



# PRESENT STATUS OF WASTE MANAGEMENT IN SERBIA

focus on PET recycling and possibilities  
for cross-border cooperation

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# SEE Economy background

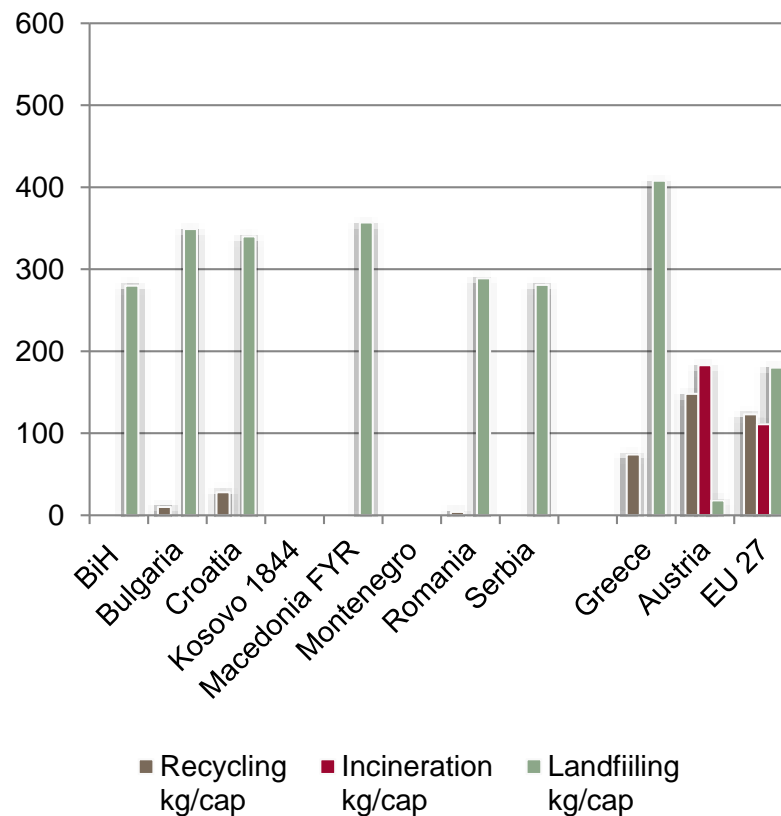
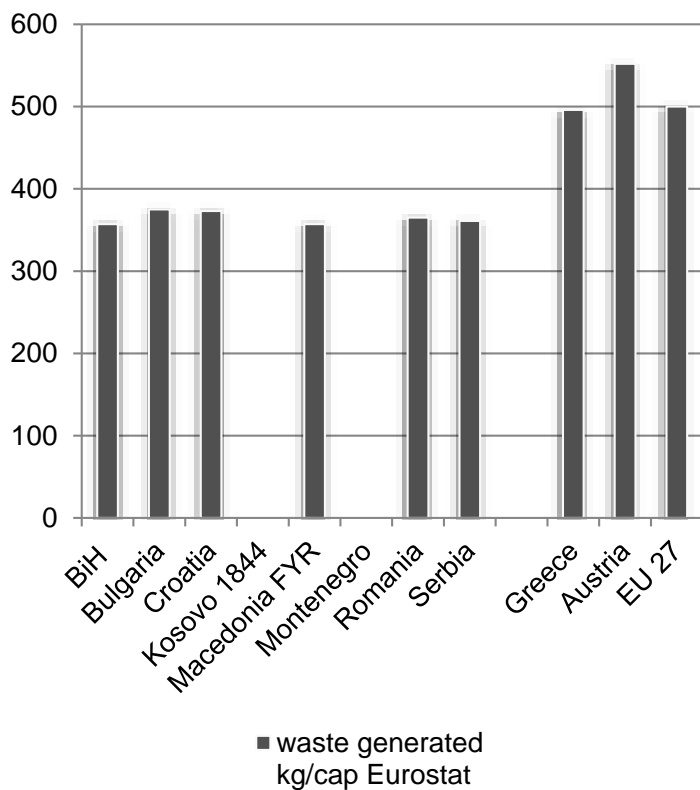
Source: World Bank, 2016

<i>No</i>	<i>COUNTRY</i>	<i>NUMBER OF CITIZENS * 1000</i>	<i>GDP \$/CAP IN 2016.</i>
<i>1</i>	<i>BIH</i>	<i>3.752</i>	<i>4.708</i>
<i>2</i>	<i>BULGARIA</i>	<i>7.348</i>	<i>7.350</i>
<i>3</i>	<i>CROATIA</i>	<i>4.403</i>	<i>12.090</i>
<i>4</i>	<i>KOSOVO 1244</i>	<i>1.800</i>	<i>3.661</i>
<i>5</i>	<i>MACEDONIA</i>	<i>2.064</i>	<i>5.237</i>
<i>6</i>	<i>MONTENEGRO</i>	<i>632</i>	<i>6.701</i>
<i>7</i>	<i>ROMANIA</i>	<i>21.380</i>	<i>9.474</i>
<i>8</i>	<i>SERBIA</i>	<i>7.259</i>	<i>5.348</i>
<i>9</i>	<i>ALBANIA</i>	<i>2.876</i>	<i>4.146</i>
	<i>WEE /CEE COUNTRIES</i>		
<i>1</i>	<i>GERMANY</i>	<i>82.175</i>	<i>44.184</i>
<i>2</i>	<i>AUSTRIA</i>	<i>8.424</i>	<i>49.585</i>
<i>3</i>	<i>HUNGARY</i>	<i>9.797</i>	<i>12.664</i>

- SEE region consists of both EU member states and Non-EU member states
- Significantly lower GDP/capita compared to Western Europe



## SEE Waste management status



source: EUROSTAT 2013.

- No waste to energy facilities in the Region
- Low recycling rates and low energy recovery rates



## General information

- Area 88.361 km<sup>2</sup>
- Population 7.5 million
- GDP per capita 5,397 \$
- 2017 GDP projection:  
+ 3,00 %





## Waste management system today

- Mainly public utility companies in collection of municipal waste;
- Landfills/dumpsites operated mainly by public utility companies;
- Only three (3) private companies in municipal waste collection (Porr, Asa, Brantner);
- City of Belgrade signed public-private partnership contract for Vinca landfill and WTE plant with Consortium Suez-Itochu ;
- Over 30.000 waste pickers collect waste in “grey” zone ;





## ➤➤➤➤➤ Landfills & Dumpsites

- **Eight (8)** regional sanitary landfills;
- **Two (2)** municipal sanitary landfills;
- Total of **164** legal dumpsites;
- Est. **3.500** illegal dumpsites.

Waste disposal to legal dumpsites is free of charge;  
Low disposal costs to sanitary landfills (EUR 10-20/t);  
No landfill taxes;





## Waste Management System Challenges

- Bad economic condition in public utility companies;
- Overemployment in administration, underemployment in operations ;
- Frequent management changes;
- Low cost of municipal services, difficult debt collection;
- Lack of environment funding - insufficient investments;
- Insufficient control and monitoring of the entire system;
- Lack of hazardous waste treating facilities;
- Theft of recyclable raw materials by waste pickers;

## ➤➤➤➤➤➤➤ Waste Management System Opportunities

- Accession of Serbia to EU– opening of Chapter 27 (environment) planned for 2018;
- Public – private partnership in WM sector ;
- Establishing Green Environmental Fund, more investments in WM;
- EU funds for capital investments;
- Implementing eco tax for landfilling ;
- Addressing historical pollution (rehabilitation of existing dumpsites)
- Implementing collection targets for local municipalities;
- Information systems and standardized procedures for monitoring waste streams ;

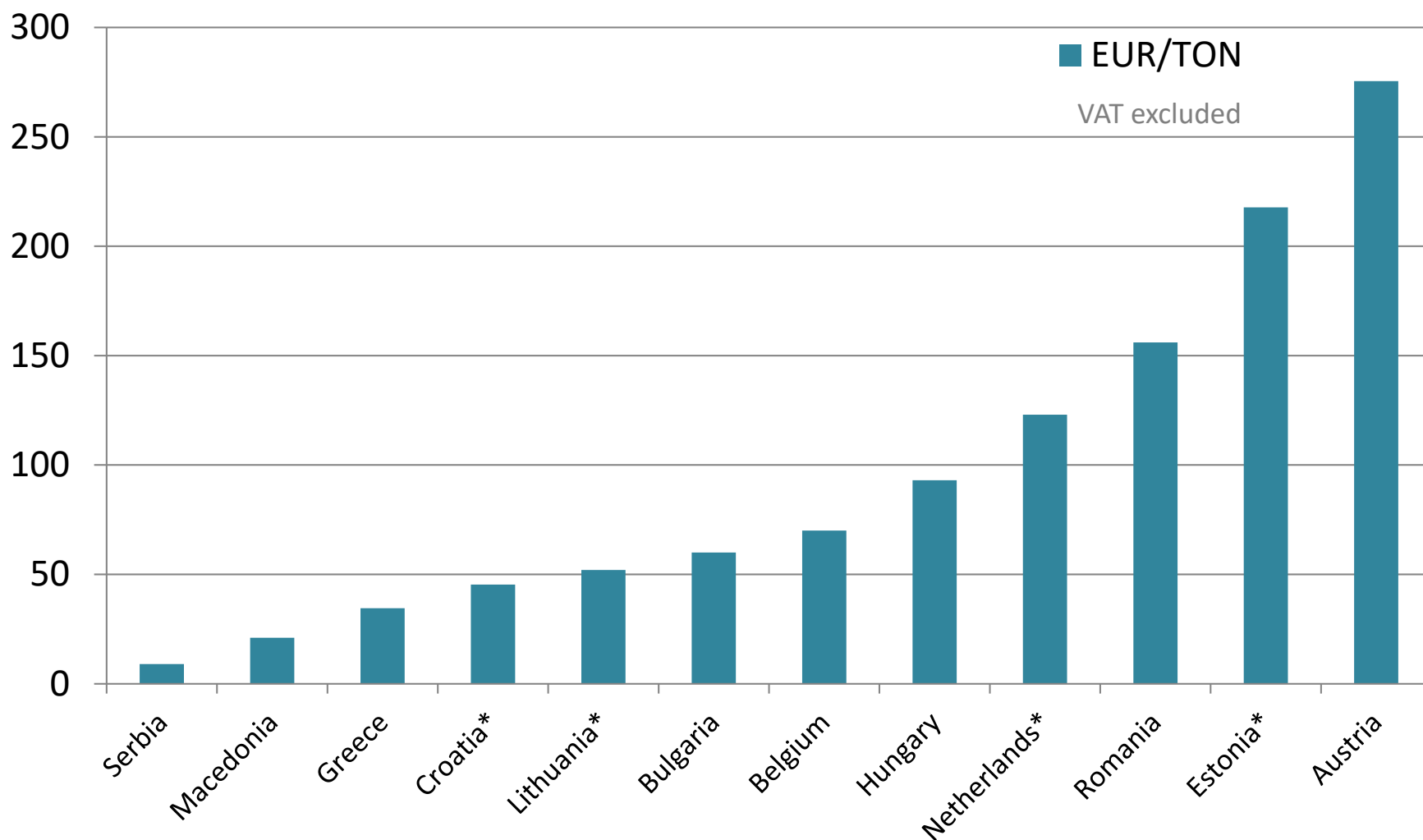


## ➤➤➤➤➤ Packaging Waste Management System Challenges

### **Shortage of raw material for processing – undeveloped collection of communal waste**

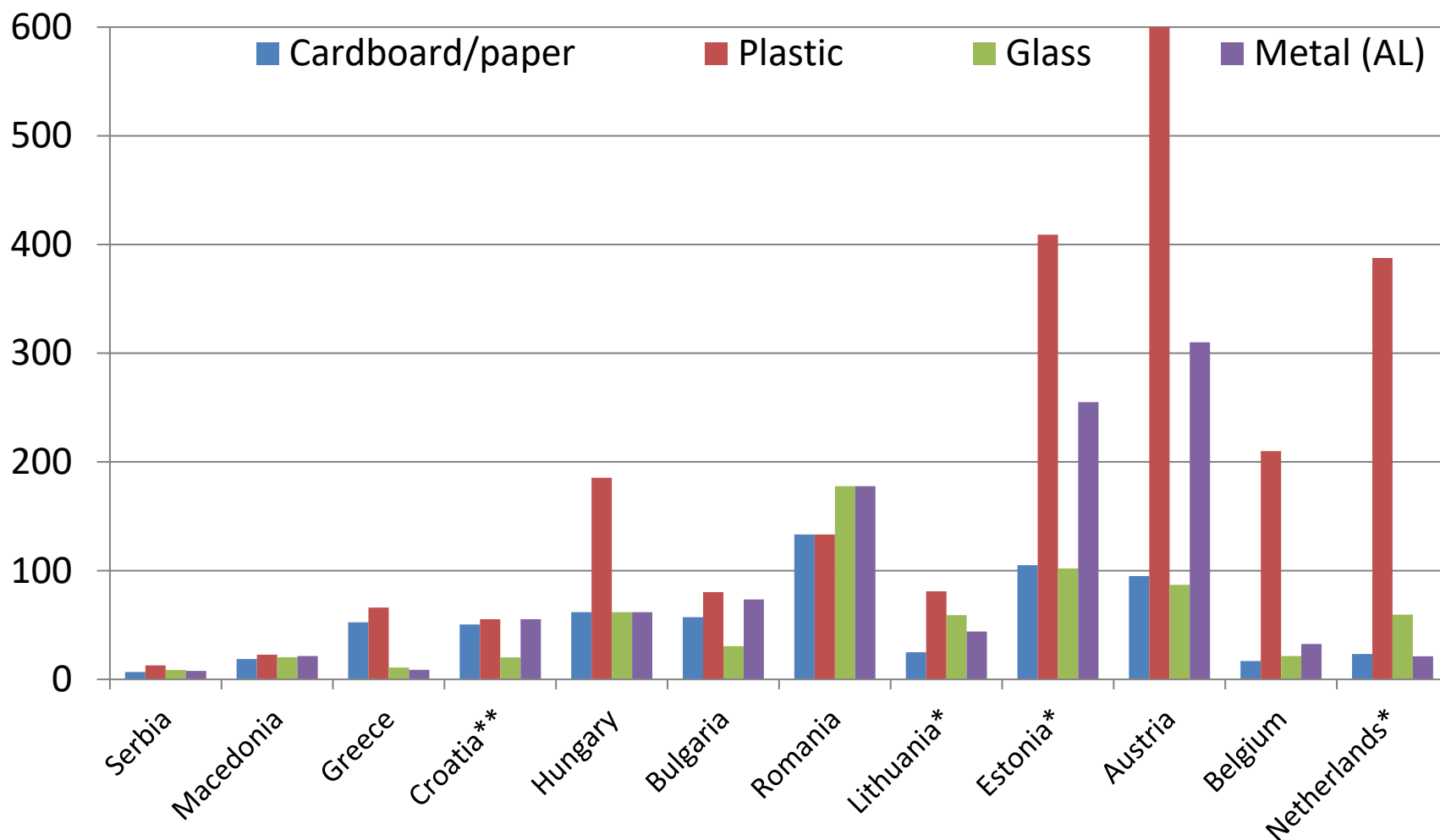
- Insufficient investment in infrastructure for selective collection of packaging waste;
- Lack of control and non-transparent spending of fees for marketed packaging waste;
- Lowest fees for marketed packaging waste in Europe;
- Low national targets for recycling of packaging waste.

## AVERAGE FEE FOR PACKAGING WASTE IN 2017.



\* Country with deposit return system, \*\* Waste disposal fee per unit 0,1k excluded.

## PACKAGING WASTE FEES IN 2017 (€/t)



\* Country with deposit return system, refundable fee excluded. \*\* Waste disposal fee per unit 0,1kn excluded.



## Packaging Waste Recycling Industry Challenges

- Capacity utilization of processing facilities around 50%.
- Recyclers have to import packaging waste from neighboring countries;
- Exports of packaging waste in neighboring countries;
- Unfair competition from neighboring countries' recyclers;
- Low landfilling fees;
- Missing collection targets for the municipalities;
- Inadequate inspection and penalty policy;
- Unregulated status of waste pickers;



## Packaging waste management system Opportunities

- ✓ Improvements on the Law on Packaging and Packaging Waste
- ✓ Increased criteria for EPRs to increase investments in PWM system;
- ✓ Establishing recycling standards and end of waste status;
- ✓ Revision of issued waste treatment licenses;
- ✓ Classification of recycling facilities;
- ✓ Continuous inspection for all stakeholders in the PWS system;
- ✓ Increasing national targets for collection and recycling of packaging waste;



# PET bottles collection and recycling in Serbia

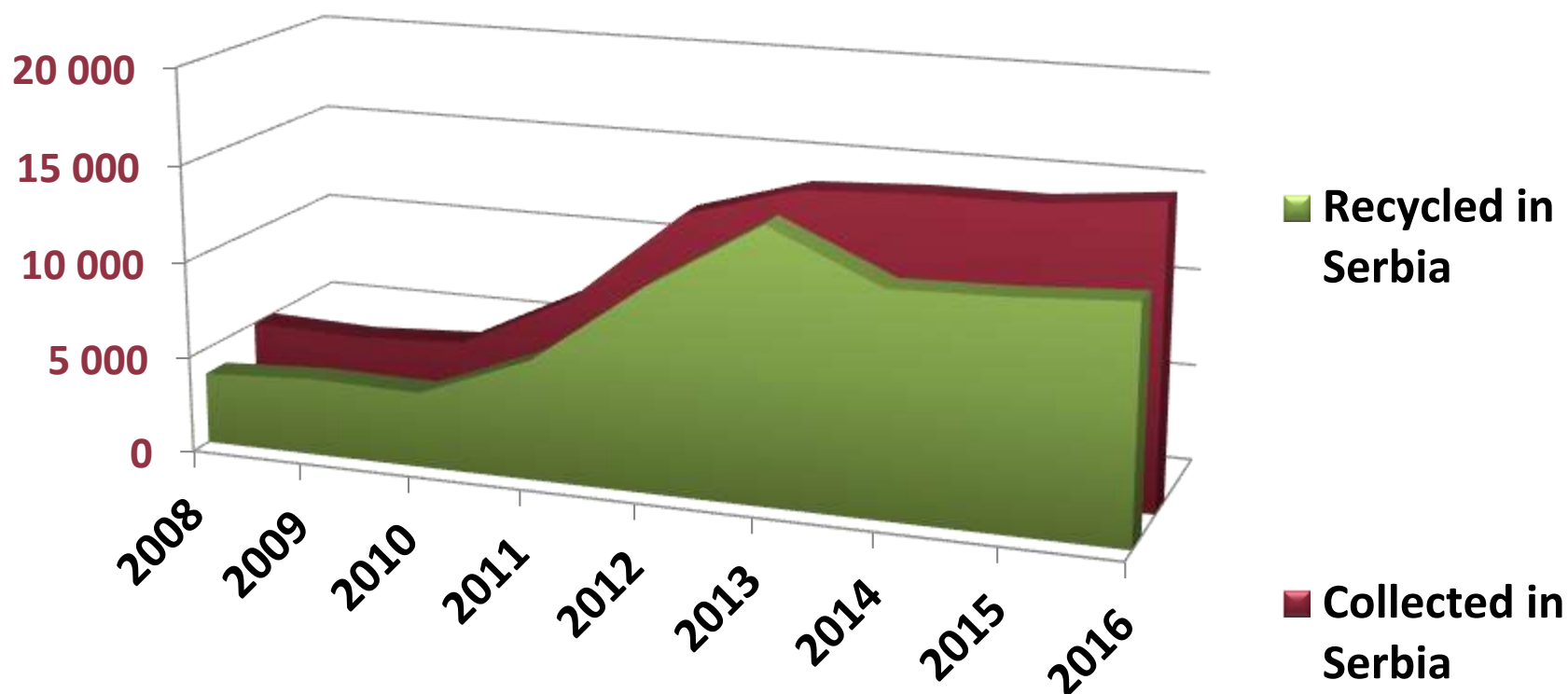






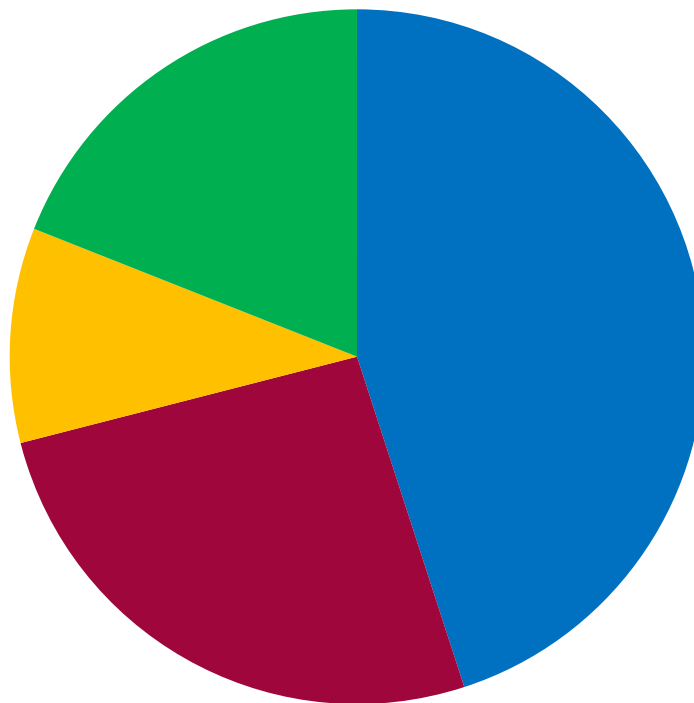
## PET bottles – collecting and recycling trends

Total hot wash recycling lines capacity in Serbia: 30.000 T/y





## Source of collecting



45%

waste pickers

26%

selective collection

10%

industry

19%

landfill collection



# Greentech Serbia



**Founded in 2005.**

Production facility in Mladenovo (near Bačka Palanka).

Headquarters in Novi Sad.

- ✓ Market share: **60%**
- ✓ Number of employees: **150**
- ✓ Total investment amount: **EUR 5 million**



# ➤➤➤➤➤ Production lines

**PET bottles hot wash line, SOREMA**  
Production capacity **8,000 t/y.**

**Polyethylene Film Recycling facility**  
Production capacity **3,000 t/y.**

Ongoing investments 2017/2018:

- **TOMRA optical sorting system**
- **Rigid Plastics Recycling Facility**
- **Second SOREMA hot wash line**





## Final products



- PET fiber
- r-PET granules
- PET strap





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Thank you for your attention!



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