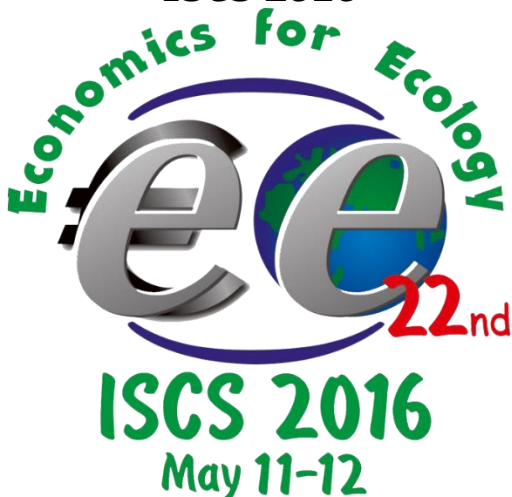


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Thus, program approach to corporate social and environmental responsibility can be implemented as construction and implementation of programs for social and environmental responsibility of the company.

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GREEN HOUSES AS A WAY FOR GREENING THE ECONOMY¹

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In recent years the deterioration of the environment has become really influence on the quality of life of the population limiting the possibility of social and economic development of countries and regions. In this context, political decisions are needed for greening economic activity, which is defined as the process of creation, development and use of scientific and technical, technological, administrative, legal and socio-economic innovations in the production and consumption sectors [1]. Green economy is recognized as one of the main trends of the XXI century. It integrates environmental and economic interests of countries and regions. One of the main directions of green economy is energy efficiency (EE) activity which helps to save energy resources and therefore to reduce environmental contamination levels.

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The housing sector is a priority area for EE not only because it consumes a huge amount of energy, but also because this sector is still characterized by extreme extravagance. Although the level of current technology provides opportunities to reduce energy consumption significantly in the residential sector, this sector, especially in Ukraine, actually continues to use outdated inefficient methods that cause even higher levels of resource consumption [2].

Economic aspects of sustainable development, greening business and EE are actively investigated by domestic scientists. Among them are B. Burkinsky, T. Galushkina S. Gerasimchuk, B. Danylyshyn, R. Zayats, P. Krugman, L. Melnik, V. Reutov, A. Harichkov, E. Khlobystov, M. Hvesik and others. Experts consider greening business and EE as key factors of improving the strategy of social and economic development of countries and regions with regard to ensuring ecological safety of living. The scientists propose organizational and economic mechanisms for greening economy implementation in all spheres of our life, but their practical realization impede by different reasons. Thus, today there is urgency for further development of strategies and policies for inclusive growth and well-being of society that would ensure sustainable development, environmental preservation and saving energy resources in order to provide the appropriate level of energy independency for territories [3].

Thus, the research objective is to review the modern problems of sustainable development and greening economy and to propose economically feasible ways for greening the residential sector of Ukraine on the base of EE measures.

Greening economy and sustainable development are based on the active use of innovations. Advanced (radical) innovations change production capabilities, they allow increasing the production of new products and services while using fewer raw materials and involving secondary raw materials. Innovations help to increase economic growth not due to the depletion of natural resources and environmental pollution, but due to use of new technologies, in particular, resource-saving and environmentally friendly ones.

Because of urgency of innovations implementation especially in the ecological sphere we may see the active development of the ecological market not only in foreign countries, but also in Ukraine. The ecological market is a market of environmental technologies, works, goods, services,

knowledge and environmental information [4]. In recent years structural and geographical changes are observed in this market. Concerning the residential area traditional sectors of the ecological market obtain further development, which include water supply, water purification and wastewater drains (about 40% of the market), disposal of solid and hazardous wastes (also 40%), utilization of secondary resources and protection of the surrounding air. New market sectors also evolve rapidly; the examples of these industries are eco-tourism, organic agriculture, ecological automotive industry, production of medicines, cosmetics and other environmental goods, construction of green houses (GHs).

The last direction – GHs – allows constructing modern buildings with low energy consumption from the outside. It is very prospective concept from the point of achieving sustainable development. GH (passive or energy efficient) is a building with a small power consumption that is about 10% of the regular house energy consumption. The main feature of GHs is their possibility of maintaining the air temperature inside at the same level as in summer as well in wintertime. Thus, there is a high level of the comfort with a maximum consumption of heating or cooling no more than $15 \text{ kW}\cdot\text{h}/\text{m}^2$ in comparison with Ukrainian regular house, where energy consumption can reach $400 \text{ kW}\cdot\text{h}/\text{m}^2$ [5]. GH is an energy efficient building, which helps not only to save money, but also to live in a safe, eco-friendly environment. No less important peculiarity of these houses is their ability of renewing the energy that the house receives from the light bulbs, washing machines, computers and even from human work.

Despite the novelty of GH concept for Ukraine, there are some successful examples of its implementation on Ukrainian territory. GHs are located in Kyiv, Chernihiv, Vasytkiv, near Kaniv, Odessa, Yavoriv city (near Lviv) and near Vyshgorod [6]. The construction of such buildings is based on the principles of their compact form, internal finishing of the building by diffusion-open materials, presence of massive parts for better accumulation of heat and cold, controlled ventilation system with heat recovery, availability of cooling and heating systems of the building by means of radiating surfaces and others. Everything should work for ensuring the effective functioning of the house. It must be environmentally friendly and safe for the environment, as well as comfortable and cozy for its residents.

Also, important factors in the design of the house are the correct orientation of building to the cardinal points, the maximum tightness and

wind-tightening of the house, proper glazing of construction, the use of a clot-walls, openness from the south side (no shading) and so on. These seemingly simple factors make it possible to achieve efficient and economical using the planet's resources along with inflicting no harm. The homes of this type do not have any harmful effects on the environment as well as it is the particular place, where a person can have a great time. There is environmental, healthy and comfortable atmosphere, which is achieved by using environmentally friendly natural materials. Furthermore, heating, ventilation and natural materials provide permanent maintenance of a healthy home humidity, lack of emissions in the inner space and comfort of living.

Of course, extra advantages of living in such GHs cost some additional money. For the case of Ukraine we can compare the price of already built passive house (the first passive house in Ukraine, Kyiv) with the price of traditional, not green, house in order to understand whether the construction of such GHs is efficient. Assume that the passive house has three separately functioning parts (total area of which is 328.5 m²): house (for a family of 5 people) with a library, swimming pool and sauna; own flat with a separate entrance from the garden; office with a separate entrance from the street. So, the costs of the entire home fully finished and equipped totaled 340,000 USD. As for the usual house, which has the same parts, its price is around 250,000–270,000 USD [6].

Thus, the difference in price is near 70,000–90,000 USD, but if you are the owner of GH, you have a number of advantages. For example, for the house of 200–300 m² the annual savings of natural gas expenditures for heating is 350–500 USD, for electrical heating is 2000 USD. The residents of the GH annually pay 150 USD for maintenance, including heating, cooling, water heating and heating the pool, electric sauna, electric lighting, electricity etc. Monthly expenditures for maintenance of the ordinary house reach 200–250 USD. As a result, the payback period of additional investments in GH compare to the usual building is about 10-15 years. In addition, that is not taking into account. living in the GH has favorable effect on human health.

Thus, in many ways, the construction of energy efficient GH is a promising industry. Its main usefulness is saving the limited resources on all stages of building. A passive house is effective not only for its durability (more than 150 years), but also because of its useful influence on human's health. Therefore, due to constructing the GH society obtains a various

kinds of benefits, such as saving resources, reducing the negative technological impact on the environment, as well as increasing life expectancy of humanity and enable sustainable development.

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**THE INFLUENCE OF ECOLOGICAL FACTOR ON THE
FUNCTIONING OF ECONOMY OF UKRAINE**

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There are a lot of factors which have influence on the functioning of economy of Ukraine, and we can divide them into internal and external. The influence of external factors is beyond control of government, but internal, which functions inland, can be regulated by a state. However, we