

• WASTE AND WASTE MANAGEMENT

Initial situation

The year 2008 was the third year of meeting the objectives of the Programme of Waste Management of the Slovak Republic for the years 2006-2010.

Balance of waste generation

Since 2003, waste generation assessment has been split into 2 tables. The first shows total volumes of generated waste based on notifications from waste generators. More information in terms of strategic territorial development of waste management infrastructure shows the table containing just those waste volumes that are located on the market, i.e. the producers had to submit waste for recovery or disposal to the authorities dealing with waste handling, pursuant to waste law. Waste volumes located on the market represent the initial statistical basis for monitoring the waste management trend.

Waste generation (t)

Waste category	Amount (t)
Hazardous waste	602 480
Other waste	12 962 808
Municipal waste*	1 790 691
Total	15 355 979

Source: SEA, SO SR

Generation of waste located on the market (t)

Waste category	Amount (t)
Hazardous waste	523 928
Other waste	9 177 459
Municipal waste*	1 790 691
Total	11 492 078

Source: SEA, SO SR

*MW contains both categories (hazardous and other waste, it is necessary to separate the category of municipal waste considering the unique character of its regime, typical of municipal waste

Compared to 2007, the annual growth of waste put on the market is about 5 %. The decrease existed in hazardous waste generation by 1.5 % compared to the previous year.

In the area of waste generation by economic activities classification SK NACE, manufacturing industry has been the dominating component over the recent years, with 65 % share. Sector of building industry follows with 13 %, agriculture with 8 %, and trade with 5 % share. It is necessary to point out that the total amount of waste produced by particular economic sectors does not include municipal waste.

Waste generation by particular economic sectors in year 2008 (t)

SECTION	Total (t)	Hazardous waste (t)	Other waste (t)
A - Agriculture, Forestry, Fishery	788 788	42 249	746 539
B - Mining and quarrying	150 860	569	150 291
C - Manufacturing	4 469 017	327 051	4 141 966

SECTION	Total (t)	Hazardous waste (t)	Other waste (t)
D - Electricity, gas, steam and air conditioning supply	1 150 662	9 871	1 140 791
E - Water supply; sewerage; waste management and remediation activities	794 489	44 795	749 694
F - Construction	1 301 761	5 413	1 296 348
G - Wholesale and retail trade; repair of motor vehicles and motorcycles	486 109	20 123	465 986
H - Transporting and storage	175 233	61 207	114 026
I - Accommodation and food service activities	1 731	112	1 619
J - Information and communication	7 752	362	7 390
K - Financial and insurance activities	380	95	285
L - Real estate activities	7 750	297	7 453
M - Professional, scientific and technical activities	41 101	1 592	39 509
N - Administrative and support service activities	33 170	2 453	30 717
O - Public administration and defence; compulsory social security	33 880	1 480	32 400
P - Education	1 106	165	941
Q - Human health and social work activities	106 176	4 211	101 965
R - Arts, entertainment and recreation	4 389	150	4 239
S – Other services activities	1 377	212	1 165
Unknown	145 656	1 521	144 135
Total	9 701 387	523 928	9 177 459

Source: SEA

Waste handling

Handling with waste by means DO, O and Z codes (t)

Disposal code	Activity	Total (t)	Hazardous (t)	Others (t)
DO	Handing over of waste for domestic use	72 222	0	72 222
O	Handing over to another subject for next recovery	218 924	21 399	197 525
Z	Storage of waste	271 051	7 462	263 589
Total		562 197	28 861	533 336

Source: SEA

Waste recovery

There were 5 157 389 **tons of waste recovered** in the SR in 2008. This represents **53 % of total volume of waste** located on the market (not included MW). R5 activity – Recycling or re-extraction of other inorganic compounds has the greatest share on waste recovery with a 35 % share.

Waste recovery following codes R1 – R13 in year 2008 (t)

Code	Activity	Total (t)	Hazardous waste (t)	Other waste (t)
R1	Used mainly as fuel or to extract energy through different approach	429 068	12 584	416 484
R2	Solvent reclamation/regeneration	4 020	3 995	25

R3	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes)	583 119	29 851	553 268
R4	Recycling or reclamation of metals and metal compounds.	680 866	6 703	674 163
R5	Recycling or reclamation of other inorganic material.	1 789 301	2 533	1 786 768
R6	Regeneration of acids and bases.	392	228	164
R7	Recovery of components used for pollution abatement	376	194	182
R8	Recovery of components from catalysers.	2 399	2 355	44
R9	Oil re-refining or other re-uses of soil.	10 121	10 067	54
R10	Treatment of soil to benefit the agricultural production or to improve environment.	796 051	9 771	786 280
R11	Use of waste obtained from the activities R1 to R10.	34 303	375	33 928
R12	Treatment of waste generated by any of the R1 to R11 activities.	216 842	11 311	205 531
R13	Storing of waste before using any of the R1 to R12 activities (besides temporary storage prior to collection at the place of waste generation).	610 531	20 542	589 989
Total		5 157 389	110 509	5 046 880

Source: SEA

Waste disposal

Of total volumes of generated waste placed on the market 3 981 801 t, **41 % was disposed** (without MW). Dominance of landfill waste is a historical rule with a 81 % share on total waste disposal, what means the decreasing about 20% compared to previous year (without MW). As of December 31, 2008, there were 143 landfills operated in Slovakia.

Number of landfills (towards 31.12.2008)

Region	Hazardous waste landfills	Landfills for not hazardous waste	Inert waste landfills	Total
Bratislava	2	10	3	15
Trnava	2	8	1	11
Trenčín	1	16	3	20
Nitra	3	18	2	23
Žilina	0	16	2	18
Banská Bystrica	1	18	2	21
Prešov	1	18	1	20
Košice	3	10	2	15
Total	13	114	16	143

Source: SEA

Waste disposal following codes D1 – D15 in year 2008 (t)

Code	Activity	Total (t)	Hazardous waste (t)	Other waste (t)
D1	Underground or surface waste disposal. (e.g. landfill)	3 211 530	109 791	3 101 739
D2	Treatment by soil processes (e.g. biodegradation of liquid or sludge waste in soil, etc.)	153 319	117 963	35 356

Code	Activity	Total (t)	Hazardous waste (t)	Other waste (t)
D8	Biological treatment non-specified in this annex that generates compounds and mixtures eliminated by any of the D1 to D12 activities.	38 626	16 716	21 910
D09	Physical-chemical treatment non-specified in this annex that generates compounds and mixtures eliminated by any of the D1 to D12 activities. (e.g. vaporizing, drying, calcinations, etc.)	83 140	52 932	30 208
D10	Incineration on land.	65 878	47 772	18 106
D13	Mixing or blending prior to any of the D1 to D12 activities.	9 138	2	9 136
D14	Placing into other packaging prior to any of the D1 to D12 activities.	81	80	1
D15	Storage before implementing any of the D1 to D14 activities (besides temporary storage prior to collection at the place of waste generation).	420 089	39 302	380 787
Total		3 981 801	384 558	3 597 243

Source: SEA

Waste from electrical and electronic equipment (WEEE)

There were placed on the market 60 661 of electrical devices in Slovakia in 2008 (11 kg per inhabitant). Amount of collected WEEE was approx. 19 388 thousand tons (3.6 kg per inhabitant).

Summary reports by producers of electrical equipment for the year 2008 (kg)

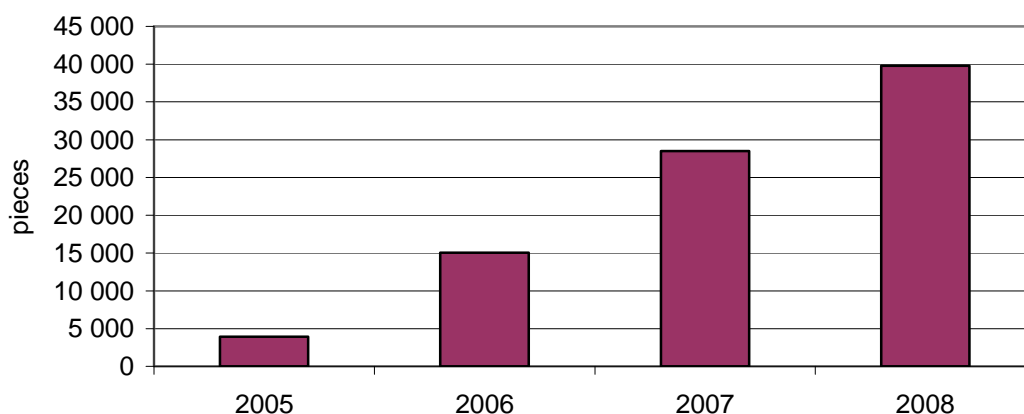
Category under Annex 3 of the waste law	Introduced to market (kg)	Collected (kg)	Processed (kg)	Recovered (kg)	Recycled (kg)
1. Big domestic appliances	32 945 912	12 457 771	12 457 771	10 856 092	10 778 928
2. Small domestic appliances	4 964 096	1 323 392	1 323 392	1 035 681	980 754
3. IT and telecommunication devices	6 533 492	2 531 997	2 531 997	2 253 576	2 189 353
4. Consumer electronic devices	7 278 287	2 265 225	2 265 225	1 945 263	1 908 896
5. Sources of light	3 266 171	179 201	179 201	164 208	158 262
5a. Gas lamps	419 409	132 314	132 314	116 697	116 697
6. Electrical and electronic instruments	4 399 961	179 558	179 558	152 045	150 419
7. Toys, devices designated for sport and recreational use	494 589	7 076	7 076	5 946	5 926
8. Medical devices	93 871	79 535	79 535	68 931	68 876
9. Machines for monitoring and testing	110 350	76 951	76 951	69 804	69 595
10. Vending machines	154 888	154 909	154 909	135 022	134 212
Total	60 661 026	19 387 929	19 387 929	16 803 265	16 561 918

Source: SEA

Old vehicle

There were 39 769 old vehicles processed in 2008. Compared to 2007 this means increasing about 28 %.

Processed old vehicle (amount of cars)



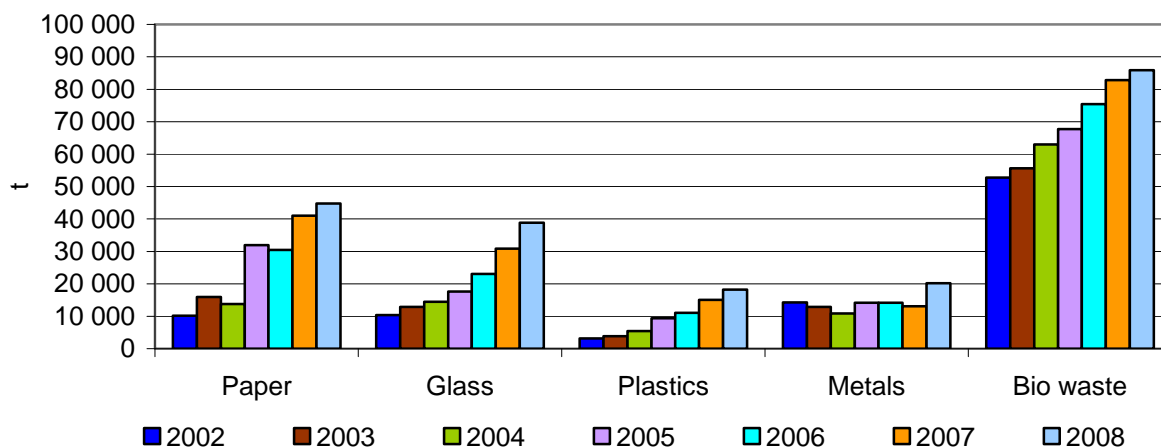
Municipal waste

According to data from the SO SR, there were **1 790 691 tons of total municipal waste** generated in Slovakia in 2008. This volume represents **331 kg of municipal waste per capita**. Compared to 2007, this is an increase by 22 kg per capita. Long-term waste **disposal on landfills (76 %)** is the **most frequent method** of municipal waste handling, following by incineration with energy recovery (9 %).

In terms of **municipal waste composition**, mixed municipal waste (68.5 %) constitutes the major component of municipal waste together with bulky waste (11 %), small construction waste (5 %). Biologically degradable waste was 5 % and waste paper and cardboard was 3 %.

According to the SO SR, **volume of separated municipal waste per capita is 25 kg**, which means that the level of municipal waste separation decreased by 9 kg compare year 2007. Volume of **recovered municipal waste per capita increased to 58 kg per capita**.

Separated waste collection (t)



Source: SO SR

Financial mechanisms of waste management

◆ Recycling fund

Finances paid from Recycle fund (SKK)

Sector	2003	2004	2005	2006	2007	2008
Spent batteries and accumulators	14 665 664	6 123 789	27 762 392	6 548 521	1 521 960	4 527 804
Waste oils	25 978 911	13 513 450	31 838 929	27 122 645	51 419 465	39 142 693
Used pneumatic tires	55 526 823	31 938 861	52 227 842	31 876 532	43 394 128	5 609 428
Multi-layer combined materials	11 200 000	6 011 426	15 788 362	6 104 424	9 436 275	27 270 084
Electric and electronic devices	108 444 952	31 809 571	43 873 057	12 177 730	1 817 482	2 040 451
Plastics	45 331 744	97 465 327	85 257 226	43 462 867	25 886 202	29 895 738
Discharge light sources containing mercury	3 376 397	1 747 720	1 788 973	31 836	0	0
Paper	66 861 855	66 541 864	63 043 210	119 539 255	43 400 107	68 191 721
Glass	6 662 395	26 397 285	36 443 376	41 612 019	20 643 076	22 393 694
Vehicle	20 708 446	73 828 884	50 661 866	135 715 643	167 310 817	408 120 244
Metal packing	0	12 385 467	6 909 123	11 020 641	9 028 531	4 273 598
General sector	16 673 117	69 584 229	34 684 182	1 691 695	4 710 600	6 486 091
General sector - municipalities	5 031 880	27 467 030	33 956 530	17 614 220	63 019 868	112 769 390
Total	380 462 184	464 814 903	484 235 068	454 518 027	441 588 511	730 720 935

Source: RF

◆ Environmental Fund

In 2008, the Environmental Fund in the area of waste management, 100 applicants funded, with the amount of 307 mil. SKK.

Finances invested according to the supported activity in year 2008 (SKK)

Activity	Finance
Separate collection	62 426 000
Waste recovery	94 733 418
Landfill closing and recultivation	150 113 600
Total	307 273 018

Source: EF

Packaging and waste from packaging

Amount of packaging materials made, imported, exported and introduced to the market in year 2008 (t)

Material	Production (t)	Import (t)	Export (t)	Market (t)
Gas	47 415	66 188	25 336	75 802
Plastics	43 853	91 690	41 357	80 653
PET	1 104	1 071	1 414	762
Paper and cardboard	62 394	161 004	97 690	117 523
Composite	6 147	13 541	7 502	12 058

Aluminum	476	4 674	813	4 232
Steel	23 084	37 132	35 490	15 688
Wood	96 180	46 623	85 019	18 207
Others	17	361	234	142
Total	280 670	422 284	294 855	325 067

Source: SEA

Packaging waste handling in year 2008 (t)

Packaging waste Material	Amount (t)	Recycling		Recovery			
		Material recovery (t)	(%)	Energy (t)	Others (t)	Total* (t)	(%)
Glass	75 802	36 109	47.6	-	111	36 220	47.8
Plastics	81 415	35 578	43.7	747	1 328	37 653	46.3
Paper**	129 581	69 422	53.6	310	3 167	72 899	56.3
Aluminum	4 232	1 219	28.8	-	19	1 238	29.3
Steel	15 688	9 890	63.0	-	104	9 994	63.7
Metals	19 920	11 109	55.8	-	123	11 232	56.4
Wood	18 207	2 932	16.1	975	3 004	4 499	24.7
Total	324 925	155 150	47.7	2 032	7 733	162 503	50.0

* material recovery included

** Tetra-pack included

Source: SEA

Trans-boundary movement – import, export and transit of waste

Over the period of 1.1.2008 to 31.12.2008, the MoE SR issued **147 decisions on trans-boundary transport of waste.**

Summary of the number of effective licenses for trans-boundary transport of waste (t)

Issued in year	Import	Export	Transit	Total
2007	76	7	12	95
2007- 2008	92	39	16	147
Total	168	46	28	242

Source: SEA

Total permitted volumes of waste by individual countries in year 2008 (t)

	Import to SR (t)	Export from SR (t)
Belgium	-	4 800
Belarus	40	-
Czech Republic	487 100	300
Netherlands	370	1
Japan	60	-
Hungary	179 100	150
Germany	149 950	606
Poland	376 084	1 383 895
Austria	191 700	-
Romania	2 400	5 200
Russia	6 000	-
Ukraine	23 120	78 000
Great Britain	500	-
Total	1 416 424	1 472 952

Source: SEA