THE IMPORTANCE OF FOREIGN EXPERIENCES IN THE SUSTAINABLE DEVELOPMENT OF UZBEKISTAN ON THE BASIS OF A GREEN ECONOMY

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Abstact: The article analyzes the experiences of foreign countries, such as the USA, China, South Korea, France, Japan, and Great Britain, in achieving sustainable development based on a green economy in a period of increasing global environmental problems, and studies the priority areas of their use in the conditions of Uzbekistan. Scientifically based proposals and recommendations are presented for the reorganization, formation, and development of the Uzbek economy from the point of view of environmental requirements.

Keywords: green economy, sustainable development, environment, environmental sustainability, environmental problems, renewable energy, waste, natural resources, low-carbon development, climate change, ecology, international experience, international cooperation.

O‘ZBEKISTONNING YASHIL IQTISODIYOT ASOSIDA BARQAROR RIVOJLANISHIDA XORIJ MAMLAKATLARI TAJRIBALARI AHAMIYATI

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Annotatsiya: Maqolada global ekologik muammolar kuchaygan davrda yashil iqtisodiyot asosida barqaror rivojlantirishga erishish bo‘yicha xorijiy mamlakatlar tajribalari AQSH, Buyuk Britaniya, Xitoy, Janubiy Koreya, Yaponiya kabi davlatlarning tajribalari tahlil qilingan va O‘zbekiston sharoitida foydalanishning ustuvor yo‘nalishlari tadqiq qilingan. O‘zbekiston iqtisodiyotini ekologiya talablari nuqtayi nazaridan qayta tashkillashtirish, shakllantirish va rivojlantirish bo‘yicha ilmiy asoslangan taklif va tavsiyalar keltirilgan.

Kalit so‘zlar: Yashil iqtisodiyot, barqaror rivojlanish, atrof-muhit, ekologik barqarorlik, ekologik muammolar, qayta tiklanadigan energiya, chiqindilar, tabiiy resurslar, past uglerodli rivojlanish, iqlim o‘zgarishi, ekologiya, xalqaro tajriba, xalqaro hamkorlik.

ЗНАЧЕНИЕ ЗАРУБЕЖНОГО ОПЫТА В УСТОЙЧИВОМ РАЗВИТИИ УЗБЕКИСТАНА НА ОСНОВЕ ЗЕЛЕНОЙ ЭКОНОМИКИ

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Аннотация: . В статье анализируется опыт зарубежных стран, таких как США, Китай, Южная Корея, Франция, Япония, Великобритания, по достижению устойчивого развития на основе зеленой экономики в период обострения глобальных экологических проблем, а также изучаются приоритетные направления его использования в условиях Узбекистана. Представлены научно обоснованные предложения и рекомендации по реорганизации, формированию и развитию экономики Узбекистана с точки зрения экологических требований.

Ключевые слова: Зеленая экономика, устойчивое развитие, окружающая среда, экологическая устойчивость, экологические проблемы, возобновляемые источники энергии, отходы, природные ресурсы, низкоуглеродное развитие, изменение климата, экология, международный опыт, международное сотрудничество

Introduction

In the current global economic development, environmental problems are considered to be one of the most negative issues affecting the economic and social development of regions and areas. Countries cannot achieve sustainable development unless they eliminate environmental problems and reduce their impact in order to accelerate and stabilize their regional development.

With the increasing integration of the economies of the world, the development of production, and the increase in the population, the negative impact on the environment from society and economic sectors is increasing. Currently, humanity is experiencing important, decisive processes of environmental protection and ecological problems. If humanity does not take specific and targeted actions to eliminate environmental protection problems, reduce their negative impacts, and take measures that will lead to their positive change, then each process postponed for later will lead to irreversible consequences.

The development of the "green economy" is taking a leading place in ensuring sustainable development in our country, rational use of limited, non-renewable economic resources, and increasing energy efficiency. In order to transfer the national and regional economy to the path of innovative development, it is important to study the scientific, theoretical, and practical aspects of the formation, development patterns, and implementation of the "green economy."

Analysis of literature on the topic

The report “Greening the Economy in the Eastern Partnership Countries of the European Union (EaP GREEN)” examines the effectiveness of increasing production efficiency based on the principles of the green economy in Armenia, Belarus, Georgia, Moldova, Azerbaijan, and Ukraine, and the use of the green economy as a priority in the management of the country's natural capital, administrative management, and environmental protection policy.[1]

V.A. Pokhvoshev, studying the role of the green economy in the social development of Russia, notes the need to adapt the principles of the green economy to regional conditions. He emphasizes that this approach can also be useful in Uzbekistan, and that Russia's experience should be used to improve the ecological environment in Uzbekistan.[2]

A.M. Rodriguez, analyzing the impact of the green economy on sustainable growth and the importance of eliminating environmental problems, emphasizes the importance of this model in the conditions of the financial crisis.

N.N. Yashalova, on the other hand, studied the role of the green economy in achieving environmental and economic sustainability. Her research focuses on the promotion of green production in regional conditions.[3]

Research methodology

The research used methods of systematic analysis, statistical analysis, comparative comparison, synergetic analysis, and interdisciplinary approach. In particular, the systematic analysis method was used in the analysis of literature and sources on the topic, and the comparative analysis method was used in the analysis of the experience of foreign countries.

Analysis and results

A green economy is an economic model that aims to protect the environment, mitigate climate change, sustainably use natural resources, and improve human well-being. One of the most important develo

pments for the development of a green economy is the adoption by 195 countries of a policy to limit global warming to +2 C at the UN Climate Change Conference held in Paris, France in 2015. At the conference, 147 countries presented "green economy" plans, 147 countries presented renewable energy programs, and 167 countries presented recommendations for improving energy efficiency in a climate-friendly manner.

[1] Яшалова Н. Н. Стимулирование устойчивого эколого-экономического развития региона. Автореферат на соискание ученый степени доктора экономических наук. https://www.prlib.ru/item/684795. EaP GREEN dasturi”. https://unece.org/eap-green.

[2] Pokhvoschev, V.A. and Lukina, A.V. (n.d.) '—Zelenaya ekonomika‖ v sotsial'nom razvitii Rossii'. 2018. 12-14-c. https://cyberleninka.ru/article/n/zelenaya-ekonomika-v-sotsialnom-razvitii-rossii.

[3] Yashalova, N.N. Stimulirovanie ustoychivogo ekologo-ekonomicheskogo razvitiya regiona.2020. 8-c. https://www.prlib.ru/item/684795

Analysis of energy efficiency indicators in foreign countries

Table 1

Country	Renewable energy share (%)	Basic documents programs	The purpose
Japan	25.7% (2023)	Green Growth Strategy (2050)	Carbon neutrality by 2050
Germany	55% (2023)	Energiewende, Klimaschutzgesetz	Carbon neutrality by 2045
South Korea	8.3% (2023)	Green New Deal (2020), 2050 Net Zero Plan	Carbon neutrality by 2050
Great Britain	47.5% (2023)	Green Finance Strategy, Net Zero by 2050	Carbon neutrality by 2050
Uzbekistan	25–30% (2024)	Green Economy Strategy – 2030	40% green energy share by 2030

Source: Compiled by the author based on UN Environment Programme: Green Economy and Sustainable Development and World Bank statistics.

Researchers at Lunda University in Sweden have developed a special model of the depletion of the planet's main resources. According to it, as a result of rising prices and the increasing likelihood of global crises, iron production will reach its peak by 2030. A similar second peak will be recorded again in 2060, after which a deficit of iron resources is predicted. The period of shortage in gold mining will begin in the 2070s. For metals, including the platinum group, the 2020s are recorded as the peak, while for lead, silver, and zinc, the 2030s are forecast. After reaching their peak in the 2040s and 2050s, consumption of copper, chromium, nickel, and molybdenum will decline. Phosphate production peaked in 2010, and phosphorus shortages could begin in 2040.[4]

[4] И. М. Потравный, А. Л. Новоселов, И. Б. Генгут Экономика региона. — 2016. — Т.12, вып. 2. — С. 438-450 doi 10.17059/2016–2–10 УДК 304.2 : 338.622 JEL: Q56

Methods of using foreign experience in developing a green economy in world practice[5]

Table 2

t/r	Ways to develop a green economy	Expected result from the methods
1	Study tours and exchanges	It is important to organize study tours, workshops, and exchange programs for policymakers, government officials, and industry representatives to visit countries that have successfully implemented green economy initiatives. This allows them to learn firsthand about best practices, policies, and technologies.
2	International cooperation	Establish partnerships and cooperation agreements with foreign governments, international organizations, and non-governmental organizations (NGOs) specializing in green economy development. These partnerships will facilitate knowledge sharing, technical assistance, and capacity building.
3	Technology transfer	Access to foreign technology, expertise and know-how through technology transfer agreements, joint ventures and licensing agreements. Collaboration with foreign companies and research institutions is essential for the adoption and adaptation of green technologies for local applications.

In Germany, the share of "green" energy reached 41% by 2021 and 47% by 2022. In 2022, this figure was 49% of total electricity consumption1. In 2023, the share of "green" energy exceeded 50% for the first time in the history of German energy. In May and July 2023, the share in electricity even rose to 57% and 59%. In total, 267 billion kilowatt hours of electricity were produced in Germany in 2023. The share of wind generators in this regard was 113.5 billion kilowatt hours[6]

The United States has chosen the development of alternative energy as one of the main directions for the development of a green economy. By 2030, solar installations will provide 65% of the country's energy consumption and 35% of its heat. US government agencies were given two years (starting in 2014) to independently develop specific measures to achieve this goal. President Joe Biden announced a plan to invest in clean technologies over the next 10 years to not only improve the environment, but also create up to 5 million jobs

[5] https://7universum.com/ru/tech/archive/item/15805

[6] https://www.dw.com/ru/v-2023-godu-vie-vpervye-obespecili-svyse-50-elektroenergii-v-frg/a-67758092

Regulatory documents adopted in the United States to develop a green economy[7]

Table 3

t/r	Name of normative document	The purpose	Date received
1	America's Clean Energy and Security Act	Aims to reduce greenhouse gas emissions by introducing a cap-and-trade system	2009
2	Energy Independence and Security Act	Sets energy efficiency standards for various types of lighting, heating, and cooling equipment	2007
3	American Recovery and Reinvestment Act	It provides funding for renewable energy projects such as wind and solar, advanced battery technologies, and smart grid initiatives.	2009
4	Clean Energy Plan:	Aims to reduce carbon dioxide emissions from power plants	2015

Japan places great emphasis on diversifying its energy sources. In particular, it focuses on developing renewable energy sources such as solar, wind, and bioenergy. The country has a very effective recycling and waste management system. The country has a widespread "Zero Waste" concept, and there is a strong commitment from industry and residents to reduce and recycle waste. Japan is contributing to a green economy by preserving biodiversity, cultivating organic products, and introducing environmentally friendly agricultural methods.

The UK's green economy is expected to grow by 9% in 2023, bringing in £74 billion to the country's budget as a sector that combines renewable energy sources, electric car production and the development of new technologies. Another noteworthy aspect is that the sector employs 765,000 people, with an average monthly salary of £10,000, and is 50% more efficient than people employed in other sectors. The British government aims to generate 75 gigawatts of energy from solar panels by 2035, increase the number of heat pumps to 60,000, and achieve carbon neutrality by 2050.[8]

[7] Environmental Assessment Methods// https://www.willmottdixon.co.uk/asset/10424/download

[8] https://afisha.london/2023/08/18/bum-zelyonoj-energii-pochemu-britantsy-perehodyat-na-solnechnye-paneli-i-teplovye-nasosy/

Regulatory documents adopted in the UK to develop a green economy[9]

Table 4

t/r	Name of normative document	The purpose	Date received
1	Climate Change Act	It aims to achieve a reduction in greenhouse gas emissions of at least 80 percent by 2050 compared to 1990 levels.	2008
2	Renewable Energy Directive	Sets targets for the share of renewable energy in the total energy mix.	2009
3	Energy Law	It introduced the establishment of a Green Investment Bank (now called the Green Investment Group), which will provide financing for green Infrastructure projects.	2011
4	Energy Efficiency (England and Wales) Regulations	This rule sets minimum energy efficiency standards for private rental properties.	2015

China's renewable energy share reached 50% in 2022 and exceeded 53% in 2023. In 2023, 210 gigawatts of solar power plants were commissioned. China's new solar, wind, hydro and nuclear power plants are expected to generate an average of 423 terawatt hours of energy annually. For example, the 20-gigawatt Xiusuan wind farm is planned to be built in the northwestern province of Gansu. In total, 450 gigawatts of renewable energy are being built in China's desert regions. In 2023, clean energy contributed $1.6 trillion to the country's economy. This is 30% more than in 2022.[10]

The Republic of Korea's initiative to transition to a "green economy" was put forward by President Lee Myung-bak in 2008-2013. In 2009, a plan was adopted to reduce greenhouse gas emissions by 30% by 2030, and in 2009-2012, 3% of the country's gross domestic product was allocated for the "green" initiative. An important component of the "Digital New Deal" is the "Green New Deal", which aims to reduce emissions of harmful substances into the atmosphere to zero. Almost half of all financial allocations, 73.4 trillion won, including 42.2 trillion won from the state budget, were directed to this area. In particular, it is planned to create 659 thousand

[9] Environmental Assessment Methods// https://www.willmottdixon.co.uk/asset/10424/download
[10] https://www.ridus.ru/zelenaya-energetika-vytyanula-ekonomiku-kitaya-v-2023-godu-426869.html

new jobs through the implementation of 8 major national projects. It is planned to increase the production capacity of electric vehicles to 1.13 million units by 2023.[11]

A three-stage system of transition to a "green" economy has been developed in Kazakhstan: At the first stage, from 2013 to 2020, the government will focus on optimizing resource use, protecting nature and creating a "green" infrastructure.

At the second stage - from 2020 to 2030 - it is planned to transition to a national economy based on the formed "green" infrastructure, aimed at rational use of water, the development and widespread introduction of renewable energy technologies, as well as the construction of facilities based on high energy efficiency standards.

At the third stage - from 2030 to 2050, the national economy will transition to the principles of the so-called "third industrial revolution". This involves the use of natural resources taking into account their renewal and sustainability.

According to the International Energy Agency, by 2050, almost half of the low-carbon energy technologies being developed will have reached the prototype stage and will begin the initial practical testing process. By 2070, 30 percent of technologies will require continued work and new investment resources to be put into operation.

According to data, the total potential of renewable energy sources in Uzbekistan is equal to 51 billion tons of oil equivalent, and the technical capabilities are 179 million tons of oil equivalent. This figure is almost 2.5 times higher than the annual energy consumption in the country. In addition, the use of renewable energy will prevent the emission of 447 million tons of carbon monoxide, sulfur compounds, nitrogen oxides and other pollutants and greenhouse gases into the atmosphere. The share of renewable energy sources in the total volume of electricity generation is almost 10 percent. In this regard, Uzbekistan has set a goal to increase the capacity of renewable energy sources to 27 gigawatts by 2030, bringing it to at least 40 percent of the total volume of electricity generation. This will save 25 billion cubic meters of natural gas annually and reduce harmful emissions into the atmosphere by 34 million tons.[12]

[11] В.Д. Андрианов. Республика Корея на пути построения зеленой экономики. Вестн. Моск. ун-та. Сер. 13. Востоковедение. 2023. Т. 67, № 3. С. 161–179 Lomonosov Oriental Studies Journal, 2023, Vol. 67, No. 3, pp. 161–179 (In Russ.)

[12] https://uza.uz/oz/posts/boriy-alixonov-iqtisodiyotning-eski-modelini-yengib-yashil-taraqqiyotga-otish-vaqti keldi_570311

Directions for forming a green economy in Uzbekistan based on foreign experience

Table 5

№	Country	International experience	The result achieved
1	**The German experience**	Energy transition	It can learn from its experience in switching to renewable energy sources and phasing out nuclear power. Through policy incentives, feed-in tariffs, and investment in research and development, Germany has become a world leader in the adoption of renewable energy sources, particularly solar and wind power.
2	Costa Rican Experience	Commitment to renewable energy	Almost 100% of its electricity comes from renewable sources. Costa Rica is investing in hydroelectric, geothermal, solar, and wind power, serving as a model for how countries can prioritize sustainability and achieve energy independence.
3	The Singapore experience	Green building initiatives	Singapore has implemented strict building codes, green certification programs, and incentives for green building design, contributing to resource conservation and environmental sustainability.
4	The Netherlands experience	Circular economy strategy	The Netherlands has adopted circular economy principles aimed at minimizing waste generation and maximizing resource efficiency.

Conclusion

World experience shows that a green economy, while ensuring regional and macroeconomic development, leads to increased well-being of the population, improvement of the natural environment and health of the population. The experience of developed countries shows that it is effective to focus on priority sectors in the initial development of a green economy and, expanding their capabilities, to gradually green other sectors of the economy.

Taking into account the current environmental risks, the revision of the resource management system, the rational use of energy sources, and the acceleration of technological modernization will determine the pace of development in the medium and long term. Given the fact that foreign countries are developing green energy systems, the unprecedentedly large volumes of energy production, and the

achievements being made, it is appropriate to introduce the models of European countries and the models of Southeast Asian countries into the national “green” economy model based on the scope of existing opportunities. In our opinion, the following proposals will be appropriate in developing a “green” economy:

1. Study the impact of climate change on renewable energy sources and forecast the results in the near and long term.

2. Develop and implement modern mechanisms for environmental protection measures. 1 Compiled by the author as a result of a literature review

3. Develop technologies for storing energy from renewable energy sources.

4. Introduce the production of electric vehicles, localize technology and spare parts.

5. Accelerate the modernization of irrigation technologies.

6. Introduce a rating of "green" economic regions and develop a plan of measures to encourage regions with high indicators.

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