Industrial Waste Accounting at the Life-Cycle Stages in the Concept of Green Economy

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Introduction

The presence of problems both in the economy and in the environment has become a starting point for finding solutions aimed at creating a sustainable economy that goes beyond the usual growth strategies (Bina; La Camera, 2011; Test of the OECD…, 2013, Hertwich, Peters, 2009). A green economy has become a promising strategy, and the international community has officially recognized at the end of the 2012 Rio + 20 summit that a green economy can enhance the ability of companies to manage natural resources sustainably and reduce environmental impact, improve resource efficiency and reduce waste. Today, the most pressing problems, according to the concept of a green economy, are the intensive accumulation of industrial waste, the problem of their use and disposal (Towards a green economy…, 2011), which contributes to environmental degradation and depletion of the mineral resource base. In this regard, the need to reduce harmful effects on the environment by dramatically improving waste management and rational nature management is of great importance. Thus, the priority areas for ensuring environmental protection, rational use of natural resources, environmental safety and the transition to a "green" economy are:

1. reduction of the volume of waste generation;
2. sustainable consumption and production;
3. maximum involvement of waste as secondary raw materials;
4. Prevention of harmful effects of waste on the environment.

For the Republic of Belarus, within the framework of the designated priority areas, the most urgent problem is industrial waste, in view of the fact that they account for about 86% of the total volume of generated production waste, which confirms the relevance of the research topic.

The purpose of the study is to develop an industrial waste accounting system. Research tasks are the following: - identifying the life cycle stages of the industrial waste for accounting purposes; - definition of industrial waste as objects of accounting; - development of

approaches to the assessment of industrial waste. The object of research is industrial waste at the life cycle stages. Among the methods used in the study, the authors identify synthesis, analysis, comparison, logical generalization, inference by analogy, etc.

1. Life-cycle stages of industrial waste

As part of the development of the "green" economy in the Republic of Belarus, the transformation of the existing accounting system for the formation of information arrays of a fundamentally new qualitative level, reflecting the close relationship between the resources of the natural environment and the results of the economy for making management decisions in the field of rational environmental management, is of great importance.

To transform the accounting system for rational environmental management in the context of a green economy, it is necessary to consider industrial waste within the life cycle, highlighting the following stages:

I. "The emergence of industrial waste";
II. "Collection and / or accumulation of industrial waste";
III. "Industrial waste recycling";
III[1] "Preparation for the use of industrial waste";
III[2] "Storage of industrial waste";
III[3] "Use of industrial waste";
IV "Burial of industrial waste".

This will make it possible to track industrial waste from the moment of its formation to the moment of its disposal in order to manage it competently in the context of the principles of a green economy.

2. Industrial waste as an object of accounting

To date, industrial waste as an accounting object is not reflected in the accounting system, which does not allow tracking them at all the life cycle stages in order to make effective decisions on the rational use of natural resources. In this regard, a new object of accounting and reporting is proposed - industrial waste, which is economic resources that have completely or partially lost their consumer properties, formed in the course of the organization's production activities, but not being the goal of the production process.

Unlike the existing approach, which presupposes the presence of disparate accounting objects (recyclable waste, secondary material resources, secondary raw materials, a by-product) with different approaches to assessing these objects and, as a result, incomplete reflection of information on waste in the accounting and reporting of enterprises, this is will allow to form a reliable information base on industrial waste, presented in accounting and reporting at all the life cycle stages of industrial waste in order to manage the economic and environmental safety of industrial enterprises in the context of the principles of a "green" economy.

3. Industrial waste assessment for accounting purposes

To develop a comprehensive methodology for accounting for industrial waste at the life cycle stages, it is necessary to determine approaches to the assessment of industrial waste at the life cycle stages. The essence of this approach, according to the authors, will be to reflect industrial waste in two assessments:

1. First, at fair value using account XX "Industrial waste" in the context of various types of industrial waste, such as: 1) waste arising from tank cleaning; 2) construction waste; 3) waste of ferrous and non-ferrous metals; 4) irrecoverable waste and others. Reflecting industrial waste at a fair value in the life cycle will help to assess their economic potential - in contrast to the existing approach, during which a high cost of waste is formed by mixing two types of assessment: at actual costs and at current market prices - which will reduce demotivation industrial enterprises to involve industrial waste in recycling, reduce the accumulation of hazardous waste in open areas and reduce the risks of developing a hidden waste market.
2. Secondly, according to the actual costs of collection, accumulation, recycling and disposal of industrial waste using account YY "Cost of handling industrial waste" and further writing off to the account "Other income and expenses" waste ", which will not only contribute to the systematic grouping of costs for the purposes of managing the activities of petrochemical enterprises in terms of industrial waste management at the micro level and assessing choosing to recycle industrial waste in the context of green economy principles. The types of industrial waste assessment used will make it possible to generate at each stage of the life cycle of industrial waste information about two management objects: the cost of waste management and potential income from their use, providing the information need of various users of accounting (financial) statements in the areas of interest to them, increasing the information value reporting and its forecast characteristics.

Conclusions (recommendations, debatable issues)

Thus, for a new accounting object, we propose a new approach to its assessment. We propose to reflect the economic potential of industrial waste in accounting as follows:

1. The fair value of industrial waste should be reflected on the debit of the proposed active account XX "Industrial waste" and the credit of the accounts "Investments in long-term assets", "Materials", "Cost of production", etc.
2. Changes in the fair value of industrial waste due to changes in the physical properties of processed industrial waste and possible technological losses are attributed to XX "Industrial waste" and "Other income from current activities" or "Other expenses from current activities".
3. The costs arising at the life cycle stages associated with the implementation of a set of measures for the management of industrial waste should be taken into account separately from industrial waste reflected in account XX "Industrial waste".

We suggest organizing the accounting of the cost of industrial waste management as follows:

1. The cost of industrial waste management as part of the actual costs of collection, accumulation, recycling and disposal of industrial waste should be reflected separately from industrial waste on the proposed active account ZZ "Waste management cost".

2. The cost of handling industrial waste should be reflected as part of the current period's expenses and written off to the debit of the account "Other expenses on current activities" with the allocation of the sub-account "Expenses on handling industrial waste" in the share attributable to this reporting period.

These proposals will contribute to the formation of reliable data in the accounting system, increase the information value of accounting (financial) reporting indicators, correct interpretation of the results of the analysis of economic activities for making competent management decisions on sustainable environmental management in the context of the principles of a "green" economy, which in turn will weaken demotivation of petrochemical enterprises to the involvement of industrial waste in recycling, will reduce the amount of accumulated hazardous waste in open areas and reduce the risks of developing a hidden market.

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