

ECONOMIC SCIENCES

PRIORITY DIRECTIONS FOR THE DEVELOPMENT OF GREEN ECONOMY IN AZERBAIJAN

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Abstract

This article explores the priority directions of the formation and development of a green economy in the Republic of Azerbaijan, which include: building the potential for the use of renewable energy sources; the development of organic agriculture and animal husbandry; the development of "clean - green" transport; the transition to the construction of energy-efficient residential buildings and increasing the efficiency of energy consumption in housing; improvement of waste management system; improvement of the water resources management system; sustainable production and consumption. The article is supplemented with proposals for economic measures and incentives aimed at further increasing Azerbaijan's "green" growth and transition to a green economy (subsidies, subsidies, financial assistance through the introduction of environmental taxes, green tariffs, etc.). Based on the study, it was revealed that the transition to a green economy is an established trend in the development of Azerbaijan, whose competitiveness in the global economic system will, for the most part, be predetermined by how much the republic will be able to mobilize its development in the direction of green growth.

Keywords: green economy, energy, sustainable development, green growth, renewable energy sources, environmental, waste disposal

1. Introduction

The main purpose of this study is to develop recommendations on priority areas for the development of the green economy in Azerbaijan. To achieve this goal, it is necessary to solve such tasks as: to determine the directions of further development of the green economy in Azerbaijan for certain types of economic activity; to develop a set of measures in the context of individual sectors aimed at improving the development of the green economy in Azerbaijan.

Today, one of the priorities for ensuring sustainable economic development in various countries is to determine common directions and develop a concept for activating the green economy, the most important advantages of which are maximum energy efficiency and minimal impact on the external environment. Economic growth and increased consumption in the world, which arose as a result of industrialization since the end of the twentieth century, have significantly aggravated environmental problems. Currently, the main threats to the sustainable development of mankind are environmental pollution and deterioration of ecosystems. Only the transition to a "green" economy can help stabilize economic systems and balance the interests of man, nature and the efficient use of resources (Masko L.V., Gavrilov R.V., 2020: p. 188). In this regard, environmentally friendly economic development in different countries is declared as a necessary condition, and production efficiency is perceived as one of the factors of sustainable development of society.

Azerbaijan is a part of the global economic system, therefore, it cannot stay away from global trends. The peculiarities of the domestic economy, in particular, its raw materials orientation, puts the tasks of ensuring nature-saving economic growth and innovative

orientation of the development of society in the category of the most important, the solution of which seems to be a necessary condition for the transition to a fundamentally new level of development of the domestic economy. The inevitability of guaranteeing sustainable environmental and economic development based on the transition of the modern world community to a green economy, first of all, requires the development and implementation of an appropriate state policy for regulating the green economy in order to ensure its effective provision.

Many studies have been devoted to the problems of the green economy, in particular, its prospects, as well as the peculiarities of "green" business, "green" growth and "green" production in Azerbaijan, but despite a large number of works, there is still no concept linking all directions of this process, both at the level of industries, the same applies to certain types of activities, which determines the relevance of this study.

2. Improving the directions of development of the green economy in Azerbaijan

Determining the ways of further development of the green economy in Azerbaijan requires specific details and structuring, both in terms of identifying industries and activities in which appropriate "green" transformations should be carried out, and in terms of developing "green" measures that should be carried out in the context of individual activities and in the economic system as a whole.

In some studies, in a certain sequence, the following priority sectors are proposed, which are the core for the implementation of "green" modifications: energy; transport; mining and manufacturing; agriculture; construction; housing and communal services; fisheries; tourism; as well as activities such as waste disposal and

recycling; regulation water resources. (Kozhevnikov and Lebedeva, 2019). Moreover, when defining and structuring these areas, it is customary to take into account the specifics of a particular country.

Depending on the socio-economic situation, prospects and international agreements, we will consider the priority guidelines for the formation of a green economy in the Republic of Azerbaijan.

3. Capacity building for the use of alternative and renewable energy sources

The potential of alternative and renewable energy sources in Azerbaijan is quite large. However, as a traditional producer of oil and natural gas, Azerbaijan, like other producers of traditional fossil fuels, "does not seem to have a sense of urgency to switch to renewable energy sources"

(https://www.pwyp.org/wpcontent/uploads/2022/01/RUS_Report_Energy_Transitions_Eurasia_2021.pdf, 2022). This fact is clearly reflected in the dynamics of energy supply through renewable energy sources (table 1).

Table 1

Dynamics of energy supply from renewable energy sources, thousand NET

	2014	2015	2016	2017	2018	2019	2020	2021
Energy supply, total	15085,5	15569,4	15419,9	15506,8	15590,7	17085,6	16 642,8	17 566,6
Of these:								
Hydropower	111,8	140,8	168,5	150,2	152,0	134,6	92,0	109,8
The share of hydropower in the total energy supply, in %	0,7	0,9	1,1	1,0	1,0	0,8	0,5	0,6
Biomass and waste	158,9	160,7	100,8	102,4	110,7	115,9	108,4	102,6
The share of biomass and waste in the total energy supply, in %	1,1	1,0	0,7	0,7	0,7	0,7	0,7	0,6
Wind energy	0,2	0,4	2,0	1,9	7,1	9,1	8,3	7,9
The share of wind power in the total energy supply, in %	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Solar energy	0,2	0,4	3,0	3,2	3,4	3,8	4,0	4,8
The share of solar electricity in the total energy supply, in %	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Energy supply of all renewable energy sources	271,1	302,3	274,3	257,7	273,2	263,4	212,7	225,1
The share of renewable energy in the total volume of energy supply %	1,8	1,9	1,8	1,7	1,8	1,6	1,3	1,3

Source: https://www.stat.gov.az/source/balance_fuel/, 2023

Thus, the analysis of table 1 shows that the total energy supply in Azerbaijan in 2021 amounted to 17566.6 thousand NET, i.e. there is an increase of 14% according to the same indicator in 2014. Of these, most of the electricity supply is accounted for by hydropower (109.8 thousand NET), whose share in the total energy supply of the country in 2021 amounted to 0.6% and biomass and waste (102.6 thousand NET), whose share in the total energy supply of the country decreased by 0.5% over the same period.

The share of renewable energy in the total volume of energy supply in 2021 amounted to 1.3%, which is 0.5% lower than the same indicator in 2014. In our opinion, this is due to the continuing trend in the country to increase the country's energy supply through traditional sources. In our opinion, in order to strengthen the potential and increase the use of renewable energy sources, the implementation of the following measures is required:

- ✓ create conditions to ensure transparency of procedures for the introduction of electricity tariffs, as well as the establishment of a transparent and uniform procedure for connecting to the grid for all subjects, in the appendix to the guarantee for the purchase of energy, the inclusion of clear and equivalent (both legal and practical) regulations for new subjects of the electric power market;

- ✓ to introduce fixed (green) price tariffs on preferential terms for renewable energy, taking into account the type of technology, which would be especially useful for promoting new technologies such as solar and wind energy;

- ✓ to transfer part of the revenues from the oil and gas sector to the development of renewable energy sources. At the same time, we consider it advisable to organize a special fund on renewable energy sources, for example, the State Fund for the Optimal Use of Natural Resources, which could contribute to the formation of a market for the latest services in the field of energy (consulting, energy audit, technical maintenance of innovative technologies, etc.) in cooperation with the authorized body (Malikova and Zlatnikova, 2019);

- ✓ systematically re-evaluate the national energy strategy for the development of renewable energy sources, through the financing of the European Union Energy Sector Support Program (ERSP). This activity should be carried out after the end of the European Union program, and the implementation of the strategy must be constantly evaluated and regularly adjusted;

- ✓ limit the role of the state by accepting competitive conditions, separating vertically integrated monopolies, and easing barriers to entry for smaller companies;

- ✓ to introduce innovative technologies, practical innovations and scientific and technical developments in the field of alternative and renewable energy development and energy efficiency, increase production and expand the concentration of energy-saving special equipment and devices, including technology transfer and organization of engineering and technical centers;

- ✓ optimize accountability in order to stimulate investments from foreign companies, provide incentives for domestic enterprises in the field of renewable energy, improve innovation potential through support for the transfer of know-how and training programs for local personnel;

- ✓ to involve business entities in the development of generating capacities based on proven technologies for the use of wind, solar energy, small and micro hydroelectric power plants;

- ✓ to reduce the energy intensity of manufactured products through the development of new and modernization, technical and technological re-equipment of operating capacities based on the introduction of the latest energy-saving and energy-efficient technologies (<https://ws-conference.com/webofscholar>, 2020).

At the same time, it is more important that each individual point should be investigated not in isolation, but in context with others, since most obstacles are interdependent and, as a result, a synergistic approach is required to effectively overcome them.

4. Development of "clean-green" transport

Transport is one of the sectors of the economy that significantly pollutes atmospheric air, soils and reservoirs more than others. The share of the transport sector in the total volume of emissions of harmful substances into the atmosphere from mobile and stationary vehicles in developed countries is 40-60%, which exceeds this indicator in any industry. The source of 80-90% of pollutants from the total emissions is road transport, 8% – rail, almost 2% – sea and river, and about 1% – air. (<https://cyberleninka.ru/article/n/zelenaya-ekonomika-v-azerbaydzhanskoy-respublike-predposylki-i-napravleniya-razvitiya-1>, 2022).

As a result of such exposure, the atmosphere, land and water bodies are polluted, changes in the chemical composition of microflora and soils occur, industrial waste is formed, including toxic and radioactive, as well as sludge, ash and garbage. The unfavorable environmental result from transport activities puts forward the need to step up work aimed at strengthening environmental protection and environmental management, both from the state and public sides. In order to reduce the toxic impact of transport on the environment of Azerbaijan, measures should be implemented in the following areas:

- the introduction of electric vehicles that can be produced from renewable sources, which reduces carbon dioxide emissions compared to traditional cars with gasoline or diesel engines;
- the use of hybrid vehicles that combine an internal combustion engine with an electric motor, which provides increased fuel efficiency and reduced emissions;
- the use of a public transport system, including buses, trams and subways, encouraging people to use

shared low-emission modes of transportation, reducing the number of individual cars on the road;

- encouraging cycling and walking as modes of transport reduces emissions, improves physical health and reduces traffic jams;

- the use of alternative fuels such as natural gas, hydrogen or biofuels can reduce carbon dioxide emissions than conventional gasoline or diesel;

- high-speed rail and other efficient long-distance modes of transport reduce the environmental impact of travel.

The transportation industry is a significant source of air pollution and greenhouse gas emissions, so environmentally friendly transportation will be required to find a solution. Individuals, companies and governments can help create a more sustainable and environmentally conscious future by adopting and supporting these sustainable transportation options and methods.

5. Improving the waste management system

At the moment, the problem of waste disposal in Azerbaijan, as a whole, remains unresolved and requires an integrated approach involving the following main provisions:

- specification of the established payment calculations for the temporary dislocation of waste and the costs of their processing and disposal;

- switching from the principle of minimizing waste disposal costs to the principle of their optimization (adoption of a single tariff for waste disposal for each specific region of the country);

- providing financial independence and ensuring the sustainability of landfills for waste disposal (enterprises should accumulate the necessary funds in specialized funds and ensure the targeted use of these funds);

- building a system that guarantees the manageability of waste masses and encourages landfills to optimize.

The development of organizational and economic waste management mechanisms also implies that payments for waste disposal will be directed to the above-mentioned special trust funds, and will be consumed, for example, for the development of domestic landfills and the elimination of adverse consequences of their prolonged operation. (https://wedocs.unep.org/bitstream/handle/20.500.11822/14873/trade_GE_handbook_RU.pdf?sequence=9&isAllowed=y, 2020).

Consequently, the waste management system in Azerbaijan requires revision, and in our opinion, this process should take into account the practice of advanced countries and the latest domestic achievements in the field of recycling, burial and disposal of waste, at the same time, and modification of the relevant legislative framework, in particular, based on the principles of the waste management hierarchy adopted in the European Union. Of course, problems and risks are inevitable on the way to "greening" the domestic economy. At the same time, it can be argued that the transition to a green economy is an established developmental trend. Azerbaijan's competitiveness in the global economic

system will, for the most part, be determined by the extent to which our country will be able to mobilize its movement towards green growth.

6. Conclusions and suggestions

At the present stage, certain shifts in the direction of sustainable development are observed in Azerbaijan due to the introduction of strategies and measures aimed at the transition to a green economy into national policy. Measures aimed at accelerating and facilitating the transition to a green economy in the republic require the use of such tools as:

1. making appropriate changes to the taxation system, greening the tax system, and introducing a pollution tax;
2. public procurement policy providing for the production of an environmental product;
3. increasing the volume of public investments in environmental infrastructure in accordance with the principles of sustainable development;
4. government support for research and development on the creation of environmentally friendly technologies;
5. creation of investment funds and financial institutions;
6. retraining of the workforce;
7. study and implementation of international practice.

Recent trends in the world confirm the need for the development of green finance, the withdrawal of investments from the oil and gas sector. The main condition for launching green finance mechanisms is the standards and policies for building an appropriate financial sector, as well as appropriate environmental legislation on emissions trading.

According to the conducted research, it can be concluded that the improvement of the main directions of the development of the green economy provides for the implementation of three key goals:

- ensuring balanced rates of economic growth in the long term, the development of an energy system that actively uses renewable energy sources;
- reduction of toxic effects on the environment (reduction of greenhouse gas emissions and other unsafe substances, reduction of emergency conditions from energy facilities, etc.);
- increase employment, improve the living environment and quality of life of the population.

Thus, the green economy is the latest trend that determines the prevention of an environmental crisis and

the preservation of our society, natural resources, and ensuring the reuse of economic benefits.

In the long term, each area should be explored not separately, but in context with others, since most of the activities proposed in the study are interdependent, and a synergistic approach is required to effectively boost them.

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