TSUE

YASHIL

IQTISODIYOT&TARAQQIYOT

Ijtimoiy, iqtisodiy, texnologik, ilmiy, ommabop jurnal

№3

Google Scholar · OPEN ACCESS · ULRICHSWEB GLOBAL SERIALS DIRECTORY · OpenAIRE · ROAD · НАУЧНАЯ ЭЛЕКТРОННАЯ БИБЛИОТЕКА LIBRARY.RU · Academic Resource Index ResearchBib · ISSN INTERNATIONAL STANDARD SERIAL NUMBER INTERNATIONAL CENTRE · CYBERLENINKA · BASE · INDEX COPERNICUS INTERNATIONAL · Crossref

2025-YIL APREL.
NAVBATDAN TASHQARI SON

ISSN: 2992-8982

https://yashil-iqtisodiyot-taraqqiyot.uz/

2025

YASHIL
IQTISODIYOT&TARAQQIYOT
Ijtimoiy, iqtisodiy, texnologik, ilmiy, ommabop jurnal

Elektron nashr. 625 sahifa.
E'lon qilishga 2025-yil 1-aprelda ruxsat etildi.

IQTISODIYOT&TARAQQIYOT
Ijtimoiy, iqtisodiy, texnologik, ilmiy, ommabop jurnal

08.00.01 Iqtisodiyot nazariyasi
08.00.02 Makroiqtisodiyot
08.00.03 Sanoat iqtisodiyoti
08.00.04 Qishloq xo‘jaligi iqtisodiyoti
08.00.05 Xizmat ko‘rsatish tarmoqlari iqtisodiyoti
08.00.06 Ekonometrika va statistika
08.00.07 Moliya, pul muomalasi va kredit
08.00.08 Buxgalteriya hisobi, iqtisodiy tahlil va audit
08.00.09 Jahon iqtisodiyoti
08.00.10 Demografiya. Mehnat iqtisodiyoti
08.00.11 Marketing
08.00.12 Mintaqaviy iqtisodiyot
08.00.13 Menejment
08.00.14 Iqtisodiyotda axborot tizimlari va texnologiyalari
08.00.15 Tadbirkorlik va kichik biznes iqtisodiyoti
08.00.16 Raqamli iqtisodiyot va xalqaro raqamli integratsiya
08.00.17 Turizm va mehmonxona faoliyati

Muassis: “Ma’rifat-print-media” MChJ
Hamkorlarimiz: Toshkent davlat iqtisodiyot universiteti, O‘zR Tabiat resurslari vazirligi, O‘zR Bosh prokuraturasi huzuridagi IJQK departamenti.

Jurnalning ilmiyligi:
““Yashil” iqtisodiyot va taraqqiyot” jurnali
O‘zbekiston Respublikasi Oliy ta’lim, fan va innovatsiyalar vazirligi huzuridagi Oliy attestatsiya komissiyasi rayosatining 2023-yil 28-fevraldagi 333/5-sonli qarori bilan ro‘yxatdan o‘tkazilgan.

MUNDARIJA

MUNDARIJA СОДЕРЖАНИЕ CONTENTS

MUNDARIJA СОДЕРЖАНИЕ CONTENTS

MUNDARIJA СОДЕРЖАНИЕ CONTENTS

MUNDARIJA СОДЕРЖАНИЕ CONTENTS

MUNDARIJA СОДЕРЖАНИЕ CONTENTS

MUNDARIJA СОДЕРЖАНИЕ CONTENTS

MUNDARIJA СОДЕРЖАНИЕ CONTENTS

THE ROLE OF RENEWABLE ENERGY IN THE GREEN ECONOMY

Khudoyberdiyeva Olima
Karshi state university, student

Yakhshikulova Mokhinur
Karshi state university, teacher

Abstract: This article looks at how renewable energy, such as solar, wind, and hydroelectric power, is key to building a green economy. As we face problems like climate change, switching to renewable energy helps reduce pollution and conserve natural resources. The article explains how using clean energy sources can also save money, create jobs, and make countries less dependent on fossil fuels. It also highlights how governments and companies are investing more in renewable energy through policies and new technologies. Overall, the article shows that renewable energy is essential for a sustainable and green economy.

Key words: Renewable energy.green economy,solar power,wind energy,hydropower,clean energy,sustainability,carbon emissions,climate change,energy,transition,renewable.resources,greenjobs,sustainable,development,clean,technology,fossilfuels,energy,independence,climate,action,energy,efficiency,eco-friendly energy,green investments.

Annotatsiya: Ushbu maqola, quyosh, shamol va gidroelektr energiyasi kabi qayta tiklanuvchi energiya manbalarining yashil iqtisodiyotni qurishda qanday muhim rol o'ynashini ko'rib chiqadi. Iqlim o'zgarishi kabi muammolar bilan yuzlashayotganimizda, qayta tiklanuvchi energiyaga o'tish ifloslanishni kamaytirishga va tabiiy resurslarni saqlashga yordam beradi. Maqolada, toza energiya manbalaridan foydalanish nafaqat pulni tejashga, balki ish o'rinlarini yaratishga va mamlakatlarni yoqilg'i qazib olishdan kamroq bog'liq qilishga yordam berishi ham tushuntiriladi. Shuningdek, hukumatlar va kompaniyalar qayta tiklanuvchi energiyaga sarmoya kiritish, siyosat va yangi texnologiyalar orqali buni amalga oshirishda qanday o'sayotganini ta'kidlaydi. Umuman olganda, maqola qayta tiklanuvchi energiyaning barqaror va yashil iqtisodiyot uchun zarur ekanligini ko'rsatadi.

Kalit so'zlar: qayta tiklanuvchi energiya,yashil iqtisodiyot,quyosh energiyasi,shamol energiyasi,gidroelektr energiyasi,toza energiya,barqarorlik,uglerod chiqindilari,iqlim o'zgarishi,energiyani o'zgartirish,qayta tiklanuvchi resurslar,yashil ish o'rinlari,barqaror rivojlanish,toza texnologiyalar,fosil yoqilg'ilar,energiya,energiya mustaqilligi,iqlimga qarshi harakat,energiya samaradorligi.

Аннотация: Эта статья рассматривает важную роль возобновляемых источников энергии, таких как солнечная, ветровая и гидроэнергия, в построении зеленой экономики. В условиях глобальных проблем, таких как изменение климата, переход на возобновляемую энергию помогает сократить загрязнение и сохранить природные ресурсы. В статье объясняется, как использование чистых источников энергии помогает не только экономить деньги, но и создавать рабочие места, а также снижать зависимость стран от ископаемых топлив. Также подчеркивается, как правительства и компании инвестируют в возобновляемую энергию, развивая политику и новые технологии. В целом, статья демонстрирует, что возобновляемая энергия необходима для устойчивой и зеленой экономики.

Ключевые слова: возобновляемая энергия,зеленая экономика,солнечная энергия,ветряная энергия,гидроэнергия,чистая энергия,устойчивость,углеродные выбросы,изменение климата,переход к энергии,возобновляемые ресурсы,зеленые рабочие места,устойчивое развитие,чистые технологии,ископаемое топливо,энергия,энергетическая независимость,действия по борьбе с изменением климата,энергоэффективность,экологически чистая энергия,зеленые инвестиции.

INTRODUCTION

There are a lot kind of energies in the world .Renewable energy is one of them.Renewable energy is energy made from renewable natural resources that are replenished on a human timescale.There are most widely used renewable energy types. They are solar energy,wind power,and hydropower.

Solar energy is harnessed from the sun in the form of electromagnetic radiation (light, heat, and ultraviolet rays). By installing solar panels or collectors, it can be used to capture thermal energy (photothermal) or to generate electricity (photovoltaic).

To generate useful work Wind power is the use of wind energy.From ancient times because of sails,windmills and windpumps utilized wind power.However nowadays it is generally used to produce electricity

Hydropower is also known as water power or water energy.We use fast running water to produce electricity or for power machines. Hydropower is an attractive alternative to fossil fuels as it does not directly produce carbon dioxide or oter atmospheric pollutants and it provides a relatively consistent source of power.

Over the past 3 decades Renewable emergy systems have rapidly become more efficient and cheaper. Most of the new setted up electricity positions are now renewable.Over the past 10 years,renewable energy sources for example solar and wind power have seen dramatic price drop and it made them competitive with classic fossil fuels.

"A green economy refers to an economic system that aims to promote sustainable development while reducing environmental risks and ecological scareities. In this model, economic growth is decoupled from environmental degradation, with a focus on minimizing carbon emissions, conserving natural resources, and ensuringlong-term environmental sustainability"[1]

"Key features of a green economy include:

Low Carbon Emissions: Efforts are made to reduce greenhouse gas emissions through the use of renewable energy, energy efficiency, andcleaner technologies.

Resource Efficiency: The efficient use of natural resources, such as water, land, and minerals, to minimize waste and environmental impact

Sustainable Production and Consumption: Encouraging industries and consumers to adopt practices that reduce harm to the environment, such as recycling, sustainable agriculture, and eco-friendly products.

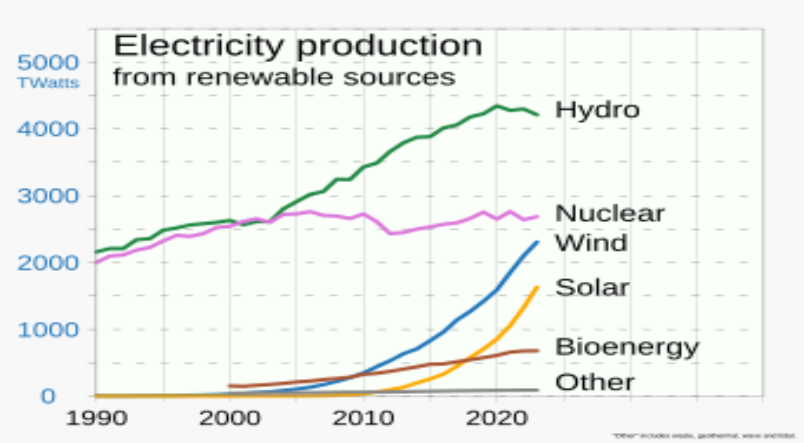
Biodiversity and Ecosystem Protection: Preserving ecosystems andprotecting biodiversity to ensure the health of natural habitats and species.

Economic Inclusivity: Ensuring that the benefits of green economic growth are distributed fairly, offering new job opportunities and improving social well-being, particularly for marginalized communities.

Overall, the green economy seeks to balance economic development with environmental responsibility, promoting long-term sustainability while addressing climate change and conserving resources for future generations.

For data collection in this study, academic articles, central bank reports and financial used Big Data analytics provided by institutions. Statistical data regression analysis and the data were processed using the clustering method and the effect on the effectiveness of the monetary policy was evaluated. Also, machine learning algorithms to improve forecasting accuracy of economic indicators applied"[2].

ANALYSIS AND RESULTS



This chart represents electricity production from renewable sources over time, measured in terawatts (TWatts), from 1990 to approximately 2025. The key sources of renewable electricity shown in the graph include:

Hydro: The most significant and stable contributor, showing steady growth until around 2015, after which it slightly declines or plateaus. Nuclear: A relatively constant energy source, with minimal fluctuations over time. Wind: Demonstrates rapid growth, especially after 2010, surpassing nuclear energy around 2020. • Solar: Starts from nearly zero but experiences exponential growth, particularly after 2010, following an upward trend. Bioenergy: Shows a gradual but steady increase over time. Other sources: Appear to contribute minimally

1 https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy
2 https://www.celsia.io/blogs/transition-to-a-green-economy-key-benefits-risks-for-businesses

compared to the other categories.Overall Trends: Hydropower remains the dominant renewable energy source but has reached a peak or slight decline. Wind and solar energy have grown significantly, with solar showing the sharpest increase in recent years. Bioenergy and other sources remain minor contributors compared to wind and solar.

• The overall trend indicates a shift towards wind and solar energy as major contributors to renewable electricity production.

Renewable energy affects green economy ,dramatically.Here I will explain How it works.

“Renewable energy plays a crucial role in fostering a green economy, which emphasizes sustainable development while minimizing environmental harm. Here are several ways in which renewable energy impacts the green economy:

Reduction in Greenhouse Gas Emissions: By replacing fossil fuels with renewable energy sources like solar, wind, hydro, and geothermal, we can significantly reduce carbon dioxide (CO2) emissions. This helps mitigate climate change and aligns with international agreements like the Paris Climate Accord.

Creation of Jobs: The renewable energy sector has become a major job creator. Installing, maintaining, and operating renewable energy technologies requires a skilled workforce. This includes jobs in manufacturing, construction, engineering, and research and development.

Energy Security and Independence: Renewable energy sources are typically local and abundant. This reduces reliance on imported fossil fuels, enhancing national energy security and promoting self-sufficiency. This also reduces vulnerability to global energy price fluctuations.

Investment and Economic Growth: Investments in renewable energy infrastructure can stimulate economic growth by driving innovation and developing new technologies. Green technology companies often receive funding and support, contributing to economic diversification and sustainability.

Promoting Sustainable Practices: The transition to renewable energy encourages broader sustainable practices, such as energy efficiency and the circular economy. It promotes responsible consumption and reduces the environmental degradation caused by traditional energy extraction methods.

Increased Energy Access: In remote or underdeveloped areas, renewable energy technologies like solar power can provide access to electricity where traditional grid infrastructure is not feasible. This boosts economic opportunities in those regions, improving education, healthcare, and productivity.

Public Health Improvements: By reducing air and water pollution associated with fossil fuel energy production, renewable energy helps decrease health problems, such as respiratory diseases and water contamination, contributing to overall well-being and reducing healthcare costs.

Long-Term Economic Sustainability: Renewable energy systems, especially those that rely on wind, sun, or water, have low operating costs once they are installed, meaning they can provide affordable and stable energy prices over time, contributing to a more resilient economy.

Clean energy: Renewable energy sources produce little to no greenhouse gas emissions, helping to reduce air pollution and combat climate change.

In summary, renewable energy is essential for building a green economy, supporting environmental sustainability, economic growth, and social well-being while addressing the urgent need to tackle climate change.”[3]

“While renewable energy offers numerous benefits, there are some disadvantages to consider as well. These drawbacks can vary depending on the specific energy source, location, and technological development. Here are some of the main disadvantages of renewable energy:

Intermittency and Reliability:

Solar and wind energy are intermittent, meaning they depend on weather conditions. The sun doesn’t always shine, and the wind doesn’t always blow, leading to fluctuations in energy supply.This can create reliability issues if backup systems (like energy storage or grid support) aren’t in place.

Energy Storage Challenges:

Storing renewable energy for use during times when generation is low (e.g., cloudy days or calm winds) is a significant challenge. Current storage technologies, like batteries, are often expensive and have limited capacity and efficiency.Without sufficient energy storage systems, managing these fluctuations and ensuring a steady energy supply can be difficult.

High Initial Investment:

The upfront cost of installing renewable energy systems, such as solar panels, wind turbines, and hydroelectric plants, can be high.While these systems often have lower operational costs in the long run, the initial capital investment may be a barrier for some countries, businesses, and individuals.

3 https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2016/IRENA_Measuring-the-Economics_2016.pdf

Land and Space Requirements:

Some renewable energy sources, like wind farms and solar fields, require significant land area to produce large amounts of energy.In densely populated areas or regions with limited available land, this can create space constraints and lead to land-use conflicts (e.g., with agriculture or wildlife habitats).

Environmental Impact:

Although renewable energy is generally cleaner than fossil fuels, some technologies can still have environmental impacts:

Hydropower can disrupt ecosystems, displace communities, and affect fish populations due to damming rivers.

Solar farms and wind turbines may disrupt local wildlife habitats and have an impact on bird and bat populations.

The manufacturing, transportation, and disposal of solar panels, batteries, and wind turbine blades can also have an environmental impact.

Dependence on Weather and Geography:

Renewable energy potential is often geographically dependent. For example, solar power is most effective in sunny regions, while wind energy is best in areas with consistent winds.

In areas that lack the appropriate natural resources (e.g., places with low sunlight or wind), renewable energy may not be as viable or cost-effective.

Disposal and Recycling Issues:

The disposal of renewable energy components, such as solar panels and wind turbine blades, can be challenging. As these technologies reach the end of their life cycle, recycling and disposal methods need to be improved to avoid environmental harm.Solar panels, in particular, contain materials like cadmium and other heavy metals that require careful disposal or recycling.

Energy Density:

Renewable energy sources generally have lower energy density compared to fossil fuels. For example, wind and solar require much more space to generate the same amount of electricity as coal or natural gas power plants.This means that to meet large-scale energy demands, more infrastructure may be needed, which can make it more expensive and logistically challenging to implement.

Transmission and Grid Integration:

The integration of renewable energy into existing power grids can be complex. For instance, wind and solar farms are often located far from population centers, necessitating the construction of long-distance transmission lines, which can be costly and face regulatory hurdles.Additionally, renewable energy's variability can require grid operators to implement advanced systems and technologies for grid stability, which may further increase costs.While these disadvantages exist, ongoing advancements in technology, energy storage solutions, and grid management are continually addressing many of these challenges, helping to make renewable energy more feasible and accessible."[4]

CONCLUSION AND SUGGESTIONS

To overcome the challenges associated with renewable energy, a combination of technological, policy, and infrastructure solutions can be employed. Here are some key solutions to the problems mentioned:

Solution: Energy Storage Technologies. Battery Storage: Advancements in battery technology, such as lithium-ion, solid-state, or flow batteries, can store excess energy generated during sunny or windy periods for use during times of low generation.Pumped Hydro Storage: This method uses excess renewable energy to pump water to a higher elevation, which can then be released to generate electricity when needed.

Compressed Air Energy Storage (CAES): Uses excess energy to compress air, which is then stored and released to generate electricity.

Solution: Grid Modernization and Smart Grids. Smart Grids: Smart grids use advanced digital communication technology to efficiently balance electricity supply and demand. They can help integrate renewable sources into the grid and improve reliability.Demand Response Programs: These programs can reduce demand during peak times by incentivizing consumers to lower their energy usage or shift it to off-peak hours.

2. High Initial Investment

Solution: Financial Incentives and Subsidies.Governments can offer tax incentives, subsidies, or grants to lower the upfront cost of renewable energy systems for businesses and individuals. This encourages investment in clean energy technologies.

4 https://www.altenergymag.com/article/2015/08/the-dark-side-of-renewable-energy-negative-impacts-of-renewables-on-the-environment/20963/

Green Bonds: Issuing green bonds to finance renewable energy projects can attract investment and make these projects more affordable..Solution: Economies of Scale and Technological AdvancementsAs renewable energy technologies mature, production costs generally decline due to economies of scale and technological improvements. More widespread adoption will reduce the cost of manufacturing and installation.

3. Land and Space Requirements

Solution: Offshore Wind and Floating Solar. Offshore Wind: Building wind farms offshore, where land is scarce or costly, allows for access to higher and more consistent wind speeds while avoiding land-use conflicts.

Floating Solar: Installing solar panels on water bodies (e.g., lakes, reservoirs, and even oceans) helps conserve land and reduces competition for space.

Solution: Dual Land Use

Agrivoltaics: Combining solar panels with agricultural activities, such as growing crops or grazing livestock under the panels, can optimize land use without compromising food production.

Wind-Solar Hybrid Systems: Co-locating wind and solar energy generation systems in the same area can maximize land use, as the two sources often complement each other (e.g., wind tends to be stronger when the sun isn't shining).

4. Environmental Impact. Solution: Sustainable Design and Planning

Wildlife-Friendly Turbines: The design of wind turbines can be improved to minimize the impact on bird and bat populations. This includes using bird-friendly blades or siting wind farms away from migratory routes. Careful Site Selection for Hydropower: For hydropower projects, ensuring that they do not disrupt ecosystems or local communities is critical. This can include installing fish ladders to allow fish migration and using small-scale or run-of-river systems instead of large dams.

Solution: Recycling and Circular Economy

Recycling Solar Panels and Wind Turbine Blades: Developing efficient recycling methods for solar panels (e.g., recovering valuable metals like silver and silicon) and wind turbine blades will help minimize waste and environmental impact.

Reusing Materials: Promoting the use of sustainable materials and reusing components from decommissioned renewable energy systems in new installations can reduce resource consumption.

5. Dependence on Weather and Geography

Solution: Diversified Energy Mix.Hybrid Systems: Combining multiple renewable energy sources (e.g., wind, solar, and biomass) in a hybrid system can ensure that energy generation remains consistent. When one source is not generating enough power, another may be.

Geographic Diversity: Spreading renewable energy infrastructure over a wide geographic area helps reduce the impact of weather variations in one region. If the wind isn't blowing in one area, it may be in another.

Solution: Advanced Weather Prediction and Forecasting.Improved weather forecasting can help predict renewable energy availability, allowing better planning and grid integration. Real-time data can enable grid operators to manage the supply-demand balance more effectively.

6. Disposal and Recycling Issues. Solution: Improve Recycling Infrastructure.Solar Panel Recycling: Develop better recycling processes for solar panels recover valuable materials like silicon and rare metals, reducing environmental impacts.

Wind Turbine Blade Recycling: Invest in technologies to recycle or repurposy wind turbine blades (e.g., turning them into construction materials or other products).Solution: Extended Product Lifecycles.Increasing the durability and lifespan of renewable energy components (e.g., using more robust materials for wind turbine blades) reduces the frequency of disposal and the associated environmental impact.

7. Energy Density.Solution: Concentrated Solar Power (CSP).CSP: CSP systems use mirrors or lenses to focus sunlight onto a small area, increasing energy concentration and making it more efficient for large-scale power generation. This helps mitigate the land-use issue of solar power.

Solution: Efficient Use of Space.Innovations in energy efficiency, such as high-efficiency solar panels or small modular nuclear reactors (SMRs), could provide more power in a smaller footprint.

8. Transmission and Grid Integration.Solution: High-Voltage Direct Current (HVDC) Transmission.HVDC technology allows for efficient transmission of electricity over long distances with less energy loss, making it ideal for connecting remote renewable energy sources (like offshore wind farms) to population centers.

Solution: Microgrids and Decentralized Systems.Microgrids: Localized grids that can operate independently or in conjunction with the main grid help reduce transmission losses and allow for better integration of renewable energy sources.Distributed Energy Systems: Encouraging decentralized renewable energy generation (e.g., rooftop solar panels) allows for more localized power production, reducing the need for long-distance transmission and enhancing grid stability.

CONCLUSION

To address the challenges associated with renewable energy, a combination of innovation in technology, investment in infrastructure, and supportive policies will be necessary. By advancing energy storage, improving grid systems, optimizing land use, and developing recycling methods, we can maximize the potential of renewable energy while minimizing its drawbacks.

List of used literature.

1. https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy
2. https://www.celsia.io/blogs/transition-to-a-green-economy-key-benefits-risks-for-businesses
3. https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2016/IRENA_Measuring-the-Economics_2016.pdf
4. https://www.altenergymag.com/article/2015/08/the-dark-side-of-renewable-energy-negative-impacts-of-renewables-on-the-environment/20963/
5. http://eprints.umsida.ac.id/view/creators/Xudoyberdiyeva=3AOlima_Otabekovna=3A=3A.html
6. Xudoyberdiyeva, O. O. (2024). MONOPOL SHAROITDA NARX BELGILASH VA MONOPOL HOKIMIYAT KO‘RSATKICHLARINI PASAYTIRISH. BOSHQARUV VA ETIKA QOIDALARI ONLAYN ILMIY JURNALI, 5(1), 6-8.
7. Rahmonova, T. (2024). STATISTICAL ASPECTS OF THE HUMAN RESOURCE MANAGEMENT CONCEPT OF PROOF. GOLDEN BRAIN, 2(10), 33-41.
8. Narkulovich, D. O. (2023). WAYS OF PREPARING STUDENTS FOR RATIONAL ORGANIZATION OF WORK IN THE PROCESS OF PEDAGOGICAL EDUCATION. Conferencea, 115-118.

IQTISODIYOT&TARAQQIYOT

Ijtimoiy, iqtisodiy, texnologik, ilmiy, ommabop jurnal

Ingliz tili muharriri: Feruz Hakimov

Musahhih: Zokir ALIBEKOV

Sahifalovchi va dizayner: Oloviddin Sobir o‘g‘li

2025. aprel. № 3. navbatdan tashqari son

Mazkur jurnalda maqolalar chop etish uchun quyidagi havolalarga
maqola, reklama, hikoya va boshqa ijodiy materiallar yuborishingiz mumkin.
Materiallar va reklamalar pullik asosda chop etiladi.
El.Pochta: sq143235@gmail.com
Bot: @iqtisodiyot_77
Tel.: 93 718 40 07

Jurnalga istalgan payt quyidagi rekvizitlar orqali obuna bo‘lishingiz mumkin. Obuna bo‘lgach, @iqtisodiyot_77 telegram sahifamizga to‘lov haqidagi ma’lumotni skrinshot yoki foto shaklida jo‘natishingizni so‘raymiz. Shu asosda har oygi jurnal yangi sonini manzilingizga jo‘natamiz.

““Yashil” iqtisodiyot va taraqqiyot” jurnali 03.11.2022-yildan
O‘zbekiston Respublikasi Prezidenti Adminstratsiyasi huzuridagi
Axborot va ommaviy kommunikatsiyalar agentligi tomonidan
№566955 reyestr raqami tartibi bo‘yicha ro‘yxatdan o‘tkazilgan.
Litsenziya raqami: №046523. PNFL: 30407832680027

Manzilimiz: Toshkent shahar, Mirzo Ulug‘bek tumani
Kumushkon ko‘chasi, 26-uy.

Jurnal sayti: https://yashil-iqtisodiyot-taraqqiyot.uz