

W2GAS – Waste-To-Compost and Green Energy Know-how-Event



Romania: Market Analysis → Principles

Principles defined in the **Romanian National Strategy for Waste Management** which motivate the activities of waste management are the following:

- The primary protection of resources - is formulated in the broader context of sustainable development with emphasis on the use of secondary raw materials;
- The measures preliminary concerns the application of existing state of technological development;
- The prevention establishes a hierarchy of activities of the waste management hierarchy to place first to avoid waste generation, minimize quantities eliminated and treatment to recovery and to eliminate the safe environmental and public environment;

Romania: Market Analysis → Principles

- The polluter pays principle in line with the principle of producer responsibility and the responsibility of the user requires a legislative framework appropriate and economically so that the waste management costs can be covered
- The substitution emphasizes the need to replace hazardous materials with hazardous materials to avoid generating hazardous waste;
- The proximity principle states that waste must be treated or disposed of as close as possible to where they were generated;
- The principle of subsidiary establishes that the responsibilities must be allocated to the lowest administrative level to the source of generation, but on the basis of uniform criteria at regional and national level.

These principles are also an integral part of **Regional Objectives & Targets**.

Romania: Market Analysis → Statistics

According to the EUROSTAT data, **4.895 million tonnes of municipal waste** were generated in Romania [National level] in 2018. The generation indicator is **247 kg/inhabitant/year**, as compared to the **EU 28** indicator of **476 kg/inhabitant/year**.

Composition of waste: **more than half of household waste and similar** is biowaste, followed by paper/ cardboard and plastic.

Of the entire amount of generated municipal waste, around **87%** was treated:

- 72% landfilled
- 2 % co-incinerated
- 6 % materially recycled
- 7 % composted

The remaining 13% quantity is in stocks or suffered recovery or disposal operation that must not be reported to EUROSTAT.

Romania: Market Analysis → Statistics

Currently, the infrastructure for the separate collection of the following types of recyclable waste was built: **(i) paper/cardboard, (ii) plastic, (iii) metal and (iv) glass.**

In collection points that are most commonly equipped with 1.1 m³ containers.

Separate collection of **household bio-waste**: this has been implemented or is being implemented currently in **11 counties** in **urban areas** (Bihor, Arad, Mures, Sibiu, Valcea, Dolj, Harghita, Arges, Neamt, Bacau, and Vrancea).

Household bio-waste is collected separately in order to be composted.



Romania: Market Analysis → Galati Region

RO: 41 counties are grouped in **7 Development Regions**, plus Bucharest and the county of Ilfov, which represents the **8th Development Region**.

On average, each county has an area of 5800 km² and a population of 500,000 inhabitants.

The **South-East Development Region** is the 2nd largest between the total of 8 Development Regions existing in Romania and is located in the South-Eastern Romania, covering 35,762 km² or 15% of the total area of this country.



The districts/counties included in this development region are: Braila, Buzau, Constanta, **Galati**, Tulcea, Vrancea.

Romania: Market Analysis → Galati Region

- ✓ The total **number of inhabitants** in Galati County is 621.161. A total number of 353.349 people (56,89%) live in urban areas, while 267.812 people (43,11%) live in rural areas.
- ✓ About 49% of the population had **access to garbage collection and disposal services**, with a coverage of 79% of the households in urban areas.
- ✓ The total **amount of solid waste** was 320.610 thousand tonnes in 2018, of which 99.7% is non-hazardous waste. The hazardous waste generated is about 0.3% of the total waste.

Romania: Market Analysis → Galati Region

The **municipal waste** generated in Galati county is of the type:

- household waste collected in a mixture and separately from the population
- waste similar to household waste, excluding waste from industry and waste from agriculture and forestry
- street waste and waste from markets
- waste from gardens and parks
- construction and demolition waste.

Only about **12% of municipal waste collected is recycled**. Around 88% of municipal waste collected is disposed of by landfills.

The evolution of the average municipal waste collected in Galati County in the period 2014 – 2018, is as follows:

Indicator	2014	2015	2016	2017	2018
Quantity of municipal waste collected [kg/inhabitant/year]	242,3	261,5	257,5	260,0	252,0

Romania: Market Analysis → Galati Region

The composition of household and similar waste at county level:

Material / Waste Type	Galati County [2019][%]
Biowaste	65,6
Paper & Cardboard	10,9
Glass	3,9
Metal	0,8
Plastic	9,2
Textiles	2,5
Wood	2,2
Others	4,9
Total	100,0

Although the necessary infrastructure has been created in Galati, **the degree of selective collection of recyclable waste** from the population is quite low. In order to increase the quantities of waste collected and to make investments more efficient, it is necessary to **periodically carry out awareness campaigns** for the population in which to promote the selective waste collection system.

Galati Region → Waste Management Integrated System

The **long-term investment plan**, includes investments for reaching:

- the recycling target of 50% in 2025
- the recycling target of 55% in 2030
- the recycling target of 60% in 2035

Measures:

- Increasing the **capture rate of recyclable household waste**, similar and from markets at:
 - ✓ 10% in 2017 to 40% in 2019, 60% in 2021 reaching 70% starting with 2027 - for the Municipality of Galați,
 - ✓ 0% in 2017 to 40% in 2019, 60% in 2021 reaching 70% starting with 2027 - for Tecuci Municipality
 - ✓ 0% in 2017 to 60% in 2021 reaching 70% starting with the year 2027 - for the localities Tg. Bujor, Berești and the rural environment

Galati Region → Waste Management Integrated System

Measures:

- Ensuring a **separately collected bio-waste capture rate:**
 - ✓ from the urban population - by 53% in 2027, and will increase to 62% in 2030 and to 70% in 2035,
 - ✓ from canteens and restaurants - by 55% in 2027 to increase to 60% in 2030 and to 70% in 2035,
 - ✓ from markets - by 70% in 2029 and will increase to 75% in 2030 and at 80% in 2035.
 - ✓ from parks and gardens of 100% starting with 2025

- Ensuring a **90% capture rate for bulky waste and a hazardous household waste** from 2025

Galati Region → Waste Management Integrated System

Measures:

- Providing **additional capacity for the treatment of recyclable waste** collected separately - in addition to the existing sorting stations in Galați and Tecuci it is necessary to **build a new station**,
- Providing **capacity for biowaste treatment in parks and gardens** collected separately - in addition to the existing composting stations in Galați and Tg. Bujor (which must become operational) is the **construction of a new station composting**
- Providing **capacities for the treatment of household**, similar and from bio-waste markets collected separately - it is necessary to make a **digestion / anaerobic plant to be part of the new Mechanical-Biological Treatment (MBT) plant**

Galati Region → Waste Management Integrated System

Measures:

- Providing capacity for **mixed waste treatment and stabilization** of their biological point of view before storage → construction of an installation for **mechanical-biological treatment** with **anaerobic digestia** for waste treatment in mixture collected from the county, waste from sorting stations and composting

From 2027 it will ensure the treatment of household biowaste, similar and from separately collected markets.

The mechanical treatment step will include including an **automatic sorting station** that will ensure the extraction of recyclable fractions from mixed waste.

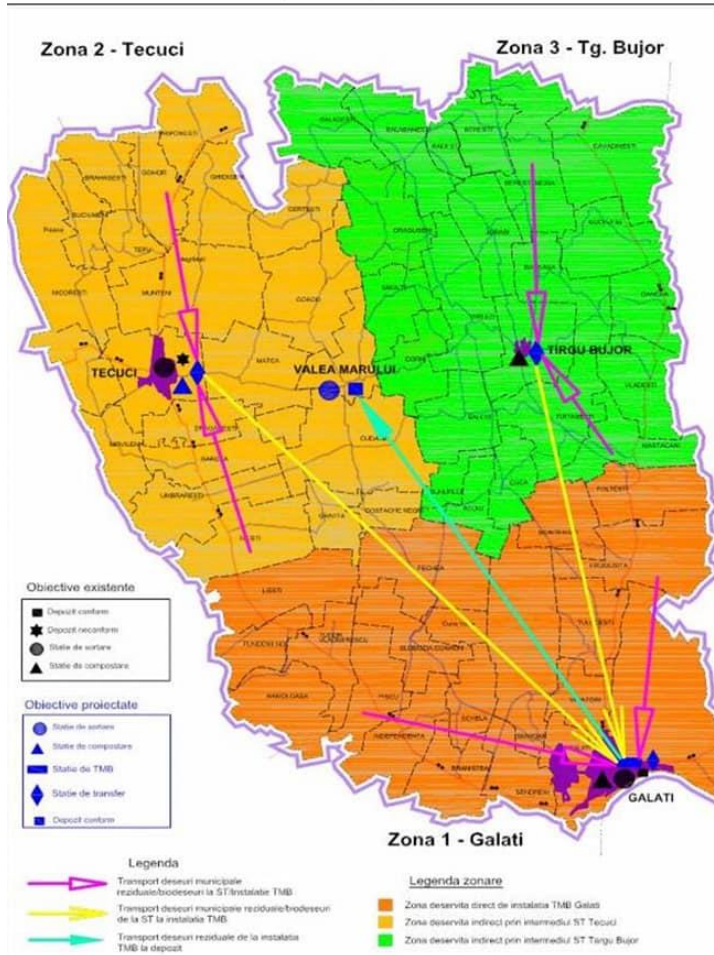
Galati Region → Waste Management Integrated System

Measures:

- Ensuring additional **storage capacity** → Building a new zonal warehouse, serving the entire county from 2023,
- Closure of the **non-compliant landfill** in Tecuci City
- Construction of **3 transfer stations** to ensure:
 - ✓ the transfer of residual waste from MBT to the new landfill
 - ✓ transfer of recyclable waste to the new sorting station
 - ✓ the transfer of residual waste (and biowaste from 2027) to MBT installation

Galati Region → Waste Management Integrated System

Arondarea unităților administrativ-teritoriale membre ADI ECOSERV, pentru deșeurile reziduale și biodeșeurilor colectate separat, la stațiile de transfer și instalația TMB



Integrated Waste Management System will have several **strategic points** in the county - in **Galati, Tecuci, Târgu Bujor and Valea Mărului** - and will be oriented on **several components**, whether it is waste collection, transport or transfer, waste treatment in composting stations, sorting stations and mechanical - biological treatment plants or the storage of compost resulting from waste treatment.

Galati Region → Biogas & Compost Statistics

The existing arable area in Galati County in the year 2018 is 336.970,00 hectares.

Types of crops carried out in 2018:

No.	Crop type	Cultivated area (Ha)
	Cereal grains (wheat, corn, barley, oat)	167.835,00
	Oily plants (sunflower, rape, soy)	74.904,00
	Legume (green peas, beans)	9.714,00
	Potatoes	1.043,00
	Vegetables	7.254,00
	Medicinal herbs	580,00
	Watermellons	1.604,00
	Forage plants	14.580,00
	Others	32.863,00
	Total	310.377,00

Galati Region → Biogas & Compost System

The composting line has a capacity of **10,000 t / year** and processes vegetable waste from gardens, parks, green spaces, markets, restaurants.

The composting technique is called **aerobic composting in furrows**.

The composting line has a concrete platform, with an area of 6000 m² covered with a light roof.

The collected waste is first crushed in a shredder and then placed in the composting hall, in furrows with a height of 1.5 m. A specialized machine periodically turns and moistens the furrows.

After a fermentation period of approx. 12 – 14 weeks is obtained compost that is used as topsoil in areas where green spaces are arranged, on slopes, etc.

The compost thus obtained is stored on a platform from where it is delivered to the beneficiaries.

Galati Region → Biogas & Compost System

The first cell built within the Tirighina Ecological Waste Warehouse has a capacity of 920,000 m³ (736,000 t).

The warehouse serves the municipality of Galați and the neighboring localities, respectively Șendreni, Smârdan, Vânători, Tulucești and Braniștea, approximately 260000 inhabitants.

The warehouse is equipped with all the necessary facilities for operation in accordance with the legal provisions in force.

The biogas resulting from the anaerobic decomposition of the organic matter from the composition of the municipal waste deposited in Cell 1 of the ecological landfill Tirighina will be collected in 12 extraction wells, to be burned in the existing biogas combustion plant.

Thank you!



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