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THE MAIN PROBLEMS FACED UKRAINE IN CASE OF LOW-CARBON ECONOMY

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The article presents main thoughts covering the process of implementation of low-carbon economy principles in Ukraine, presented main problems towards this aim and proposes one of the main steps to be taken on this long-term way. In case of the damaged limit of the natural resources to be developed in Ukraine nowadays (especially gas, oil, coal, etc.), lost of competitive position on international market to be always placed by Ukrainian manufactories, disability to cut the value of carbon gases and then, as a result, disability to ensure Ukrainian obligations by the Kyoto protocol, Ukrainian Government needs to find better solution for solving the problems mentioned above. In this case we should take into account that the main part of these problems appeared in case of the low-carbon economy movement in the world. As we declare our desire to be next to the leaders countries, than we have to find solutions for our problems based on the main international best practices.

Keywords: *Ukrainian economy, low-carbon economy, carbon gases, low-carbon strategy.*

Introduction. Intensification and diversification, globalization and transnationalization of economy became the main factors for the further active development of using the natural resources within the business activities. They stay as a main problem of business depletion and irrational using of all possible resources, as well as necessity to find new ways for substitution of these resources, active defense of global ecology and development of innovative approaches for decreasing negative human impact. Of course, all these aims need to be discovered within the main focus of the scientists on solving the main economic, ecological, investment problems in case of sustainable development. In case of the current instability of Ukrainian economy, in situation of escalation the conflict with Russia (the main

country costing the main value of all manufactories' products) and inability to attract new investors to absolutely unstable circumstances, the question of building new economic strategy for the country is on the top of Ukrainian agenda. We can stay that the only one possible way for the national government is to review all existed natural resources, identify the possibility to improve industrial competitiveness, clarify the main problems towards this way and based on these results develop a new strategy. As of now the only one possible way to revive Ukrainian economy is to prepare it for the conditions of the low-carbon development. At the same time we have an additional question – identification of the main problem on the way of formation of the low-carbon economy in Ukraine.

Analysis of recent researches and publications. All issues to be related to the low-carbon economy and its development in different countries can be found in scientists researches of the main international academic economists. Among the countries deeply researched the issues of low-carbon economy are the USA, EU, China and India. All these countries are among the first who declare their obligation to decrease the value of carbon emissions into the air, develop new type of the national economic strategy and develop new style of human behavior.

The “low-carbon development” as a concrete term was identified by the United Nations Framework Convention on Climate Change (UNFCCC) in 2008 [1] but till now there is no unique clarification of its meaning. Thus, the DFID's White Paper (2009), appears to be a common feature in what is implied by low-carbon development, stressed that this term is just the view «using less carbon for growth» [2]. The other one scientists, Charles Levy identify «low carbon development» as an economy which is characterised by activities which emit low levels of carbon dioxide into the atmosphere [3]. Some of the economist says that the low carbon development as a joint of activities which included but not limited with active business activities and stabilization of the level of carbon gases emission in the atmosphere. These actions should enable additional climate changes and consisted of decrease of value of carbon gasses' emission, showing the high-level of using energy-efficient technologies and using of low-carbon energy resources. Additionally, the low-carbon development is the only one effective approach for ensuring an adequate level of socio-economic development for the country with economy under development (such as Ukraine is). Chinese Professor Zhuang Guiyang [4] equal «low carbon development» and «low carbon economy» which is identified as an economic system which has a clear energy structure and devoted to energy efficiency. He stressed that key element of such economy is energy innovations which has a systematic character and aimed at systematic decrease of speed changing in the environmental and promotion of sustainable development. We can stressed that the low-carbon development is the golden middle between the sustainable development of nature and humanity, as well as it's the one of the mostly possible ways to develop the national economy in Ukraine. But despite this absolutely understandable thing our

government doesn't try to intensify its efforts toward implementation and development of the main low-carbon steps.

Previously unsettled problem constituent. Despite all these facts and understanding the necessity to support low-carbon economy in the developing countries, the main problems faced Ukraine in case of low-carbon economy are still undiscovered.

Main purpose of the article. To clarify the main factors which ensure necessity for Ukraine to implement scenario of low-carbon development, as well as identify main steps to be taken by the government in the next 2-3 years.

Results and discussions. Discovering the issue of using the low-carbon development as a basis for the development of the national economic strategy, we should identify factors which became a main force in low-carbon movement (but still ignored by Ukrainian leadership). Among them we can specify next:

- rapid speed of innovation and scientific development. Current innovative technological developments enable humanity to use an alternative energy sources, thus providing lower fiscal costs. Via using the modern energy efficient technologies (via outsourcing or franchising), Ukrainian economy can decrease the value as well as an impact of co-called "energy" costs in its budget, especially if we are talking about using of such technologies in social infrastructure.

- instability of the energy market prices. For the majority of developing countries, classic energy resources and fossil fuels became into economic burden. The main part of all budgets owned by developing countries belongs to the energy resources costs. Of course this situation becomes more dramatically in case of prices instability – the governments of such countries enable to plan their budget costs even for a year, thus their unable to plan all their other costs aimed at social infrastructure development, increasing of salaries for the unprotected categories of people, etc. In Ukraine we always monitor the following situation – the government develops its annual budget taking into account the current price on the fuel and the main energy resources and of course it calculates all its costs for a year. Then we have a situation when the prices starting increase, thus the value of energy coasts also increase and, as a result, the value of socially important project rapidly decrease or even dropped. Our government should start implementation of the big pilot low-carbon projects, first of all at some manufactures, evaluate their results and calculate the possible economic effect of such project for the pilot regions, as well as for the rest of Ukrainian regions.

- need to fulfill commitments under the Kyoto Protocol and getting additional financial resources for the future projects. All developing countries understand that if they fulfill all their Kyoto commitments, they'll cut their negative influence on the nature and even get additional funds for the next projects. Such countries clarify that using of low-carbon technologies allow them to be energy independent from another big 'fuel-countries', implement new ecological projects, increase the number of 'ecological' vacancies, etc. As of now Ukraine couldn't meet its commitment of

Kyoto protocol, but it could sale the rest of its quotes and get additional fund for its further economic development.

All the fact mentioned above, as well as more others circumstances, shows us the necessity for Ukrainian government to develop its national strategy for the low-carbon development, make a research and indentify the first pilot manufactories for this development, and improve current legislative documents as well as fiscal documents relative to this development. As a result we can identify the main steps to be taken by the Ukrainian government for making a normal basis for the next low-carbon development of the country (Table 1)

Table 1. The main steps to be taken by the Ukrainian Government to implement the low-carbon development

Sector	Steps to be taken	Final result to be achieved
Sustainable energetic	Invest into: – innovative energy distribution systems such as «smart grids», – infrastructure of renewable energy resources, – using of alternative energy resources in the industry.	Developing of new working places. Decrease of carbon gases emission. Increase the value of using the green energy in industry.
Fiscal system	Develop the new articles to be included into current fiscal codex aimed at supporting industrial sector in using of energy efficient technologies. Develop the mechanism of financial reimbursement	Increase the value of enterprises using the green technologies. Increase the legal defense for industrial companies.
Sustainable transport	Using of low carbon fuel. Investment into energy-efficient transport, electrification, railway transport. Planning of green city infrastructure for the transport.	Decrease the value of using the classic fuel. Decrease of carbon gases value polluted by the transport. Development of new jobs.
Sustainable industry	Investment in using of energy efficient technologies in pilot industrial projects. After them – implement such pilots across Ukraine. Implement the system of government subsidies for the enterprises implementing such technologies.	Decrease the value of energy coasts in budgets of industrial manufactories. Decrease the value of their negative attitude on the air.

We should notice that the main tasks that have a direct impact on mandatory greenhouse gas emission in Ukraine are the following:

- to develop an optimized structure of the energy sector of the national economy by increasing the use of energy sources with low carbon dioxide emissions;
- to reduce the value of greenhouse gases emissions in accordance with the declared Ukraine's commitments under the Kyoto Protocol;
- to develop and implement the National Action Plan on climate change mitigation.

Of course we've got additional steps, which have no direct influence on the value of greenhouse gases emission issues, to be taken by Ukrainian government after the previous list:

- to increase the forests area by 17% of the state through reforestation and afforestation by 2020;
- to establish economic conditions for infrastructure development of environmentally friendly transport by 2020;
- to increase energy efficiency by 50% by 2020;
- to increase the value of renewable and alternative energy sources by 55 percent by 2020.

Conclusions and further researches directions. Of course, all the problems and areas for development mentioned above – it's just a formal directions for our Government. We all clearly understand that our future sustainable development fully depends on political desire and readiness of our government to indicate a low-carbon development as a major director for the National economical future. We stayed that this direction should be supported by developed and scenically approved roadmap and the national green strategy. After this all the ministries and other stakeholders should develop the regional framework for this strategy, identify several pilot oblasts, implement low-carbon technologies and approaches, an finally implement the strategy through the country. The presented results of our research can be use by another economic scientists for the development of the national low-carbon strategy and additionally for the low-carbon roadmap for the national manufactories.

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**ОСНОВНІ ПРОБЛЕМИ УКРАЇНИ В КОНТЕКСТІ
НИЗЬКОВУГЛЕЦЕВОЇ ЕКОНОМІКИ**

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У статті представлені основні підходи до процесу реалізації принципів низьковуглецевої економіки в Україні, основні проблеми досягнення цієї мети та запропонований один з головних кроків на цьому довгостроковому шляху. У випадку досягнення межі природних ресурсів, що добуваються в Україні в цей час (особливо газ, нафта, вугілля і т.д.), втрати конкурентних позицій на міжнародному ринку, що завжди були зайняті українськими виробниками, неможливості скорочення вартості вуглеводнів, а потім, як наслідок, неможливості забезпечення зобов'язань України згідно Кіотського протоколу, український уряд повинен знайти краще рішення зазначених вище проблем. У цьому випадку ми повинні взяти до уваги, що основна частина цих проблем виникла у випадку низьковуглецевого економічного руху у світі. Оскільки ми декларуємо бажання бути на ряді з лідерами, ми повинні знайти рішення для наших проблем, ґрунтуючись на кращих міжнародних практиках.

***Ключові слова:** економіка України, низьковуглецева економіка, вуглецеві гази, низьковуглецева стратегія.*

**ОСНОВНЫЕ ПРОБЛЕМЫ УКРАИНЫ В КОНТЕКСТЕ
НИЗКОУГЛЕРОДНОЙ ЭКОНОМИКИ**

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В статье представлены основные подходы к процессу реализации принципов низкоуглеродной экономики в Украине, основные проблемы в достижении этой цели и предложен один из главных шагов на этом долгосрочном пути. В случае достижения предела природных ресурсов, что добываются в Украине в настоящее время (особенно газ, нефть, уголь и т.д.), потери конкурентных позиций на международном рынке, что всегда были заняты украинскими производителями, невозможности сокращения стоимости углеводородов, а затем, как следствие, невозможности обеспечения обязательств Украины согласно Киотскому протоколу, украинское правительство должно найти лучшее решение указанных выше проблем. В этом случае мы должны принять во внимание, что основная часть этих проблем возникла в случае низкоуглеродного экономического движения в мире. Поскольку мы декларируем желание быть на ряду с странами-лидерами, мы должны найти решения для наших проблем, основываясь на лучших международных практиках.

***Ключевые слова:** экономика Украины, низкоуглеродная экономика, углеродные газы, низкоуглеродная стратегия.*