

# Implementation of sustainable waste management

Lessons learned in CEE  
& recommendations for  
Ukrainian municipalities



# WHO WE ARE

# FCC Environment CEE („A.S.A.”)



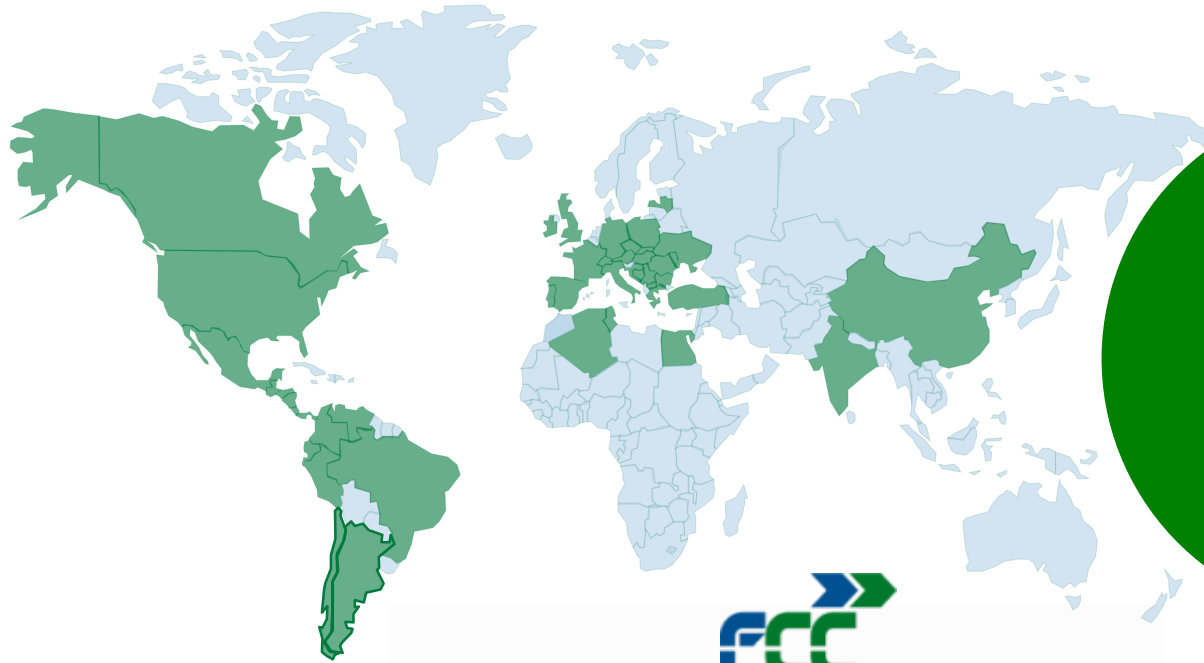
## Who we are

- An **international waste management and citizen service group**, active in **8 countries** in Central and South-Eastern Europe.
- We profit from **25-years of market experience**, where we gained **advanced technological background** and **know-how**. As part of FCC we are an important member of a world-wide active citizen service group.
- We manage waste and recover resources from more than **51.700 industrial customers** and are providing services for almost **5,1 million citizens** living in **1.950** municipalities.
- Our claim is our mission - **„Service for the Future”**. With our philosophy, proven service quality and investment into modern and clean technologies we secure the quality of life for present and future generations by minimizing environmental impacts.

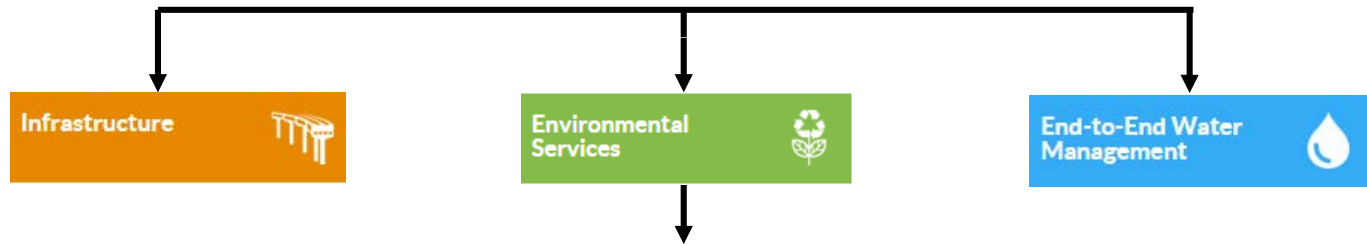


# FCC Environment CEE

## Part of a world wide Group



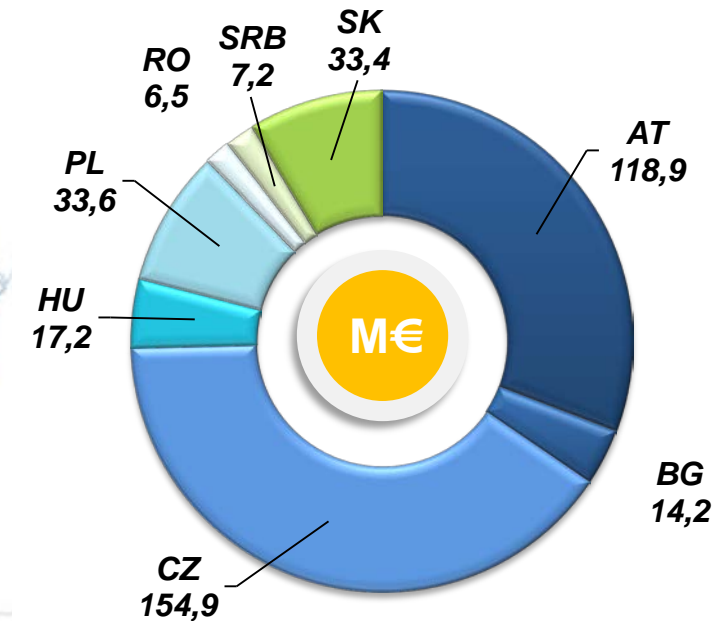
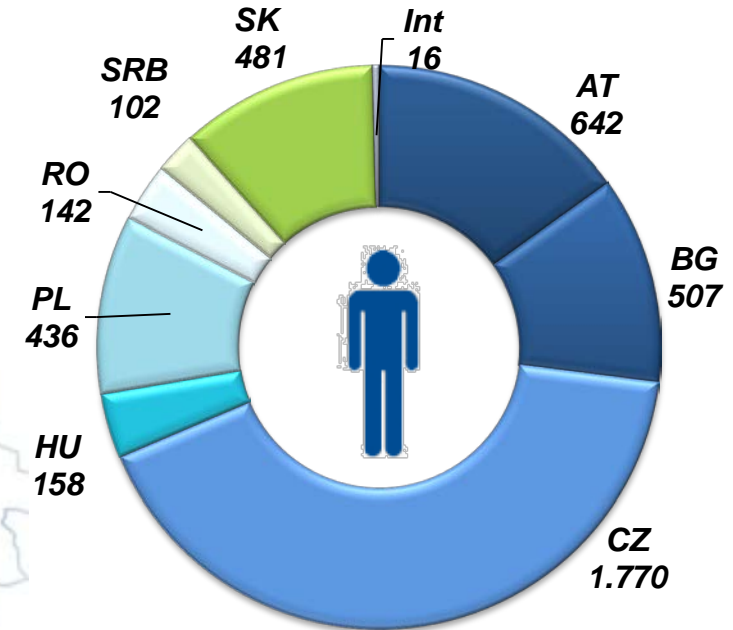
FCC operates in 25 countries, with >55.000 employees and net sales of 5.952 M€ in 2015



**FCC Environment CEE**  
(represented by FCC Austria Abfall Service AG and its subsidiaries)



# FCC Environment CEE Market overview



(Figures 2016)

# WHAT WE DO

# FCC Environment CEE Service Structure



## Logistic Services

- Collection
- Transport
- Other Logistic Services  
*(Winter service, Street cleaning,...)*



## Treatment

- Sorting & Splitting
- Mechanical-Biological Treatment
- Composting
- Chemical – Physical Treatment
- Residue Fuel Production (RDF)
- Incineration

## Disposal

- Landfilling



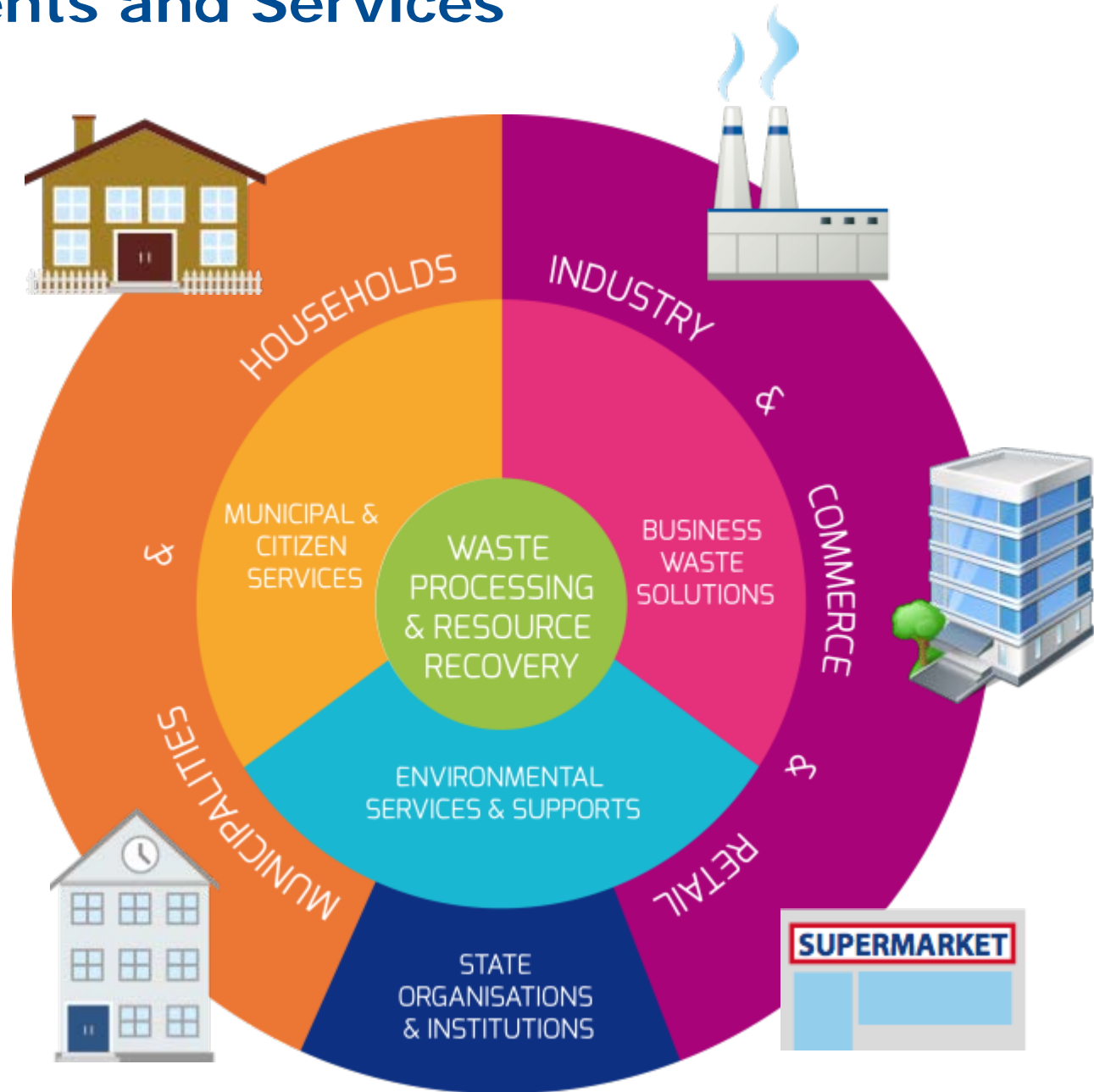
## Other services

- Remediation
- Facility Services *(public greenery, cemetery management, park maintenance, parking systems,...)*
- Outsourcing
- Trade
- Consulting
- Engineering

**FCC is technology leader in CEE countries**

# FCC Environment CEE

## Clients and Services





# FCC Environment CEE Facilities and Equipment

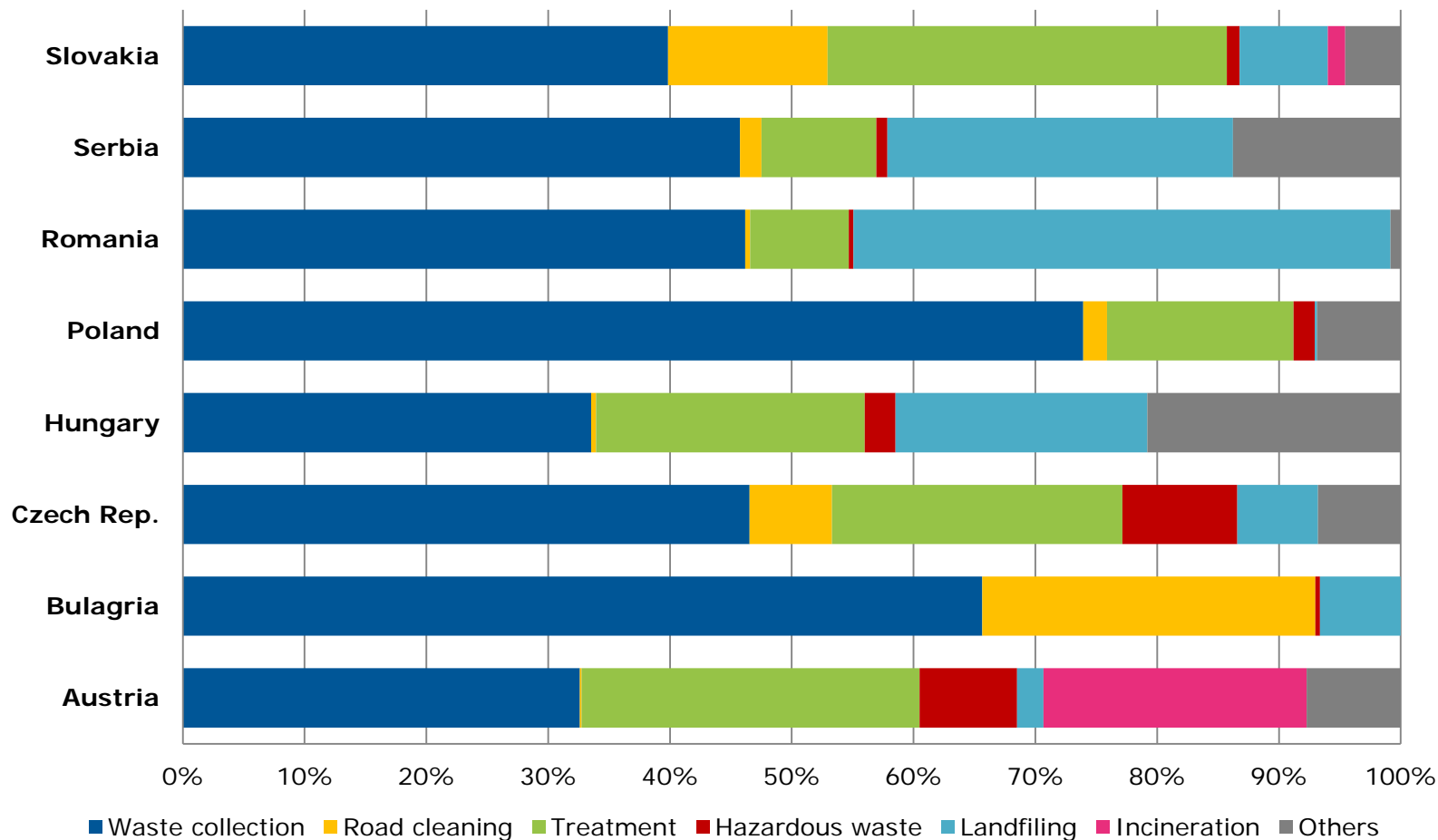
Modern trucks and special vehicles	<b>&gt; 1.250</b>
Containers & bins	<b>&gt; 1.300.000</b>
Collection yards	<b>95</b>
Waste Transfer Stations	<b>17</b>
Sorting plants	<b>28</b>
RDF plants and/or Splitting Plants	<b>12</b>
Mechanical biological treatment plant	<b>3</b>
Composting plants, solidification and biodegradation plants	<b>19</b>
Modern Landfills	<b>28</b>
Household & commercial waste incinerator	<b>1</b>
Incineration facility for hazardous waste	<b>1</b>

**OUR GOAL IS TO PROCESS THE WASTE INTO REUSABLE MATERIALS AND MAXIMIZE THE SAVINGS OF PRIMARY SOURCES.**



# FCC Environment CEE

## Service structure in countries



# LESSONS LEARNED



# Lessons learned

## STRATEGIC CONSIDERATIONS

- Legal framework prepared and enforced?
  - Sanitary landfills (core!)
  - Closing of all wild dumpsites
  - Landfill tax
  - Landfill ban
  - Recycling targets
- Who shall provide the service?
  - Public company vs. private service provider
  - Funds (e.g. EU)
- Minimum size of a project
  - Waste generation: 100.000 tons MSW per year
  - Served population: ~300.000 inhabitants
  - In case of smaller cities/municipalities associations possible





# Lessons learned

## TECHNICAL CONSIDERATIONS

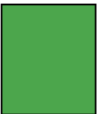















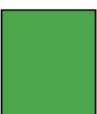







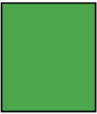
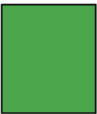






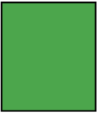
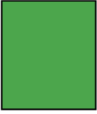






- Waste collection
  - Increase service coverage
  - Separate collection
    - Legislation to be prepared and enforced
    - Pilot projects
    - Waste morphology
    - Which method (dual vs. multi-color containers)
    - Long process: 2 generations (awareness raising!)
    - Business model
  
- Waste disposal/treatment
  - Stepwise improvement of waste management (see next slide)
  - Location – land plot






# Lessons learned

## STATUS CEE



	AT	CZ	SK	PL	HU	RO	SRB	BG
V. Treatment (MBT, Incineration)								
IV. Composting, Sorting, Recycling								
III. Separate Collection								
II. Collection								
I. Safe Landfill								

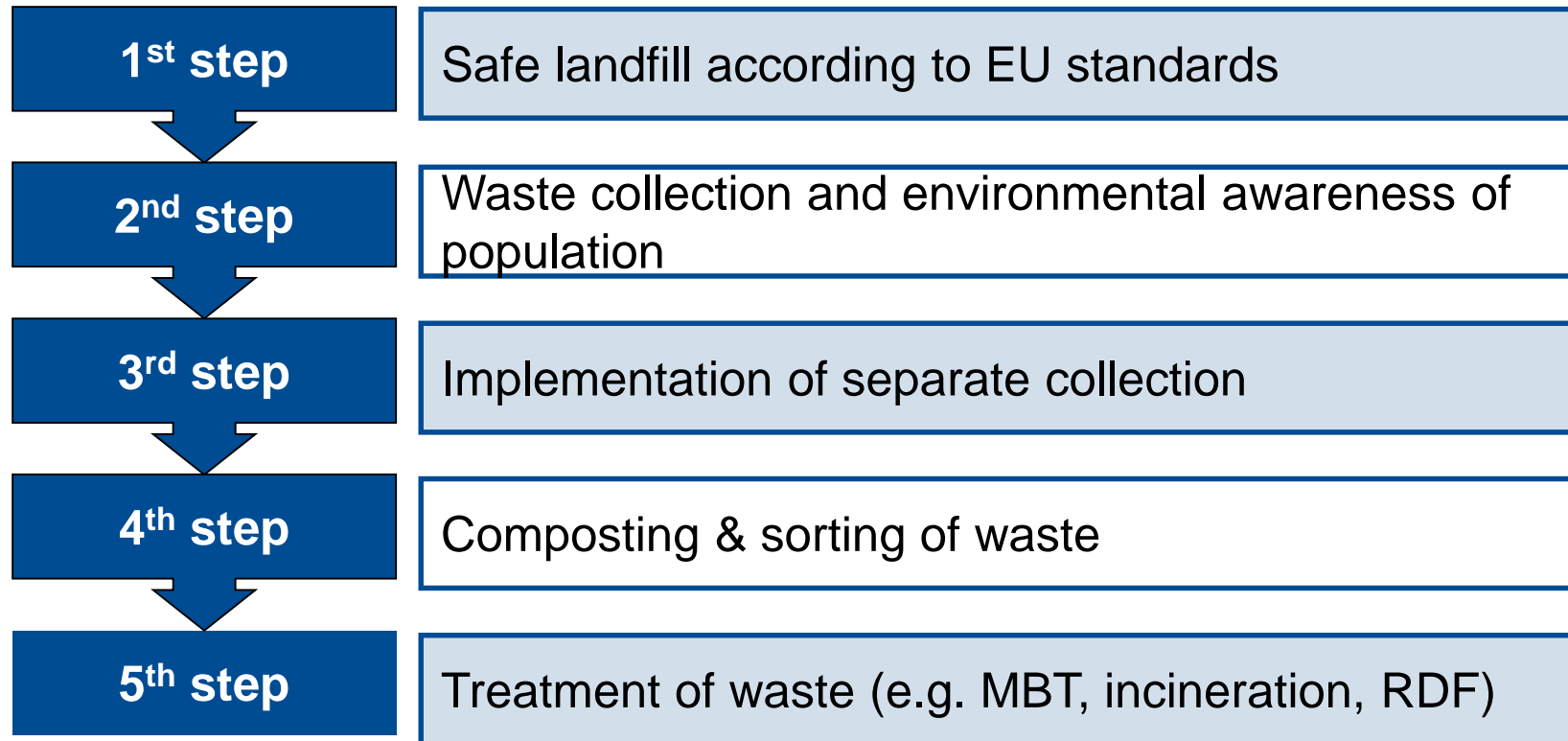
 Service implemented
  Service partly implemented
  Service under development





# Lessons learned

## STEP BY STEP MODERNIZATION



# Lessons learned

## BEST PRACTICE



**WE ARE A STABLE,  
STRONG AND  
RELIABLE B2B-  
PARTNER WHO  
GUARANTEES  
SERVICE QUALITY  
AND PROVIDES  
QUALITATIVE  
SECONDARY RAW  
MATERIALS.**





# Lessons learned

## COMMERCIAL CONSIDERATIONS

- Affordability of services
  - Guidelines from Worldbank
  - Stepwise increase of service fees
- Database with customers
- Service fee
  - Fee shall cover costs for waste collection, disposal (and treatment – if implemented)
  - Contract with single households or municipality?
  - How to pay for the service?
  - How to handle bad debts?



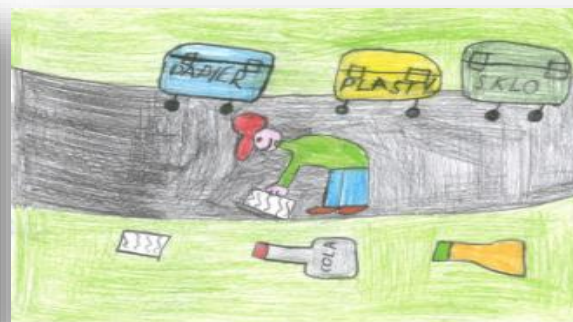
# CONCLUSIONS



# Conclusions

## Recommendations for Ukraine

- Legislation prepared
- Political stability
- Affordability
- Awareness raising
- Step by step modernization of waste management (engineering and consulting)
- Segregated collection important from environmental point of view
- Take your time ☺!





## CONTACT

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