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## Waste Management Principles on the Example of Altvater Piła Group Eneris

### Zasady gospodarki odpadami na przykładzie przedsiębiorstwa Altvater Piła Group Eneris

In 2013, the Polish legal system referring to municipal wastemanagement was restructured in a revolutionary way. The analysis of new provisions of law described in the article requires particular attention, taking into account their place in the entire system of dealing with waste and connections with the remaining elements of this system. The article discussed the process of road transport operation planning connected with municipal waste transport and the organization of mixed waste collection on the example of shipping routes analysis carried out by means of transport of a service company in Walcz commune in West Pomeranian voivodeship. The article consists of seven parts, all of which present elements of a planning and transport process connected with municipal waste in road transport from legal, technical and economic perspective. Legal information concerning a road transport of goods was provided along with conditions that have to be met in order to perform this kind of transport and business activity. Moreover, technical and legal aspects of municipal waste transport vehicles were approached. At the level of Polish law, the goals and tasks concerned with dealing with waste were set forth, which leads to tightening of the system. All actions in this respect - from propagating the selective accumulation and collection of municipal waste, keeping the established levels of recycling and recycling of packaging wastes, and limiting the mass of biodegradable waste directed at the storage - is only a beginning of the road to reduction of environmental risks. In this case, permanent monitoring of proper waste dealing in the commune, the province as well as the entire country is essential. One of the crucial reasons of the system changes of waste management in our legal system in Poland was a need to implement solutions and mechanisms that are applied in the European Union. At the European Union law level, a Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives constitutes a basic legal document described in this part of the article. Achievement of these assumptions requires providing segregation at source and recycling of the main waste streams above all. The article covered as well the characteristics of: transport process, transport technologies, transport systems, the analysis of work capacity on the basis of drivers' working time and a description of optimal routes for providing services in the commune taking into consideration a technological process of municipal waste transport step by step. The aim of the article is to present the rules of municipal waste: management, storage, segregation, keeping appropriate records of waste in municipal enterprises on the example of Altvater Piła Group Eneris.

**Keywords:** road transport, municipal waste, provisions of law, transport centre, legislative directive, transport operation, act, regulation, record

## Introduction

Municipal waste management has become a challenge for local government authorities both in small communes and larger municipalities. Pursuant to revised national legislative provisions, communes are obliged to manage waste. Currently, waste storage is the most popular way of its dealing in Poland. According to data provided by the National Waste Management Plan, there is no sufficient amount of recovery and disposal facilities outside storage places [1]. The article presents the stages of planning and convey processes for transporting commune waste in road transport in legal. They include all legal information relating to road convey of commodities as well as conditions which must be met by the service company that conducts this kind of carriage and business activity. Due to that, not enough waste undergoes biological and thermal treatment. When it comes to household waste treatment, it's the local government authorities that are held responsible for waste collection, keeping records, and lawful management. The article indicates basic types of documents which relate to waste management records that business entities deal with and requirements that need to be met on the example of Altvater Pila Group Eneris. Provisions concerning waste management in Poland have been binding for a few years so far, however many problematic issues in relation between the commune and municipal company still arise. Another parts of the article will focus on this matter.

## 1. Principles of waste management

Waste holder is obliged to keep a record of qualitative and quantitative waste inventory, in accordance with legally enacted waste catalogue. However, keeping waste records does not apply in case of [2]:

- municipal waste producers and producers of 'end-of-life' vehicles, if such vehicles were transferred to disassembly stations, or a vehicle collection point,
- entities and private individuals that are not entrepreneurs, and use waste for their own purposes.

Generation of waste constitutes a serious problem in a global scale on account of a growing population and economic growth that made humans the largest waste producer in nature.

Waste management cannot [3]:

- 1) put at risk water, soil, plants and animals,
- 2) cause a nuisance through noise or odors,
- 3) adversely affect the countryside or places of special interest.

Waste management shall be carried out in accordance with the amendment of Waste Act so-called Waste Management Plans that need to include [3]:

- 1) the analysis of a current waste management standing in the area of a plan's application relating to:
  - a) existing waste prevention means and its evaluation,
  - b) type, amount and sources of waste,

- c) type and amount of waste that undergoes special recovery processes, including facilities situated outside the territory of the country,
  - e) existing waste management systems including waste collection,
  - f) types, arrangement and operating capacities of waste treatment plants including waste oils, hazardous waste addressed by specific legislation,
  - g) identifying problems in the scope of waste management, including creation of new waste collection systems or developing the old ones, building new waste management infrastructure;
- 2) projected developments in terms of waste management, that result from demographic and economic changes;
  - 3) targets adopted regarding waste management to be achieved by specific dates with targets concerning waste prevention, limiting the amount of biodegradable municipal waste directed to landfills;
  - 4) directions of actions within the scope of waste prevention and development of waste management system undertaken in order to attain the objectives such as:
    - a) solutions concerning waste oils, other hazardous waste and waste addressed by specific waste treatment legislation,
    - b) waste management policy including planned waste management technologies or policies for waste posing specific management problems, also incentives supporting selective collection of bio-waste with a view to composting and digestion of bio-waste,
    - c) if necessary specifying the location criteria of waste treatment establishments and operation capacities of future waste management installations;
  - 5) schedule, performer, and financing sources that result from adopted lines of action,
  - 6) information on strategic evaluation of plan's impact on the environment,
  - 7) monitoring and evaluation of plan's implementation that allows to determine a way and a degree of fulfilling objectives,
  - 8) non-technical summary.

Generally, waste management plans are planning and economic documents designed for a specific part of municipal waste management. Act of 12 December 2012 on Waste introduces many changes in ways of waste management. The basic change is creating the hierarchy of waste management, that consists in keeping a precisely determined sequence of waste treatment from waste prevention to its disposal (Fig. 1) [4].

Currently the following rules of waste management shall apply [5]:

1. Principle of waste prevention is connected with the scope of responsibilities for waste generation.

Everyone who undertakes actions that cause or may cause waste creation, should plan and conduct such activities as to [6]:

- prevent the creation of waste or limit waste and its negative impact on the environment during the creation of products, during and after their use,
- provide a re-use in a manner compatible with protection or improvement of the quality of the environment,

- provide waste disposal compatible with the environment protection in case where waste creation and re-use could not have been prevented.

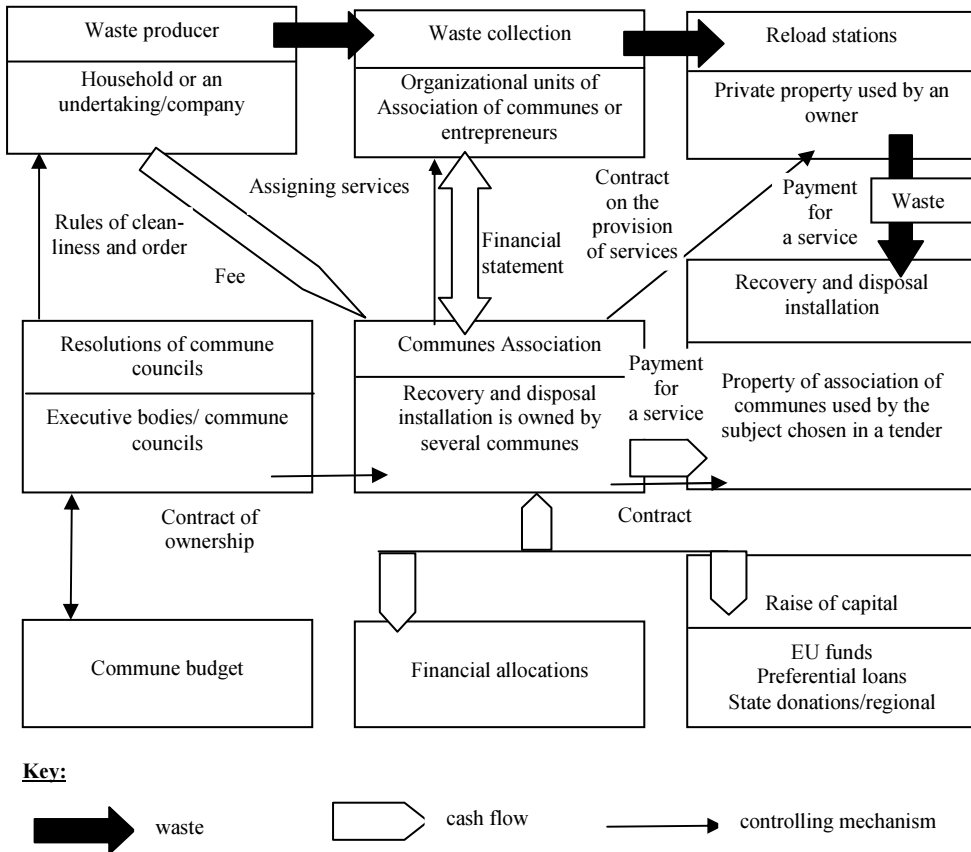


Fig. 1. Scheme of responsibility and waste treatment hierarchy [4]

The principle particularly applies in case of business entities (communes, entrepreneurs, property owners). A commune as business entity may introduce actions that result in waste creation. If however the commune acts as a property owner, all duties for property owners apply. Entrepreneurs - waste producers and other property owners need to abide by the mentioned regulation just as in case of a commune, which is treated as a civil legal entity. The regulation does not apply to entrepreneurs that deal with waste collection (including transport). In situation where an activity results indirectly in waste creation other than the one that is collected and transported the said rule applies (Fig. 2) [4].

This information doesn't relate to entrepreneurs that deal with waste disposal and recovery. Basically, the rule applies to waste producers as its main aim is to reduce the amount of produced waste which also made it important for local authorities. Every property owner, irrespective of the legal form including entrepreneur and commune may be waste producer.

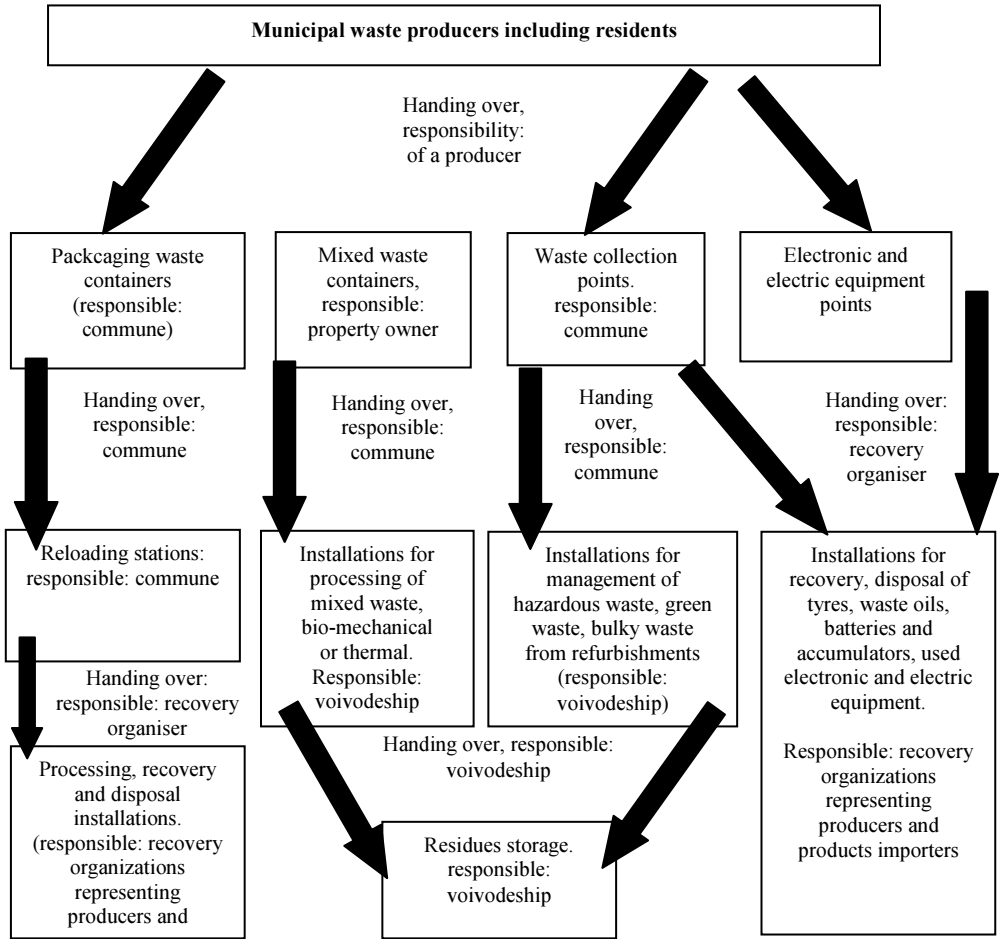


Fig. 2. Waste creation responsibility principle [4]

2. Priority of waste recovery principle.

The principle refers to communes, entrepreneurs and property owners. Waste holder, which is a commune as a civil legal entity, entrepreneur and an owner of a property, is obliged to deal with waste in a way that conforms to the principles of waste management, environmental protection requirements and waste management plans. First, it is required that waste recovery takes place and if due to technological reasons it's not possible or unjustified ecologically, waste should be disposed of in accordance with environment protection requirements and waste management plans. Where it was not possible to recycle waste it should be disposed of in a way that enables warehousing of waste that couldn't be disposed of in other manner due to technological reasons, or it was either ecologically or economically unjustified. Pursuant to the principle, a commune which a civil law relation subject, needs to abide by the regulations set forth by its authorities and a commune waste management plan. In case of property owner (individual or aggregate) should sort and

recover waste and only when these actions are not possible shall he dispose of it. The same rule applies to entrepreneurs [7].

3. Principle of waste recovery and disposal at the place of its production [8].

Waste should firstly undergo recovery after its sorting, and then may be disposed of at the place of its production. Waste that can't be recovered or disposed of at the place of production, should be transmitted to the nearest waste management facilities that can deal with its recovery or disposal. Mixed municipal waste, residues of municipal waste sorting and sewage sludge may undergo recovery or disposal in other municipality if a distance between the place of waste production and recovery or disposal facilities which fulfill technological standards, is smaller than a distance to waste management facility within the boundaries of the same municipality.

4. Proximity principle expressed in subjecting waste to recovery or disposal first, at the place of its production or transmitting waste to the nearest plants that provide recovery or disposal at high technological level, according to Environmental Protection Law of 27 April 2001 (Journal of Laws of 2208 No 25, item 150, as amended). Waste producer may manage it using own means or transmit it to other holder as long as the other producer or waste holder meets formal requirements (obtained waste management permit or is released from the obligation to obtain such permit). Waste producer or subsequent waste holder is responsible for appropriate waste management as long as it is authorized to perform waste management or is entered into a register of subjects exempted from authorizations kept by a district mayor.

5. Polluter pays principle - costs of waste management are incurred by primary waste producer, current or previous waste holder. Member states may stipulate that costs of waste management are in whole or in part assigned to goods producer or products dealers.

6. The principle of proximity and self-sufficiency.

The relevant local legal act within the territory of commune is rules of cleanliness and order that determines detailed principles of keeping a commune clean and tidy. It is a general act, passed compulsorily by a Commune Council, referring to duties of the commune and all subjects performing activities within the commune boundaries. Basic issue that rules of cleanliness and order relates to is defining the scope of selective collection and pick up of municipal waste. Member States shall take appropriate measures (alternatively in cooperation with other Member States) to establish an integrated and adequate network of waste disposal installations that will deal with mixed waste recovery. Network should be designed in a way that would allow the European Union as a whole to become self-sufficient and Member States to reach the same goal gradually. Network needs to enable mixed municipal waste recovery or disposal in the nearest waste management installation by means of the most appropriate methods and technologies in order to ensure a high level of protection for the environment and public health.

7. Principle of selective collection and waste pick up.

A legal basis for the said principle is article 4a of the amended Act on Maintaining Cleanliness and Order in Communes of 1 February 2015. The regulation intro-

duced an optional delegation for the Minister of the Environment to set out in a regulation:

- detailed manner of selective collection of waste fractions and determining when a requirement of selective collection is met,
- municipal waste subject to selective collection among the depicted one in the article 3b paragraph 1 and article 3c paragraph 1. Ministry of the Environment introduced a provision in regulation that sets out in what situations an obligation of selective municipal waste collection is fulfilled. The decisive criteria in this case would be weight of separately collected waste in a month. If such waste constitutes at least 50% of total waste weight, then the said obligation is treated as fulfilled. A legal basis of this principle which is an article 4a of the amended Regulation, excludes any possibility of municipal waste collection at source in a double container system (broken down into “wet” and “dry” fractions). A duty of selective waste collection is met by communes that provide for a duty of separating the following types of waste from total waste weight in rules of cleanliness and order [2]:
  - paper, cardboard and paper, cardboard packaging,
  - metals and metal packaging,
  - plastic and plastic packaging,
  - multi-material packaging,
  - glass and glass packaging,
  - biodegradable municipal waste including biodegradable packaging and greek waste,
  - overdue medicines and chemicals,
  - used electronic and electric equipment,
  - waste batteries and accumulators
  - furniture and other bulky waste,
  - used tyres,
  - construction and demolition waste which is municipal waste.

Currently there are three models of selective waste collection “at source”, among which commune may choose one [9]:

1. Model I - collecting the following waste fractions on separate bags and containers:
  - a. Paper
  - b. Metals
  - c. Plastic (including multi-material packaging)
  - d. Glass
2. Model II - collecting the following waste fractions on separate bags and containers:
  - a. Paper
  - b. Metals
  - c. Plastic (including multi-material packaging)
  - d. Glass
  - e. Biodegradable vegetable waste

3. Model III - collecting the following waste fractions on separate bags and containers:
  - a. Paper
  - b. Metals
  - c. Plastic (including multi-material packaging)
  - d. Glass
  - e. Biodegradable vegetable waste
  - f. Ash from households

In all three models, the Ministry allowed to collect waste in aggregate to one bag or a container in order to pass the following type of waste to sorting [9]:

- a. metals and metal packaging,
- b. plastic and plastic packaging,
- c. multi-material packaging.

Due to that, glass-cardboard, glass-plastic and glass-metal are excluded from an aggregate collection. Paper and glass waste should be collected separately as the Ministry informs. As a consequence every property owner has 4 types of waste collected from: mixed, paper, glass, plastic with metal and multi-material packaging.

In case of Model II and Model III the Ministry allows collecting ash from households only during heating season. At the same time, separate ash collection is suggested by the department.

Prior to being placed in a container or a bag, packaging waste should be empty but not necessarily cleaned.

#### Colors of bags and containers:

Pursuant to the Regulation, colors of containers and bags intended for selective waste collection are determined (Figs. 3 and 4) [1]:

- a. BLUE containers and bags labeled: „PAPER AND CARDBOARD”;
- b. GREEN containers and bags labeled „GLASS” - if glass is collected in aggregate;
- c. GREEN containers and bags labeled „COLORED GLASS” - if collected glass is divided into white and colored;
- d. WHITE containers and bags labeled „WHITE GLASS” - if collected glass is divided into white and colored;
- e. YELLOW containers and bags labeled „METALS” or „PLASTIC” or „MULTI-MATERIAL WASTE” or „DRY WASTE”;
- f. BROWN containers and bags labeled „BIODEGRADABLE VEGETAL WASTE”;
- g. BLACK containers and bags labeled „MIXED WASTE”.

Simultaneously, the Regulation allows the Commune Council to introduce additional colored containers intended for collecting other municipal waste fractions” [10]. In municipal waste management the most often used containers are the ones of a capacity 120, 240 and 1 100 litres [9].

New regulations concerning waste segregation were introduced on 1 July 2017. Common waste segregation system, which introduces 4 main waste categories was created (WSSO).



Selective waste collection is carried out in accordance with the mentioned system, which increased the amount of recycled waste. Within the commune territory, local authorities should provide easy waste segregation that follows the common segregation system. Containers and bags should secure waste effectively, until its collection. By the end of June 2022, all containers in the communes should be exchanged. The resolution of the Ministry of the Environment of 29 December 2016, item.19 on selective collection of chosen waste fractions, introduced 5 fractions of waste that should undergo a selective collection [5]:

- 1) paper,
- 2) metals,
- 3) plastic, including multi-material packaging,
- 4) glass,
- 5) biodegradable waste with special reference to biowaste.

The regulation determines possibility of aggregate waste collection in the same container or a bag, in case of metals and plastic (including multi-material packaging), with a view to submitting it to sorting. Within five years after the date of entry into force of this regulation, colours of containers will have to be adjusted to standards specified in this regulation:

- Containers and bags labelled „Paper and cardboard” - blue colour
- Containers and bags labelled „Glass” - green colour
- Containers and bags labelled „Metals” lub „plastic and multi-material packaging” - yellow colour.

There are no obligatory container or bag colours connected with biodegradable waste. Within half a year after the date of entry into force of this regulation, using adequate colours and labels will be required. It shall apply from 1 January 2017 [11]. Waste segregation - a method for the utilization and recovery of waste. It is limiting the amount of waste by recovering raw materials that can be reused or recycled and used as a new material (recycling). Segregation of waste consists in collecting them into special containers, divided into types of materials. Is divided into [4]:

- source segregation - waste segregation in the household,
- segregation in municipalities - bag or container segregation.

Legal provisions that introduce the principle correspond with the rules stipulated in Act on cleanliness. It is directed to property owners in the first place, to local government authorities which a commune is, and afterwards to entrepreneurs. Pursuant to the Act, property owners are obliged to collect waste generated on the property in accordance with requirements provided for in regulation of City Council Resolution. The resolution needs to include requirements in the scope of order and cleanliness on the estate, including performance of selective waste collection and pick up. In addition, the legislator equipped commune councils with resolution-making competence that enables to organize municipal waste collection within a commune territory and collect fees for municipal waste management, so-called “waste tax”. It should be highlighted that a commune is obliged to adopt such resolutions. By way of a resolution, commune councils determine a manner in which the amount and way of paying a fee is calculated, detailed way and scope of per-

forming activities in the range of waste collection and management from property owners [3].



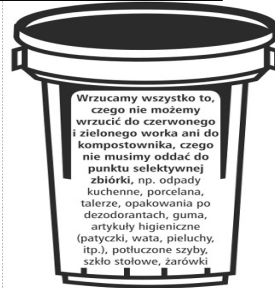
**DRY WASTE SORTING**



**PACKAGING GLASS**



**MIXED WASTE**



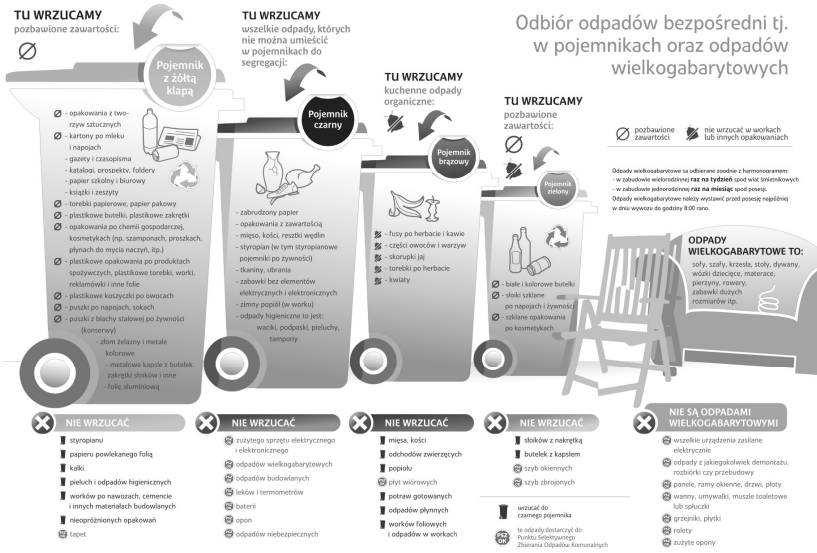


Fig. 3. Containers used for selective waste collection [1]

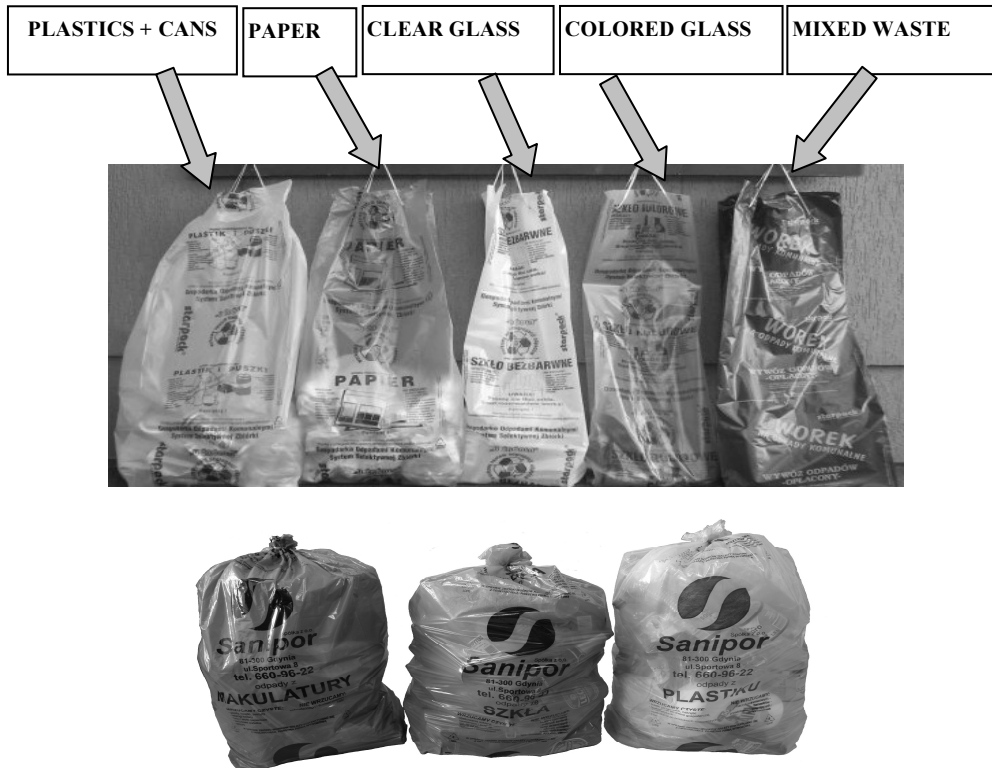


Fig. 4. Bags used for selective municipal waste collection [1]

Pursuant to article 39 (3) of Act of 14 December 2012 on waste (Journal of Laws of 2013 item. 21, as amended), the Minister of the Environment prepares a report on implementation of the national waste management plan, and submits it to the Council of Ministers. The report covers three calendar years, in this case: 2015-2017. Resolution No. 88 of the Council of Ministers, dated 1 July 2016 on the National Waste Management Plan 2022, is currently in force. The document sets forth activities which are vital for integrated and solid waste management. It determines new targets and goals that refer to 6 consecutive years, in future plans, until 2030. The aim of the document is to define waste management policy, consistent with circular economy. In line with plan's objectives, it is significant to implement actions that are on the top of waste management hierarchy, which means waste prevention and creating selective waste collection at its source. In accordance with the Act of 14 December 2012 on Waste (Journal of Laws 2013, item 21), article 34(3): "waste management plans are formulated at national and voivodeship level". The provision means that the obligation to formulate district or commune waste management plans has been deleted. Local government authorities should adjust their plans to voivodeship waste handling objectives. The mentioned objectives are to be followed in compliance with regulations on cleanliness and order in communes, drawn up on the basis on an Act of 13 September 1996 on maintaining cleanliness and order in communes (consolidated text Journal of Laws of 2012 item 391, as amended). Unlike communal waste management plan, commune regulation is a local legal act. According to applicable regulations – to article 3 (2) of Act of 13 September 1996 on maintaining cleanliness and order in communes (Journal of Laws of 2016, item 250), communes ensure cleanliness and order, within commune territory, and create conditions for maintaining it, particularly through organizing points of selective municipal waste collection. It is a place, within the commune premises, where waste collected selectively may be left by commune dwellers. The act determines two conditions that a point of selective waste collection has to meet [12]:

- 1) easy access for all commune dwellers,
- 2) accepting at least the following types of municipal waste:
  - waste batteries and accumulators,
  - waste electronic and electrical equipment,
  - furniture and other high volume waste,
  - used tyres,
  - green waste,
  - construction and demolition waste, as well as waste described in regulations based on article 4a.

So far, there have not been any executive regulations on the basis of article 4a. As for a detailed manner of providing services by the selective waste collection point, it is specified by the Commune Council, by way of a resolution, which is a local legal act (art. 6(3) of this Act). Waste fractions indicated by the act constitute only a part of waste catalogue that a commune is required to collect in these special points. Considering the practice, the catalogue should be extended, consid-

ering local commune conditions and existing systems of waste collection and reception.

## 2. Rules of storage (warehousing) and waste sorting

Act of 14 December 2012 on Waste, determines waste storage that is compliant with environment protection and human health safety. The storage of waste in repositories is being gradually replaced with various methods of waste disposal. This transformation is important in order to keep sustainability of waste management. In a short perspective, there are plans of closing all waste landfills, reducing the amount of waste that needs to be stored and increasing scale of waste disposal. Finding a proper location for a landfill is difficult due to the presence of outbuildings. People tend to be scared for their health and the condition of land and soil around. Choosing a location needs to be supported by appropriate economic, operational and environment protection criteria [10]. Storage has to be carried out in a selective way, however in certain cases there is a possibility of storing waste in a non-selective manner, which is regulated by the legal act (Ordinance of the Minister of Economy on types of waste not subject to selective storage in landfills). Environment protection regulations determine requirements that are to be met in connection with waste storage. The process should be carried out in accordance with environment protection and human health protection rules, in particular in a way that accounts for physical and chemical properties of waste (i.e. physical state, qualities that make waste hazardous and possible treats it may cause). Proper storage has to protect environment from penetration of contamination to water and soil (liquid waste is particularly dangerous).

## 3. Records of waste rules

Waste inventory is based on Regulation of the Minister of the Environment of 8 December 2010 on specimen documents used for keeping inventory of wastes (Journal of Laws No 294 of 2010 item 1673). The record is kept with the use of the following documents [11]:

- waste inventory card,
- waste transmission card,
- an entity conducting only waste transport, is required to use waste transmission card,
- waste holder that disposes of waste should provide basic waste record and results of compliance tests.

Basic requirements concerning waste inventory are [11]:

1. Waste inventory may be run in electronic system, allowing to certify the document with electronic signature. In case of Altvater Piła Group Eneris, there is an IT program „Waste inventory 2017”, which offers a complex system of waste management. The system has integrated mechanisms to automate waste man-

agement (download of source data from one waste inventory card and transcription to target waste inventory card). The user has to enter information concerning the product and waste that is created as a result. Another unique solution used in the program is the possibility to export data to formats such as: MS Word, MS Excel, PDF, JPEG, BMP and other graphic formats. The function may be used in order to send a report or a document to the contractor (WZ/PZ/KPO etc.).

2. Another function of the program that is worth mentioning is the possibility to filter data displayed on lists. Every list possesses a built-in filter editor, which enables displaying only the desired data. Apart from information on waste management, the program assures storage module as well. It gives detailed information on amount of waste, and every waste transfer card may be a storage document at the same time. Waste controllers may use the function of reports that answer questions such as: amount and codes of waste produced in a given period. The program may be tested prior to purchase, which enables the users to learn about its functions and choose modules which will be appropriate, and the modules may be extended at any time.
3. Waste transmission card in adequate amount - one for waste holder and waste carrier - it's drawn up by waste holder.
4. If waste holder is discharged from obligation of keeping waste records, it is possible not to prepare waste transfer card.
5. Cumulative waste transfer card is permissible, if one waste type is transferred during a month, through one carrier, to one waste holder.

The Act on Waste provides for a possibility of carrying out a simplified version of waste records to be kept by some subjects. It consists in keeping records only with the use of waste handing-over card (a card drawn up at the moment of waste passing), without necessity of keeping waste inventory cards. The process of waste management has to be thoroughly documented. This often entails obtaining permits, giving information, reports, charging fees and confirmation of their reception. Simplified waste records relate solely to [13]:

- subjects performing waste transport (relates to waste transported by undertakings that deal with transportation of waste, the document confirms provided services),
- small and medium-sized enterprises that meet the following requirements [13]:
  - generate 100 kg of hazardous waste annually,
  - generate 5 tons of non-hazardous waste which is not municipal waste at the same time.

In the case where an entrepreneur generates small amount of waste, there is a possibility of discharging from obligation of keeping waste records. It is provided by the Minister of Environment Regulation of 12 December 2014 on kind and amount of waste which is not subject to keeping a record (Journal of Laws of 2014 item. 1974 as amended). (Ordinance of the Minister of Economy on types of waste not subject to selective storage in landfills) [14].

Waste record is carried out by means of waste inventory card which is drawn up for each type of waste (for separate waste code) and waste handing-over card at the moment of waste forwarding. In order to unify the documents used in keeping waste records, there were documents specimen introduced by the Ministry of Environment in a Regulation of 12 December 2014 on specimen of documents used for waste records. (Journal of Laws of 2014 item 1973) (Figs. 5-9) [4, 15].

KARTA EWIDENCJI ODPADU							Nr karty	1	Rok kalendarzowy	2015	
Kod odpadu		13 02 08*									
Rodzaj odpadu		Inne oleje silnikowe, przekładniowe i smarowe									
Procentowa zawartość PCB w odpadzie		-									
Podmiotek odpadów		Franciszek Nowak Przedsiębiorstwo Transportowe „Na Osi” ul. Pozorkowa 16, 64-500 Szamotuły									
Nr rejestrowy		MP		777*E11214		REGON		632412445			
Adres posiadacza odpadów											
Województwo		Wielkopolskie		Gmina		Szamotuły		Miejscowość		Szarnotary	
Ulica		Pozorkowa		Nr domu		16		Telefon słuchowy		61 29-27-501	
								Telefon faksowy		-	
								E-mail		nowak@naosi.pl	
								Kod pocztowy		64-500	
Miejscę prowadzenia działalności											
Województwo		Wielkopolskie		Gmina		Szamotuły		Miejscowość		Szarnotary	
Ulica		Pozorkowa		Nr domu		16		Telefon słuchowy		61 29-27-501	
								Telefon faksowy		-	
								E-mail		nowak@naosi.pl	
								Kod pocztowy		64-500	
Działalność w zakresie:											
<input checked="" type="checkbox"/> W			<input checked="" type="checkbox"/> ZB			<input type="checkbox"/> D			<input type="checkbox"/> O		
Szacowanie odpadów											
Miesiąc	Masa wyekwirowanych odpadów (Mg)	Masa odpadów niebezpiecznych (Mg)	Masa odpadów niebezpiecznych w składowisku (Mg)	Odpady przyjęte przez posiadacza odpadów		W ilościary w składowisku			Odpady przekazane		Nazwa podmiotu świadczącego
				Masa (Mg)	Nr karty przekazania odpadu	Masa (Mg)	RID	Sposób gospodarowania	Masa (Mg)	Nr karty przekazania odpadu	
Styczeń	-	-	-	-	-	-	-	-	-	-	Anna Nowak
Luty	-	-	-	-	-	-	-	-	-	-	Anna Nowak
Martec	-	-	-	-	-	-	-	-	-	-	Anna Nowak
Kwiecień	-	-	-	-	-	-	-	-	-	-	Anna Nowak
Maj	-	-	-	-	-	-	-	-	0,7	132015	Anna Nowak

Fig. 5. Filled in waste inventory card with code: 13 02 08 [4, 15]

GRUPA WSPARCIA TECHNICZNEGO GWP s.c.		RAFIT <sup>TM</sup> Sp. z o.o.		RAFIT <sup>TM</sup> Sp. z o.o.	
Adres:		Adres:		Adres:	
N: REGON		N: REGON		N: REGON	
Miejscę przekazania odpadów					
BAZA ZDUSSKĄ WOLĄ					
Rodzaj procesu przetwarzania, którego w wyniku został powstany odpad					
Ważniejsze z wydanych dokumentów potwierdzających proces lub recykling: TAK <input type="checkbox"/> NIE <input type="checkbox"/>					
Kod odpadu: 13 02 08		Rodzaj odpadu: Inne oleje silnikowe, przekładniowe i smarowe			
Data emisji: 19/09		Masa przekazanego odpadów (Mg): 0,304		Numer rejestrowy pojazdu, przyczepy lub naczepy: PO 31860	
Podmiotek przekazujący odpad		Podmiotek wykonujący usługi transportu		Podmiotek przyjmujący odpady	
GRUPA WSPARCIA TECHNICZNEGO GWP s.c.		Oficjalny adres: Haniekowięta		Oficjalny adres: Haniekowięta	
Barbora Leszczyńska, Drogowa 2300000		Tomasz Michalik		Tomasz Michalik	
52-031 Luboń, ul. Hutnicza 5		ul. Hutnicza 121 Wybrzeże		ul. Hutnicza 121 Wybrzeże	
tel.: 71 81 96 770, 71 81 765 772		ul. Hutnicza 121 Wybrzeże		ul. Hutnicza 121 Wybrzeże	
NIP: 5247879111, REGON: 142539350		ul. Hutnicza 121 Wybrzeże		ul. Hutnicza 121 Wybrzeże	

Fig. 6. Filled in waste handing-over card with code: 13 02 08 [4, 15]

KARTA EWIDENCJI KOMUNALNYCH OSADÓW ŚCIEKOWYCH				Nr karty	Rok kalendarzowy
Wytwórca komunalnych osadów ściekowych					
Adres wytwórcy komunalnych osadów ściekowych					
Województwo	Gmina	Miejscowość	Telefon służbowy	Faks służbowy	
Ulica		Nr domu	Nr lokalu	Kod pocztowy	
Oczyszczalnia ścieków					
Województwo	Gmina	Miejscowość	Telefon służbowy	Faks służbowy	
Ulica		Nr domu	Nr lokalu	Kod pocztowy	
Rodzaj obróbki komunalnych osadów ściekowych przeprowadzonej przez ich wytwórcę					
Skład i właściwości komunalnych osadów ściekowych					
Odczyn pH			Zawartość metali ciężkich [mg/kg s.m.]		
Zawartość suchej masy (s.m.) [%]			kadm		
Zawartość substancji organicznych [% s.m.]			miedź		
Zawartość azotu ogólnego [% s.m.] w tym: azotu amonowego [% s.m.]			nikiel		
Zawartość fosforu ogólnego [% s.m.]			olów		
Zawartość wapnia [% s.m.]			cynk		
Zawartość magnezu [% s.m.]			rtęć		
Łączna liczba żywych jaj pasożytów [liczba/ kg s. m. osadu]			chrom		
Bakterie z rodzaju Salmonella w 100g osadów przeznaczonych do badań			<input type="checkbox"/> wyizolowano <input type="checkbox"/> niewyizolowano		
Postać komunalnych osadów ściekowych			<input type="checkbox"/> slivna <input type="checkbox"/> ziemista <input type="checkbox"/> maziasta		

Fig. 7. Specimen card of municipal sewage record [4, 15]

KARTA EWIDENCJI ZUŻYTEGO SPRZĘTU ELEKTRYCZNEGO I ELEKTRONICZNEGO				Nr karty	Rok kalendarzowy					
Kod odpadu		Rodzaj odpadu								
Numer i nazwa grupy sprzętu		Numer i nazwa rodzaju sprzętu								
Prowadzący zakład przetwarzania					Nr rejestrowy					
Adres prowadzącego zakład przetwarzania										
Województwo	Gmina	Miejscowość	Telefon służbowy	Faks służbowy						
Ulica		Nr domu	Nr lokalu	Kod pocztowy						
Miejsce prowadzenia działalności										
Województwo	Gmina	Miejscowość	Telefon służbowy	Faks służbowy						
Ulica		Nr domu	Nr lokalu	Kod pocztowy						
Działalność w zakresie:		W <input type="checkbox"/>	Zb <input type="checkbox"/>	Od <input type="checkbox"/>	Un <input type="checkbox"/>					
Zbieranie										
Miesiąc	Przyjęte				Przekazane		Przetwarzane we własnym zakresie			
	od innego zbierającego zużyty sprzęt		od użytkownika sprzętu		do innego zakładu przetwarzania		Przetwarzane we własnym zakresie			
	nr karty	masa [Mg]	nr karty	masa [Mg]	nr karty	masa [Mg]	masa [Mg]			
Wytwarzanie odpadów w wyniku przetworzenia zużytego sprzętu			Gospodarowanie odpadami powstałymi w wyniku przetworzenia zużytego sprzętu							
Miesiąc	kod odpadu	rodzaj odpadu	masa wytworzonych odpadów [Mg]	we własnym zakresie				odpady przekazane innemu posiadaczowi odpadów		imię i nazwisko osoby sporządzającej
				masa [Mg]	metoda odzysku R	metoda unieszkodliwiania D	masa zużytego sprzętu przeznaczonego do ponownego użycia [Mg]	masa części składowych pochodzących ze zużytego sprzętu przeznaczonych do ponownego użycia [Mg]	data przekazania odpadów wytworzonych ze zużytego sprzętu	

Fig. 8. Specimen card of used electronic equipment record [4, 15]

Waste inventory card has to be prepared for each code separately. It refers to the amount of waste produced in a year. Monthly amount of produced waste has to be registered and written down in a proper column, according to explanation presented



in the said regulation. Apart from giving the type of waste, the method of waste management has to be included in the card. The number of waste handing-over card is often listed and the amount of waste in a month in which waste was handed over to a receiver.

KARTA EWIDENCJI POJAZDÓW WYCOFANYCH Z EKSPLOATACJI					Nr karty		Rok kalendarzowy	
Kod odpadu przyjętego do stacji demontażu lub punktu zbierania pojazdów					Rodzaj odpadu			
Rodzaj działalności: <input type="checkbox"/> prowadzący stację demontażu					<input type="checkbox"/> prowadzący punkt zbierania pojazdów			
Prowadzący stację demontażu lub punkt zbierania pojazdów								
Adres prowadzącego stację demontażu lub punktu zbierania pojazdów								
Województwo		Gmina		Miejscowość		Telefon służbowy		Faks służbowy
Ulica			Nr domu		Nr lokalu		Kod pocztowy	
Miejsce prowadzenia działalności								
Województwo		Gmina		Miejscowość		Telefon służbowy		Faks służbowy
Ulica			Nr domu		Nr lokalu		Kod pocztowy	
Działalność w zakresie:			W <input type="checkbox"/>		Zb <input type="checkbox"/>		Od <input type="checkbox"/> Un <input type="checkbox"/>	
Zbieranie								
Miesiąc	Pojazdy przyjęte do punktu zbierania pojazdów			Przyjęte do stacji demontażu pojazdów od				
	punktu zbierania pojazdów			punktu zbierania pojazdów		właściciela pojazdu		
	masa [Mg]	liczba [szt.]	nr karty przekazania odpadu	nr karty przekazania odpadu	masa [Mg]	liczba [szt.]	masa [Mg]	liczba [szt.]
Przetwarzanie								
Wytwarzanie odpadów w wyniku demontażu pojazdów wycofanych z eksploatacji			Gospodarowanie odpadami powstałymi w wyniku demontażu pojazdów wycofanych z eksploatacji					

Fig. 9. Specimen card of end-of-life vehicles record [4, 15]

Waste handing - over card is made by waste holder who passes it. The document is prepared after the end of a month. Waste records need to be kept for the period of 5 years. The obligation of waste records keeping does not pertain to [2]:

- municipal waste producers,
- producers of end-of - life vehicles,
- natural persons and entities that are not enterprises and use waste for own account,
- subjects that are not obliged to be authorized to collect waste.

Documents of waste production or sorting undertaking may be checked by supervisory entities with regard to environment protection. Lack of appropriate documents results in imposing fees and sanctions. It is worth noting that waste records may be different for various business units. It depends mainly on type and amount of produced waste, and the role that waste plays in the conducted activity [8].

Current proposed amendment of an Act on waste suggests significant changes in waste inventory. Waste management companies will have to adjust to new standards, as waste records are going to be run electronically. These changes are vital to comply with European Union law. The draft from 23 November 2016 introduces modifications in the field of waste inventory, with transitional period until 30 June 2020.

Table 1. Types and amount of waste not subject to annual waste record [14]

No.	Type of waste	Code	Waste weight, Mg
1.	Vegetal waste	02 01 03	unlimited
2.	Livestock waste	02 01 06	unlimited
3.	Bark and cork waste	03 01 01	to 10
4.	Sawdust, shavings, cuttings, wood, particle board and veneer other than listed in 03 01 04	03 01 05	to 10
5.	Waste painting toner other than listed in 08 03 17	08 03 18	to 0.1
6.	Absorbents, filter materials, wiking cloths (e.g. rags, cloths) and protective clothing other than listed in 15 02 02	15 02 03	to 0.01
7.	Used equipment with dangerous parts other than listed in 16 02 09 and 16 02 12	16 02 13	to 0.005
8.	Parts removed from used equipment other than listed in 16 02 15	15 02 16	to 0.005
9.	Alkaline batteries (except from 16 06 03)	16 06 04	to 0.005
10.	Other batteries and accumulators	16 06 05	0.005
11.	Concrete waste and debris from demolition and renewal	17 01 01	to 5
12.	Brick debris	17 01 02	to 5
13.	Ceramic waste and fittings	17 01 03	to 5
14.	Wood	17 02 01	to 5
15.	Glass	17 02 02	to 5
16.	Plastic	17 02 03	to 5
17.	Soil and stones other than those mentioned in 17 05 03	17 05 04	to 5
18.	Construction materials containing plaster other than those mentioned in 17 08 01	17 08 02	to 5

The project assumes setting up a database, regarding products and packaging and waste management, from 1 January 2019. The register of entities introducing products, packaging products and waste managers will be required from every entity that produces waste. Database login data will be given on the grounds of an entry into the register, which will be the only place of waste inventory and reporting. This may result in creating an interface between the database and records run by entrepreneurs, which in turn, may increase costs. Technical database problems could block waste handing-over. The legislator provided for a new municipal waste transfer card (KPOK) for entities that collect waste from properties owners and the ones that conduct waste transport, collection and processing. The card is supposed to be run daily and will contain date, time of waste collection and handing-over to the next holder. Some changes will be introduced into waste transfer cards (KPO) as well. It will contain date and time of transport beginning and end. This solution enables supervisory bodies to trace waste stream. The driver will be obliged to present either paper or electronic version of KPO or KPOK. The database will ultimately replace paper waste inventory and in case of companies working in 3 shifts, a person well accustomed with database will have to be present during every shift-says an expert from Stena Recycling. The draft does not provide for accumulative

waste transfer cards issued monthly, as separate waste transfer card is required with each transport. This may increase number of documents and complicate waste management clearing process in case of regular recipients of waste. The amendment assumes that waste transfer cards have to be issued at the moment of waste collection, which would force entrepreneurs to own authorized scales on company premises. Such regulations will lower efficiency of waste reception. Moreover, every vehicle that collects waste needs to be equipped with high-speed internet access and additional person who enters and processes data [11].

#### **4. Penalties for infringements and irregularities in waste management**

The State Inspection of Environmental Protection is a basic institution that controls the issues connected with waste management. Activities undertaken by the inspector of SIEP are twofold. It may take place as a planned audit with prior notification of the undertaking or non-scheduled audit performed by the inspector. Pre-audit notification results from provisions of article 79 paragraph 1 of Act on freedom of economic activity of 2 July 2004 (Journal of Laws of 2015, item 584) and pertains solely to scheduled and non-scheduled audits other than interventions. In case of a scheduled audit (notification sent through registered letter accompanied by an acknowledgment of receipt) an inspector may initiate an audit no sooner than 7 days and not later than 30 days from the receipt of the notice. The said provision can be found in article 79 paragraph 4 of the above mentioned Act. The Inspected Entity is obliged to indicate in writing a person authorized to represent the undertaking, especially in the absence of the controlled party. (article 80, paragraph 3). The audit focuses on complying with provisions and administrative decisions in the scope of environment protection. On the day of an audit the inspector submits a permission to carry out an audit and makes an entry in a control book of an undertaking. The situation looks different in case of an intervention control. It is carried out without notification due to direct life, health or environment threatening or may be indispensable to prevent environmental offences. The audit covers complying with the regulations and administrative decisions in the scope of environmental protection. The inspector of the State Inspection of Environmental Protection makes an entry in a control book of an undertaking and submits the permission to carry out an audit within 3 days.

A period of 5 years may be subject to an audit which checks as well the scope of use of the environment. It refers to waste production, keeping waste records, waste storage, delivery of waste to receivers, collection and transport of waste, waste recovery, possession of procedural legal regulation in the range of waste generation, waste management, extraction of surface and groundwater, sewage disposal, procedural legal regulations of gas and dust emission, noise emission in the environment, dealing with genetically modified organisms, packaging and packaging waste, product fees, dealing with ozone-depleting substances, recycling of end-of-life vehicles, used electronic and electric equipment, using natural fertilizers,

timely and reliable submission of data on type and amount of produced waste and list of the environmental use. The findings observed during the inspection are recorded in a protocol. Every act connected with environmental protection provides for fines. Criminal sanctions may take a form of a custody or a fine or an administrative financial sanction which seems to be the most severe one. A penalty notice is given to an undertaking representative - an owner or an appointed person. Administrative financial sanction is used on the basis of administrative proceeding. The inspector is authorized to impose fines by way of a penalty notice for serious environmental offences. A detailed list of offences that are covered by Inspection is included in the Regulation of the President of the Council of Ministers of 13 September 2002 on awarding authority to impose fines by way of penalty notice by inspectors (Journal of Laws No 151, item. 1253, as amended). (Ordinance of the Minister of Economy on types of waste not subject to selective storage in landfills). It is worth noticing that if waste carrier has a permission to transport waste, collection and storage in order to have a full load is impossible. If an undertaking wishes to have waste reload and storage base, it is an obligation to obtain a permission to deal with waste which is waste collection authorization. Ignorance of an entrepreneur may be severely punished and unawareness of provisions does not relieve from the responsibility. In case when an entrepreneur produced waste in a year but did not submit a yearly report on type and amount of waste and methods of waste management, did that in untimely (after 15 March for a previous reporting year) or incorrect manner, the provincial environmental protection inspector levies a financial penalty of 500 PLN. In case where an entrepreneur does not submit a missing yearly report, in spite of being given post-inspection recommendations issued by the State Inspection of Environmental Protection, another fine of 2000 PLN will be imposed. Administrative penalty may be imposed numerous times, however a yearly total amount of fines cannot exceed 8500 PLN. Data mentioned before indicate how many subjects are given administrative pecuniary sanctions for violations of conditions of the use of the environment.

The most common irregularities revealed during inspection of Environmental Protection are [11]:

- lack of organizational and legal regulations in the scope of use of the environment, particularly in waste management and emission of pollutants to air,
- lack of pollutant emission measurements, or non-compliant measurements,
- lack of inventory of air pollutants and produced waste, or unreliable inventory,
- no payment of fees for environment use,
- incorrect operation of environment security devices,
- incorrect use of equipment containing controlled substances,
- waste transfer to unauthorized entities.

After every inspection, a written protocol is prepared, to which a controlled party may submit written complaint, within 7 days from the date of its signature. The controlled party may refuse to sign the protocol and justify the decision in writing. As a result of the audit, post-audit recommendations may be issued and some obligations may be imposed on the controlled party. An entrepreneur is obliged to

inform the inspectorate about deadline of recommendations implementation, or shall write a reasoned request in order to set a new date. As a result of non-implementation of recommendations, the inspectorate takes actions within its competence. The most common reasons of irregularities are lack of legal provisions or improper supervision of the company's management. A negative result of an audit may affect company's image in the eyes of customers and controllers.

## 5. Rules of reporting

Two basic rules of reporting are currently applicable, under the Act on waste of 14 December 2012 (Journal of Laws 2013.21) [11]:

1. Yearly report on produced waste and waste management.

The reports need to be submitted by:

- waste producers that run waste records,
- business entities that handle waste and are obliged to keep waste records (excluding municipal waste collectors), in the scope of waste collection and processing,
- entities that deal with extraction from landfills on the basis of an authorization or a decision containing instructions on landfill management in after-care phase.
- yearly report on products, packaging and its management.

2. The reports need to be submitted by [11]:

- producers, importers, making an intra-community acquisition, exporters making intra-community supply for unit, grouped and transport packaging,
- exporters and entities making intra-community supply for packed products,
- entities placing packed products on the market (plastic, aluminium, paper etc.), lubricating oils, waste oils or tyres,
- entities placing motor cars falling into M1 category on the market (used for the carriage of maximum 9 people) and N1 category (with a permissible maximum laden mass not exceeding 3.5 tonnes),
- entities placing electrical and electronic equipment on the market in the territory of Poland,
- entities placing batteries and accumulators on the market in the territory of Poland (including the ones installed in the equipment or a vehicle).

## Conclusions

New system of waste management did not affect the problem of uncontrolled waste abandonment. Currently, waste is rarely abandoned by property owners, as it used to be, but more often by some entities that collect and handle waste. It may be a result of higher prices of waste handling in comparison with low costs of waste collection.

Currently, the legislator introduced an obligation for the communes to organize waste management and collection from every property owner. Due to that, communes are equipped with legal instruments compliant with the Act of 2012 that enable them to perform the tasks. Among the instruments, local legal acts are particularly significant, as their aim is to determine principles of waste collection in the commune. Commune residents may use administrative legal instruments and the relation between the commune and an entrepreneur that collect waste is regulated (with inclusion of its civil-legal personality) by an agreement on waste collection. Provisions concerning waste management in Poland have been binding for a few years so far, however many problematic issues in relation between the commune and municipal company still arise. Another parts of the article will focus on this matter.

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### **Streszczenie**

Obecnie ustawodawca wprowadził i zobowiązał gminy do organizowania gospodarki odpadami i zbierania od każdego właściciela nieruchomości. W związku z tym gminy są wyposażone w instrumenty prawne zgodne z ustawą z 2012 r., które umożliwiają im wykonywanie zadań. Spośród instrumentów szczególne znaczenie mają lokalne akty prawne, których celem jest określenie zasad zbierania odpadów w gminie. Mieszkańcy gminy mogą korzystać z administracyjnych instrumentów prawnych, a stosunek między gminą a przedsiębiorcą, który zbiera odpady, jest uregulowany (z uwzględnieniem osobowości cywilno-prawnej) umową o zbieraniu odpadów. Przepisy dotyczące gospodarki odpadami w Polsce obowiązują od kilku lat, jednak wciąż pojawiają się zagadnienia problematyczne pomiędzy gminą a spółką komunalną.

**Słowa kluczowe:** transport drogowy, odpady komunalne, przepisy prawne, środek transportowy, dyrektywa, operacja transportowa, ustawa, rozporządzenie, ewidencja