



less  
waste

 T-MASTER

**Pay as you throw**  
Save as you sort



Since 2017, we have been providing Polish cities with waste management solutions that not only meet legal requirements but also effectively support residents of multi-family housing estates in efficient waste segregation.

## THE EFFECTS of system implementation in numbers:

**50%**

less mixed waste

**2x**

fewer mixed waste collections

**36%**

reducing the costs of waste collection and disposal within just 5 months of implementation

**35%**

reduction of non-segregated waste containers in favor of selectively collected ones

**95%**

of households segregate waste

**4x**

more weight of selectively collected (cheaper) waste instead of mixed waste

**91%**

waste quality control with a correct result

T-MASTER S.A. is a Polish technology company. We design and manufacture our products in Poland.

With over 20 years of experience in the market, we have gained expertise in creating IT and electronic solutions for major clients in the public sector in the country.

Over **500** devices delivered



**6 000**

households

**15 000**

users

22 CITIES HAVE TRUSTED US,  
AS WELL AS RENOWNED COMPANIES



Leading brands from the clothing industry

**AkzoNobel**

Manufacturing companies



Shopping centers



Developers



Creators of circular fashion boutiques

Each day brings more of them...

less waste



# WE CHANGE CITIES



We introduce innovative solutions that change the way we handle waste. Our smart containers not only make waste disposal easier but also improve the hygiene of the environment in which residents of multi-family housing estates live.

## SEE SOME OF OUR PROJECTS



T-MASTER



We have created a system that **GUARANTEES:**

↑70%

increase in the quantity of selectively collected waste

↑95%

households fulfilling the segregation obligation, starting from less than <12%

-20%

average cost reduction in collection and disposal

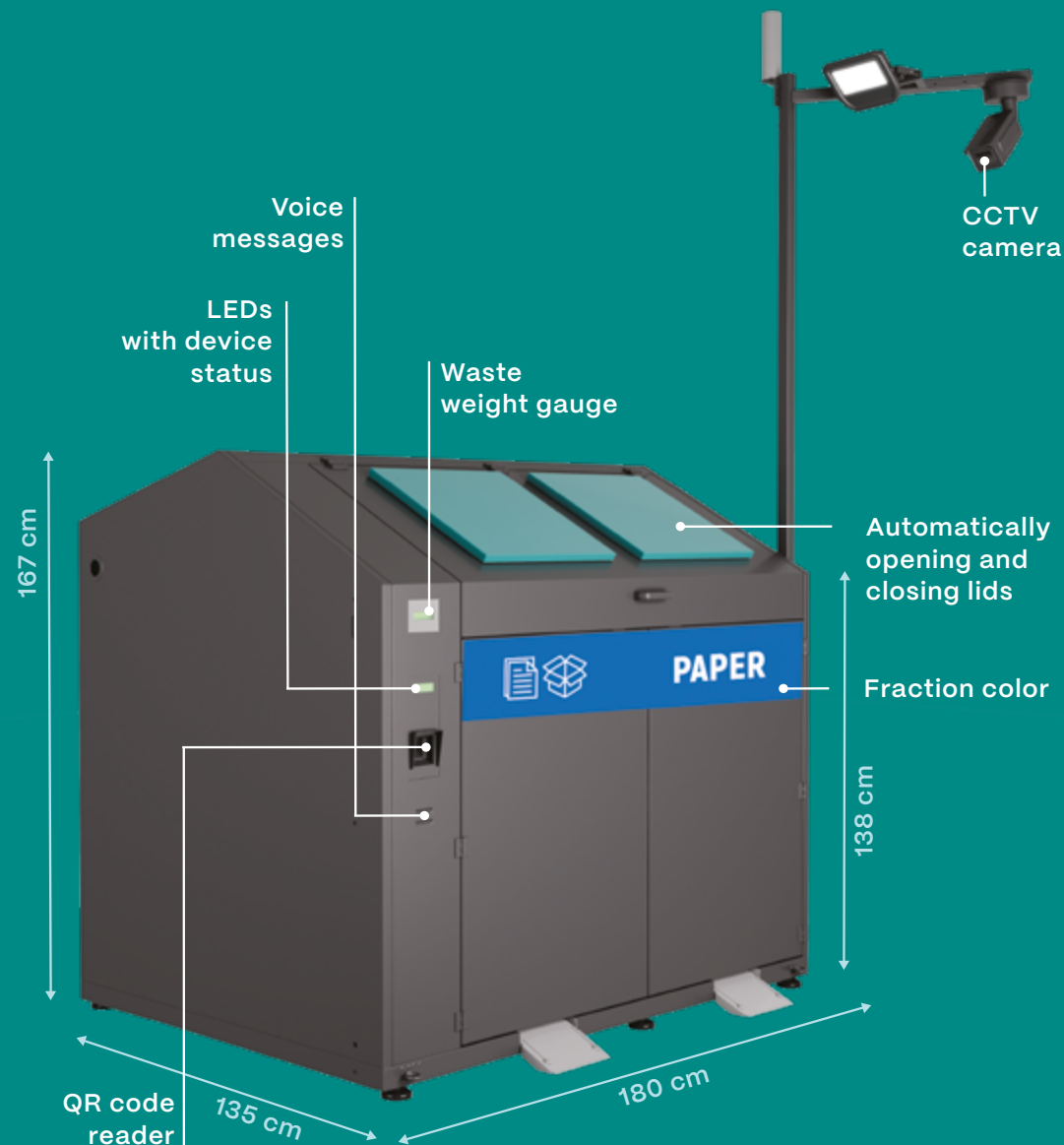


elimination of collective responsibility



# SMART CONTAINER- DROP&GO

## electronic municipal waste gauge



Height of the reader 1.2 m



1x 1100-liter container



Automatic chute flap



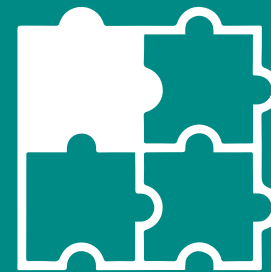
2x 360-liter containers



Voice messages



Power supply 230V



### WE ADAPT TO YOUR NEEDS



module settings examples

#### • MODULARITY

Thanks to individual containers, we can design the installation freely

#### • THE SYSTEM'S SCALABILITY

In case of expansion of the installation or legal changes, we simply add another container

#### • PERSONALIZATION

QR codes attached to the bags allow for waste assignment to households

#### • SAVINGS

Scheduled collection of only filled containers based on fill-level sensors data

#### • THE FUTURE

The verified scales present in each container allow residents to be charged based on the weight of waste

#### • PROGRESS

A mobile segregation quality control system will allow for individual identification of premises not complying with selective waste collection requirements

## HOW IT WORKS?



1. Every household receives packages with QR code stickers



2. Residents sort waste into separate bags in their households



3. Single-use QR code opens the container and assigns the type and weight of waste to an individual user account



4. The mobile app facilitates accurate waste sorting and monitors residents achievements in waste sorting and reducing waste volume



5. Quality control over segregation is provided by IWO apps



6. Waste management application check

Watch the movie



T-MASTER

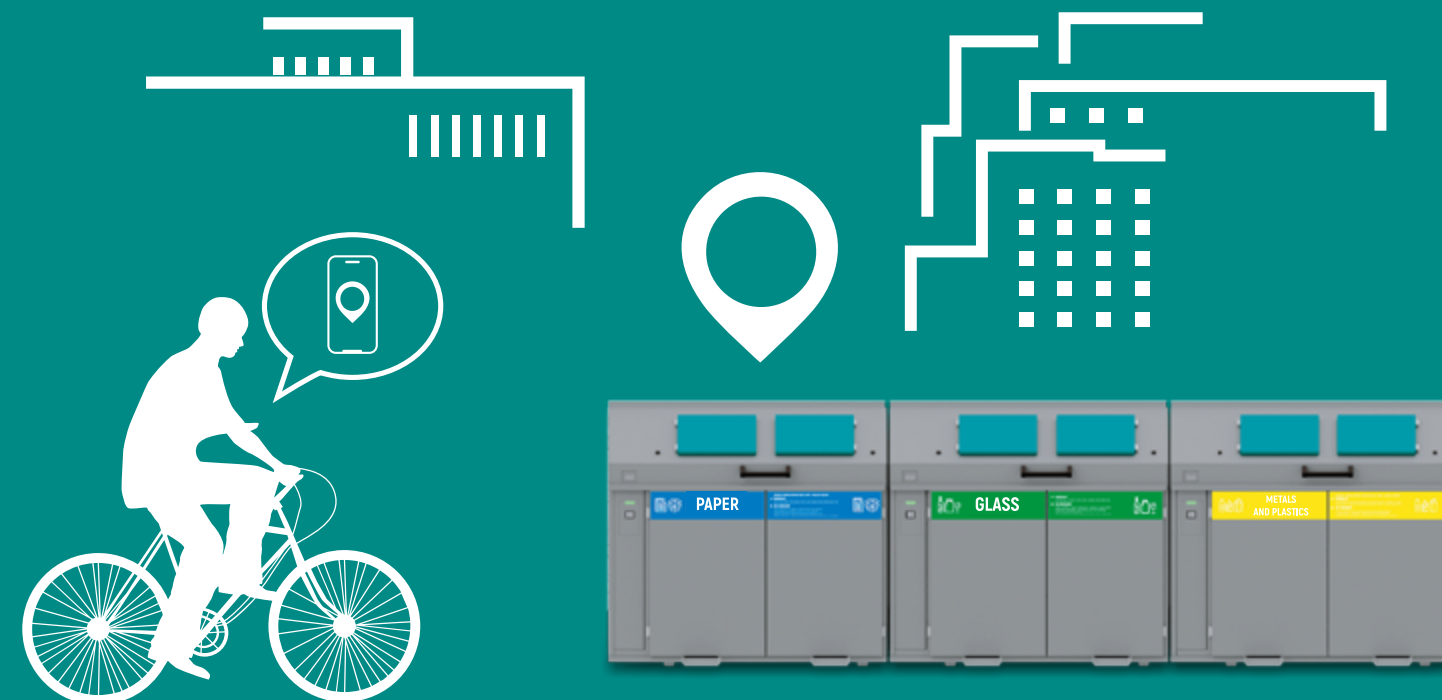
## miniPSZOK 247

### Self-service 24/7 installation close to residents

Our facilities offer a safe and environmentally friendly solution for disposing of problematic waste like light bulbs, batteries, and expired medicines.

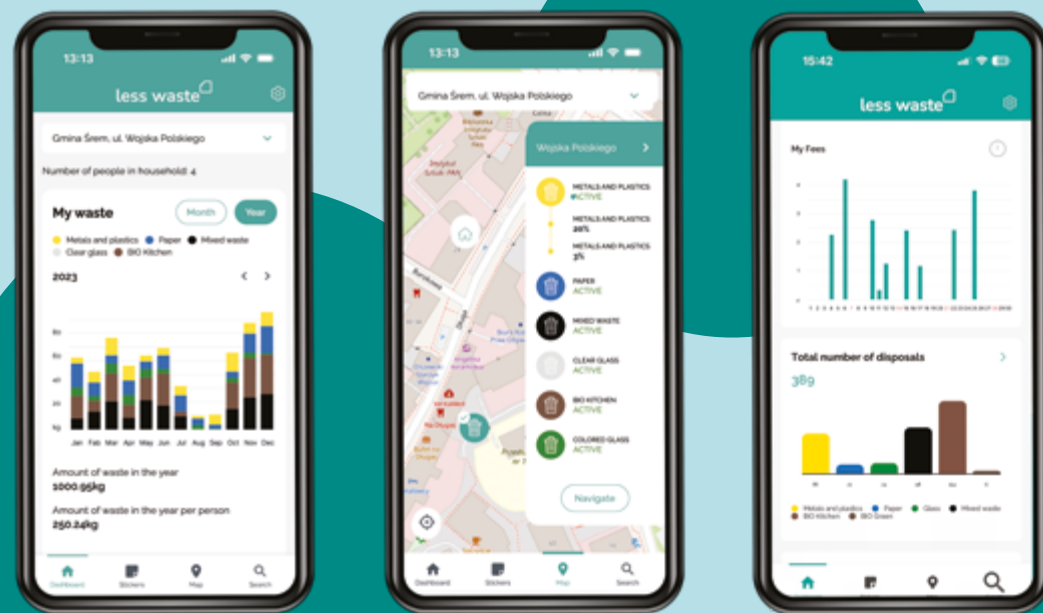
By locating these points close to housing estates and shopping centers, we provide easy access for residents, which contributes to reducing the amount of waste dumped on the streets and in illegal landfills.

Moreover, the possibility of using these devices as collection points for recyclable materials encourages residents to actively participate in recycling. This contributes to increasing recycling levels in our municipality and supports sustainable development goals.



# LESS WASTE APP

helps and educates



## Features of an app designed for residents:

• You see the actual cost you incur for mixed waste, while for segregated waste, you gain actual value in cash

• The quality of segregation and comparing your results with other residents

• Knowledge about the amount of waste generated by your household

• Control of the quantity of stickers with QR codes

• A waste search engine that suggests where to dispose of waste

• Locating the nearest available DROP&GO container, mini waste collection point

# LESS WASTE APP

to support waste management

T-MASTER



One application for all participants in the proces

• **COMMUNICATION**  
Information about upcoming inspections and the need to order QR codes

• **SUPERVISION**  
Device status in the system and CCTV monitoring

• **MONITORING FILL LEVELS**  
Collecting only full containers helps to optimize costs

• **INTERFACE**  
Continuously evolving profiles for the Municipality, Property Manager, waste collection company and residents

• **REPORTS AND ANALYSIS**  
Quantity of waste produced in the city by fractions, segregation level, waste growth dynamics, and more

• **BILLING**  
Individual billing based on the weight of waste assigned to the household

• **CRM**  
User management, configuration, online suport

• **QUALITY CONTROL**  
Mobile application for quality control integrated with lesswaste software

less waste

Creator / Technology owner / Manufacturer / Seller		T-MASTER
Production of devices and software	Poland	
Device servicing and repair		
Maintenance and development of the IT system		
MECHANICAL LAYER		
Device construction	modular	
Installation design	the number of containers in the installation is flexible and limited only by the buyer's vision. The arrangement of modules is flexible, ideally maximizing the available space.	
Height of the device – insertion opening	1, 38 meters	
Number of interfaces	1 interface per 1 container  (short service time – no occupied session – only one container is affected in case of failure)	
Installation lighting	YES  (LED – activated by motion/energy – saving)	
Opening method for users/residents		
manual	YES	
automatic		
Waste collection method by the municipal company	Each container directly  (short service time)	
ELECTRONIC LAYER		
Access control system	YES	
RFID cards		
Barcode codes		
QR codes		
RFID chips		
RFID proximity reader 125 KHz/UHF		
MIFARE proximity reader		
LED indicator for bin availability		
CCTV system		
Automatic detection of waste tossing		
Automatic detection of bulky waste		
Bin fill level measurement system		
Multi-point (image of waste distribution in the bin)		

Certified waste weight measurement system (basis for commercial settlements)	YES
Fire detection system	
Device communication system with central layer	GSM (LTE or FTTH)
Unauthorized access detection system to the device	YES
IT LAYER	
Server room location	Poland
Redundant network architecture	YES
Backup copy	
Software	YES
Software in multiple language versions	
Website interface for the Client/Owner	
Website interface for the waste collection company	
Website interface for Property Manager (e.g., HOA, Property Management, Public Housing)	
Website interface – individual account for user/resident	
Mobile application for residents	
CRM system (user management, communication, support)	
Electronic service/repair request system	
Individual billing system based on waste weight (billing)	
Statistics	YES
Records of the number of drop box openings	
Records of residents/users	
Records of waste quantity (based on authorizations/openings)	
Records of waste weight (certified measurement)	
Records of container fill levels	
Waste segregation control based on fraction percentage	
Quality control of segregated waste	
Mobile app for quality control	
Automatic detection of anomalies targeted for quality control (precision = low cost)	
Electronic circulation of quality control results	



FACILITIES	
Visually impaired individuals	YES (voice messages)
Individuals using wheelchairs	YES (automatically opening flap)
WARRANTY	
Warranty period	12 – 60 months
Manufacturer's warranty for the casing (sheet metal)	even up to 10 years!
Duration of IT system maintenance	YES
Duration of device maintenance/service	



They're talking about us



FOLLOW OUR SOCIAL MEDIA  
PROFILES AND STAY UP TO DATE  
WITH US



One device  
multiple possibilities



CLOTHES DISPENSER

Our smart containers were designed for collecting municipal waste, but they also work well as clothes dispensers.

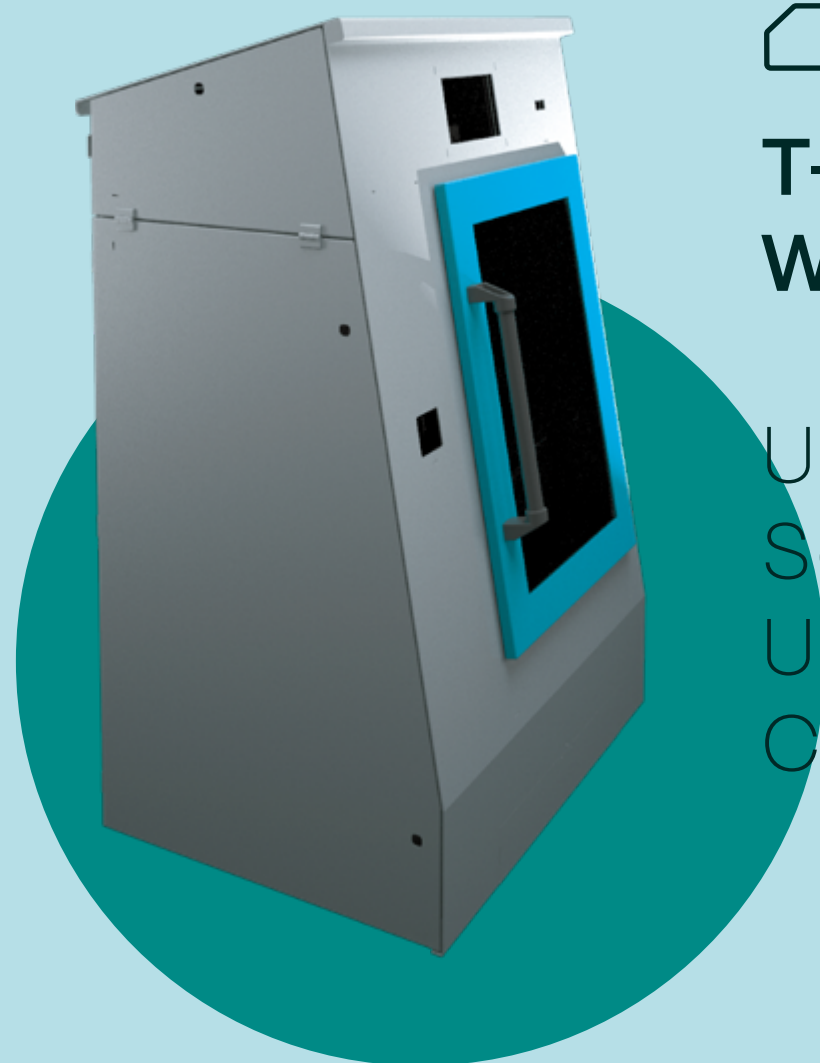
Install in a housing estate, shopping center or frequently visited places in your city and take textile collection to a higher level.



We cooperate:

Our devices are used by





## T-MASTER Weigh in Box

Universal  
Solution for  
Underground  
Containers

The device for recording and weighing separately collected municipal waste is intended for integration with the underground container system.

### KEY FEATURES OF THE SOLUTION ARE:

- Legalized weight measurement system
- Waste registration system using an individual QR code on the waste bag or RFID card
- Access control system to the underground container chute, possible only after waste registration in the Weigh in Box device
- CCTV monitoring system for each collective installation
- Mobile tool for quality control of waste segregation

## Waste disposal process



1. Distribution of sticker packages with QR codes



2. Residents segregate waste at home into separate bags and affix individual QR codes



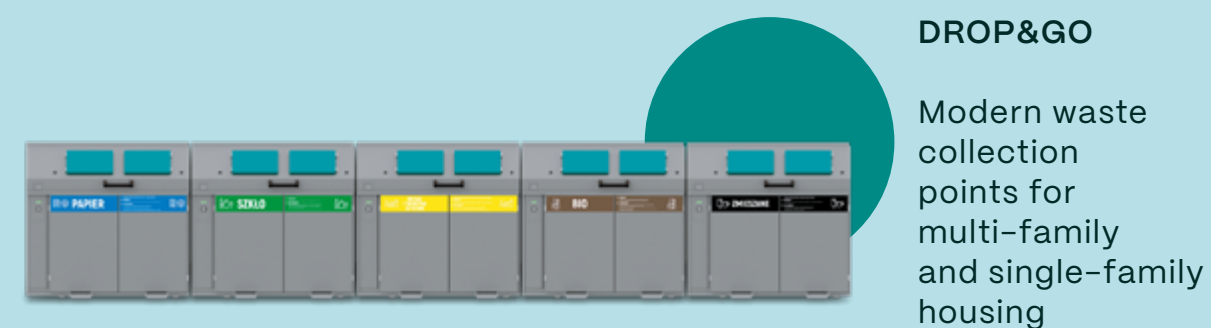
3. The QR code on the bag serves as a one-time key to the device. After placing the bag and selecting the type of fraction to be disposed of, the waste is weighed



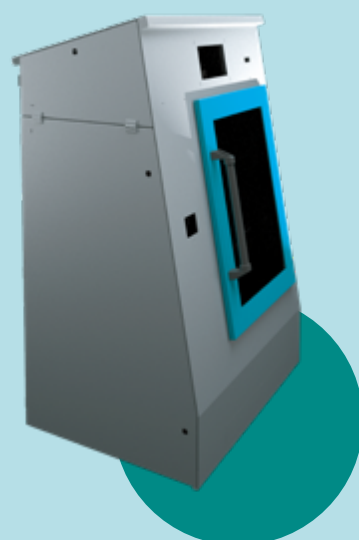
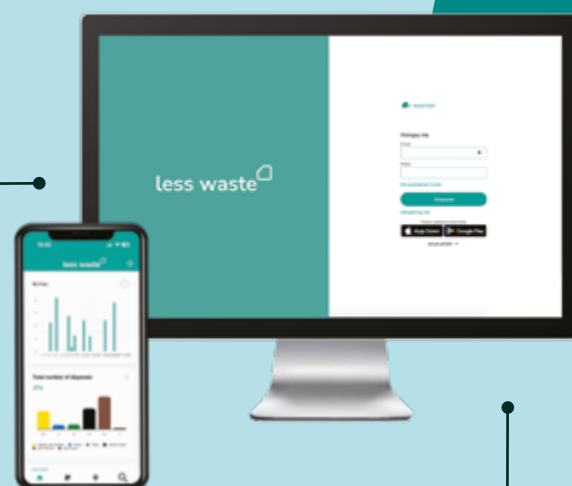
4. After completing the process in Weigh in Box, the flap of the appropriate container opens. You can then place the bag with the corresponding waste inside



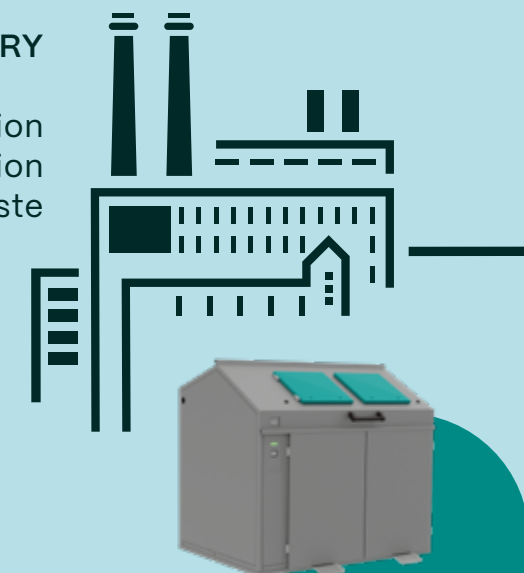
# COMPREHENSIVE OF INDIVIDUAL WASTE SEGREGATION



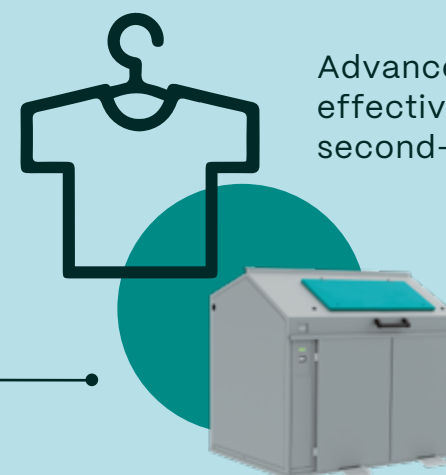
**LESS WASTE APP**  
Software for managing and optimizing waste management processes



**DROP&GO FACTORY**  
Cost optimization of post-production waste



**DROP&GO TEXTIL**  
Advanced and effective collection of second-hand clothes



**MINIPSZOK247**  
Distributed systems for problematic wastes near residents



less waste





less  
waste

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