

The Orange Box – Berlin's Resource Bin The household's own recycling center?

DAKOFA Conference, Copenhagen, 29.02.2012



Contents

- I. Preliminary notes on waste management in Berlin and the responsibilities of BSR

- II. Recovering recyclable materials:
recycling rates; quality of residual waste; improvement of separate collection (The Orange Box)

I. Preliminary notes on waste management in Berlin and the responsibilities of BSR



Important types of municipal waste in Berlin

Domestic waste and trade waste



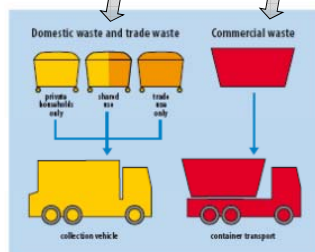
Commercial waste



Bulky waste



Road sweepings



Important types of recyclable materials in Berlin

Glass (brown, white, green)



Organic waste



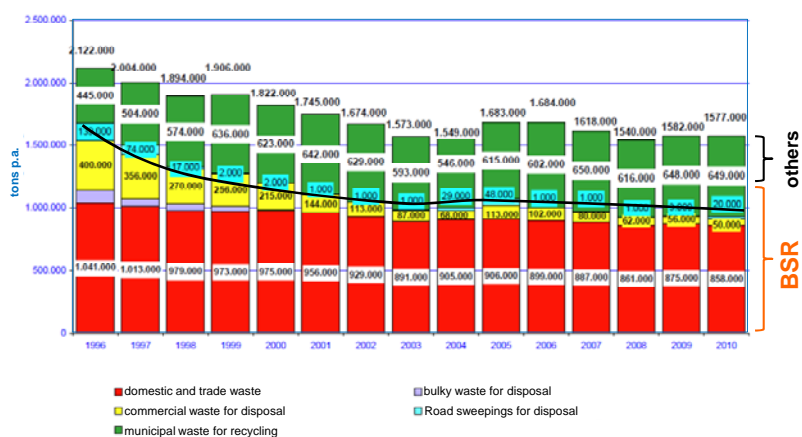
Light packaging



Paper



Development of MSW in Berlin



While the amount of disposed waste was declining, the amounts being recycled steadily increased. The recycled waste includes separately collected and recovered waste from households and commerce, domestic bulky waste and treated road sweepings.

The legal basis for waste management^{*)}

SOURCE	TREATMENT PATHWAY	TYPE OF WASTE	RESPONSIBILITY
Municipal Solid Waste (MSW)	private households	for recycling	organic materials, paper, wood, bulky waste etc. municipal (in Berlin: BSR)
		for disposal	packaging (glas, paper, light packaging), electronic equipment household waste, bulky waste municipal (in Berlin: BSR) (producer responsibility, organized in dual systems)
	others (enterprises, retailers, small business etc.)	for recycling	wood, plastic, metall, organic etc. (private companies)
		for disposal	commercial waste, industrial waste (non-toxic) municipal (in Berlin: BSR)

MSW is collected and treated by private, public or mixed companies (PPP).

The municipalities have full responsibility for waste from private households (except packaging).

^{*)} Waste Management Act



7

BSR/ Dr. M. Nogueira/ 29.02.2012

The Orange Box – Berlin's Resource Bin

BSR is the largest municipal waste management company in Germany

area of 890 km²
(more than Munich, Frankfurt and Stuttgart combined)

approx. 3.4 million inhabitants

approx. 1.4 million km cleaning of streets and pavements

approx. 200,000 dogs

approx. 80,000 tons of street cleaning waste

approx. 400,000 trees

approx 1.3 million tons of waste

approx. 1,800,000 homes
(approx. 400,000 waste containers)

8

BSR/ Dr. M. Nogueira/ 29.02.2012

The Orange Box – Berlin's Resource Bin



Safe disposal through own facilities and contractual stipulation of capacities

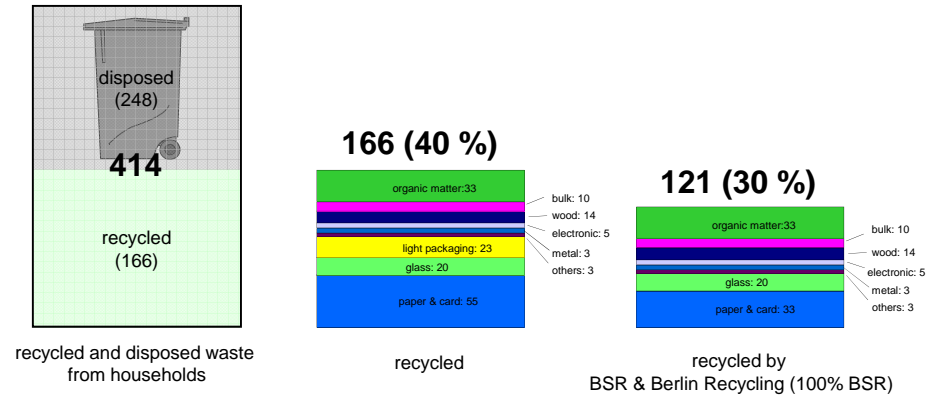


II. Recovering recyclable materials:

- recycling rates;
- quality of residual waste;
- improvement of separate collection

(Berlin's Resource Bin)

Recycling rate for domestic and trade waste 2010 (kg per capita and %)

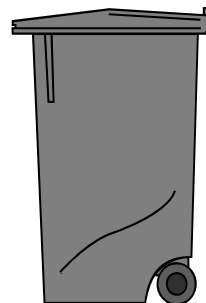


What is thrown away in residual bins?

organic matter	42.5 %
paper & card	12.0 %
compound	9.4 %
glass	6.3 %
plastic	7.0 %
textile	3.3 %
metal	2.1 %
mineral material	2.0 %
wood	0.4 %
others	15.0 %

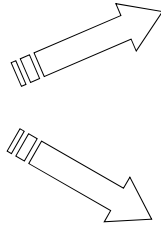
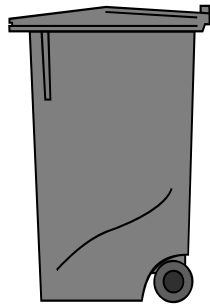
Domestic and trade waste include about 40 % of dry recyclable materials which could at least partly be recovered.

Organic matter accounts for the largest proportion.



[ARGUS-Study, BSR, 2008]

Two pilot projects to improve separate collection



„Tonnen-Kombi“ (05/2009 – 04/2011)
- bin combination -



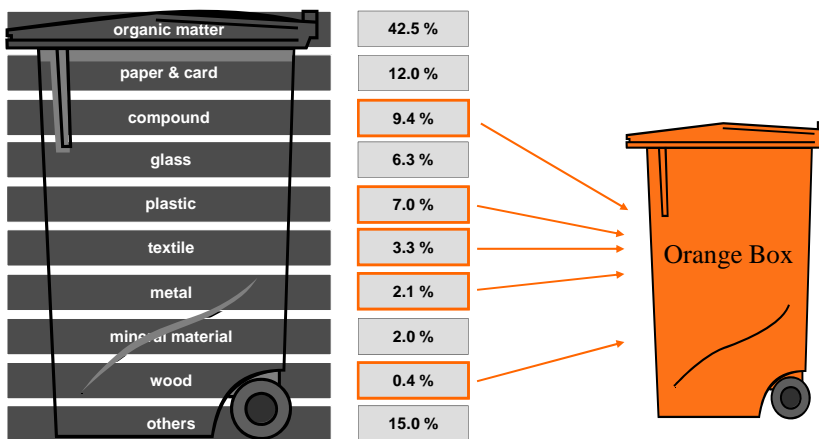
improvement of separate collection of organic waste in the outskirts

„Orange Box“ (06/2009 – 06/2010)



expansion of separate collection of dry materials other than packaging in densely settled areas

Orange Box - Berlin-wide introduction from July 2010



[ARGUS-Study, BSR, 2008]

Orange Box - Berlin-wide introduction from July 2010

Das gehört in die Orange Box:

-  Elektrokleingeräte: MP3-Player, Toaster, Radios, Handys, Föhn, Taschenrechner, Gameboys u. a.
-  Spielzeug: Holzspielzeug, Plastikspielzeug u. a.
-  Metalle: Kochtöpfe, Draht, Zangen, Schraubenschlüssel, Schrauben, Besteck u. a.
-  Datenträger: CDs, Kassetten, DVDs u. a.
-  Kunststoffe: Gießkanne, Eimer, Blumentöpfe, Klarsichthüllen, Plastikschüsseln u. a.
-  Alttextilien: Jacken, Hosen, Decken, Gardinen u. a.
-  Altholz: Sägereeste, kleine Bretter, Holzkisten, Spanplatten, Bilderrahmen u. a.

Das gehört NICHT in die Orange Box:

-  Verpackungen: Joghurtbecher, Weichspülerflaschen, Tetrapaks u. a.
-  organische Abfälle: Essensreste, Obst- und Gemüseschalen, Laub und Strauchschnitt u. a.
-  Energiesparlampen: Energiesparlampen, Leuchtstoffröhren u. a.
-  Batterien: Batterien und Akkus sämtlicher Größen u. a.



15

BSR/ Dr. M. Nogueira/ 29.02.2012

The Orange Box – Berlin's Resource Bin



Orange Box – results of the scientific evaluation 2010/2011

Additional separate collection of approx. 13 kg per capita and year is possible:

- equivalent non-packaging materials (metals, plastics and composite materials that are not packaging material, e.g. children's toys) 4 kg (31%)
- bulky waste / wood 3 kg (20%)
- electronic devices 2 kg (17%)
- textiles 1 kg (8%)
- others (miss-sortings) (ceramic, hygiene products, e.g. baby nappies etc.) 2 kg (15%)
- lightweight packaging (LVP) 1 kg (9%)



[scientific evaluation by the ARGUS Institut, Berlin, 2011]

16

BSR/ Dr. M. Nogueira/ 29.02.2012

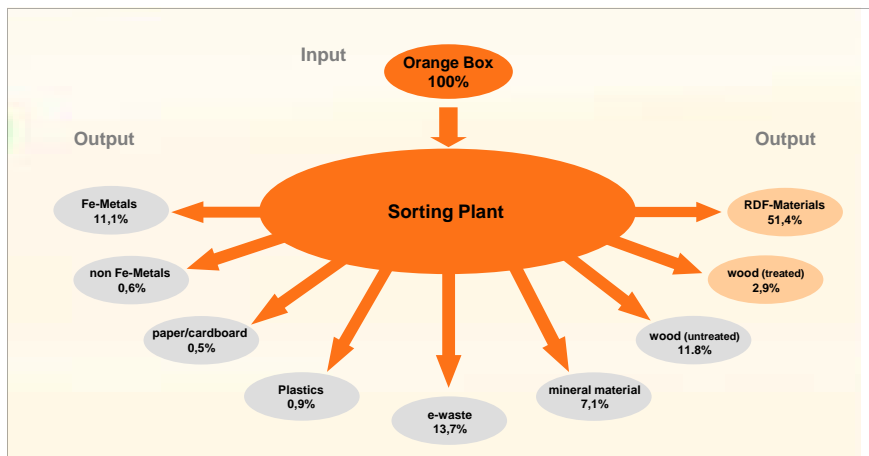
The Orange Box – Berlin's Resource Bin



Orange Box – recycling and energy recovery

46% recycling

54% energy recovery



17

BSR/ Dr. M. Nogueira/ 29.02.2012

The Orange Box – Berlin's Resource Bin



Comparing range of materials accepted in other cities

Materials	Orange Box				
	Berlin	Hamburg	Leipzig	Dortmund	Hannover
• equivalent non-packaging materials (metals, plastics and composite materials that are not packaging material, e.g. pans, watering cans, children's toys)	+	+	+	+	+
• electronic devices	+	-	+	+	+
• wood	+	-	-	-	-
• textiles	+	-	-	-	+
• lightweight packaging (LVP)	-	+	+	+	-
increase of collected amount:	5 – 13 kg per capita per year				

In cooperation with the Berlin government we are now working towards an integrated solution, so that in the future for user convenience only **one single recyclables bin** has to be used.

18

BSR/ Dr. M. Nogueira/ 29.02.2012

The Orange Box – Berlin's Resource Bin



Thank you



Questions?

Dr.-Ing. Margarida Nogueira
Berliner Stadtreinigung
Vorstandsbüro – Unternehmensstrategie
Telephone +49 30 7592-2180
Margarida.Nogueira@BSR.de
www.BSR.de