

Reducing the energy intensity of production as an important component of competitiveness of the administrative-territorial units environmentally sustainable development in Ukraine

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Abstract

The need to reduce the energy intensity of production in the system of the competitiveness ensuring of the administrative-territorial unit environmentally sustainable development has been justified in the article. The essence of the administrative-territorial unit in terms of the fundamental processes of its operation and development has been determined. The concept of environmentally sustainable development of the administrative-territorial unit has been offered.

Keywords

Administrative-territorial unit, energy intensity of production, environmentally sustainable development, competitiveness

Introduction

In modern conditions the contradictions between the evolution of the global ecosystem and socio-economic development of the world economy have been escalating, which are transformed into an environmental crisis of global proportions. Environmental imperatives require the establishment of conditions for realization of the Concept of Sustainable Development, adopted by the UNO in 1992, which provides for the adaptation of social production to the reproducing conditions of ecosystems in the implementation of each of the links of multi-relations “man-nature”. The basis of sustainable development is economic growth in terms of harmonizing relations with the environment. An important indicator of the development of the systems of the different levels is their competitiveness.

That is why it is necessary to create conditions for the status of environmental factors of competitive advantages in the competitiveness primarily of administrative units, as it is at the regional level is provided by the base level of competitiveness by enterprises, development of industrial infrastructure, optimizing the value chains.

At present it is impossible to achieve a high level of environmental and economic development without taking into account environmental factors in the system of administrative and territorial management. The perspective of humanity primarily determines the state of environmental security that affects the development of all components of society, so the issue of environmentally sustainable development of administrative units is very important. Achieving environmentally sustainable development of administrative units can be achieved by reducing the energy intensity of industrial production within the trend decline in the capacity of its nature in today's conditions. In a competitive environment reduction in energy intensity is an important factor in the competitiveness of the economy in the direction of reducing its resource intensity and optimize of prices.

Results of the study

The current state of socio-economic transformation in Ukraine is characterized by the highest level of anthropogenic and technogenic load all over in excess of 6-7 times the level of developed European countries. Resource intensity of products Ukraine is higher in 2-3 times than the rate in developed market economies, and energy intensity – in 6-7 times.

Thus, figure 1 shows the dynamics of the energy intensity of world GDP, and GDP of Ukraine.

High energy intensity of GDP is the result of extensive economic development, poor branch structure of the national economies and the structure of import-export operations, the impact of “shadow” sector. This situation objectively limits the competitiveness of industries and heavy burden on the economy.

However, despite the positive trend Ukraine's economy remains one of the most energy-intensive in compare with developed countries in Europe and is higher in 2.05 times than the world. Global

average energy intensity of GDP in 2010 amounted to 0.19 kg of oil equivalent per 1 dollar global domestic product, while in Ukraine – 0.39 kg.

The most energy-intensive industries in Ukraine remain metallurgy and chemical industry.

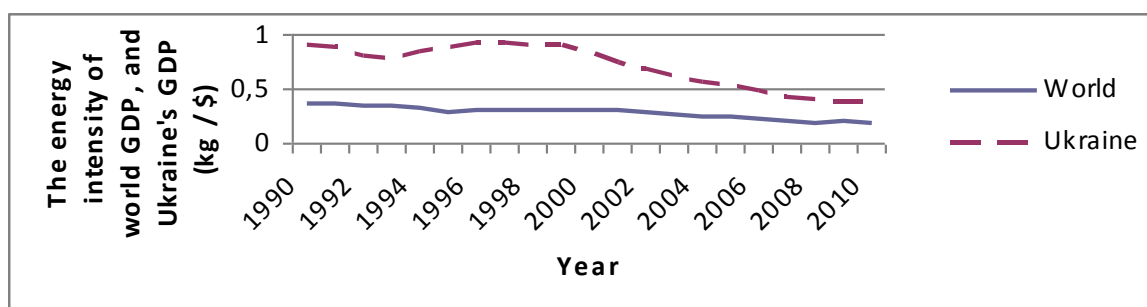


Figure 1. The dynamics of energy intensity of world GDP and GNP Ukraine [1, 2]

It is helpful to note that the socio-economic development indicators of Ukraine, that are calculated by the State Committee of Statistics, does not take into account complex indicator of ecological situation in Ukraine. It can be traced by growth of industrial production during 2004-2012 (Figure 2).

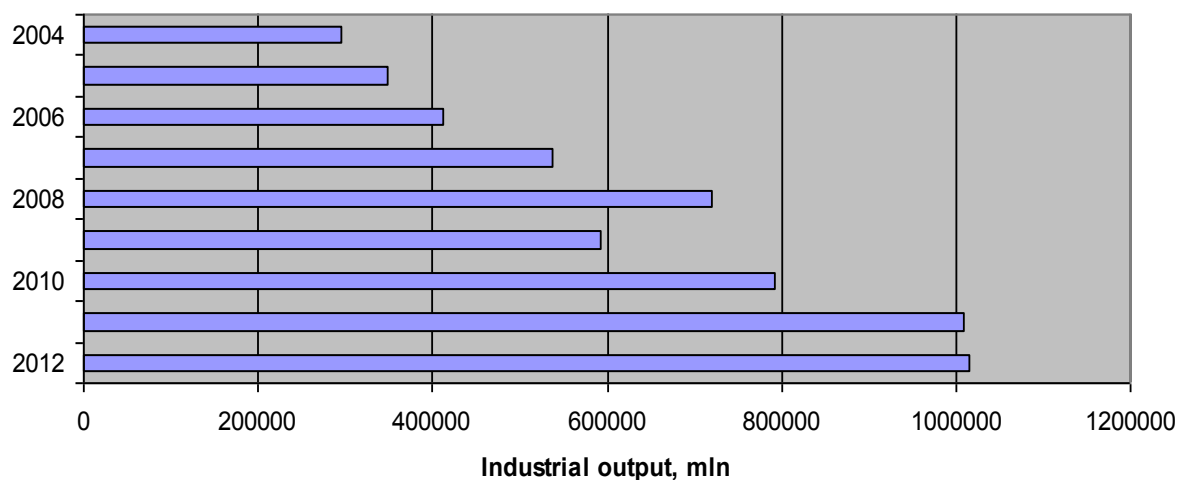


Figure 2. The dynamics of sales of industrial products in Ukraine in 2004-2012 years [3]

According to the energy efficiency rating of regions of Ukraine (Figure 3) in 2011 the highest overall efficiency Transcarpathian region had (64.3) and the highest energy efficiency had Donetsk region (67.9).

Based on analyzing, organizing and summarizing approaches to environmentally sustainable development of different levels the definition of environmentally sustainable development of administrative units has been formed. Environmentally sustainable development of administrative units is this development of administrative territory, which at the time of implementation of effective social and economic activities at the regional, district and baseline is not destroyed environment. This development is aimed at the optimal functioning of the socio-ecological-economic vectors to provide environmentally friendly living conditions of the population today and in the future.

For the analysis and planning of administrative-territorial unit development is appropriate justification for the essence of the concept of long-term balanced its development as its main prerequisite for sustainability.

Such development characteristics as “long-term” and “balance” involve analysis of the administrative-territorial unit development within its spatio-temporal organization. Based on this statement, the long-term balance of regional development must be understood as a state of the administrative-territorial unit that meets the criteria of structural and dynamic rationality.

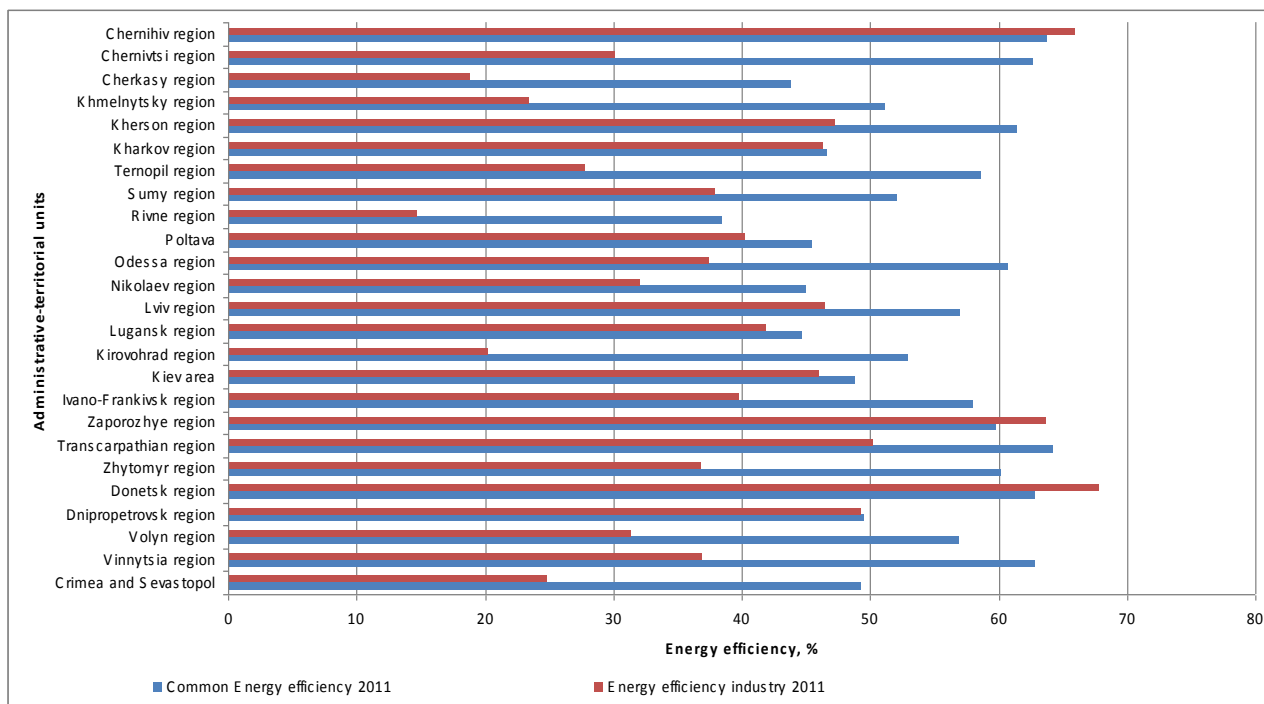


Figure 3. Rating energy efficiency of regions of Ukraine [4, 5]

Criterion of structural and dynamic rationality is determined from the position of co-evolutionary development and should be considered in terms of the material, energy and information aspects of administrative-territorial units. Material aspect relates to the physical basis of the system, that is the essence and meaning of the functional elements of the system structure. Form of the manifestations of the energy aspect of the structural and dynamic criteria of rationality is the links between the various elements of the system in a particular structural combination. The energy aspect is seen not only from the standpoint of production resource intensity, but in terms of overall reproductive system basis. Information criterion aspect of the structural and dynamic rationality of administrative-territorial unit is the existence of the potential of each of its elements, as well as other combinations of structure options.

The main criterion and at the same time, resulting in the development of a market economy is competitiveness. Therefore, there is the problem of competitiveness based on environmental factors.

On the basis of the fundamental aspects of the administrative-territorial unit development, the essence of ecologically sustainable development the system to ensure the competitiveness of environmentally sustainable development of administrative-territorial unit has been offered by us (Figure 4).

Economic restructuring, isolation of branch cycles of nature are necessary conditions of integrated security at branch level. Key factors for improving the competitiveness of the regional economy based on ecological and economic security is the process of clustering and optimization and increase of productive forces. At the state level, the main prerequisite for the achievement of a complex security is the system transformation of the economy.

Conclusion

Thus the survey includes the following statements:

1) the role of reducing the energy intensity of production in the system of the competitiveness of administrative-territorial unit environmentally sustainable development has been determined;

2) the essence of the administrative-territorial system in terms of the fundamental processes of operation and development has been considered, for example the following aspects of the criterion of rationality as a physical, energy and information;

3) the essence of environmentally sustainable development of administrative-territorial unit has been revealed;

4) the system of providing economy competitiveness in the ecologically sustainable development of Ukraine has been proposed.

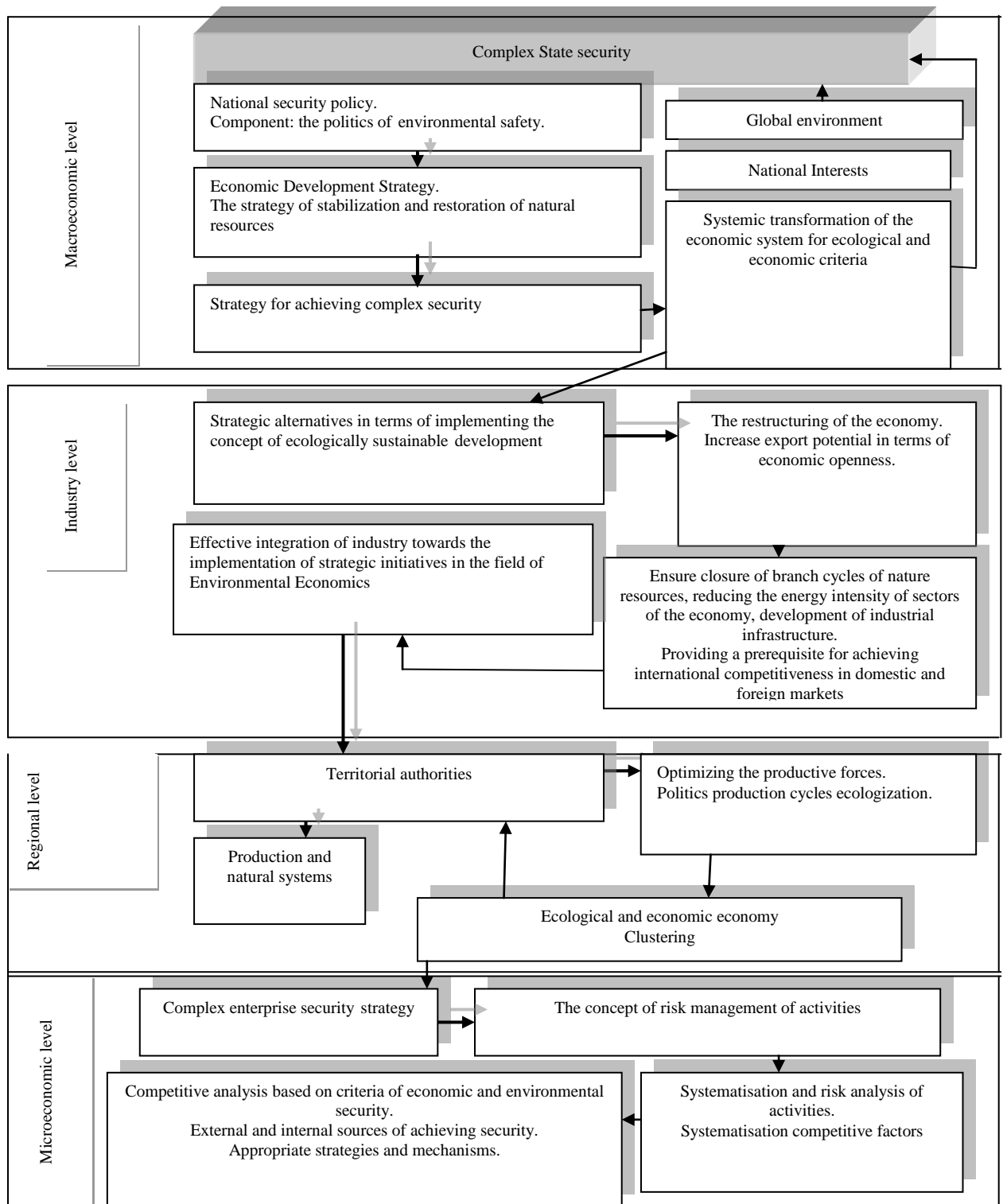


Figure 4 The structure of the system to ensure the competitiveness of the economy in terms of environmentally sustainable development of Ukraine

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