IMPLEMENTING CLEANER PRODUCTION IN ROMANIAN INDUSTRIAL ENTERPRISES IN TERMS OF SUSTAINABLE DEVELOPMENT

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Abstract:
In this paper I propose to emphasize the necessity of implementation cleaner production in industrial enterprises from our country in the contemporary context of sustainable development through extensive use of renewable resources. On this background it is important to note that in accordance with recent scientific studies and research in the field of analyzed phenomenon it is suggested the idea that obtaining a cleaner production by industrial enterprises becomes a sine qua non condition in the achievement process of sustainable development objectives. Moreover, it is obvious that the integration of Romanian industrial enterprises into the paradigm of sustainable development is essentially possible in obtaining a clean production through evacuation into the natural environment of minimum quantity of waste and pollutants. In this paper the scientific argumentation is achieved by using the specific methods of research elaborated in the area of analysis theme such as: methods of quantitative measurement and qualitative analysis. Also in the structure of this paper are inserted some current statistical data that show the adaptation level of Romanian industry to sustainable development objectives. Finally it is important to emphasize that all results of economic research and major conclusions which are presented in this article are based on a series of specialized studies and official documents among that are highlighted in the content of this scientific approach such as: Europe 2020 Strategy, National Sustainable Development Strategy Romania 2013–2020–2030, National Strategy of Waste Management 2014-2020.

Keywords: sustainable development, industrial enterprises, renewable resources, cleaner production, natural environment

Classification JEL: Q01; Q2; Q51; Q53; Q55

1. Introduction

The complexity of the concept of sustainable development has generated over the years a number of definitions, both from scientists and also by the most prestigious international institutions. For example, Brundtland Report of the World Commission on Environment and Development (1987) defines the term "sustainable development" as “the ability of humanity to guarantee satisfaction of current needs without compromising the ability of future generations to meet their own needs.”

After analyzing the economic doctrine it is evident that sustainable development is defined and treated (Cerin, 2006; Dernbach J.C., 2003; Stoddart, 2011) from the perspective of achievement a possible equality between present and future generations.

The issue of harmonizing the activity of Romanian industrial enterprises with the objectives of sustainable development must be analyzed in accordance with the strategic vision of EU in this field, which propose to stimulate investments in a smart, sustainable and inclusive growth and promote a development model based essentially on three pillars: economic, social and environmental.

Against this background, the general objective of the paper is to identify the directions and means of increasing the competitiveness of industrial activity in Romania, respecting the principles of sustainable development. Thus by elaborating of this scientific paper the author has not proposed an exhaustive approach of the analyzed theme, but it sought to clarify certain aspects related to the necessity of harmonizing the industrial activity from our country with values, principles and objectives of sustainable development.

At the same time, the message of the paper is that the industrial activity in Romania can and must become more competitive, without sacrificing the development opportunities of future generations and modernization offered by European integration. [1] Moreover it is important to note that for the Romanian industrial enterprises in the current economic context, identifying new tools and mechanisms for sustainable development must become a constant concern in increasing the competitiveness at European and global level.
2. The necessity of implementing cleaner production in industrial activity of Romanian enterprises

In this framework of analysis in accordance with the objectives of sustainable development it is necessary to implement a system of cleaner production within industrial activity of Romanian enterprises that can be considered the most efficient mean of operating on the processes products and services. Also, our industrial enterprises have to act in direction of more efficient use of resources that contribute to achieving the target for creating maximum value by minimum of resources. In the same time more attention is recommended to be given to implementing eco-innovation in the sphere of goods and services with an environmental impact. In this direction it is recommended for industrial enterprises from our country to increase their capacity of environmental protection by introducing clean production.

This objective can be achieved by promoting on large scale of environmental industry specialized on production of goods and services having the role to measure, prevent, limit, minimize or correct damage to water, air, soil, problems related to waste, noise, ecosystems. All these aspects involve industries regarding water and waste water management, renewable energy sources, environmental consulting, air pollution control, eco-construction etc.

Figure No.1. Integrated system of initiatives and actions towards ensuring cleaner production

From this perspective, the new experience in cleaning production demonstrates that many changes can be made to industrial processes without any expense or reduced costs, resulting in profitable growth. In this context, it is important to mention that the costs of losses and emanations on health and environment can be reduced and achieve not only benefits but also new markets. On the other hand, the economic benefit thus obtained is joined by social benefits. Moreover, through clean production, producers will have more obligations and will be better prepared to face restrictions caused by consumer demands for environmental protection.

In addition, cleaner production means any activity that which reduces the quantity of losses produced within an industrial enterprises. At the same time it can be seen that cleaner production is not a waste management, and neither a waste elimination after the have been generated.

The first phase of cleaner production in industrial activity must begin from the design stage of processes and products if it is desired the reduction of polluting agents, losses and minimizing the use of raw materials, energy and water. [4]
The reduction of industrial pollution through the application of cleaner production concept is the key to sustainable industrial development. The cleaner production improves the environmental quality and often increases the profitability by eliminating losses right to source. The purpose of cleaner production is the use of industrial processes and products that prevent air pollution, water and soil, waste reduction at the source and minimize risks to humans and the environment. Schematically, this concept can be presented as in figure below.

![Figure No.2. Government Strategies and Policies for Cleaner Production](source)

Generally, it is well known that cleaner production seems not to produce waste, use only industrial goods that are fully products incorporated, be immediately recycled or sold as raw material for other applications. In this sense, cleaner production is a preventive strategy applicable continuous process of production, products and services in order to increase efficiency and reduce risks to human health and the environment. [5]

For production processes, cleaner production refers to use of raw materials, water and energy, eliminating the toxic or dangerous materials and reduction of pollution and losses, directly from the source. The techniques and methods for ensuring of cleaner production are manifold.

Thus, finding the substitutes for raw materials and recoverable energy, the optimization of some operating parameters, the design and redesign of goods starting from requirements of a clean environment, recycling etc. there are only common directions and forms that can be acquired specific names depending on the specific domain where is applied. Improving the management of natural resources and the avoidance of overexploitation, recognizing the value of services provided by ecosystems is one of the general objectives set out in the National Strategy for Sustainable Development of Romania Horizons 2013-2020-2030 and also in Europe 2020 Strategy to ensure the conservation and management of natural resources. [2]

In this sense the new strategy on waste management in Romania 2014-2020, proposes the framework of measures that ensure the transition from the current model of development based on production and consumption to the transition from the current model of development based on production and consumption to a model based on the waste prevention and use of raw materials resulted from recovery industry thus achieving the preservation of national natural resources, creating the premises for reconciliation of economic imperatives and environment.

Also in this domain it is necessary that the action have to focus on implementation of integrated projects for waste management at national and regional level through a hierarchical orientation of investments in industrial activity of romanian enterprises according to established priorities: prevention, separate collection, recycling, recovery, treatment and disposal.

Reducing the consumption of natural resources, recycling the raw materials which are founded in products reached waste and the recovery of energy should be vectors of major changes towards a sustainable life. For this purpose strategy focuses on encouraging the expansion and development of recycling capacity and the installations which use waste in the production process, particularly those of energy production. [3]

Another important aspect regarding the analyzed phenomenon consist in determining a correlation between cleaner production implemented in industrial enterprises and the values of sustainable development into schematic approach as it can be seen in the figure below.
The generation and waste disposal may be translated into a loss of valuable resources, and hence the pressure that is put on the ability of the environment to resist to increased demand. In this analytical framework should be taken into consideration and the additional impact generated by extraction and processing of new materials and production/distribution of new goods.

3. Conclusions

In the current context of integration of Romanian industrial activity into paradigm of sustainable development is distinguished for enterprises the "win-win" principle, according to which simultaneously with minimizing the impact on environment can be achieved the use of resources efficiency so implicitly of business. Thus, the efficiently use of resources has always been fundamental to maintaining the business competitiveness in a dynamic market by reducing costs throughout the supply chain.

Also, significant savings can be realized through measures of cost reduction but frequently the environmental improvements require new technology, and this process involves a greater financial effort. On the other hand, the process of increasing productivity having a minimal imput value is actually an optimization mechanism. Taking into account current trends and requirements from environmental protection romanian industrial companies can conclude very well that a more comprehensive approach to environmental costs in the investment planning and decision-making can prove beneficial in terms of sustainable development. In this sense it is important to mention that through implementing cleaner production in industrial enterprises from our country can be obtained a wide range of remarkable benefits, such as: products and packages safe and friendly with environment throughout their lifetime; minimizing, reducing or recycling waste and by-products ecological incompatible; eliminating chemicals or physical agents dangerous for environment and human health; conservation of energy and materials used in production processes; continuous improvement regarding the economic viability of enterprises.

4. Bibliography

