgas - Recycling Champion, Zero waste town etc.;
- Campaigns with competitive character among neighbourhoods;
- Communication campaigns for citizens, big chain stores, restaurants and hotels;
- Promoting re-use and repair – waste prevention, circular economy;
- Improving of collection infrastructure and introducing service for collecting of bulky waste etc.

First of all planned steps are the promotion and the campaigns which we plan for June/July 2021.

Burgas is considering as well to ask the Interreg Europe Policy Learning Platform for a matchmaking on 'How to successfully introduce a PAYT scheme' in order to obtain deeper knowledge on the issue and to help advancing the implementation of such a scheme in the region.

4. Conclusion

The Peer Review and the exchange was excellent organized and carried out very smooth, both content wise and technically. All peers were chosen by INTERREG Policy experts very precisely and the discussion was very useful with the valuable experiences shared by the peers, and the recommendations based on the profile and issues of Burgas and the region.

When the situation allows it, some study visit(s) will be organized to the regions of the peers. The Peer Review contributed to initiating a more cooperative approach for organizing the waste management in Burgas, and we are looking forward to new knowledge exchange sessions with INTERREG Policy Learning Platform experts.