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## **Fulfilment of the Recovery and Recycling Obligations by Entrepreneurs in Podkarpackie Province**

### **1. Introduction**

Legal regulations regarding waste management are created in the EU legislative system based on specific determinants, for instance, for specific waste types or measures to be taken, while respecting general (superior) stipulations. Transposition of the European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste amended with the Directive 2004/12/EC of the European Parliament and of the Council of 11 February 2004 and with the Directive 2005/20/EC of the European Parliament and of the Council of 9 March 2005 is most of all reflected in two legal acts. The first one is the Act on packaging and packaging waste of 11 May 2001 (Journal of Laws of 2001 no. 63, item 638 as amended) that defines requirements that must be fulfilled by packaging and measures to be taken as regards packaging and packaging waste, and determines obligations of the producer, importer and exporter of packaging and packed products [11].

The second fundamental document that transposes the regulations of the Directive 94/62/EC onto the Polish realities is the Act on obligations of the entrepreneurs as regards management of certain waste and on product fee of 11 May 2001 (Journal of Laws of 2007 no. 90, item 607 as amended). The Act imposes obligations on importers and product manufacturers who place packed products on the market. Broader liability of the producer is a very important principle and a very significant aspect of the policy regarding waste management [11].

First of all, the Act on packaging and packaging waste as well as the Act on the obligations of the entrepreneurs force the producers to use such technological and production systems that will allow to reuse a given product. Thus, the producer is responsible for the impact of the product on the environment during its entire life-cycle, until its complete usage and disposal. It is reflected in the

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selection of materials and recycling methods used in production. There may be lots of methods that comply with the above principle. The overriding concept of that principle is that the systems of production development and of consumption must lead to diminishing of the waste, and to recycle and dispose of the remaining waste economically and effectively. [11].

## **2. Obligation to Ensure Recovery and Recycling of the Packaging Waste and Post-Use Waste**

The Act specifies the obligations of the entrepreneurs, as they are defined in the regulations of the Act on freedom of business activity of 2 July 2004 (Journal of Laws of 2007 no. 155 item 1095 as amended), who place on the domestic market packed products of the types stipulated in the enclosure no. 1 thereto, and products listed in enclosure no. 3 to the Act, and it provides for the principles of determining and charging of the product fee [1].

The stipulations of the Act are also applicable to an entrepreneur who packs products manufactured by another entrepreneur and places them on the domestic market. If a product or packed product is placed on the domestic market by an entrepreneur other than the manufacturer of the product or packed product, the obligations provided for in the Act shall be binding for the entrepreneur who ordered manufacturing of the product or packed product, and whose marking was placed on the product or on the packed product [1].

The obligations imposed by the Act are applicable also to the entrepreneurs running retail trade outlet(s) of the commercial area above 500 m<sup>2</sup> who sell products packed there, and entrepreneurs who run more than one retail trade outlets of the total commercial area exceeding 5,000 m<sup>2</sup>. The regulations of the Act are also applicable to the entrepreneur who introduces goods to his/her country by import or by intra-community acquisition of goods, if the components or fixtures of the goods are products listed in enclosure no. 3 to the Act [1].

The Act on the obligations of the entrepreneurs covers the packaging listed in enclosure no. 1 to the Act: plastics, aluminium, steel, paper and cardboard, domestic glassware, wood, multi-material packaging.

According to the Act, the term “packaging” stands for any goods placed on the market that are made of any materials, are designed for storage, protection, transport, supply or presentation of any products, from raw materials to processed goods, as well as parts of packaging and elements designed for the same purpose as packaging. The Act includes also products enumerated in enclosure no. 3 to the Act: lubricating oils and tires.

The Act imposes the obligation of ensuring recovery, and especially recycling of packaging waste and post-use waste, on the entrepreneurs who are subject to the regulations of the Act. The obligation of ensuring recovery and recycling is the major duty of the entrepreneur. The regulations of the Act do not provide for the obligation of recovery and recycling of packaging waste exclusively from the products that the entrepreneur places on the market. The said obligation refers to the packaging of the same type as the one in which the product was packed.

Weight or quantity of the waste recovered or recycled and method of recovery shall be determined based on documents that confirm separately recovery and separately recycling. Specimens of the mentioned above documents are stipulated in the Ordinance of the Minister of Environment (Journal of Laws of 2006 no. 247 item 1816). The documents are issued by the recovering or recycling person on request of the entrepreneur handing over the waste. The documents should be issued within 7 days from submitting the request [8].

In case of exporting the waste abroad with the aim to have them recovered or/and recycled, their weight or quantity shall be determined based on the invoice confirming the intra-community supply of waste, and based on the declaration that the recovery or/and recycling takes place in the plants meeting the same requirements as the ones provided for the plants operated on the country [1]. If the entrepreneur carries out recovery or/and recycling on his/her own, the weight or quantity of waste recovered or/and recycled shall be determined based on the waste records maintained by him/her.

An entrepreneur who recovered or recycled waste in excess of required level may settle the excess weight or quantity of packaging waste or post-use waste in the next calendar year [1].

The obligation of ensuring recovery, and especially recycling may be fulfilled by the entrepreneur:

- 1) On his/her own – the entrepreneur himself/herself recovers or recycles, in line with the terms and conditions stipulated in the regulations on waste, packaging waste and post-use waste manufactured by him/her. The obligation of recovery or recycling may be fulfilled by the entrepreneur also by recovering or recycling the waste collected through the selective waste collection network organised by him/her, however the said waste must be of the same type and weight or quantity as the waste originating from the products or packed products placed on the domestic market.
- 2) Through the agency of the recovery organisation – the organisation takes over the entrepreneur's obligations based on the signed agreement.

In line with the Act, the recovery organisations run their business as joint stock companies whose initial capital must be at least PLN 1,000,000. Business of

the recovery organisation must be related to recovery, recycling and ecological education exclusively. [9]

The obligation of recovery and recycling is accounted for at the end of the calendar year. Entrepreneurs who failed to fulfil the obligation of recovery or recycling (or who fulfilled the obligation in part only, without achieving the required levels) are obliged to pay the product fee calculated separately in case of failure to meet the required recovery as well as recycling levels. The fee rates recovery and recycling levels for the packaging in the years 2007–2009 are presented in the table 1.

**Table 1.** Fee rates, recovery and recycling levels for packaging in the years 2007–2009

No.	Type of packaging	2007			2008			2009		
		Recovery level [%]	Recycling level [%]	Rate [PLN]	Recovery level [%]	Recycling level [%]	Rate [PLN]	Recovery level [%]	Recycling level [%]	Rate [PLN]
1	plastic	50	25	2.68	50	16	2.73	51	17	2.73
2	aluminium		40	1.34		41	1.37		43	1.37
3	steel, inclusive of steel sheet		20	0.8		25	0.82		29	0.82
4	paper and cardboard		48	0.64		49	0.65		50	0.65
5	domestic glassware, exclusive of ampoules		40	0.25		39	0.26		41	0.26
6	natural materials (wood and textiles)		15	0.32		15	0.33		15	0.33

Source: [4–7]

The product fee shall be calculated as a product of the product fee rate and the difference between the required and achieved recovery (recycling) level converted into a value expressed as weight or as a number of products or packaging:

$$N = W \cdot \frac{(p-o) \cdot s}{100}$$

Product fee shall not be paid if its total annual amount for packaging and products is lower or equal to PLN 50.

### 3. Example of a Calculation of the Product Fee for the Entrepreneur for the Years 2007–2009

In 2007, the entrepreneur placed on the domestic market products manufactured by him/her in packaging made of: plastic – 800 kg, paper and cardboard – 1,700 kg, steel – 500 kg. Product fee rates, recovery and recycling levels for 2007 are as follows (tab. 2).

**Table 2.** The fee rates recovery and recycling levels for the year 2007

Type of packaging	Recovery level [%]	Recycling level [%]	Rate [PLN]
plastic	50	25	2.68
steel		20	0.8
paper and cardboard		48	0.64

The entrepreneur did not have the packaging waste recovered or recycled and thus he/she is obliged to calculate the product fee:

- The fee for recycling of plastic:

$$N_1 = 800 \text{ kg} \cdot 25\% \cdot 2.68 \frac{\text{zł}}{\text{kg}} = 536 \text{ zł.}$$

- The fee for recycling of paper and cardboard:

$$N_2 = 1700 \text{ kg} \cdot 48\% \cdot 0.64 \frac{\text{zł}}{\text{kg}} = 522 \text{ zł.}$$

- The fee for recycling of steel packaging:

$$N_3 = 500 \text{ kg} \cdot 20\% \cdot 0.80 \frac{\text{zł}}{\text{kg}} = 80 \text{ zł}$$

- The fee for failure to meet the recovery obligation:

$$OP_{\text{odysk}} = \frac{800 \text{ kg} \cdot 2.68 \frac{\text{zł}}{\text{kg}} + 1700 \text{ kg} \cdot 0.64 \frac{\text{zł}}{\text{kg}} + 500 \text{ kg} \cdot 0.80 \frac{\text{zł}}{\text{kg}}}{800 \text{ kg} + 1700 \text{ kg} + 500 \text{ kg}} \times$$

$$\times (800 \text{ kg} + 1700 \text{ kg} + 500 \text{ kg}) \cdot 50\% = 1816 \text{ zł.}$$

The total product fee for 2007 is the sum of recycling and recovery fees and it amounts to PLN 2,954.

In 2008, the entrepreneur placed on the domestic market products manufactured by him/her in packaging made of: plastic – 1,100 kg, paper and cardboard – 1,900 kg, steel – 600 kg.

Product fee rates, recovery and recycling levels for 2008 are as follows (Tab. 3).

**Table 3.** The fee rates, recovery and recycling levels for the year 2008

Type of packaging	Recovery level [%]	Recycling level [%]	Rate [PLN]
plastic	50	16	2.73
steel		25	0.82
paper and cardboard		49	0.65

The entrepreneur had the following packaging waste recovered and recycled: paper and cardboard waste – 700 kg, plastic waste – 1,000 kg, and obtained a confirmation of recovery and recycling for the above quantities from the recycling organisation.

Thus, the fee for the recycling of plastic is negative value:

$$N_1 = (1100 \text{ kg} \cdot 16\% - 1000 \text{ kg}) \cdot 2.73 \frac{\text{zł}}{\text{kg}} = -2250 \text{ zł},$$

which means that the fee for recycling of plastic is PLN 0.

The surplus that can be used the next calendar year is:

$$1000 \text{ kg} - 1100 \text{ kg} \cdot 16\% = 824 \text{ kg}.$$

The fee for recycling of paper and cardboard is:

$$N_2 = (1900 \text{ kg} \cdot 49\% - 700 \text{ kg}) \cdot 0.65 \frac{\text{zł}}{\text{kg}} = 150 \text{ zł}.$$

The fee for recycling of steel packaging is:

$$N_3 = 600 \text{ kg} \cdot 25\% \cdot 0.82 \frac{\text{zł}}{\text{kg}} = 123 \text{ zł}.$$

The fee for failing to meet the recovery obligation is:

$$OP_{\text{odzysk}} = \frac{1100 \text{ kg} \cdot 2.73 \frac{\text{zł}}{\text{kg}} + 1900 \text{ kg} \cdot 0.65 \frac{\text{zł}}{\text{kg}} + 600 \text{ kg} \cdot 0.82 \frac{\text{zł}}{\text{kg}}}{1100 \text{ kg} + 1900 \text{ kg} + 600 \text{ kg}} \times \\ \times [(1100 \text{ kg} + 1900 \text{ kg} + 600 \text{ kg}) \cdot 50\% - 1700 = 132 \text{ zł}.$$

The total product fee for 2008 is the sum of recycling and recovery fees and it is PLN 405.

In 2009, the entrepreneur placed on the domestic market products manufactured by him/her in packaging made of: plastic – 1,200 kg, paper and cardboard – 2,300 kg, steel – 800 kg.

Product fee rates, recovery and recycling levels for 2009 are as follows (Tab. 4).

**Table 4.** The fee rates, recovery and recycling levels for the year 2009

Type of packaging	Recovery level [%]	Recycling level [%]	Rate [PLN]
plastic	51	17	2.73
steel		29	0.82
paper and cardboard		50	0.65

The entrepreneur had the following packaging waste recovered and recycled: paper and cardboard waste – 2,000kg, steel – 250kg, and obtained a confirmation of recovery and recycling for the above quantities from the recycling organisation. Furthermore, he/she had the surplus plastic packaging waste recycled in 2008 to be settled (824 kg).

The recycling fee for plastic is negative value:

$$N_1 = (1200 \text{ kg} \cdot 17\% - 824 \text{ kg}) \cdot 2.73 \frac{\text{zł}}{\text{kg}} = -1693 \text{ zł}.$$

Thus, the fee for recycling of plastic is PLN 0. There is still the surplus to be used next calendar year. The surplus weight is:

$$824 \text{ kg} - 1200 \text{ kg} \cdot 16\% = 620 \text{ kg}.$$

The fee for recycling of paper and cardboard is negative value:

$$N_2 = (2300 \text{ kg} \cdot 50\% - 2000 \text{ kg}) \cdot 0.65 \frac{\text{zł}}{\text{kg}} = -552 \text{ zł}$$

which means that the fee for recycling of paper and cardboard is PLN 0.

There is still the surplus to be used next calendar year. The surplus weight is:

$$2000 \text{ kg} - 2300 \text{ kg} \cdot 50\% = 850 \text{ kg}$$

The fee for recycling of steel packaging is negative value:

$$N_3 = (800 \text{ kg} \cdot 29\% - 250 \text{ kg}) \cdot 0.82 \frac{\text{zł}}{\text{kg}} = -15 \text{ zł}$$

which means that the fee for recycling of steel is PLN 0. There is still the surplus to be used next calendar year. The surplus weight is:

$$250 \text{ kg} - 4300 \text{ kg} \cdot 51\% = 57 \text{ kg}$$

The recovery fee is negative value:

$$OP_{\text{odzysk}} = \frac{1200 \text{ kg} \cdot 2.73 \frac{\text{zł}}{\text{kg}} + 2300 \text{ kg} \cdot 0.65 \frac{\text{zł}}{\text{kg}} + 800 \text{ kg} \cdot 0.82 \frac{\text{zł}}{\text{kg}}}{1200 \text{ kg} + 2300 \text{ kg} + 800 \text{ kg}} \times$$

$$\times [(1200 \text{ kg} + 2300 \text{ kg} + 800 \text{ kg}) \cdot 51\% - 2250] = -72 \text{ zł}$$

which means that the recovery fee is PLN 0. There is still the surplus to be used next calendar year. The surplus weight is:

$$2250 \text{ kg} - 4300 \text{ kg} \cdot 51\% = 57 \text{ kg}$$

In 2009, the entrepreneur met the obligation to ensure recovery and recycling in full, and thus he/she does not pay any product fee.

#### 4. Execution of the Statutory Obligations in Podkarpackie Province

Entrepreneurs may meet the statutory obligations on their own or through the agency of the recovery organisations.



In Podkarpackie Province, the statistics regarding meeting the statutory obligations by the entrepreneurs on their own were as follows:

- in 2007 362 entrepreneurs,
- in 2008 337 entrepreneurs,
- in 2009 298 entrepreneurs.

Although the number of entrepreneurs who meet the statutory obligations is increasing, the number of entrepreneurs who do it on their own is decreasing. It is so because the recovery organisations take over the entrepreneurs' obligations.

In Podkarpackie Province, the statutory obligations are met by nearly 800 entrepreneurs. It is an approximate value because the Marshal's Offices do not receive information thereon from the recovery organisations seated outside their province. Recovery organisations report only to the Province Marshal of the province where they have their registered seat. The Marshal of the province verifies meeting the statutory obligations only based on notifications submitted in connection with Article 9 (4) of the Act on obligations of entrepreneurs. However, information disclosed in the notifications not always reflect the actual status. Thus, the Province Marshals who want to verify meeting the entrepreneurs' obligations by recovery organisations having their registered seat in other provinces request the Marshals of such provinces to send them a list of entrepreneurs who were meeting their statutory obligations through the agency of the recovery organisations seated in specific provinces.

It would be much easier to verify meeting the statutory obligations by the entrepreneurs if the recovery organisations were obliged by legal regulations to submit a collective information on entrepreneurs to the Province Marshals. The said information should be submitted to the Marshals of the provinces where the entrepreneurs from whom the recovery organisation took the statutory obligations over are located.

Entrepreneurs who meet their statutory obligations on their own may be divided into three groups.

- 1) Entrepreneurs who have met their obligation to ensure recovery and recycling and thus they do not pay any product fee.
- 2) Entrepreneurs who have not met their obligation to ensure recovery and recycling, or who have not attained the required levels, and the calculated product fee does not exceed PLN 50, and thus they do not pay any fee (in pursuance of Article 12 (5) of the Act.)
- 3) Entrepreneurs who have not met their obligation to ensure recovery and recycling, who have not attained the required levels, and the calculated product fee is in excess of PLN 50, and thus they are obliged to pay the product fee.

**Table 5.** Number of entrepreneurs per specific groups in Podkarpackie Province

Years	The first group – the fee of PLN 0	The second group – the fee < PLN 50	The third group – the fee > PLN 50
2007	98	39	225
2008	96	37	204
2009	92	37	169

The number of entrepreneurs in the specific groups in Podkarpackie Province are presented in the table 5. Entrepreneurs meeting the statutory obligations are divided into three groups. You may notice, that each year the number of entrepreneurs in each group decreases, however the biggest drop is in the group of entrepreneurs obliged to pay the product fee.

There is little interest in shifting statutory obligations to the recovery organisation in the group of entrepreneurs who met their statutory obligations. In case of this group, the entrepreneurs resign from meeting the statutory obligations on their own because of the amendment of the Act of 2005 that added a clause forcing the entrepreneurs to meet their statutory obligations by recovering or/and recycling of waste produced by them exclusively. Meeting the obligations by recovering or recycling the waste “collected though the selective waste collection network organised by the entrepreneur himself/herself” commits the entrepreneur to recover or recycle the waste “of the same type and weight or quantity as the waste originating from the products or packed products placed on the domestic market”. It means, that the entrepreneur who meets the obligation in reference to the “collected” waste is obliged to attain 100% recovery level and 100% recycling level. Thus, in certain cases it may be better to shift the statutory obligations to the recovery organisation.

The group of entrepreneurs who must pay the fee but in the amount not higher than PLN 50 remains at the same level. Shifting their obligations to the recovery organisation is not beneficial for them. Moreover, the recovery organisations are not interested in taking over the obligations from the entrepreneurs who place little packaging or/and products on the domestic market. Slight decrease in the number of entrepreneurs in that group may result, for instance, from increase in production and their reclassification to another group.

In the third group, the decrease in the number of entrepreneurs meeting their statutory obligations is the biggest. It results from shifting the obligations of ensuring recovery and recycling to the recovery organisation. In that group, there are few entrepreneurs who have not attained the required levels of recovery or/and recycling. The remaining entrepreneurs are the ones who have not met their statutory obligations to ensure recovery and recycling of packaging waste and post-use waste and thus they are obliged to pay the product fee.

## 5. Summary and Conclusions

The number of entrepreneurs who meet their obligations resulting from the Act on obligations of the entrepreneurs as regards management of certain waste and on product fee increases every year. It results from controls performed by the Provincial Inspectorate of Environment Protection, summons sent by the Province Marshal to entrepreneurs who fail to meet their statutory obligations, and from the improved awareness of entrepreneurs in this respect. Despite of the above, the number of entrepreneurs who meet their statutory obligations in this respect on their own is decreasing. The reason thereof is that the recovery organisations offer increasingly better terms and conditions of their services. The fee for taking over the statutory obligations by the recovery organisation is a dozen or so times lower (in some cases, even a few dozen times lower) than the fee that the entrepreneur would have to pay to the Marshal's Office. Moreover, the fact that the entrepreneurs recovering and/or recycling the waste collected on the market were "forced" by the regulations of the Act to attain recovery and recycling at 100% level forced them to shift their obligations to the recovery organisations.

## References

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