

# Swiss experiences in (municipal) waste management

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EUROSAI WGEA

Seminar Waste Management

Oslo, May 3-4, 2011



# Agenda

1. Facts & Figures
2. Audit/Evaluation Subject & Results
3. SFAO Experiences



## Facts & Figures

- Overall quantity of recycled household/domestic waste p.a. (2009): 2.8 mio. t; per capita: 360 kg/cap
- New Federal Act since 2000:
  - No (as few as possible) landfills or use of taxpayers' money allowed
  - Waste must be disposed as far as possible and/or reasonable within Switzerland
  - Polluter Pays Principle: Prepaid fees and taxes (Subsidiarity: Cantons and Municipalities)
- System in Switzerland: public private partnership
  - FOEN: defines quota for separate waste types (incl. function of surveillance)
  - Private waste management organizations have unique strategies & processes (waste collection and disposal)



# 1. Facts & Figures

## Total quantities of (recycled) waste in CH 2009

Municipal waste Incinerated	2'660'000 t	340 kg/cap.
Construction waste (without material from excavation)	11'900'000 t	
Special waste	1'830'000 t	
Sewage sludge	210'000 t	
Total waste	16'600'000 t	2.13 t/cap.

Recovered household and small business waste	Waste paper	1'316'888 t	169 kg/cap.
	Compostable waste	930'000 t	120 kg/cap.
	Glass (bottle glass)	331'507 t	43 kg/cap.
	Electrical and electronic appliances	112'700 t	15 kg/cap.
	Textiles	50'593 t	7 kg/cap.
	PET	37'543 t	5 kg/cap.
	Tinplates (cans + caps)	11'760 t	2 kg/cap.
	Aluminium from postconsumer products <i>of which <b>beverage cans</b></i>	7'900 t 6'400 t	1 kg/cap. 0.8 kg/cap.
	Batteries	2'394 t	0.3 kg/cap.
Total amount of recycled waste from households and small businesses	2'801'285 t	360 kg/cap.	

Recycled waste from trade and industry	Scrap iron	850'000 t
	Cars and metal objects processed by shredder	300'000 t
	Aluminium scrap	60'000 t
	Plastics	80'000 t
	Used tyres	50'000 t
	Used electrical cables (copper/plastic 1:1)	14'000 t

Source: FOEN



## Separate Solid Waste Collection: Overview

### Separate collections in Switzerland

Which type of waste?	Legal basis (Ordinance)?	How are collection and recycling financed?	Amount of the fee?	Who is responsible for the financing?	Who collects and transports?	Where can it be disposed of?
Paper and cardboard	None	Municipal taxes	Variable	Municipalities	Municipalities	<ul style="list-style-type: none"> <li>• Municipal recycling centres</li> <li>• Municipal waste collections</li> </ul>
Glass containers	OBC <sup>1</sup> (Prescriptions concerning the prepaid disposal fee and the recycling quota)	Prepaid disposal fee <sup>4</sup>	Fr. 0.02 to 0.06 per bottle	VetroSwiss	Municipalities	<ul style="list-style-type: none"> <li>• Municipal collection points</li> <li>• Municipal waste collections</li> </ul>
Batteries	OSubst <sup>2</sup> (Prescriptions concerning the prepaid disposal fee and the obligation to return)	Prepaid disposal fee <sup>4</sup>	Fr. 3.20 per kg of batteries	INOBAT	Retailers	<ul style="list-style-type: none"> <li>• Sales outlets (Obligation to take back)</li> <li>• In some cases at municipal recycling centres</li> </ul>
PET-beverage containers	OBC <sup>1</sup> (Prescribed recovery rate, subsidiary obligation to take back)	Voluntary solution: prepaid recycling fee <sup>5</sup>	Fr. 0.04 per bottle	PET-Recycling Schweiz	PET-Recycling Schweiz	<ul style="list-style-type: none"> <li>• Containers at sales outlets and in some cases at municipal recycling centres</li> </ul>
Electrical and electronic appliances	ORDEA <sup>3</sup> (Obligation to return)	Voluntary solution: prepaid recycling fee <sup>5</sup>	Varies according to appliance type	<ul style="list-style-type: none"> <li>• SWICO (office, and IT equipment, consumer electronics)</li> <li>• S.E.N.S (household appliances)</li> </ul>	<ul style="list-style-type: none"> <li>• SWICO</li> <li>• S.E.N.S</li> </ul>	<ul style="list-style-type: none"> <li>• Sales outlets (Obligation to take back)</li> <li>• In some cases at municipal collection points</li> </ul>
Tin cans	OBC <sup>1</sup> (Subsidiary obligation to take back beverage containers)	Voluntary solution: prepaid recycling fee <sup>5</sup>	Fr. 0.01 per can	Ferro Recycling	Municipalities	<ul style="list-style-type: none"> <li>• Municipal recycling centres</li> </ul>
Aluminium packagings	OBC <sup>1</sup> (Prescriptions concerning the recycling quota and the subsidiary obligation to take back aluminium beverage containers)	Voluntary solution: prepaid recycling fee <sup>5</sup>	Fr. 0.01 to 0.04 per packaging	IGORA	Municipalities	<ul style="list-style-type: none"> <li>• Municipal recycling centres</li> </ul>
Cars	None	Voluntary solution: prepaid recycling fee <sup>5</sup> for disposal of ASR <sup>6</sup>	Fr. 30 per car	Autorecycling Foundation	<ul style="list-style-type: none"> <li>• Private</li> </ul>	<ul style="list-style-type: none"> <li>• Retailers</li> <li>• Scrap metal dealers</li> </ul>

<sup>1</sup> Ordinance on Beverage Containers

<sup>2</sup> Ordinance relating to Environmentally Hazardous Substances

<sup>3</sup> Ordinance on the Return, the Taking back and the Disposal of Electrical and Electronic Appliances

<sup>4</sup> The prepaid disposal fee is mandatory and legally regulated

<sup>5</sup> The prepaid recycling fee is levied on the basis of a voluntary convention signed by the industry concerned

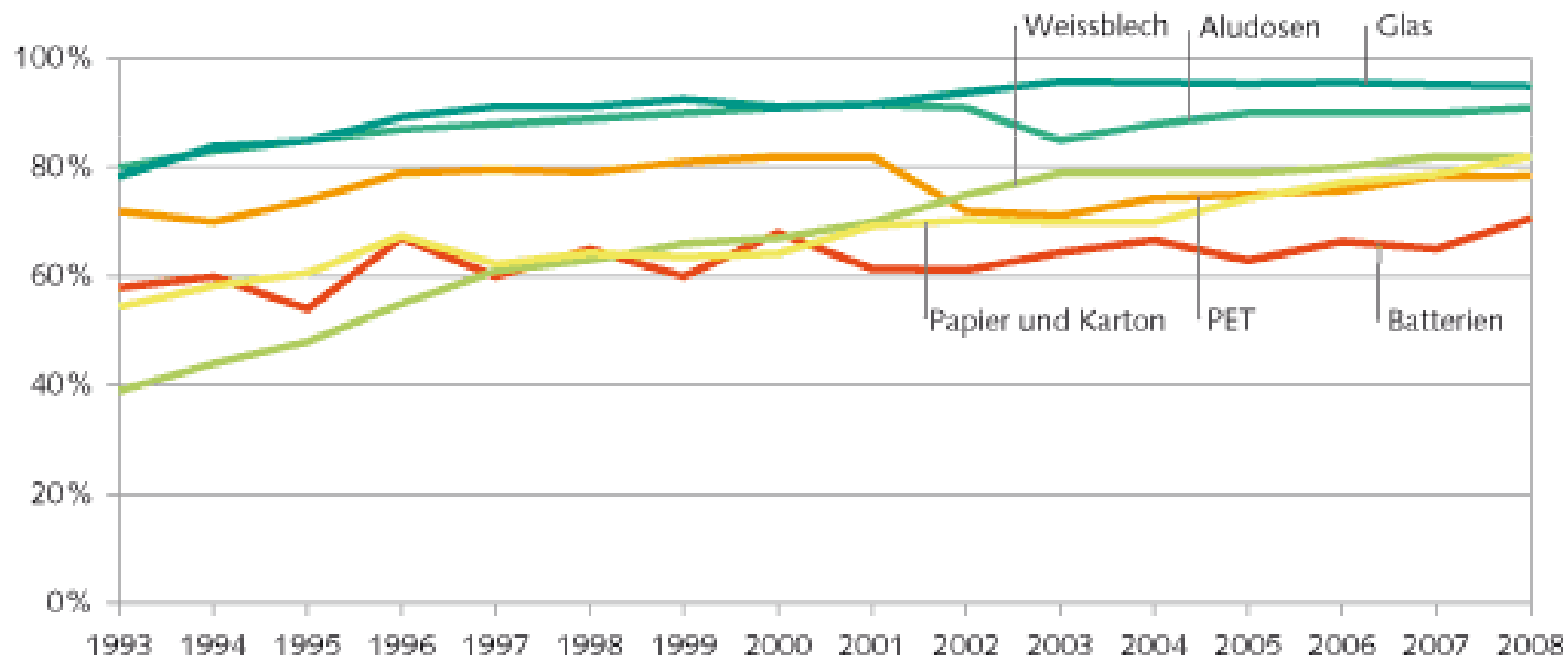
<sup>6</sup> Auto shredder residue

Source: FOEN



## Recycling Quota 1993-2008

Recycling: Abfallverwertung Haushalte und Gewerbe  
Sammelquoten



Quelle: Bundesamt für Umwelt

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## 2. Audit/Evaluation Subject & Results

### Audit/Evaluation Subject & Purpose

- Subject: The existing separate waste collections using prepaid fees or municipal taxes
- Purpose: The Swiss Federal Audit Office (SFAO) carried out investigations
  - to see whether the individual solutions have clear objectives and a collection of performance data
  - to what extent effectiveness and efficiency are checked in the individual solutions and
  - to see the role the Confederation plays at the same time



## 2. Audit/Evaluation Subject & Results

### Audit/Evaluation Results

- A multiplicity of collection chains for separate waste types with little coordination
- Very few environmental reviews conducted which also take costs into account, but numerous control mechanisms ensuring minimal effectiveness
- Satisfied producers, importers and traders, high acceptance of the authority (FOEN)
- Basis for calculating and determining recycling quota is weak
- Car recycling (still) unsolved

➤ **but overall an effective and efficient system**





## 2. Audit/Evaluation Subject & Results

### Recommendations

**Recommendation 1:** FOEN should draw up standards for comparing the financial data of the waste management organisations as well as an overall cost comparison for all separate collections using prepaid fees.

**Recommendation 2:** FOEN should transparently give account of its own control activities in relation to separate collections.

**Recommendation 3:** FOEN should fix priorities for its study policies and define a corresponding strategy.

**Recommendation 4:** FOEN should try to summarise the financial resources used for campaigns to do with the public, as well as taking a more professional approach with the measures involved.

**Recommendation 5:** FOEN should provide incentives for the stakeholders concerning mergers and realignments.

**Recommendation 6:** FOEN should examine if present car recycling voluntary sectoral agreements should be converted into a legislative solution.



# SFAO Experiences

<b>Challenges/solutions</b>	<ul style="list-style-type: none"><li>• Waste collection policies are vague (recycling quota) and surveillance complex</li><li>• Procedures (waste management/recycling) are not well known (-&gt; private initiatives)</li><li>• Recycling of cars/parts still unsolved</li></ul>
<b>Methodology/Data</b>	<ul style="list-style-type: none"><li>• Evaluation of effectiveness is complex</li><li>• Reliable technical and performance data (?)</li></ul>
<b>Findings/Recommendations</b>	<ul style="list-style-type: none"><li>• Limited to duties and responsibilities of the authority involved (FOEN)</li></ul>
<b>Impact</b>	<ul style="list-style-type: none"><li>• Recycling of used tires initiated</li><li>• Objective evaluation/audit was appreciated</li></ul>
<b>Scope audit &amp; Questions</b>	<ul style="list-style-type: none"><li>• ok (broad approach/overview, no specific scope)</li><li>• Follow-up evaluations/audits may address specific topics (waste types)</li></ul>



# Thank You!

# Questions?