

Legal transfer of EU laws to Uzbekistan in the field of green economy

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Abstract. The aim of this study was to examine the specifics of the legal transition of EU laws to Uzbekistan in the field of green economy. The study focused on analysing the compatibility of current Uzbek legislation with EU standards and identifying potential areas for harmonisation of the legal framework. The study utilised a comparative legal analysis methodology examining relevant EU directives, regulations and policies, as well as Uzbekistan's national laws and policies related to green economy development. It was shown that although Uzbekistan has made progress in aligning its legal framework with EU standards, there are still gaps and challenges that need to be addressed. The study emphasised the importance of adapting EU laws to the specific context of Uzbekistan, taking into account its socio-economic conditions, institutional capacities and environmental priorities. In addition, some German regulations have been analysed, and it is concluded that these, among other things, can be used as a basis for establishing its own legal and regulatory framework. The study also identified key areas that are worth paying particular attention to in legal transfer, such as renewable energy, energy efficiency, sustainable agriculture and green finance. The conclusions emphasised the need for a holistic and gradual approach to legal transfer, including stakeholder engagement and the implementation of monitoring mechanisms. The study contributes to a better understanding of legal harmonisation processes between the EU and third countries in the field of the green economy, providing information for policymakers, legal practitioners and researchers

Keywords: sustainable development; green course; regulatory framework; renewable energy sources; climate

Introduction

Already in the 20th century, the world community has become aware of the prospects of significant environmental challenges that can negatively affect, among other things, the economic and environmental situation in all countries of the world. Since the EU as an association of countries is one of the leaders in this area, the study of the possibilities of gaining the experience of its member countries (as well as the association as a single entity) is relevant. The EU has become a world leader in promoting the transition to a green economy, driven by its legal norms and policies. The EU's overarching framework for sustainable development not only shapes the internal dynamics of its member states, but also has a significant impact on third countries. As the EU sets high standards and requirements for environmental protection, renewable energy, energy efficiency, sustainable finance and circular economy, it creates both challenges and opportunities for countries outside its borders to meet these standards and access the EU market (Soderholm, 2020; Barna *et al.*, 2023). This paper assesses the extraterritorial impact of EU legal regulations on the transition to a green economy in third countries, with a particular focus on the case of Uzbekistan.

As a developing country in Central Asia, Uzbekistan is travelling its own path towards sustainable development, influenced by the legal and regulatory frameworks of its

main trading partners, including the EU (Serikzhanova *et al.*, 2024). By examining the key EU legal instruments shaping the green economy and their mechanisms of influence, this study aims to draw attention to the complex interplay between EU regulatory power and the sustainable development strategies of third countries such as Uzbekistan. The country faces resource constraints that may make it difficult to implement EU standards. There is a possibility that the transition to a green economy may lead to social and economic costs, especially for vulnerable populations. Therefore, the legal transfer of rules should be gradual and take into account local conditions, and be accompanied by close co-operation between the EU and Uzbekistan and stakeholder participation.

Environmental challenges in Uzbekistan further highlight the necessity of regulatory transition. The country generates approximately 35 million cubic meters of household waste annually, with each citizen contributing around 165 kg per year (Sustainable Development Goals, 2024b). Waste composition includes 50% polymers, exacerbating environmental concerns. Additionally, 80% of Uzbekistan's water resources originate from upstream countries, making transboundary cooperation crucial for sustainable management (Sustainable Development Goals, 2024a). Air pollution is also a significant issue, with mortality from diseases linked

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to household and ambient air pollution recorded at 0.203 per 100,000 population in 2023 (Sustainable Development Goals, 2024c). These indicators emphasise the pressing need for comprehensive environmental policies and the adoption of EU-aligned green economy standards.

The strategic importance of strengthening the relationship between the EU and Uzbekistan was addressed in the study by N.R. Fayzullaeva (2023), examining key areas of cooperation, highlighting existing problems and proposing effective measures to deepen the partnership. In particular, it was noted that the most active cooperation between the associations should take place in the sphere of trade, investments, political dialogue and formation of common initiatives. The possibility of developing cooperation in the direction of education was considered by K. Nilufar (2022), in particular in the context of the Erasmus+ programme. Sh. Tursunova (2020) assessed the formation of the European direction of foreign policy of the Republic of Uzbekistan. It was emphasised that Uzbekistan has a solid legal basis for building long-term mutually beneficial relations with the Benelux and other European countries in trade, economic, humanitarian and social spheres. Attention was also drawn to the need for stronger strengthening of relations between European countries and Uzbekistan for potential additional benefits for the country. F. Dzhamalov and S. Saraev (2022) described the need for a strong link between EU countries and Uzbekistan, also noting that this link has already proven to be sustainable over time, with significant potential for growth in cultural, economic and socio-political co-operation. M. Isakova (2024) examined the growing importance of legal frameworks governing cross-border data transfer in the digital age, particularly focusing on Uzbekistan's efforts to adapt its legislation to the global challenges of information exchange. It was noted that there are problems in the context of the country's legal framework in this direction, and their solution should be an important component of the state's future policy.

R. Bookbinder (2023) notes that European climate norms have significantly influenced the legislative frameworks of nations beyond Uzbekistan. For example, European countries have actively engaged with South Africa to promote the adoption of renewable energy policies. European diplomats met with officials and workers' unions in South Africa's coal-centric Mpumalanga province to discuss transitioning from coal to renewable energy. This initiative is part of an \$11.6 billion package funded by wealthy nations to support South Africa, one of the world's top greenhouse gas emitters, in its energy transition. The discussions aimed to address concerns that the transition could lead to economic hardship, highlighting the EU's role in shaping South Africa's legislative approach to energy and environmental policy.

Additionally, N. Korpar *et al.* (2023) discuss the implications of the European Union's implementation of the Carbon Border Adjustment Mechanism (CBAM) for non-EU countries. CBAM imposes levies on imports from nations that do not meet EU environmental standards, creating an economic incentive for these countries to adopt similar carbon pricing policies in order to maintain trade competitiveness. This mechanism has prompted countries such as India and Turkey to consider implementing their own carbon pricing strategies, demonstrating the EU's broader influence on global environmental legislation. These examples illustrate the extraterritorial impact of EU climate regulations beyond

its immediate neighbours and reflect the wider trend of legal adaptation to European sustainability norms.

The aim of the study was to explore the possibilities of legal transfer of EU legislation in the field of sustainable development in Uzbekistan. The objectives of the study included analysing how different legal mechanisms contribute to the EU Sustainable Development Goals and affect third countries, with a special focus on Uzbekistan, assessing the gaps and opportunities for the country to meet the EU green economy standards, and developing policy recommendations for effective implementation of the EU green economy rules taking into account the socio-economic and environmental conditions of Uzbekistan.

Materials and methods

The study was based on EU legal acts, international treaties, legal regulations and official reports. Notable among them is the European Green Deal (2019), which describes the EU's strategy to make Europe the first climate-neutral continent by 2050, in particular through actions in the areas of climate change, environment, energy, transport, agriculture, and industry. The Directive of the European Parliament and of the Council No. 2023/2413 (2023), which is an important EU legislative initiative aimed at accelerating the use of renewable energy in Europe, playing a role in achieving the EU's goals of reducing greenhouse gas emissions and moving towards climate neutrality, was also considered, as well as Directive of the European Parliament and of the Council No. 2023/1791 "On Energy Efficiency and Amending Regulation (EU) 2023/955" (2023). The Circular Economy Action Plan for a Cleaner and More Competitive Europe (Communication from the Commission..., 2020) has also been analysed. It is an EU initiative that was adopted under the European Green Deal. It aims to make the EU economy more sustainable by reducing waste, maximising the reuse of materials and minimising negative environmental impacts. The reviewed EU Taxonomy for Sustainable Activities (2024) is a normative classification system developed by the EU that defines which economic activities can be considered sustainable from an environmental perspective. It aims to attract investment in the green economy, increase transparency of companies and set criteria for environmental sustainability.

A key addition to this study was the analysis of German legislation. Germany was chosen as a reference due to its leading role in environmental regulation and sustainability policies. Renewable Energy Sources Act (2000) provides a framework for supporting renewable energy through feed-in tariffs, market premiums, and auctioning mechanisms. The Energy Efficiency Act of Germany (2023) (EnEFG) sets binding targets and incentives for energy conservation, making it a relevant case study for Uzbekistan's transition. Germany's Sustainable Finance Strategy (2021) and its Circular Economy policies serve as models for green investment and waste management reforms.

Some legal and regulatory documents directly related to the legislative framework of Uzbekistan were also considered. The EU-Uzbekistan Agreement (2021) was considered as a significant development in the relations between the EU and Uzbekistan. The EU-Central Asia Platform for Environmental and Water Cooperation is a framework established to address environmental and water issues in Central Asia through regional cooperation. It is part of a wider EU-Central Asia strategy to promote sustainable development, good

governance and regional co-operation. The Platform plays a role in addressing transboundary environmental and water issues, requiring coordination between Central Asian countries and the EU. Reference was also made to the Renewable Energy Sources Act (2000), which was first adopted in 2000 to provide incentives to support and develop renewable energy and its various sources. Also assessed was the EU-Uzbekistan Agreement (2021), which aims to strengthen bilateral relations in various areas, including economy, trade, sustainable development and human rights. The EU-Central Asia Platform for Environment and Water Cooperation (2023) and the Energy Efficiency Act of Germany (2023) were also considered.

Furthermore, Uzbekistan has already taken significant steps towards a green economy, which is crucial for legal transfer and adaptation. The Green Economy Transition Strategy for 2019-2030 was adopted, laying the foundation for further reforms (2019). The Law of the Republic of Uzbekistan No. ZRU-539 “On the Use of Renewable Energy Sources” (2019) created a legal framework for the development of alternative energy, and the Decree of the President of the Republic of Uzbekistan No. PP-436 “On Measures to Improve the Effectiveness of Reforms Aimed at Transitioning the Republic of Uzbekistan to a Green Economy by 2030” (2022) defined specific measures to achieve environmental goals. Uzbekistan’s legislative framework includes several key statutes that strengthen environmental governance and climate action. The Law of the Republic of Uzbekistan No. 353-I “On Atmospheric Air Protection” (1996) defines measures to safeguard air quality by preventing pollution and other harmful impacts. The Law of the Republic of Uzbekistan No. 837-XII “On Water and Water Use” (1993) regulates water resource management, ensuring their sustainable use and protection against contamination and depletion. The Law of the Republic of Uzbekistan No. 362-II “On Waste” (2002) focuses on waste management, minimising harmful effects on human health and the environment while promoting the efficient use of waste in economic activities. Additionally, the Law of the Republic of Uzbekistan No. 73-II “On Environmental Expertise” (2000) sets the framework for environmental impact assessments, ensuring that proposed activities comply with ecological standards and do not harm the environment.

Results

The EU’s legislative strategy for the green economy is founded on its adherence to the Sustainable Development Goals of the United Nations (UN) and the Paris Agreement. The EU’s climate and environmental policy is based on the European Green Deal (2019), which has established goals for resource efficiency and carbon neutrality. A plethora of legal instruments, including directives, rules, and policies, have been devised to address various facets of the green economy. These include the Circular Economy Action Plan for a Cleaner and More Competitive Europe (Communication from the Commission..., 2020), the Directive of the European Parliament and of the Council No. 2023/2413 (2023), the Energy Efficiency Directive (Directive of the European Parliament and of the Council No. 2023/1791, 2023), and the EU Taxonomy for Sustainable Activities (2024). These instruments provide the legislative foundation for the Green Deal. These legislative instruments have a multifaceted impact on third countries, in addition to establishing legally binding objectives and standards for EU member states.

As the largest market in the world, the EU may use its economic clout to promote green economy standards outside of its boundaries, making it one of the primary instruments of influence. Businesses operating within or seeking to export to the EU market are obligated to adhere to the association’s stringent social and environmental standards, which frequently exceed those prevailing in the countries of origin of the exported goods (Liu *et al.*, 2021; Pagallo, 2022). Consequently, businesses in third-world nations are strongly encouraged to adopt greener procedures and technology to maintain access to the EU market. An analysis of current trends reveals an increasing incorporation of sustainability clauses within bilateral and multilateral trade agreements by EU member states. These clauses stipulate that partner countries must adhere to environmental and social standards as a prerequisite for accessing preferential market access.

For instance, a provision on trade and sustainable development in the EU-Uzbekistan Agreement (2021) promotes collaboration in the green economy, encompassing sectors such as sustainable agriculture, energy efficiency, and renewable energy. Moreover, the EU, through its programmes for technical aid and development cooperation, seeks to encourage third-world nations to transition towards a green economy (Syrov, 2024). It offers resources and knowledge to assist partner nations in capacity building, policy reforms, and sustainable development initiatives. For instance, the EU is assisting the government of Uzbekistan in creating a low-carbon and climate-resilient economy through programs such as the EU-Central Asia Platform for Environment and Water Cooperation – Outcome Document (2023). In line with these objectives, Uzbekistan is implementing measures to stimulate green investment, including the establishment of a system for awarding green certificates, the provision of tax incentives for environmental projects, and the streamlining of processes for investors in sustainable development (Decree of the President of the Republic of Uzbekistan No. PP-4477, 2019). The nation has set ambitious targets to increase the share of renewable energy sources to 25% by 2026 and reduce greenhouse gas emissions by 35% by 2030. The establishment of a specialised working group, comprising members from academia, civil society, the commercial sector, and pertinent government agencies, is of particular relevance to the advancement of these projects.

In order to facilitate the transition to a green economy, the EU has established a robust regulatory framework (Martyniuk, 2024). The Renewable Energy Directive (2009) is a seminal piece of legislation in this area, as it establishes legally enforceable goals for the proportion of renewable energy in the EU’s overall energy mix. The Directive aims to ensure that at least 32% of energy is derived from renewables by 2030. Member States of the EU are obliged to devise national renewable energy action plans and to report on their progress towards the targets in accordance with the Renewable Energy Directive (2009). The Directive also contains sub-targets and incentives to encourage the use of renewable energy in the transportation and heating and cooling sectors (Kumar, 2021). Furthermore, the Directive encourages the development of renewable energy and self-consumption communities by empowering citizens and local authorities to participate in the energy transition. The Directive has significant implications for third countries that export renewable energy or raw materials to the EU. To gain access to the EU market, these countries must fulfil the sustainability

criteria set out in the directive and demonstrate that their renewable energy sources meet EU standards.

The EU's legal framework for a green economy also includes the Energy Efficiency Directive (Directive of the European Parliament and of the Council No. 2023/1791, 2023). This directive establishes legally binding energy efficiency targets for the entire EU, with a minimum improvement target of 32.5% by 2030. Member States are obligated to devise national energy efficiency action plans and provide regular reports on their progress towards the targets stipulated in the Directive. Furthermore, the Directive incorporates a range of energy efficiency measures in a variety of industries, including financing energy efficiency projects, energy efficiency labels, and public procurement. The Energy Efficiency Directive has important implications for third countries that export energy-related products or services to the EU. Third countries supplying energy-related products or services to the EU must adhere to the directive's energy efficiency and labelling requirements to enter the market. This creates opportunities for countries such as Uzbekistan to develop their energy efficiency industries and capitalise on the growing demand for energy efficient products and services in the EU market. However, it also requires significant investment in technology modernisation, capacity building and regulatory reforms to meet EU standards.

Notwithstanding its recent inclusion within the EU's regulatory framework for the green economy, the EU Taxonomy for Sustainable Activities (2024) exerts a considerable influence on businesses and investors operating within the EU. The taxonomy provides a classification scheme for sustainable economic activity by establishing precise definitions and standards for identifying green investments. It aims to redirect capital to sustainable projects and prevent green PR by ensuring transparency and uniformity in the labelling of green financial products. The taxonomy also establishes technical verification criteria for each economic activity to determine its compliance with environmental objectives. To be considered a sustainable company under the taxonomy, economic activities in these countries must fulfil the same criteria and standards as in the EU. This presents both challenges and opportunities for countries such as Uzbekistan to align their green economy strategies with EU requirements and tap into the growing pool of sustainable finance.

A comprehensive plan to change the EU economy from a linear model to a closed-loop model that maximises resource efficiency and minimises waste is the Circular Economy Action Plan for a Cleaner and More Competitive Europe (Communication from the Commission..., 2020). The plan establishes objectives to reduce waste and increase the proportion of products that can be recycled and reused. By the year 2030, the EU aims to achieve a recycling rate of 65% for its municipal solid waste and 75% for its packaging waste, as outlined in the Action Plan. In order to encourage sustainable product design, the plan includes a number of measures, including right-to-repair regulations, eco-design requirements, and product info sheets. The action plan also seeks to foster the growth of circular business models like product-as-a-service and sharing platforms, as well as to open up new markets for recycled materials.

Given the need to implement the described regulations, the legal transfer of EU green economy rules to third countries such as Uzbekistan is not a straightforward process. It

requires careful consideration of the specific socio-economic conditions, environmental challenges and development priorities of each country, close cooperation and dialogue between the EU and the association partner countries, as well as targeted support and capacity building (Zhang *et al.*, 2022a). As a developing country in Central Asia, Uzbekistan faces a unique set of challenges in adapting to EU green economy standards and taking advantage of the association's legal framework. One of the main challenges for Uzbekistan in complying with the EU green economy rules is the lack of technical expertise and financial resources: implementing sustainable practices and technologies in areas such as renewable energy, energy efficiency and circular economy requires significant investments in infrastructure, research and development, and capacity building.

As of 2023, Uzbekistan's Gross Domestic Product (GDP) was approximately \$101.6 billion. The sectoral contributions to the GDP were as follows: Agriculture, Forestry, and Fisheries accounted for 24.3%, Industry contributed 26.1%, Construction made up 6.2%, and Services represented 43.4%. Collectively, the "dirty" sectors – primarily agriculture and industry – contributed approximately 50.4% to the GDP, equating to about \$51.2 billion in absolute terms (World Bank Group, 2024).

Implementing stringent climate regulations in resource-dependent countries has led to varied economic outcomes. Nations reliant on natural resources often experience negative long-term growth impacts, necessitating diversification strategies (Börzel & Risse, 2011). Climate policies influence trade by affecting supply chains and market access. For instance, the EU's deforestation regulation restricts imports linked to deforestation, impacting developing countries. Additionally, the EU's CBAM imposes levies on imports from countries without equivalent carbon pricing, affecting the competitiveness of exporters from nations like China, and Turkey (Zhang *et al.*, 2022b).

Adopting EU green economy standards poses challenges for Uzbekistan. Sustainable practices require substantial infrastructure and technology investments, straining resources. Integrating water, energy, and food security policies is crucial for regional sustainability but demands coordinated efforts and significant funding (Saidmamatov *et al.*, 2020). Non-compliance with EU standards could limit market access, particularly for textiles and agriculture. Uzbekistan must also navigate competition from countries better positioned to meet EU green standards. Compliance requires external investment in sustainability, labelling, and environmental management. Balancing green growth with economic demands presents trade-offs, particularly for a resource-dependent economy (Faichuk *et al.*, 2022). The transition has distributional effects, necessitating social protection for vulnerable groups. Resistance from vested interests may further complicate reforms, requiring effective communication and stakeholder engagement.

However, as stated in the Decree of the President of the Republic of Uzbekistan No. UP-60 "The New Uzbekistan Development Strategy For 2022-2026" (2022) and further supported by the Decree of the President of the Republic of Uzbekistan No. PP-436 (2022), Uzbekistan has created a comprehensive plan for making the transition to a green economy. By incorporating green economy concepts into national reforms, this method seeks to increase environmental sustainability, lower greenhouse gas emissions, and achieve

sustainable economic progress. Enhancing energy efficiency through technological modernisation and the creation of financial mechanisms to improve energy efficiency across various sectors are among the main goals of Uzbekistan's green economy strategy. Another goal is to promote renewable energy by raising the proportion of renewable energy sources in electricity generation to 25% by 2030. Another goal is to ensure sustainable resource management through the prudent use of natural resources, such as land and wa-

ter, incorporating green criteria into state expenditures and investments based on international standards, and creating a system for training staff for a green economy through educational investments and partnerships with international scientific and educational institutions.

Although the objectives of Uzbekistan's strategy are similar to those of the UN Sustainable Development Goals and the European Green Deal, there are some significant variations in terms of targets and scope (Table 1).

Table 1. Comparative analysis of Uzbekistan's green economy strategies, the European Green Deal and the UN Sustainable Development Goals

Aspect	Uzbekistan's Strategy	European Green Deal	UN Sustainable Development Goals
Climate Neutrality	The objective is to reduce greenhouse gas emissions per GDP unit by 35% by 2030 in comparison with 2010 levels	The following goals have been established for the achievement of net-zero greenhouse gas emissions by the year 2050	The 13th Sustainable Development Goal (SDG) calls upon nations to integrate climate change actions into their respective national policies. However, it does not stipulate the establishment of net-zero targets
Energy Efficiency	By 2030, it is anticipated that energy efficiency metrics will have doubled	The strategy emphasises energy efficiency, with particular regulatory measures in a variety of sectors, including buildings, industry, and transportation	By 2030, the objective of SDG 7 is to double the rate of increase in global energy efficiency, whilst ensuring universal access to modern, affordable, reliable and sustainable energy sources
Renewable Energy Targets	The objective is to achieve 15 GW of renewable energy capacity, with more than 30% of electricity deriving from renewable sources by 2030	By 2030, the EU aims to derive a minimum of 32% of its energy from renewable sources	While SDG 7 does not stipulate specific national objectives, it does advocate for a substantial augmentation in the share of renewable energy within the global energy portfolio
Circular Economy	A comprehensive action plan for the circular economy is not yet in place, however, there is a focus on incorporating green standards into public investments and spending	It implements a circular economy action plan that incorporates strategies for resource efficiency, waste minimisation, and sustainable product design	SDG 12 encourages nations to embrace sustainable methods and reduce waste creation to guarantee sustainable patterns of consumption and production
Biodiversity Preservation	While a specific biodiversity policy is not yet in place, environmental sustainability is addressed	It incorporates a biodiversity strategy to preserve and replenish biodiversity and ecosystems	With a focus on terrestrial life, SDG 15 aims to prevent biodiversity loss and preserve, restore, and encourage sustainable use of terrestrial ecosystems

Source: compiled by the author based on M. Ovadek (2020) and Decree of the President of the Republic of Uzbekistan No. PP-436 "On Measures to Improve the Effectiveness of Reforms Aimed at Transitioning the Republic of Uzbekistan to a Green Economy by 2030" (2022)

The alignment of Uzbekistan's green economy strategy with the European Green Deal is of paramount importance for several reasons. Primarily, it is imperative to consider trade and market access issues, given that the European Union is a major trading partner of Uzbekistan (Eckert & Kovalevska, 2021). The harmonisation of environmental standards and practices is likely to facilitate trade relations and assist Uzbek products in meeting the requirements of the EU market. Furthermore, the alignment with EU green policies is likely to attract European investors seeking sustainable and environmentally compliant projects, thereby augmenting foreign direct investment in Uzbekistan. Finally, technological cooperation and the sharing of advanced green technologies and best practices could prove to be a mutually beneficial arrangement, offering Uzbekistan opportunities to access leading-edge green technologies and best practices from EU countries. It is crucial to recognise the substantial environmental advantages that would result from implementing comprehensive circular economy principles and rigorous emission reduction targets. These advantages may be substantial and would aid in worldwide endeavours to alleviate climate change. Furthermore, by aligning with

the European Green Deal, Uzbekistan can position itself as a leader in green transformation within the Central Asian region, setting a precedent for neighbouring countries (Jeschke & Murray, 2011).

With laws like the Law of the Republic of Uzbekistan No. ZRU-539 "On the Use of Renewable Energy Sources" (2019) and the Decree of the President of the Republic of Uzbekistan No. PP-156 "On Measures to Implement the Green Energy Certificate System" (2023), Uzbekistan has shown that it is committed to developing its renewable energy sector. These programs encourage the use of renewable energy by introducing certification procedures and establishing fundamental principles. However, Uzbekistan might gain from incorporating particular finance mechanisms and policy tools that have worked well in other situations in order to improve its framework for renewable energy even further. For example, the Renewable Energy Sources Act (2000) of Germany has played a significant role in advancing renewable energy through feed-in tariffs (FiTs). FiTs give renewable energy producers guaranteed payments per kWh for a predetermined time frame, usually 20 years, which secures investments and promotes a notable increase in the number

of renewable energy installations throughout Germany. Uzbekistan should think about adding FiTs to Article 7 of the Law of the Republic of Uzbekistan No. ZRU-539 (2019) in order to improve its renewable energy framework. This would provide renewable energy producers with guaranteed payments per kilowatt-hour over a predetermined time frame. This amendment would promote the growth of renewable energy projects and offer investor protection. Furthermore, a degression mechanism built into Germany's EEG steadily lowers FiTs for new installations over time to reflect declining technological costs and encourage efficiency. In order to promote technological innovation and cost savings in the renewable energy sector, Uzbekistan should integrate a comparable degression mechanism into its FiT structure.

To ensure the preferable integration of power generated from renewable sources into the system, Germany's EEG mandates priority grid access for renewable energy producers. Priority access is not explicitly assured under the Law of the Republic of Uzbekistan No. ZRU-539 (2019). Amending Article 12 of the Law of the Republic of Uzbekistan No. ZRU-539 (2019) to mandate priority grid access and obligate grid operators to purchase electricity from renewable sources would enhance market stability for producers and facilitate the integration of renewable energy into the national grid. Germany has implemented competitive bidding procedures (auctions) for large-scale renewable energy projects to determine tariff levels according to market conditions, leading to a more cost-effective deployment of renewable energy. Comparable competitive bidding processes might be used in Uzbekistan to ensure cost-efficiency and transparency in the allocation of renewable energy initiatives. Germany's EEG provides tax incentives and financial subsidies to promote investments in renewable energy. Article 14 of the Law of the Republic of Uzbekistan No. ZRU-539 (2019) should be augmented to encompass direct subsidies and low-interest loans to further stimulate investment in the renewable energy sector.

The Law of the Republic of Uzbekistan No. 412-I "On the Rational Use of Energy" (1997) provides the framework for advancing energy efficiency in the nation. However, certain aspects of this regulation require improvement to better align with modern international norms and practices, particularly those exemplified by Germany's Energy Efficiency Act (2023). The goal of the current law, as stated in Article 1 of the Law of the Republic of Uzbekistan No. 412-I (1997), is to establish a broad legal foundation for protecting the country's energy resources and ensuring their efficient use. Although this presents a general objective, it lacks specific, quantifiable benchmarks that could drive the implementation of concrete programs. In contrast, EnEFG establishes precise guidelines for enhancing energy efficiency by setting national targets for reducing primary and final energy consumption by 2030, 2040, and 2045. Uzbekistan can adopt this approach by amending its legislation to incorporate specific energy efficiency targets, set clear expectations, and guide policy implementation.

According to Article 9 of the Law of the Republic of Uzbekistan No. 412-I (1997), which outlines the responsibilities of businesses, institutions, and organisations, energy-efficient practices are mandatory, but the installation of energy management systems is not explicitly required. To enhance energy efficiency monitoring and improvement, Germany's EnEFG mandates that specific industries, such as data centres, implement energy or environmental

management systems within predetermined deadlines. Uzbekistan can strengthen its regulatory framework by amending Article 9 to require businesses exceeding a specific energy consumption threshold to adopt certified energy or environmental management systems, thereby fostering continuous improvements in energy efficiency. Article 12 of the Law of the Republic of Uzbekistan No. 412-I (1997) promotes rational energy use and provides broad incentives for energy efficiency but lacks specific policies for waste heat utilisation. In contrast, Germany's EnEFG stresses the importance of waste heat utilisation, particularly in data centres, to enhance overall energy efficiency. Implementing policies that encourage or mandate the utilisation of waste heat in industrial operations could significantly enhance Uzbekistan's energy efficiency.

Article 14 of the Law of the Republic of Uzbekistan No. 412-I (1997) addresses control and supervision in the area of rational energy use but does not require routine energy audits. Germany's EnEFG, however, mandates regular energy audits to identify opportunities for energy savings. Introducing a similar requirement in Uzbekistan would facilitate the systematic identification and implementation of energy-saving measures. Although it lacks specific enforcement mechanisms, Article 15 of the Law of the Republic of Uzbekistan No. 412-I (1997) outlines consequences for non-compliance. Germany's EnEFG, by contrast, specifies penalties for non-compliance and imposes explicit obligations on businesses. Strengthening Uzbekistan's regulatory framework by defining enforcement procedures and sanctions for non-compliance would enhance adherence to energy efficiency measures and promote more effective implementation of energy-saving initiatives.

A thorough analysis of existing legislation reveals opportunities for enhancement and alteration to align Uzbekistan's policies with the principles of the circular economy. Uzbekistan can modify its existing legislation to foster a more circular economy by drawing inspiration from the Circular Economy Action Plan for a Cleaner and More Competitive Europe (Communication from the Commission..., 2020) and the German Resource Efficiency Programme (2024), both of which prioritise sustainable practices, waste minimisation, and resource efficiency. The Decree of the President of the Republic of Uzbekistan No. PP-4422 "On Accelerated Measures to Enhance Energy Efficiency in Economic Sectors and the Social Sphere, Implement Energy-Saving Technologies, and Develop Renewable Energy Sources" (2019) primarily addresses the promotion of renewable energy sources and the enhancement of energy efficiency. This decree could be expanded to encompass policies that promote recycling and reuse practices across various industries, as well as the reduction of material consumption, thereby integrating the principles of the circular economy. Incorporating provisions that promote the utilisation of recycled materials in construction and manufacturing may advance the goals of the circular economy. Promoting sustainability can be achieved by establishing design principles that facilitate recycling and disassembly of products.

The Decree of the President of the Republic of Uzbekistan No. PP-54 "On Measures to Improve the Efficiency of State Control in the Sphere of the Use of Fuel and Energy Resources" (2023) attempts to improve governmental supervision of fuel and energy resource use. This decree could be changed to incorporate monitoring and regulation of

material resource utilisation in order to assist circular economy initiatives. This would guarantee that industries implement procedures that optimise resource efficiency and minimise waste. Enforcing reporting requirements on material use and waste creation by businesses would yield important information to support transparency and guide policy decisions. Additionally, the Decree of the President of the Republic of Uzbekistan No. UP-5742 “On Measures for the Efficient Use of Land and Water Resources in Agriculture” (2019) outlines policies for the sustainable management of agricultural

land and water resources. Given the significant role of agriculture in Uzbekistan’s economy, aligning this decree with circular economy principles is essential. Broadening its focus to encompass strategies for minimising agricultural waste, optimising irrigation efficiency, and advocating sustainable farming practices could further augment resource conservation. Furthermore, implementing practices for organic agriculture and utilising environmentally friendly fertilisers may enhance long-term ecological sustainability. From the results obtained earlier, brief conclusions can be drawn (Table 2).

Table 2. Comparison of Uzbek legislation with EU laws

Aspect	Uzbekistan Legislation	EU Laws	Potential Harmonisation Areas
Renewable Energy Targets	Law of the Republic of Uzbekistan No. ZRU-539 (2019) establishes the legal framework for renewable energy development, promoting solar, wind, and hydro energy but lacks binding targets. Decree of the President of the Republic of Uzbekistan No. PP-156 (2023) introduced a green energy certification system to attract investment in renewable energy projects	Directive of the European Parliament and of the Council No. 2023/2413 (2023) sets binding targets of at least 32% renewable energy by 2030	Setting binding renewable energy targets and incentives for green energy development
Energy Efficiency Measures	Law of the Republic of Uzbekistan No. 412-I (1997) provides general principles for energy conservation but lacks detailed enforcement mechanisms and specific targets. Decree of the President of the Republic of Uzbekistan No. PP-4422 (2019) mandates accelerated measures for energy efficiency in economic sectors, encouraging modernisation of infrastructure	Directive of the European Parliament and of the Council No. 2023/1791 (2023) mandates at least 32.5% energy efficiency improvement by 2030	Introducing enforceable energy efficiency targets and mandatory energy audits
Sustainable Finance	Decree of the President of the Republic of Uzbekistan No. PP-436 (2022) promotes green investment and financial incentives for sustainable projects. Decree of the President of the Republic of Uzbekistan No. PP-4477 (2019) defines the strategy for transitioning Uzbekistan to a green economy, but does not fully align with the EU sustainable finance taxonomy	EU Taxonomy for Sustainable Activities (2024) provides clear criteria for sustainable finance	Aligning green finance initiatives with EU taxonomy standards to attract investments
Circular Economy Framework	Uzbekistan currently lacks a comprehensive circular economy action plan. Some elements are included in Decree of the President of the Republic of Uzbekistan No. PP-4422 (2019), which introduces green criteria for public investments and encourages sustainable industrial practices	Circular Economy Action Plan (2020) mandates waste reduction, sustainable product design, and recycling targets	Developing a comprehensive circular economy strategy with regulatory support
Carbon Emission Reduction	Decree of the President of the Republic of Uzbekistan No. UP-60 (2022) sets goals for reducing greenhouse gas emissions by 35% per unit of GDP from 2010 levels by 2030. Law of the Republic of Uzbekistan No. 412-I (1997) also contains provisions related to energy efficiency but lacks clear enforcement mechanisms	European Green Deal (2019) seeks to achieve net-zero carbon emissions by 2050	Strengthening carbon emission reduction policies with long-term net-zero targets
Air and Water Protection	Law of the Republic of Uzbekistan No. 837-XII (1993) governs sustainable water management and the safeguarding of water resources, although it is deficient in stringent pollution control measures. The Law of the Republic of Uzbekistan No. 353-I (1996) implements emission control measures. Nonetheless, it does not entirely comply with EU air quality criteria	Water Framework Directive (2000) mandates that all EU member states attain a satisfactory water quality condition	Strengthening water management and air quality standards to meet EU environmental benchmarks
Waste Management	Law of the Republic of Uzbekistan No. 362-II (2002) establishes fundamental laws for garbage management and disposal. The Law of the Republic of Uzbekistan No. 73-II (2000) establishes the framework for environmental impact assessments, although it does not impose stringent recycling and waste reduction objectives	Waste Framework Directive (2008) establishes a legislative framework for waste management and the circular economy	Improving waste management policies with stricter recycling and waste reduction targets

Source: compiled by the author

As demonstrated in Table 2, a synopsis of the fundamental elements of Uzbekistan's legal framework in relation to EU environmental and sustainability standards is provided. The table delineates the principal legislative provisions governing renewable energy, energy efficiency, sustainable financing, the circular economy, carbon emissions, market access, environmental protection, biodiversity conservation, and waste management. The comparison presented demonstrates both the progress that has been made and the areas requiring further alignment with EU policies. The integration of EU regulatory ideas and practices could strengthen Uzbekistan's legal environment, fostering sustainability, regulatory transparency, and enhanced access to international markets.

Discussion

The current study pointed out in particular that not just the legislative framework of EU countries, but in particular Germany, could be used as a basis for Uzbekistan. The EU legislative framework and the values of the association in this direction were considered by K.L. Scheppele *et al.* (2020) and V. Ladychenko and A. Mykytiuk (2023). Scholars have noted that the EU is facing a crisis of values as some member states openly violate the EU's basic principles, creating both political and legal problems. Unlike political measures, legal action can better address the dual political and legal nature of the problem. The article also argued in favour of a stronger legal approach, where systemic infringement claims assess and address infringements holistically. Nevertheless, the aforementioned challenges do not imply that the association's legal system cannot subsequently serve as a model for other nations or as a platform for amending their own legislation (Pech, 2022). A study of the legal frameworks for sustainable development in EU nations concluded that utilising the legal framework as a foundation for Uzbekistan is an effective strategy, aligning with the study's conclusions. Uzbekistan's resource-based economy can be compared to the Netherlands, which faced Dutch disease, causing currency appreciation and industrial decline (Barczikay *et al.*, 2020). The Dutch experience underscores the need for economic diversification. Policies like fiscal strategies and exchange rate management help mitigate risks (Bresser-Pereira, 2020; Gu *et al.*, 2023). Uzbekistan could adopt green finance mechanisms and align with climate agreements to counter resource dependence effects.

This study analysed the legislative framework applicable for enacting modifications to the legal and regulatory structure in Uzbekistan. The efficacy of legislative measures was evaluated in the study of L. Montanarella and P. Panagos (2021), specifically within the context of the European Green Agreement. The researchers observed that the European Green Deal serves as a strategy to tackle climate and environmental challenges, with soils being integral to the attainment of Sustainable Development Goals. However, they concluded that insufficient action has been taken to enhance progress towards achieving the primary objectives in this regard. This has resulted in inefficiencies in achieving the Sustainable Development Goals within the European Green Deal. Despite these challenges, it is imperative for the nation to enhance market access opportunities for local enterprises in Europe. The present study observed that the EU's strategies for attaining the Sustainable Development Goals, as well as their overall methodologies, are effective. These strategies can be implemented in several countries,

including Uzbekistan, to achieve enhanced outcomes in this regard. However, the challenge of establishing conditions for a qualitative shift and the application of one country's legislative principles in another remains, and this is a very complex process.

L. Rajamani *et al.* (2020) assessed the equity justifications in 168 nationally defined constituents in the 2015 Paris Agreement, comparing them with the principles of international environmental law. While many constituents of the Paris Agreement are consistent with legal principles, such as sustainable development and equity, some rely on unsupported indicators such as small shares of global emissions. The removal of cost and allowance-based approaches that benefit affluent nations has led to more stringent standards for developed countries and more forgiving targets for developing nations (Ostudimov & Kaminska, 2023). If every nation opted for the highest permissible emissions within its equitable allocation, global emissions may attain 63 GtCO₂e by 2030, leading to disastrous climate change. Utilising principles like damage avoidance, the Paris Agreement mandates that industrialised nations with significant historical emissions, such as the US and Germany, attain net zero emissions by 2030. Considering all these factors, the necessity to expedite efforts on climate change is underscored, which remains pertinent for Uzbekistan, among others.

It is evident that the Republic of Uzbekistan is currently devoid of the necessary legal and regulatory frameworks, a fact that has not been examined within the scope of the present study. Moreover, the implementation of the European Green Agreement may be rendered superfluous at this time due to the absence of another component of the legal framework. However, A. Sikora (2020) has evaluated the financial dimension of the European Green Agreement. The expert observed that significant investments are required to attain climate neutrality and sustainable growth. The European Green Deal Investment Plan, which is designed to facilitate environmental and economic transformation in alignment with the EU's sustainable development objectives, is intricately connected to the European Green Agreement (Krawczyńska *et al.*, 2024). This necessitates the integration of environmental sustainability into the EU financial structure and the alignment of economic growth with climate change initiatives, particularly in the context of post-pandemic recovery efforts. The scholar deems it effective to execute this agreement within the legal and regulatory framework to enhance outcomes for investments in sustainable development. T.A. Börzel and A. Buzogány (2022), in their study, in turn looked at how European investment funds align their actions with sustainability statements, especially within the Sustainable Finance Disclosure Regulation. Overall, the researchers concluded that the boundaries of the Sustainable Finance Disclosure Regulation are too loose, leading to inconsistent practices in sustainability reporting. It calls on European and national policymakers to standardise sustainability knowledge, clarify sustainability risks and improve regulation of fund managers' incentives (Krasivskyy, 2024). In this regard, policymakers need to prioritise sustainability and deepen their knowledge of sustainable finance. It was also recommended that managers' financial incentives should be more closely monitored and regulatory requirements adjusted to ensure that funds are indeed pursuing sustainability goals. Thus, it can be agreed with the findings of the scholars above that the regulations governing sustainable

development finance, among others, are an important component for creating a sufficiently high-quality environment for the achievement of sustainable development goals. In this regard, the consideration is relevant in the longer term, when more investments will come to the local market.

Conclusions

Thus, the legal transfer of EU laws to Uzbekistan in the field of green economy is a qualitative approach to support the country's sustainable development efforts. By utilising the experience of the association, Uzbekistan can accelerate its transition to a greener and more climate-resilient future. However, the success of this process depends on a well-designed and carefully implemented legal harmonisation strategy that considers Uzbekistan's unique challenges and opportunities. The EU has established a comprehensive legal framework through directives such as the Renewable Energy Directive, the Energy Efficiency Directive, the Waste Framework Directive, the Water Framework Directive, the Sustainable Finance Taxonomy, and the Circular Economy Action Plan. These regulations set clear targets, enforceable mechanisms, and financial incentives that drive the green transition across the EU. By contrast, Uzbekistan's legal framework, while incorporating some principles of sustainable development, lacks binding targets, robust enforcement mechanisms, and incentives for investment in green technologies. Uzbekistan's legislation is inferior to EU environmental standards in several key areas. The gaps in Uzbekistan's environmental legislation compared to the EU can be attributed to several factors. Institutional capacity remains a challenge, as Uzbekistan's regulatory institutions lack the technical expertise and financial resources required to enforce and monitor strict environmental policies at the level seen in the EU. Economic constraints also play a significant role, as the transition to a green economy requires substantial investment in renewable energy infrastructure, sustainable finance mechanisms, and compliance measures, which pose financial challenges for Uzbekistan. Policy priorities further contribute to the disparity, as while Uzbekistan recognises the importance of sustainability, immediate economic development and energy security remain higher

priorities, leading to a gradual rather than immediate adoption of EU-style green policies. The lack of market incentives is another factor, as unlike the EU, where stringent regulations and market mechanisms drive sustainable business practices, Uzbekistan's private sector lacks strong incentives and regulatory pressure to adopt green technologies.

To address these legislative gaps, Uzbekistan should consider establishing binding renewable energy targets and implementing financial incentives such as feed-in tariffs, green bonds, and subsidies for renewable energy projects. Introducing mandatory energy efficiency audits for large enterprises and requiring the adoption of certified energy management systems would further strengthen regulatory oversight. Developing a national circular economy strategy aligned with the EU model, including regulations on waste reduction, recycling, and sustainable product design, would enhance sustainability efforts. Strengthening carbon emissions reduction policies, including the introduction of emissions trading schemes and stricter industrial pollution controls, would align Uzbekistan's environmental standards with global best practices. Enhancing air and water quality standards with robust monitoring, reporting, and enforcement mechanisms, following EU best practices, would ensure compliance with stricter environmental benchmarks. Seeking technical and financial assistance from the EU and international partners, particularly in the areas of capacity building and infrastructure investment, would provide the necessary support for implementing these reforms.

By implementing these measures, Uzbekistan can align its environmental policies with EU standards, improve regulatory effectiveness, and position itself as a regional leader in sustainable development. This transition will not only enhance Uzbekistan's environmental sustainability but also facilitate deeper economic integration with the EU and access to green investment opportunities.

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Conflict of interest

None.

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Правове перенесення законодавства ЄС до Узбекистану у сфері зеленої економіки

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Анотація. Метою цього дослідження було вивчення особливостей правової адаптації законодавства ЄС до Узбекистану у сфері «зеленої» економіки. Дослідження було сфокусовано на аналізі сумісності чинного законодавства Узбекистану зі стандартами ЄС та визначенні потенційних сфер для гармонізації правової бази. У дослідженні використано методологію порівняльного правового аналізу відповідних директив, регламентів і політик ЄС, а також національних законів і політик Узбекистану, пов'язаних з розвитком зеленої економіки. Було показано, що, хоча Узбекистан досягнув прогресу у приведенні своєї правової бази у відповідність до стандартів ЄС, все ще існують прогалини і проблеми, які потребують вирішення. Дослідження підкреслило важливість адаптації законодавства ЄС до конкретного контексту Узбекистану з урахуванням його соціально-економічних умов, інституційної спроможності та екологічних пріоритетів. Крім того, проаналізовано деякі німецькі нормативні акти і зроблено висновок, що вони, серед іншого, можуть бути використані як основа для створення власної нормативно-правової бази. У дослідженні також визначено ключові сфери, на які варто звернути особливу увагу при перенесенні правових норм, такі як відновлювана енергетика, енергоефективність, стале сільське господарство та «зелене» фінансування. У висновках підкреслюється необхідність цілісного та поступового підходу до правового трансферу, включаючи залучення зацікавлених сторін та впровадження механізмів моніторингу. Дослідження сприятиме кращому розумінню процесів правової гармонізації між ЄС та третіми країнами у сфері зеленої економіки, надаючи інформацію для політиків, юристів-практиків та дослідників

Ключові слова: сталий розвиток; зелений курс; нормативно-правова база; відновлювані джерела енергії; клімат