

PROBLEMS OF ANTHROPOGENIC IMPACTS ON THE ENVIRONMENT AT THE INDUSTRIAL REGIONS

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Introduction. According to the UN concept, one of the main conditions for sustainable development is precisely the greening of any production. The European Parliament adopted a resolution on the climate and environmental emergency on 28 November 2019. This document is a key strategic priority of the European Union's policy, which means that it should be considered as one of the most important challenges in the process of European integration of Ukraine (Andrienko et al., 2017).

The Concept for Implementation of the State policy on Climate change up to 2030 approved by the order of the Cabinet of Ministers of Ukraine dated 7 December 2016 No 932-p, primarily provides for the prevention of the process of climate change due to the reduction of anthropogenic emissions and the transition to low-carbon development of the state. The Government's 2020 Priority Action Plan includes included the key stages for the implementation of the reforms to meeting the European good governance standards on a reasonable and transparent hierarchy and accountability system on these issues.

Presentation of the main research. In 2020, the “anti-rating” of the most polluted Ukrainian regions was performed. Dnipropetrovsk oblast was at the top of it and other areas also showed serious environmental challenges. Industrial enterprises of mining and metallurgical, fuel and energy, chemical complexes and transport are the main sources of air pollution. Consider the impact of the main areas of activity on the environmental situation at the Dnipropetrovsk region.

1. The impact of industrial activities on the environment.

The territory of the Dnipropetrovsk region has about 500 industrial enterprises. Manganese, iron ore, uranium, kaolin, coal, granite and so on, these are the minerals that the land of Dnipropetrovsk is rich in. Coal mining leads to the formation of dumps, large waste mounds. Burning coal to generate electricity leads

to significant air pollution in the region. Toxic waste from heavy industry pollutes land and water resources. The largest dump pits are concentrated in Kamianske city and Kryvyi Rih city, which cause air pollution and natural disasters. According to the results of radiometric observations in the region over the past five years, no increase in radionuclides in the atmosphere has been detected.

In the Dnipropetrovsk region, there is a comprehensive program for 2016-2025 to prevent climate change, in which 25 industrial enterprises have the greatest impact on the environment of the region take part. Providing comfortable and environmentally friendly conditions for the life of both the population in general and production is the main strategic objective of the program. But, due to the changes of legal relations between the state and industrial business, and the strengthening of legislation on environmental protection, industrial enterprises today have higher obligations to its impact on the environment, than those of the past.

2. Pollutant emissions in the Dnipropetrovsk.

Residents of the Dnipropetrovsk region live in an environment where urban smog, particle and toxic pollutants cause serious health problems. Figure 1 illustrates the dynamics of pollutant emissions during 2012 – 2019.

Figure 1 shows that emissions of pollutants gradually decreased during recent years. The emissions decreased by 385.022 thousand tons or 40% in 2019 compared to 2012, which is associated with the modernization of the production sector of the region. Figure 2 graphically depicts the volume of air pollutants in the cities of the Dnipropetrovsk region in 2019.

The Figure 2 indicate that more pollutant emissions in Dnipropetrovsk region were recorded in Kryvyi Rih (268328.3 tons) and Kamianske (83,335.8 tons).

3. Renewable energy policy.

In the Dnipropetrovsk region, the energy industry takes an important role, especially when it comes to green energy, as the region is the leader in terms of the number of solar power plants installed by households. It should be noted that Dnipropetrovsk prefers solar energy and is among the top three in the number of solar installations; the region put an enormous amount of capacity – 389 MW.

Figure 1

Dynamics of pollutant emissions into the atmosphere from stationary sources of pollution in Dnipropetrovsk region, thousand tons (compiled from EcopassDnipro, 2020)

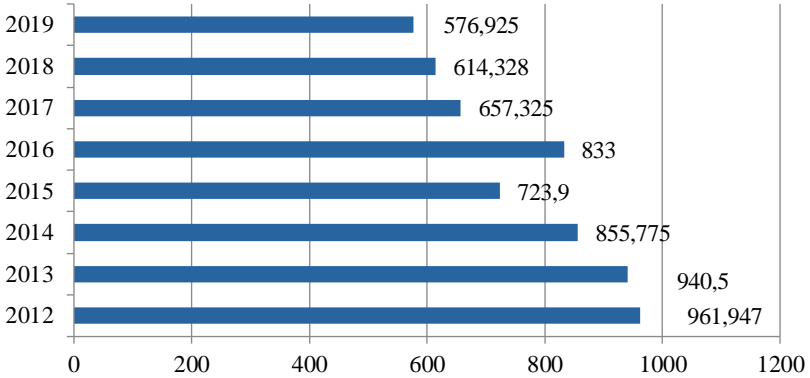
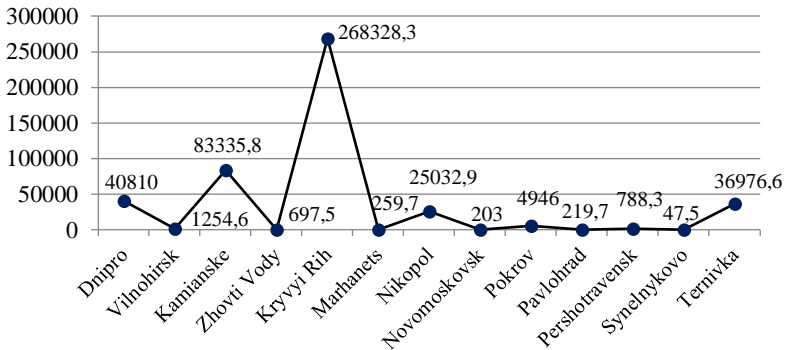


Figure 2

Pollutant emissions in the cities of Dnipropetrovsk region, tons, 2019 (compiled from EcopassDnipro, 2020)



However, irrational use of energy resources leads to an increase in their losses and environmental pollution. In 2020-2021, during the COVID-19 pandemic, the demand for electricity from the population

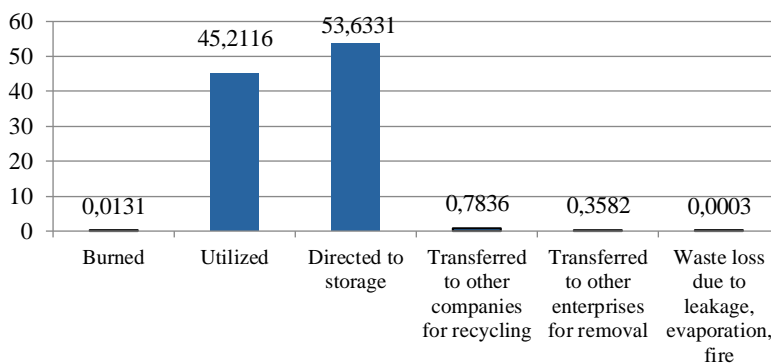
increased and far exceeded the decline in commercial and industrial enterprises, since these structures did not work at full capacity, and some were forced to stop their activities altogether.

4. Waste problem.

The issue of accumulation and disposal of industrial waste is of national importance, since most of the waste contains harmful substances for the environment. The solution to the problem of waste disposal is directly related to cleaning the environment from toxic substances and ballast and obtaining useful products and, as a result, an economic effect (Patnaik, 2018). In Figure 3, we will consider the main indicators of waste management in 2019 in the Dnipropetrovsk region. Figure 3 demonstrates that the largest part of waste is directed to storage (more 54%) and utilized (45%).

Figure 3

*Key indicators of waste management, thousand tons, 2019
(compiled from EcopassDnipro, 2020)*



5. The impact of the transport network on the on the environment.

Transport systems affect the environment, from noise and pollutant emissions to climate change. The cities of the Dnipropetrovsk region, such as: Kamianske, Kryvyi Rih, Pavlohrad, Synelnikovo and directly the city of Dnipro, are strategically

important points in the transport and logistics chain of the infrastructure of Ukraine.

Transport and environmental issues are paradoxical, as transport provides significant socio-economic benefits, but at the same time, transport affects ecological systems. On the one hand, transport activities support the growing demands on the mobility of passengers and goods, and on the other hand, transport activities are associated with an environmental impact.

The complexity of the consequences has led to many controversies over environmental policy, the role of transport and mitigation strategies. This is compounded by the fact that the priorities between environmental and economic considerations change over time, which can influence public policy (Patnaik, 2018).

Conclusions. The United Nations, declaring in its policy documents the principle of the “green” economy as “economically profitable that which is environmentally safe” and summarizes: for the transition to a “green” economy, the world community needs to invest about 2% of world GDP in 10 key sectors by 2050: agriculture, forestry, housing and utilities, energy, industry, tourism, infrastructure, water resources management, waste disposal and recycling, especially at the regional level. The essence of “green regional policy” is to find the most economical solutions to reduce the impact of production growth on the use of resources, ensuring a more efficient resources use for the environment.

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