

# **Reverse logistics processes in enterprises managing industrial waste**

*Marta STAROSTKA-PATYK*

*Janusz K. GRABARA*

*Czestochowa University of Technology*

*Faculty of Management*

- Waste management, especially industrial, in recent years an increasingly important issue in the activities and functioning of Polish enterprises.
- The main causes of industrial waste can be ascribed relatively low technological level of most national industries, the lack of adequate financial resources for waste management, environmental policy inconsistent state or irrational economic resources and low public awareness.

The most efficient solution, serving to increase the efficiency of waste management is the use of reverse logistics processes. They are very useful and modern tool for waste management. These processes cover the waste, i.e. *the materials arising from any human activities or natural forces, as they usually unintentionally, though difficult to avoid the effect. In other words, waste is an object or material that cannot be used at all or in full accordance with its original purpose in a given place and at any given time.*

# REVERSE LOGISTICS USAGE IN WASTE MANAGEMENT

Reverse logistics is a relatively new branch of knowledge logistics.

Characterizing the modern approach can be described it as *a process of planning, implementation and monitoring of effectiveness, efficiency, cost flow of raw materials, processes involving the accumulation of stocks of finished products and links information from the consumption of starting and ending point of departure in order to recover the value or proper*

Reverse logistics involves the creation of logistic chains merging of waste disposal sites.

It includes the following processes:

- Collection and sorting of waste;
- Transportation and storage of waste;
- Ways to managing waste;
- Using recyclable materials.

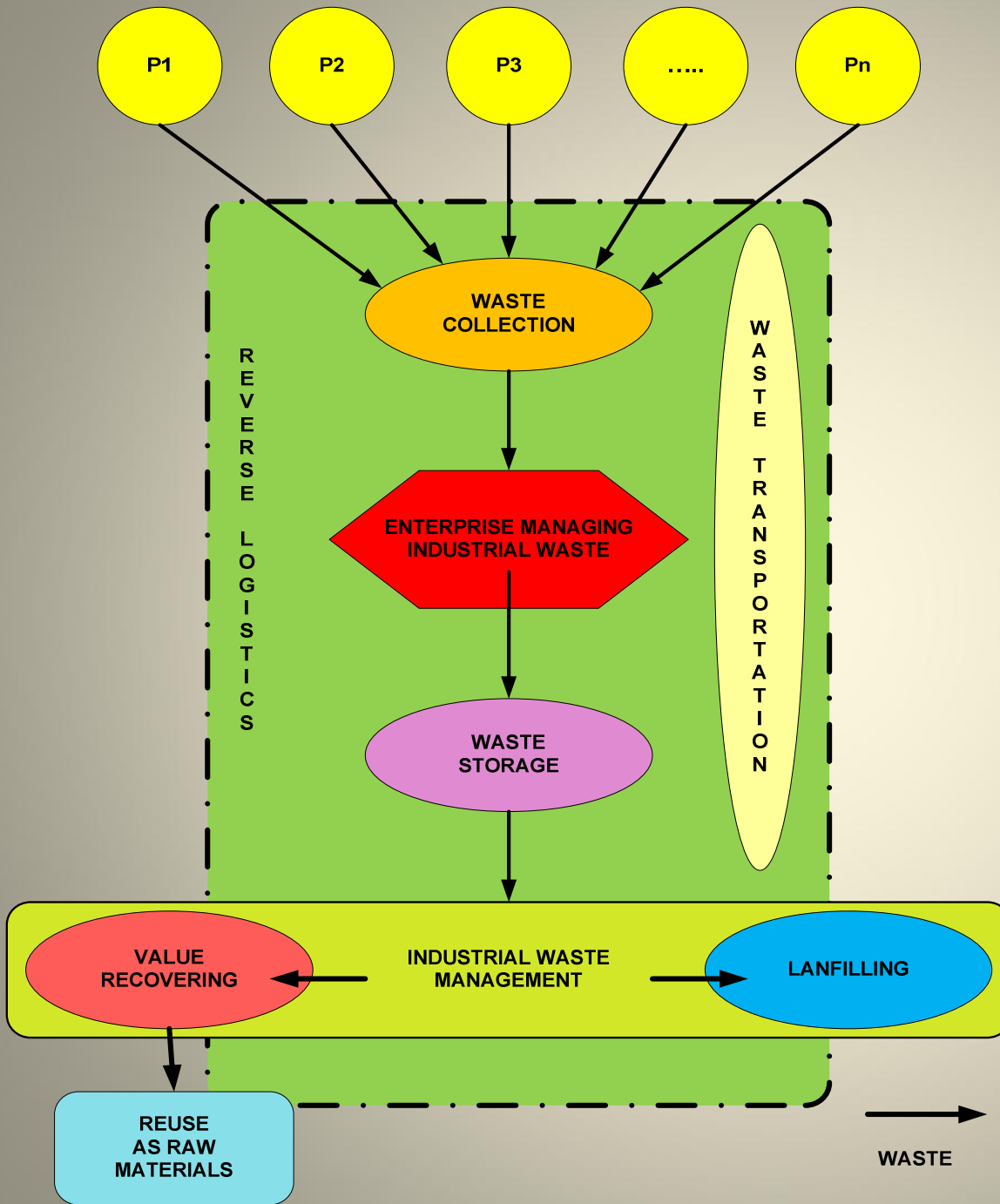
# ENTERPRISES MANAGING INDUSTRIAL WASTE

Reverse logistics is not a widespread concept that requires specific knowledge of waste management, and is relatively expensive, in practice it is usually implemented partially and in a few companies, and most are not implemented at all.

Therefore, companies that produce waste, outsource managing them to specialized bodies - **enterprises managing industrial waste.**

# **DESCRIPTIVE MODEL OF REVERSE LOGISTICS PROCESSES IN ENTERPRISES MANAGING INDUSTRIAL WASTE**

Given these distinctions, in order to clarify the descriptive processes of reverse logistics, it is possible to build a general descriptive model of the businesses performance using the concept of reverse logistics.



***Model conception of reverse logistics processes realization in enterprises managing industrial waste.***

*Source: Own elaboration.*

- Presented model is suitable for industrial and hazardous waste. Treatment of municipal waste would be presented in another way.
- Enterprises engaged in waste management are generally geared to receive industrial and hazardous waste, which automatically eliminates the need for matching processes to the municipal solid waste.

- The marks P1, P2, P3, ... and Pn, mean individual customers who use the services of the company managing waste. Customers are small, medium and large manufacturing companies, service and trade. These companies produce industrial and hazardous waste.
- Transfer of waste from the customer to the company managing industrial waste is also their entry into the reverse logistics processes.

## ***Waste collection***

Before the industrial waste will be transferred to a company specializing in process management, are subject to segregation. According to Act on Waste, the company producing industrial and hazardous wastes are required for their self-segregation, and therefore to the business they get waste manage, distinguishing between the different types of waste codes corresponding to the Waste Catalogue.

The waste managing company can assist its customers in these activities by providing various types of containers, or containers for all kinds of waste, and also provide information on the most advantageous ways of segregation and

## ***Waste in enterprise managing industrial waste***

Receive industrial waste from its manufacturer means the process of waste collection by the company managing waste. If waste producers do not always have the possibility of their temporary storage in order to collect a full load, or collect a full load is not possible during one year (a time period of storage of waste is in compliance with the law), that the company managing waste have to collect them so to ensure full capacity of their shipments while it did not exceed the storage capacity. Only such activities guarantee its rationality and economic efficiency

## ***Waste storage***

All waste collected from customers in the first instance are moved to a warehouse of company managing waste where they are subjected to the final segregation - the waste that is not suitable for reuse and disposal will be sent to the landfill, and those which can be recovered. In addition, waste is stored in the warehouse are often subjected to segregation in the pre-treatment processes such as crushing and baling, which in subsequent phases allows for easier transportation and disposal of, or recovery.

## ***Industrial waste management***

Analyzing the process of waste management, from the perspective of the company managing industrial waste, there are two possibilities in this respect:

- Transfer of waste for recovery,
- Deposition of waste in a landfill.

# CONCLUSIONS

- Systematization of information relating to industrial waste management in accordance with the processes of logistics management of waste streams, using the descriptive model allows more accurate picture of logistics activities associated with industrial waste management in enterprises managing industrial waste.

# CONCLUSIONS

- Consistent implementation of logistics management processes of industrial waste streams in enterprises managing them in the Silesian region of the descriptive model favors received by these companies stable and competitive market positions in their area of activity.
- Business activities managing industrial waste should focus on the most effective land use in terms of their environmental protection while striving to minimize costs