GREEN ECONOMY. WORLD EXPERIENCE AND FEATURES OF DEVELOPMENT IN UZBEKISTAN

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ABSTRACT

The Article discusses the world experience of the transition from the "brown" economy to the "green" and the features of the transition to the "green" economy of Uzbekistan, its economic and environmental benefits.

Keywords: *growth limits, Tobin tax, lack of resources, energy-saving technologies, resource-saving technologies, waste disposal, alternative energy.*

АННОТАЦИЯ

В статье рассматривается мировой опыт перехода от «коричневой» экономики к «зеленой» и особенности перехода к «зеленой» экономике Узбекистана, его экономические и экологические преимущества.

Ключевые слова: *пределы роста, налог Тобина, нехватка ресурсов, энергосберегающие технологии, ресурсосберегающие технологии, утилизация отходов, альтернативная энергетика.*

INTRODUCTION

The concept of "green economy" has entered our life relatively recently. But now it has a huge number of adherents and followers. For millennia, mankind has been consumer-oriented towards nature, barbarously destroying its resources. Thoughtless, unlimited consumption of natural resources has led to the fact that by the beginning of the XXI century the world was on the verge of an environmental disaster. Existing technologies that originated in the era of industrial society, based on hydrocarbons, are resource and energy intensive. A large number of production emissions have already led to a change in the Earth's climate.

The thoughtless consumption of exhaustible natural resources has led to the fact that freshwater shortages, depletion and degradation of soils, and destruction of the ozone layer are becoming commonplace for humanity. Consumer society produces millions of tons of garbage, the disposal of which requires ever-larger areas. An increase in the population of the Earth threatens that all these problems will worsen many times.

DISCUSSION AND RESULTS

By the middle of the 20th century, it became clear that it was necessary to create alternative energy sources, create energy and resource-saving technologies, and a new economic model. It is believed that the history of the "green economy" began in 1972 with the proposal of J. Tobin, adviser to the government of J. Kennedy, a special exemption in the form of deductions in the amount of 0.1-0.25% of income from financial transactions to help developing countries and parallel restrictions on cross-border currency speculation [1].This proposal went down in the history of economic science as a Tobin tax, but only forty years later, in 2013, the European Community introduced a Tobin tax as a tax on financial transactions at the proposal of France and Germany [2]. This tax is not directly related to the "green economy", but it allows you to create a fund that regulates the global financial sector and has a social orientation, avoids the debt crisis. It took forty years for humanity to not only realize the danger that the existing model of the economy poses to humanity, but also to begin to take concrete steps to avoid an environmental and economic crisis. The first UN international conference on environmental issues was held in Stockholm in 1972, which addressed the relationship between economic development and environmental issues. For forty years, environmental issues were discussed at the international level, and only in the first decade of the XXI century it became clear that the existing model of the economy has limits to growth. In 1971, Jay Forrester, in his book World Dynamics, analyzed the model of the brown economy and substantiated the problems that humanity will face in the coming decades if it does not change the economic model. “A growing population is driving an increase in industrialization, an increase in the need for food, and the spread of the population across a growing territory. But the growth in the production of food, industrial goods and occupied territory contributes not only to maintaining, but also to increasing the number of people. Population growth, with its accompanying industrialization and pollution, is the result of cyclical processes in which each sector contributes to the growth of other sectors and ensures their development at their expense. But over time, growth encounters the limits imposed by nature. Soil and natural resources are depleted, and the ability of the Earth's biosphere to decompose pollution is not unlimited. The contradiction between the concept of growth and natural restrictions can be resolved in several ways. A person, if he understands this well enough and acts reasonably, can choose a development trajectory that should lead to the stabilization of the world system. And the task is to choose the best of the possible options for the transition from dynamic growth to the state of world equilibrium”[3].

Ralph Fuks in the book “The Green Revolution: Economic Growth Without Damaging the Environment” invites humanity to switch to new, energy and resource-saving technologies. “Until now, the interaction of man and nature has been reduced to the consumption of nature rather: the richer and more powerful the human world has become, the more poor nature has become. While the productive capital of industrial countries is growing at a frantic pace, ecological systems, without which the existence of human civilization is impossible, were in danger of death.

Losses of “natural capital” increase in proportion to growing material wealth. We are at a bifurcation point: either we will be able to make the “big leap” towards a sustainable mode of production, or the world will face severe crises. Today on the agenda is the issue of transition to the economy, which functions not contrary to the productive forces of nature, but with them. Our previous ideas about nature were limited to thought, about the scarcity of natural resources that must be used extremely efficiently.

The outlines of a green economy are emerging that are characterized by a productive synthesis of biological evolution and technology. Scientists at the forefront of environmental policy have proposed terms to understand what is at stake: integrated technologies (Ernst Bloch), bio-cybernetics (Frederick Fester), the revolution of efficiency (Ernst Ulrich von Weizsacker), natural capitalism (natural capitalism, Emory and Hunter Lovisy, Paul Hocken). All of them imply not a static, but a dynamic society, not a submissive adaptation to the existing “natural order”, but growth along with nature” [4].

The first steps in introducing green technologies were made by mankind in the middle of the 20th century. Since the 1970s In industrialized countries, considerable progress has been made in improving the environment. The level of all kinds of harmful substances dropped sharply, rivers and forests “rested”, urban smog dispersed [4]. The introduction of green technologies has allowed Germany to reduce CO2 emissions over the past 30 years by 25%.

The Economic and Social Commission for Asia and the Pacific (ESCAP) has played a huge role in promoting the green economy concept. The members of this organization are: Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Uzbekistan and Turkmenistan. In 2005, at the initiative of ESCAP, a green development strategy was adopted that included four priority areas: rational production and consumption models; gardening "of enterprises and markets; sustainable infrastructure and green tax and budget reform. Later, two more

directions were added - investing in natural capital and environmental performance indicators.

Mankind has come a long way before moving to energy-saving technologies not only in production, but also in housing and communal services. The first house based on energy-saving technologies was built in Germany in 1991 in Darmstadt. The cost of heating this house was 1 liter of liquid fuel per 1 m2 of floor space per year. Heating in such a house is organized due to the heat generated by people living in the house, household appliances and solar panels. This technology is widely used in Western Europe. In Denmark, the Czech Republic and Finland, whole ecological villages have been built, numbering more than six thousand so-called passive houses.

Uzbekistan has inexhaustible sources of solar and wind energy. A high percentage of agricultural production in the country's economy will allow the use of biomass not only as fertilizer, but also as raw material for an alternative source of fuel. The problem of renewable energy sources is also developing in Uzbekistan. According to the calculations of the Center for Economic Research, pursuing a greening policy through the creation of non-traditional renewable energy sources will allow Uzbekistan to reduce the share of hydrocarbons to 50% of the total production by 2050. The energy saving potential in economic sectors is estimated at 18-20 million tons of oil equivalent per year.

The economy of Uzbekistan has a well-formed base for the development of the main sectors of the economy. This creates the prerequisites for its sustainable development. To develop a strategy for the transition of Uzbekistan to a green economy, it is necessary to take into account the experience of Western European countries that have successfully introduced new technologies in their countries.

Today, the economy of Uzbekistan is one of the fastest growing economies in the world. After gaining independence, new branches of the economy, requiring large energy costs, developed in the republic. At the same time, with the previous attitude to natural resources, maintaining the level of coal and gas consumption, according to the UNDP Analytical report “Conceptual approaches to the formation of Green Economy in Uzbekistan” for 2011, the natural reserves of these energy carriers in Uzbekistan will last for 20-30 years, and oil reserves are depleted [5].

The issue of drinking water reserves is becoming no less acute. With the established limit of 53.5 billion cubic meters. 1 for Uzbekistan, the world community cannot guarantee the receipt of this resource, at the current level of water consumption. As a result, the area under cultivation can be reduced by 20-25% within 30 years. This means that the dynamic development of the economy of Uzbekistan

will be hindered by a lack of natural resources: land, water, energy. That is why a transition to the "green economy" of our republic has become necessary, and not in the future, but now.

In addition to preserving natural wealth, our country will receive economic benefits. According to scientists, the scenario of the development of the "green economy" in 5-10 years will provide a higher rate of economic growth compared to the "brown economy" and increase the number of renewable resources needed for the development of the global economy.

Uzbekistan has a huge, practically inexhaustible potential of renewable energy sources (RES), which, according to experts, exceed the resources of organic non-renewable fuel by an order of magnitude. At the same time, about 97% of the available potential falls on solar energy, and in terms of the number of sunny days (320), Uzbekistan surpasses even Spain, the birthplace of modern solar energy. According to data from the Asian and World Banks, the gross potential of solar energy exceeds 51 billion tons of oil equivalent. The transition to the “green” economy scenario will allow economically efficient use of this type of energy, both in the development of renewable sources of resources, as well as in the housing and communal services and transport sectors. Over the past seven years, after the publication of the CEI Analytical Report, Uzbekistan has done a great job in introducing passive-solar heating technology and building photovoltaic stations in the country. According to the Program of measures approved by President Shavkat Mirziyoyev for the further development of renewable energy, improving energy efficiency in the economic and social sectors for 2017–2021, one of the directions is the development of solar energy. In particular, the country begins the construction of industrial photo power plants. The development of generating capacities through the introduction of technologies for the use of alternative energy sources and the construction of photovoltaic stations will increase the installed capacity of power plants in the republic by 1.25 GW without a load on the fuel component and will not have a negative impact on the environment. The creation in the country of its own production of these products will significantly reduce the cost of photovoltaic plants to 30% and, as a result, ensure more intensive development of renewable alternative energy, bringing it to a whole new level [6]. By 2020, Uzbekistan plans to build 3 solar power plants with a capacity of 100 MW each.

Another important area of the economy is “landscaping of transport. Today, the bulk of Uzbekistan’s transport is motor vehicles, which is the second, after industry, energy consumer and one of the main environmental pollutants.

When burning 1 ton of gasoline with exhaust gases, about 600 kg of carbon monoxide, 40 kg of nitrogen oxides and more than 100 kg of various hydrocarbons are emitted into the atmosphere [7].

For Uzbekistan, it is advisable to consider the following alternative types of fuel: compressed gas, biofuel (ethanol from biomass), synthetic fuel from plastic.

Automotive industry in Uzbekistan receives a new direction - the production of electric vehicles. Uzbekistan connects the prospects of possible cooperation in the production of electric vehicles with the Chinese company Changan Automobile. The Chinese company is ready to initially invest 15-20 million US dollars in establishing a large-site assembly of modern cars with a hybrid engine or an all-electric power plant, where 100-150 people will work. At the second stage, full-scale localization of production will be organized with the involvement of capacities of adjacent enterprises of the republic, especially since the Ferghana Valley is the heart of the domestic automobile industry: there are dozens of large enterprises for the production of components. In general, in Uzbekistan, the company intends to focus on the production of modern cars with a hybrid engine or an all-electric power plant [8].

The volume of production in the first stage can be 1000 electric vehicles of class A and B per year. The South Korean company Hyundai plans to annually produce up to 10 thousand electric vehicles in Kokand. The cost of the project is $ 300 million, the release of the first production electric car is expected by 2023.

Serial production of cars will be established in the free economic zone "Kokand". The construction of a plant with a capacity of 10 thousand electric vehicles per year should begin in 2021 [9]. The transition to clean transport will create up to 95,000 jobs by 2020 and, in the future, up to 175,000 jobs by 2050 [10].

Most industries in Uzbekistan remain energy-intensive and resource-intensive, since most of the main industries developed in the mid-twentieth century. In order to change the situation, in Uzbekistan in July 2019, the “Strategy of the Republic of Uzbekistan on the transition to a green economy” was adopted

The main goal of the Strategy for the transition to a green economy is to achieve sustainable economic progress that contributes to social development, reduction of greenhouse gas emissions, climate and environmental sustainability through the integration of the principles of a green economy in ongoing structural reforms. The transition to a green economy is based on the following basic principles:

- compliance with the Sustainable Development Goals rational use of resources, sustainable consumption and production; inclusion of environmental and social criteria in the system of economic accounting;

- the priority of the use of "green" tools and approaches to achieve the goals of socio-economic development;

- achievement of existing macroeconomic goals by increasing competitiveness and growth of indicators in key sectors, creating “green” jobs, improving the welfare of the population;

- ensuring the investment attractiveness of measures for the efficient use of resources [11].

According to Goskomekologiya, 12 - 13.5 thousand tons of MSW are produced daily in Uzbekistan. The main way to utilize waste is to bury it. There are 186 landfills in the republic, which contain 33.4 million tons of waste. In April 2017, the President of Uzbekistan Shavkat Mirziyoyev adopted a resolution “On measures to radically improve and develop the waste management system for 2017–2021”, which is aimed at improving the sanitary and environmental situation in the republic, preventing the harmful effects of waste on the health status of citizens, creating decent living conditions, and further improving the level and quality of life of the population as a whole.

As of 2018, according to the Goskomekologiya, there are 317 domestic waste processing enterprises in the country, including 81 polymer processing enterprises - in fact 26.1 thousand tons (plastic pipes, containers, hangers, PET bottles, etc.), 58 waste paper processing enterprises - actually 26.8 thousand tons (cardboard, wrapping paper, corrugated paper, toilet paper, etc.), 9 glass processing enterprises - actually 6.9 thousand tons (glass containers, glass products and etc.), 20 rubber processing enterprises - actually 1.8 thousand tons (rubber baby crumbs, shelves, paving stones, galoshes, etc.), 22 metal processing enterprises - actually 12.5 thousand tons (scrap, color, aluminum, etc.), 10 enterprises for the processing of mercury-containing lamps - actually 500.4 thousand pieces. (lamps and appliances), 117 other wastes - actually 648.9 thousand tons (textiles, etc.). The total volume of recycled household waste is about 722.5 thousand tons, or 14.2% of the volume of household waste.

60% of all MSW collected in Uzbekistan falls on housing and communal services, according to the data provided in the National Strategy for waste management. These wastes are heterogeneous, they are divided into inorganic and organic components. Organics do not cause much damage to the environment, as they are easily processed by microorganisms. One of the technologies, composting, is the processing of waste based on its natural biodegradation. The final product is compost, which is used in urban and agricultural sectors. Biological fertilizers are also formed

during the production of biogas. Currently, there are 42 plants in Uzbekistan producing 2.2 billion cubic meters of biogas per year. According to estimates, Uzbekistan has the potential to produce up to 9 billion cubic meters of biogas per year, which is about 10% of the country's annual energy needs. This green technology in Uzbekistan is mainly used in rural areas, where there are problems with the main gas supply. In cities, methane produced is used as fuel for automobiles [11]. Recycling is a very profitable business. Paper, glass, plastic, metals, cellophane, tires, construction waste, and biological waste are recycled. Everything that cannot be processed can be burned, while receiving thermal energy to produce hot water and heating. The main problem today is waste sorting. Unfortunately, the country's population is not accustomed to sorting garbage, and this creates difficulties in its processing.

The Tashkent-based Mahsustrans company, with the support of the Ministry of Innovative Development, UNDP and ADB consultants, plans to interest the city residents in sorting garbage in the form of a material reward for paying tariffs for garbage or paying for sorted garbage and providing special containers for separate collection of garbage households. The project is still under development, but this is one of the first effective steps in this direction [12].

To solve the problem of sorting garbage, you need to turn to the experience of countries that have successfully solved this problem: Switzerland, Holland, Israel, Singapore, South Korea, Japan, the USA and other countries. In addition to the system of fines and incentives, in these countries much attention is paid to the educational process. In schools and other educational institutions, students conduct classes in which they explain why it is so important to sort garbage, what economic and environmental advantages this leads to.

The introduction of such practices in our country will not immediately produce results. But after five years, the problem with garbage sorting will not be so acute, which means that there will be much more opportunities for fulfilling the tasks of the Waste Management Strategy.

The transition from a brown economy to a green one requires tangible financial costs and time. But at the same time, such a transition will not only increase the rate of economic growth, but also give people a chance for a comfortable life, while preserving nature for posterity.

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