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MODEL OF WASTE STREAMS IN THE NATIONAL RECYCLING SCHEME IN POLAND

Poland in order to join European Union on May 1st, 2004, made significant changes in Polish law, especially in the areas of environmental protection. One of them in particular is the Act of May 11th 2001, which describes the duties of fillers in waste management and product fees as well as deposit fees, so called act concerning the „product’s fee” (Dz.U. of 2001 No 63, pos. 639) [1]. The product’s fee act introduces the obligation of recycling the packaging waste for all producers and importers, as well as commercial companies adding packaging to their product. Keep in mind that:

- There is a need to create and develop a **national recycling scheme in Poland (KSROO)**.
- Work on the competitiveness of Polish economy.
- Fulfill the obligations according to the UE requirements established for the new members in environment protection.

The subjects of the national recycling scheme in Poland are made of four main groups:

- **Fillers** – importers and producers which introduce products in packaging on the domestic market as well as the commercial companies who add any packaging to their goods. They are responsible for assuring the packaging waste recycling rates according to the „shared producer responsibility” rule.
- **Recovery Organizations** – organisations which on the basis of the above mentioned act take over the duties of fillers to assure the proper recycling rates of the packaging waste. The only possible form of the activity is an incorporated company. The subject of the activity is: organization, management or leadership of the activities which are recovery or recycling of the packaging waste as well as ecological education.

- **Owners of the waste** – everyone who owns the waste, is also the person/company who is the owner of the area where the waste is placed.
- **Recyclers** – companies which recover the waste in the way it is recycled. They transform waste to a product or to a raw material which can be used by any other producer/customer.

The relationships between the groups and other objects of the system are represented on Figure 1.

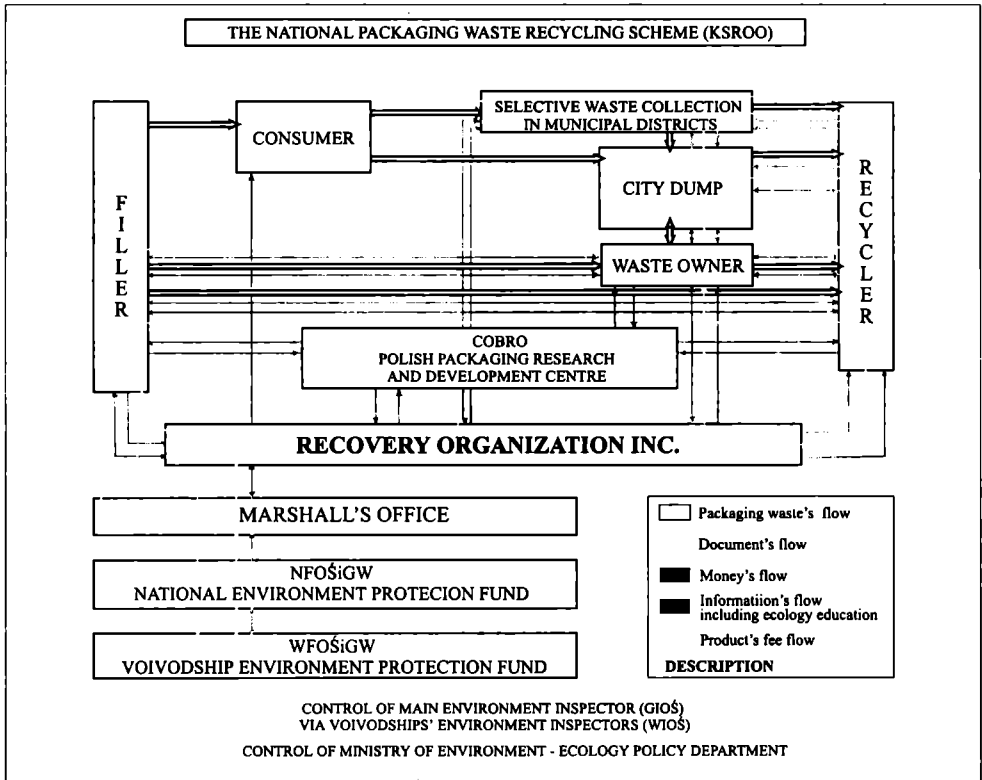


Fig. 1. Model of the national recycling scheme (KSROO)

Source: own study and the Act of May 11th 2001 regarding product's fee [1].

The act shows the recycling rates which have to be achieved till year 2007. It is very important that the rates are to be raised very rapidly until they reach the high EU standards. Established minimal rates are the sign of possible leads for any companies which would like to start their business in the area of waste management in Poland.

According to Polish Ministry of Environment the rates of recycling for year 2002 were accomplished with the surplus.

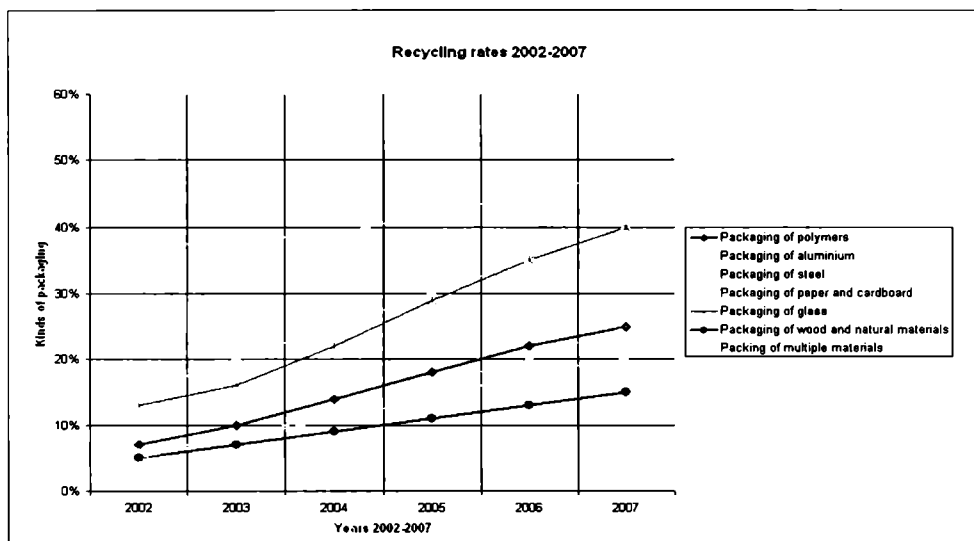


Fig. 2. The target recycling rates for years 2002-2007 as a feed for the KSROO in Poland
Source: own study on basis of the law of May 11th 2001 regarding the product's fee [1].

There are serious reasons to doubt that this is the fact. The differences between Ministry's data and the reports concerning packaging waste production are significant. There are three main kinds of packaging where the rates probably haven't been reached. Moreover practice of the branch fully confirms that possibility. The main reasons of data divergence are:

- Subjective limits in the law – small and middle (with the turnover of less than 500 000 PLN) companies were excluded from the obligation,
- Objective limits like PKWiU symbols – using those symbols in the law excluded some kinds of packaging from the recycling obligation,
- Uncleared situation with the so called ZPCHR (companies where the handicapped employees are to be hired),
- A lot of companies haven't reported they were obliged to assure the recycling rates and haven't done it as yet. What is more: there are no funds to check how many of them are beyond the law regulations.

There is also one more problem with the established recycling system. Most of the waste, as it is shown on the scheme No. 3, come from the industry: producers and huge shops centers (packagings of raw materials, transport packaging, grouped packagings like displays, etc.). As the research shows $\frac{3}{4}$ of the packaging waste being recycled in Poland comes from the industry. The rest comes from selective waste collection in municipal districts, which shows that the situation is difficult.

Table 1. Accomplishment of recycling rates in year 2002

Kind of packaging	Packaging weight introduced in 2002 according to the Ministry of Environment	Packaging waste recycled in 2002	Achieved rate of recycling	Weight of packaging produced in 2002 according to KPGO	Packaging waste recycled in 2002	Achieved rate of recycling according to data from KPGO	Rate of recycling to be achieved according to the law
				in tons			
Packaging of polymers	429 327	49 016	11,42%	534 100	49 016	9,18%	7,00%
Packaging of aluminium	41 491	9 377	22,60%	41 700	9 377	22,49%	15,00%
Packaging of steel	96 488	15 801	16,38%	142 800	15 801	11,07%	6,00%
Packaging of paper and cardboard	679 098	301 363	44,38%	1 363 600	301 363	21,78%	37,00%
Packaging of glass	660 921	99 124	15,00%	1 037 900	99 124	9,55%	13,00%
Packaging of wood and natural materials	490 362	135 543	27,44%	497 500	135 543	27,24%	5,00%
Packing of multiple materials	101 571	6 617	6,51%	155 400	6 617	4,26%	5,00%
	2 499 258			3 793 000			

Source: own study on basis of Krajowy Plan Gospodarki Odpadami (M.P. z 2002 roku, No 11, pos. 159) [2] and data of Ministry of Environment regarding recycling rates achieved in year 2002 „Niedostatkowi zapisów ujawniają się w praktyce”, magazine „Recykling” No 10/2003 [3].

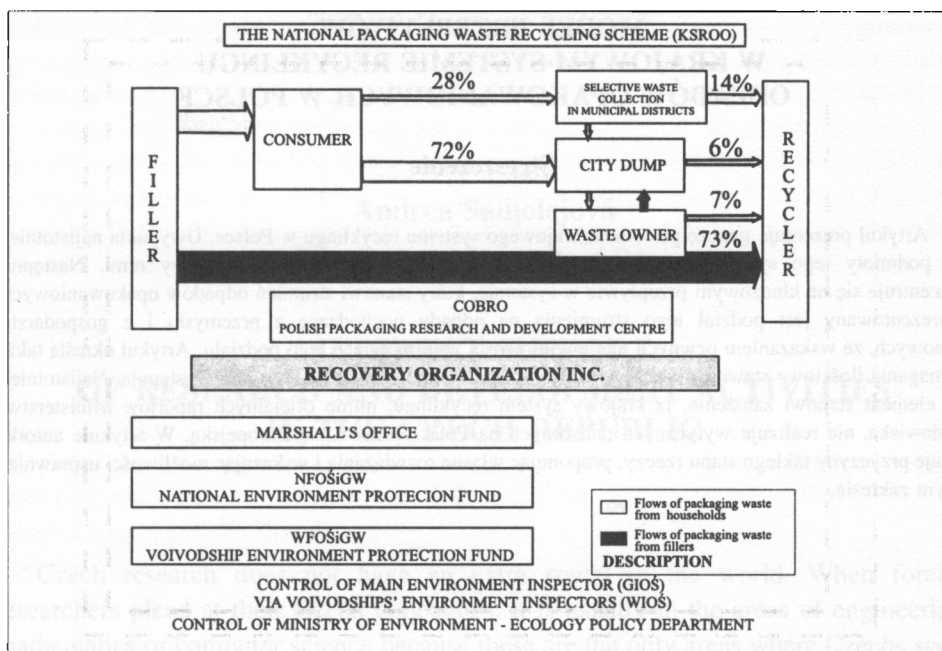


Fig. 3. Flows in the packaging waste's streams of KSROO

Source: own study and the Act of May 11th 2001 regarding product's fee [1].

The most effective methods of flows optimisation in KSROO are as follows:

- Stronger involvement of society in the selective waste collection is crucial. Ecological education & reduction of costs of selective gathered waste reception from households are the key factors (the containers should be bought for the money from product's fees paid by the fillers).
- Higher landfilling costs should deter the owners of the waste to sell them to the recyclers not to place them on the city dumps.
- The weight of the packaging should be reduced during the product's planning according to the rule „reduction at source”.

The aboved presented elementary improvements are the key to the success of packaging waste recycling system in Poland.

References

- [1] The Act of May 11th 2001, which describes the duties of fillers in waste management and product fees as well as deposit fees (Dz.U. of 2001 No 63, pos. 639).
- [2] Krajowy Plan Gospodarki Odpadami (M.P. of 2002, No 11, pos. 159).
- [3] *Niedostatki zapisów ujawniają się w praktyce*, magazine „Recykling” No 10/2003.

MODEL PRZEPIYWÓW W KRAJOWYM SYSTEMIE RECYKLINGU ODPADÓW OPAKOWANIOWYCH W POLSCE

Streszczenie

Artykuł prezentuje genezę powstania krajowego systemu recyklingu w Polsce. Uwypukla najistotniejsze podmioty tego systemu wraz z głównymi przepływami zachodzącymi między nimi. Następnie koncentruje się na kluczowym przepływie w systemie, który stanowi strumień odpadów opakowaniowych. Zaprezentowany jest podział tego strumienia na odpady pochodzące z przemysłu i z gospodarstw domowych, ze wskazaniem pewnych nieprawidłowości w proporcjach tego podziału. Artykuł określa także wymagania ilościowe stawiane wobec systemu, a także ograniczenia, jakie w nim występują. Najistotniejszy element stanowi założenie, iż krajowy system recyklingu, mimo oficjalnych raportów Ministerstwa Środowiska, nie realizuje wytycznych nałożonych na Polskę przez Unię Europejską. W artykule autorka podaje przyczyny takiego stanu rzeczy, proponując własne rozwiązania i wskazując możliwości usprawnień w tym zakresie.