

EUROPEAN LEGISLATION AND NATIONAL POLICY IN THE FIELD OF SUSTAINABLE CONSTRUCTION

NELI DIMITROVA

*University of Economics – Varna,
Blvd “Knyaz Boris I” No 77
e-mail: neli.dimitrova@ue-varna.bg*

Abstract. The interrelation and influence of European legislation on national policies underline the need for changes towards achieving sustainability in the construction sector within the European Union. This legal framework promotes the integration of sustainable building practices into national legislation, fostering the development of coherent strategies to combat climate change and conserve natural resources. European directives encourage the adoption of innovative technologies, sustainable materials, and construction methods, emphasizing energy efficiency in both new and renovated structures. As a result of the efforts of the EU, European legislation stimulates Member States to embed sustainable principles in their national construction policies and practices, to foster collaboration, and to contribute to a more unified and eco-friendly building environment for citizens of the EU.

Keywords: European legislation, national legislation, sustainable development, sustainable construction.

The European Union (EU) brings together 27 European countries in the form of a partnership that functions as a supranational institution, endowed with the authority to exercise certain legislative, executive, and legal rights vis-à-vis the Member States. It plays a pivotal role in decision-making for its own policies, with three main institutions involved in the process – the European Parliament, representing EU citizens; the Council of the European Union, acting on behalf of the governments of the Member States; and the European Commission, which is the politically independent executive body of the EU. The Commission is the sole entity that drafts proposals for new European legislation and protects the common interests of the EU and its citizens.

As the EU assumes the role of a supranational organization vis-à-vis its Member States, it has the right to take action in specific areas where the Member States have conferred corresponding powers under the treaties, they have concluded with them. Three principles [1] determine the areas and the manner in which the EU can engage in activities (see Table 1).

<http://doi.org/10.7546/EngSci.LXI.24.01.07>

Table 1. Principles for identifying areas of EU action. Source: European Commission

Principle	Description
Conferral	The EU has only that authority conferred upon it under the EU treaties concluded with and ratified by the individual Member States.
Proportionality	The EU action is limited to such extent to which it can only do what is necessary (without going beyond) to achieve the objectives of the treaties.
Subsidiarity	With the principle of subsidiarity in place, the EU can only intervene and act if the Union is more effective with its actions than the actions national governments would perform.

As a fundamental element embedded in many programs developed by the EU towards sustainable development, it has the potential to contribute to progress in the direction of “sustainable development” of the economy as a whole, while simultaneously ensuring the well-being of society and the environment. Switching to sustainable construction can optimize both the overall consumption of energy sources can reduce the pollution of water, air, and soil.

The author of this article aims to examine the existing European legislation in the field of sustainable development and sustainable construction and to analyze its impact on Bulgaria’s national policy.

Economic integration is the process of achieving and maintaining peace while facilitating free trade among the Member States of the European Union previously named the European Economic Community, established in 1958. It comprises four main stages, each building upon the previous one: the creation of a free trade area, customs union, single market and economic and monetary union. After successfully completing all stages of the economic integration process, the EU began developing strategies and plans in various areas, with sustainable development being one of the most important among the others. Sustainable construction is a crucial element, and in pursuit of this, the Council of the EU adopts EU laws and coordinates Union policies. In addition to the standard legislative procedure for adopting new laws, the European Citizens’ Initiative was established in 2007 in order to enhance democracy and transparency in the functioning of the EU. The idea behind its creation is to allow all European citizens to be able to participate in the process of creating new legislation by organizing initiatives. In our opinion, this would significantly contribute to positive development towards achieving sustainable construction.

Sustainable development involves a set of efforts aimed at addressing existing social needs while simultaneously seeking to minimize potential negative impacts on the environment. Over the years, the concept of sustainable development has been interpreted in various directions, the most popular of which are presented in this paper. It is also crucial to clarify its context within the construction industry.

As early as 1980, the International Union for Conservation of Nature (IUNC) developed a “World Conservation Strategy”, according to which development and environmental protection are two desirable but opposite states, which, however, can be simultaneously achieved. This approach could contribute to biodiversity conservation through the exercise of ecomanagement during the implementation of construction projects.

Although the concept of sustainable development is gaining widespread acceptance, there is still no unified interpretation of the new term. This led to amendments 11 years later in the “World Conservation Strategy”, later renamed “Caring for the Earth” due to criticisms that the concept of “sustainable development” is ambiguous and can be interpreted in various ways, many of which often contradict each other. Moreover, the persons behind the changes to the above-mentioned strategy believe that the confusion in interpretations between the different authors has largely arisen due to the interchangeable use of the terms “sustainable growth” and “sustainable development”.

A number of intergovernmental and international organizations have begun to play an essential role in the governance of the member states in terms of their policies and issued acts to achieve sustainable development, as well as to protect the environment in the long term. The European Union took the first significant step in this direction in 2001 by developing the Strategy for Sustainable Development (EU SDS) [2], the main objective of which is to achieve a lasting improvement in the quality of life of both present and future generations. Five years later, this strategy was refined, and in 2009 it acquired its final form after a review by the European Commission. During the revision of the document, it acknowledged the presence of several unfavourable trends that hinder member states in their efforts to achieve the goals set out in the strategy. On the other hand, the European Commission highlighted success in some key areas such as trade and development. It also pointed out a number of targeted actions related to climate change and the promotion of a low-carbon economy [3]. Transitioning to a low-carbon economy will make it possible to meet the needs of society and the economy as a whole, while simultaneously maintaining environmental sustainability, reducing energy and

emission intensity through energy efficiency, as well as increasing the use of energy from renewable sources.

One of the key documents in the field of construction at European level is Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 [4]. It includes requirements aimed at improving the energy performance of buildings in the European Union, while taking into account different climatic and local conditions. The Directive has been implemented since 2010, with the deadline for EU Member States to incorporate it into their national legislation by 2012. The initial step in the process of implementing the Directive by EU states is for them to establish minimum requirement for the energy performance of buildings, their components, and the energy used for heating and cooling, domestic hot water, ventilation, built-in lighting and other technical building systems and installations. The specified characteristics must be reviewed every five years. Under the Directive, new buildings must meet minimum standards while renovated buildings must improve their energy performance to a level that satisfies the minimum requirements. In order to ensure the energy efficiency of buildings, countries are required to implement an energy performance certification system through which it would become possible to provide the necessary information to buyers or users of the building.

An important European document, designed specifically to complement the independently developed strategies by construction companies for enhancing their own competitiveness and in response to societal challenges, is the European Strategy for the sustainable competitiveness of the construction sector and its enterprises [5]. It was developed in 2012 and covers the period until 2020, addressing the challenges faced by the sector in terms of investments, human capital, and environmental requirements, with a primary focus on the efficient use of resources. The strategy encompasses five main directions: stimulating favourable investment conditions, improving human capital within the construction sector, enhancing resource efficiency, environmental performance indicators, and business opportunities, strengthening the internal construction market and last but not least, promoting the global competitive position of EU construction companies. The strategy represents a set of short- and long-term recommendations for overcoming the challenges related to economy and the need for human capital, as well as to increase the competitiveness across the entire sector.

In order to stimulate the creation of favourable investment conditions, five main factors need to be in place – reviving the growth of the construction sector through renovation/energy efficiency activities in buildings and infras-

structure maintenance, ensuring timely access for construction companies to their own funds within a reasonable timeframe, as well as taking advantage of the support and financing provided by the EU through various structural funds. Before implementing these conditions, a mandatory step in the process of creating an attractive investment environment is for all EU Member States to adopt and implement Directive 2010/31/EU [6] of the European Parliament and of the Council on the energy performance of buildings. In support of this directive, financial assistance and fiscal incentives are provided to market participants, aiming to encourage them to increase the proportion of renovated existing buildings.

Improving human capital in the construction sector is the second objective of the Sustainable competitiveness strategy for the construction sector. The inclusion of this goal has been prompted by the increasing lack of skilled labour. This crisis is further exacerbated by the fact that the educational programs and training initiatives across differ significantly among individual countries. In our opinion, a potential solution to the challenges facing the sector could be to anticipate the need for a workforce with specific skills and to develop programs in order to increase the number of qualified construction workers in the labour market. This would also facilitate entrepreneurs in making more informed decisions regarding investments in energy-efficient buildings and practices.

The third objective set out in the strategy is related to improving resource efficiency, environmental performance indicators and business opportunities. Specifically, it involves enhancing the new building stock, which will be constructed by using resource-efficient materials and with nearly zero-energy consumption. To support the broader implementation of sustainable construction practices, harmonized methods for assessing the environmental performance of buildings, construction products, processes, and procedures, will be developed, along with uniform indicators and codes. Additionally, achieving this goal will create business opportunities for a number of enterprises, including small and medium-sized ones, with the necessary actions varying depending on the localization of entrepreneurs' activities in individual Member States.

Another important aspect of the Sustainable Competitiveness Strategy for the construction sector is the stabilization of the internal market through the creation of a clear and predictable legal framework. Due to the high degree of regulation in the construction sector and the different approaches regarding products, construction processes, workforce qualifications, and environmental impact, a systematic analysis of the regulations issued in connection with the implementation of European legislation is necessary. Its aim is to re-

duce the administrative burden on construction enterprises by examining the interaction between European and national legislation and proposing additional provisions and clarifications to ensure better functioning and subsequent strengthening of the internal construction market.

In our opinion, there are numerous opportunities for increasing competitiveness in the European market, and specific areas with growth potential for construction companies have been identified. In order to achieve higher levels of competitiveness in the construction sector, not only within the EU internal market but also in international markets, specific actions need to be taken to promote environmental conservation, the use of renewable energy sources, and sustainable materials and practices in building construction and infrastructure. This should be done in accordance with a clear and coherent legislative framework, which in turn will ensure the proper functioning of the internal market for construction products and services. All these actions would lead to an improved business environment and the provision of a qualified workforce in the construction sector only if Member States and stakeholders ensure appropriate links with national and sectoral construction programs and facilitate the exchange of experience and good practices that can subsequently be applied in construction companies. Due to its exceptional importance and its designation as a constant political priority, the construction sector plays a crucial role in the EU's gross domestic product, employment, and its impact on climate, ecology, and energy. Therefore, any political intervention in the implementation of the Sustainable Competitiveness Strategy for the construction sector and its enterprises must be monitored and evaluated.

The European Green Deal [7] is another important policy for ecological and environmental transition implemented by the EU. It consists of a set of political initiatives aimed at addressing the challenges related to the deteriorating state of the environment and climate change. The package of 12 different but interconnected initiatives is aimed at transforming the economy into a modern and competitive one (see Fig. 1), and making Europe the first climate-neutral continent.

Due to the connection of most European initiatives under the Green Deal with the construction sector, the success of each of them will lead to mitigation of the sector's negative impact on the environment and people's quality of life. One of the most important initiatives among them is "Fit for 55", which represents a package of proposals to revise the existing legislation in the EU in the areas of climate, energy, and transport, harmonizing it with the Union's climate goals. This way, the EU will solidify its leadership position in the global fight against climate change. It is undeniable that in order to engage



Fig. 1. Initiatives included in the European Green Deal. Source: Adapted from information from the European Council and the Council of the EU <https://www.consilium.europa.eu/en/policies/green-deal/> [8]

more individuals in this process, a legal framework at the European level must be created first and subsequently transposed into the national legislations of Member States. In support of this initiative, the European Climate Law has been established [9], according to which the Union and all its Member States will take actions aiming to achieve the target of reducing greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels, with periodic reviews of the achieved results. It is important to note that 75% of greenhouse gas emissions in EU result from the production and consumption of electricity, which determines the urgent need for changes in the energy sector, with the ultimate goal of making it climate-neutral. Decarbonisation can be achieved through the wider use of renewable sources and a review of the existing legislation in this area and in the field of energy efficiency. Due to the high percentage of air pollution from the building sector caused by the excessive levels of energy consumption, the “Renovation Wave for Europe” initiative [10] has been created. Its ultimate goal is to support the decarbonization of the industry and reduce greenhouse gas emissions from building operations by 60% by 2030 (see Fig. 2). Achieving positive results would lead to growth in the economy, the creation of new jobs and improved quality of life.

The Green Deal also includes several strategies focused on transforming the environment into a better place to live, such as achieving sustainability in the chemical sector through zero pollution, maintaining biodiversity,

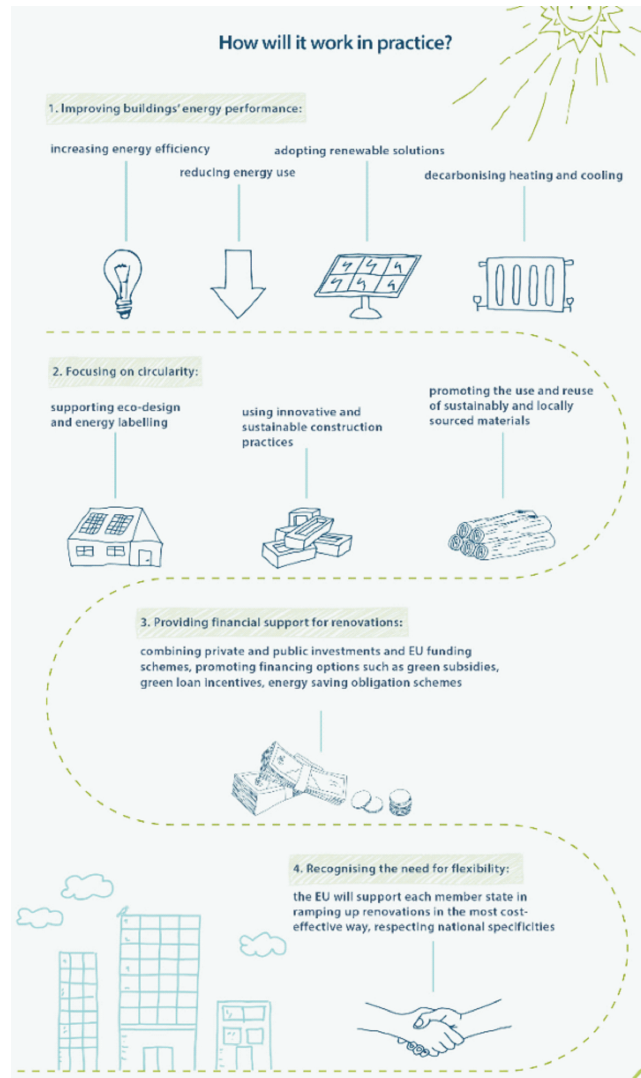


Fig. 2. Stages of the renovation process – creation.Green buildings for tomorrow.
Source: European Council and Council of the European Union
<https://www.conilum.eropa.eu/bg/infographics/renovation-wave/> [11]

planting 3 billion new trees to combat global deforestation, and implementing innovations. In addition, these strategies aim to achieve higher levels of competitiveness and transition to sustainability through the European Industrial Strategy [12].

Moreover, in the Plan for Affordable, Secure and Sustainable Energy for Europe (REPowerEU) [13], which is a part of the European Climate Pact, there is an intention to incentivize decarbonization in the industry and adopt and implement new legislation within the EU, which will contribute to the faster integration of renewable energy sources. The Green Deal prioritizes the transformation of the existing building stock by improving its energy characteristics through the use of renewable energy sources, while ensuring intelligent integration across different sectors. Environmental protection must be achieved by moving towards a circular economy in the production and consumption of sustainable products available to the population at affordable prices within the existing planetary constraints. This involves improving processes for collecting, transporting, processing, and disposing of waste. These actions will support a number of other sectors such as construction, food, and the electronics industry. The transportation sector also has a detrimental impact on human health, generating 25% of the total greenhouse gas emissions in the EU. For this reason, the Green Deal sets an ambitious target to reduce these gases by 90% by 2050.

Overall, the objectives set out in each individual initiative, part of the Green Deal, are aimed at altering Europe and making it the first climate-neutral continent by minimizing the activities that are harmful to human health and adopting legislative policies to ensure a healthy environment for future generations.

Recovery Plan for Europe [14], better known as Next Generation EU, is a temporary tool through which the European Union aims to address the economic and social challenges resulting from the COVID-19 pandemic. With a budget of €806.9 billion (at current prices in comparison with €750 billion at 2018-level-prices), the ultimate goal is to transform Europe into an environmentally-friendly, clean, digitalized, and sustainable continent. In combination with the EU's long-term budget, they form the largest stimulus package ever financed in Europe (the total funding for Europe's post-COVID-19 pandemic recovery amounts to €2.018 trillion in current prices; 2018 prices – €1.8 trillion). The majority of funds (just over 50%) are planned to be spent on modernization in six main areas – namely, scientific research and innovation, the transition to digitalization under the 'Digital Europe' program, recovery and sustainability through the Recovery and Resilience Facility (RRF), implementation of cohesion policy, protection of biodiversity, and promotion of gender equality. Last but not least are the investments dedicated to actively combating climate change – a significant 30% of the EU funds.

Through Regulation (EU) 2021/241, the Recovery and Resilience Facility

(RRF) is established for the European Union, whose main goal is to provide financial assistance to EU countries. It forms the basis of the European Recovery Plan and defines the objectives of the facility and the criteria for receiving funding. First of all, Member States must draw up their own national recovery and resilience plans, by specifying how and where the financial resources will be invested. Upon approval by the EU approval, they are given the grants and loans needed for the implementation of the planned investments and reforms (see Table 2).

Table 2. Reference to the resources of the Recovery Plan for Europe. Source: European Commission A Recovery Plan for Europe – European Commission (europa.eu)

Next Generation EU	Financial allocations (in billion €)
Loans	385.8
Grants	338
Total resources under the Recovery and Resilience Mechanism	723.8
Funding by program	83.1
Total resources under the Recovery and Resilience Plan	806.9

In the course of the implementation of the plan, Member States are obliged to achieve satisfactory progress on stage and other objectives set by the EU to qualify for the corresponding transfers of grant funds to them. Part of the funds provided to Member States is through the Recovery and Resilience Facility (€723.8 billion) and the rest is through several EU programs (see Table 3).

Table 3. Funding under programs part of the Recovery Plan for Europe (Next Generation EU). Source: European Commission A Recovery Plan for Europe – European Commission (europa.eu)

Program	Financing (in billion €)
ReactEU	50.6
Horizon Europe	5.4
InvestEU	6.1
Rural development	8.1
Just Transition Fund (JTF)	10.9
RescEU	2
TOTAL	83.1

Over the past three years, a key role in achieving sustainability, not only in the construction sector but also overall, has been played by the National Recovery and Resilience Plan of the Republic of Bulgaria [15]. It is directly linked to the European Recovery Plan, and its main goal is to mitigate the adverse effects caused by the COVID-19 pandemic, as well as to provide a basis for the effective recovery of the economy and improvement of social conditions. This, in turn, would contribute to preserving economic potential and competitiveness at national level and achieving long-term goals, such as increasing average incomes per capita, reaching levels approaching those in the European Union. The National Recovery and Resilience Plan of Bulgaria outlines specific ways to address existing issues while simultaneously making efforts to transform the economy into a low-carbon one, in line with the objectives set in the European Green Deal.

The National Recovery and Resilience Plan is structured into four pillars – Innovative Bulgaria, Green Bulgaria, Connected Bulgaria, and Fair Bulgaria, with each of them further divided into three components. The aim of the plan is to overcome the obstacles to achieving sustainable growth by implementing the necessary 47 reforms, and investments (57 in total) are directed towards solving structural problems in the economy, such as stabilizing economic and social sustainability and achieving proximity in the single market.

The first pillar, Innovative Bulgaria, consists of the components “Education and Science”, “Scientific Research and Innovation” and “Intelligent Industry”. Its goal is to create a knowledge-based economy focused on intelligent growth, achieving high levels of competitiveness through investments in education, science, innovation, and technology. Their interconnectivity is crucial for achieving sustainable results in these fields.

Green Bulgaria is the second pillar of the National Recovery and Resilience Plan. It includes all the important activities that are critical for any modern economy, encouraging investments for a transition to sustainable management of natural resources, biodiversity, sustainable agriculture, and achievement of decarbonization. Its three pillars include “Low Carbon Economy”, “Biodiversity” and “Sustainable Agriculture”.

In order to increase competitiveness and promote regional development through the utilization of local potential, the third pillar, “Connected Bulgaria”, has been formed. It is also focused on improving transportation and digital connectivity and is made up of the following components: “Digital Connectivity”, “Transport Connectivity” and “Local Development”.

“Fair Bulgaria” is the last pillar of the National Recovery and Resilience Plan, aiming to include groups in unequal situations and build public insti-

tutions that assist citizens and businesses while ensuring transparency and efficiency in their activities. Three main directions are observed here, namely, the business environment, social inclusion, and healthcare.

The estimated government expenditures for achieving the set goals in the plans amount to 6897.9 million euros, of which EUR 5.69 million euros will be provided in the form of grants from the European Union, and the remaining funds will be secured through national and private co-financing.

Figure 3 illustrates the distribution of funding across the four main pillars set out in the plan. From the figure, it is clear the largest relative share of financial resources (42%) is allocated to the second pillar, which includes the construction sector, followed by “Innovative Bulgaria”, accounting for one-fourth of the total amount.

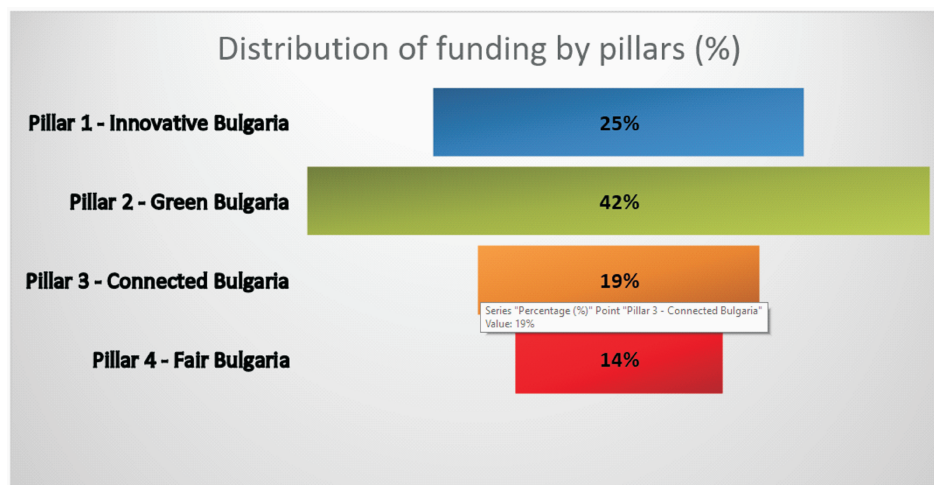


Fig. 3. Distribution of funding by pillars Source: Dobрева, A. and Lilyanova, V. (2022) Implementation of Next Generation EU (NGEU) – How are the Member States doing? EPRS | (European Parliamentary Research Service) [16]

The National Recovery and Resilience Plan consists of 12 components, with the allocated funding for each of them presented in Table 4.

From the above data, it becomes clear which are the priority areas of the EU where the most funds will be invested. Undoubtedly, the leading position is occupied by the component aimed at moving to a low-carbon economy, with a total of €2,612.5 million in investment resources available, followed by “Smart Industry”, which includes measures to create favorable investment conditions in the industry, and “Education and Skills” with 11% of the total budget of the National Recovery and Resilience Plan. The latter component

Table 4. Components of the National Recovery and Resilience Plan. Source: European Commission [https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/733662/EPRS_BRI\(2022\)733662_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/733662/EPRS_BRI(2022)733662_EN.pdf)

Policy Pillar	Component (C)	Total resources (million €)	Share
Innovative Bulgaria	C1. Education and Skills	733.5	11%
	C2. Research and Innovation	211.3	3%
	C3. Smart Industry	800.7	12%
Green Bulgaria	C4. Low-carbon Economy	2612.5	38%
	C5. Biodiversity	47.5	1%
	C6. Sustainable Agriculture	233.8	3%
Connected Bulgaria	C7. Digital Connectivity	385.2	6%
	C8. Sustainable Transport	665.8	10%
	C9. Local Development	211.1	3%
Fair Bulgaria	C10. Business Environment	188.1	3%
	C11. Social Inclusion	440.4	6%
	C12. Healthcare	367.9	5%
	Total	6897.8	100%

aims to modernize educational institutions, undertake reforms in this sector, and take actions to improve skills and access to education and training. The lowest amount of financial resources (only €47.5 million) will be spent on maintaining biodiversity and preserving and restoring ecosystems.

The section “Green Bulgaria” envisages specific reforms directly affecting the construction sector. These include facilitating and increasing the efficiency of investments in energy-saving of multi-family residential buildings, promoting the production of electricity from renewable energy sources, establishing a National Decarbonization Fund, creating a mechanism for financing projects related to energy efficiency and renewable energy projects, and more.

A central element of the programme is the Recovery and Resilience Mechanism, designed to assist in recovering from the crisis in economic and social aspects. Additionally, it has a specific financial resource through which the necessary structural investments and reforms will be made through which the necessary structural investments and reforms will be made by implementing them into the National Recovery and Resilience Plans of EU Member States. These plans must be directly tied to specific stages and objectives to be fulfilled by the countries concerned.

It is undoubtedly that there is a tendency within the construction sector to carry out scientific research and innovations to tackle the excessive use of raw materials and products, subsequently generating large amounts of waste. On

the other hand, the sector benefits from already developed innovative technological products from the industrial sector and successfully integrates them into its activities. The manufacturing industry offers ways to overcome the mentioned problems facing the construction sector, for example by developing materials that are easier to collect and reuse compared to existing ones. It also provides “construction solutions” for the challenging task of decomposing construction objects into constituent elements and their subsequent use in the future. These efforts align with the new requirements outlined in a number of European documents for the implementation of good practices in waste collection and treatment, especially in the recovery of valuable materials from them.

Achieving a low-carbon economy is one of the main goals of the National Recovery and Resilience Plan, but it is also the biggest challenge for the construction sector among all others. This is dictated by the fact that collective action and support from all stakeholders are needed, including public authorities, which must start implementing the Energy Performance of Buildings Directive [17] two years before all other participants. This involves construction companies, designers, contractors, etc. Together, they need to initiate the introduction of nearly zero-energy buildings. To effectively achieve this goal, relevant changes will be necessary in the areas of financing, public procurement, and education. In addition, emphasis will need to be placed on the renovation of the existing building stock in order to reduce the amount of electricity consumed.

Accelerating processes is also one of the important European initiatives that aims to move towards a climate-neutral circular economy, reduce the dependence on fuel and energy import, and develop competitive and secure energy sector. These goals are set out in the Integrated National Energy and Climate Plan of the Republic of Bulgaria 2021–2030 (ENCP) [18]. It envisages the consumption of green hydrogen produced using energy from renewable sources. Moreover, a target of 27.09% gross final energy consumption at the national level and a 15% electricity interconnection target are included to increase the capacity for electricity transmission between Bulgaria and Romania and Bulgaria and Greece.

Within the National Recovery and Resilience Plan falls the goal of achieving a global competitive position for construction companies located within the territory of the Member States of the European Union. The goal is directly linked to the pursuit of providing higher access to public construction contracts, as well as strengthening the partnership between the EU and Africa for building a safe and reliable transportation infrastructure. This infrastruc-

ture is intended to result in more stable transcontinental connections between the partners. There is also a commitment to achieving equality between European and non-EU companies when competing for public contracts, while simultaneously adhering to the social and environmental requirements of the European Union.

Last but not least, is the goal of renovating and achieving decarbonized building stock of residential and non-residential buildings by 2050, with the plan aiming for them to reach dimensions of over 3.6 million square meters of gross built-up area by 2026 alone. Staged sub-goals have been developed, which should be achieved every ten years. For the period 2021-2030, the plan includes the renovation of a building stock with an area exceeding 22 million square meters. In addition, the program seeks to increase trust and awareness among consumers and owners of residential buildings regarding the positive effects of implementing energy-efficient practices, which would lead to an increase in demand for such services. To support the achievement of this objective, the National Decarbonization Fund (NDF) [19] has been established, with its initial development phase completed in March 2023. Its main goal is to promote investments in low-carbon development with financial assistance aimed at a broad group of beneficiaries. The Fund [20] is intended to provide non-repayable financial and technical assistance to approved candidates [21]. In addition to these reforms, the Plan envisages the launch of the National Program for Energy Efficiency of Multifamily Residential Buildings (NPEEMRB) [22], enabling active efforts to improve energy efficiency through investments in the renovation of multi-family residential buildings in the country. The program has been active since 2015, and just five years later, by December 31, 2020, 1921 buildings with a total gross built-up area of 10,855,018 square meters have already been completed and put into operation.

The introduction of the Eurocodes is also essential [23], because by them we aim to contribute to the realization of a sustainable approach in construction. The Eurocodes are standards that strive to introduce common construction norms in the countries that are members of the European Committee for Standardization (CEN). Their initial versions appeared in the 1980s. Eurocodes are developed on the basis of the best scientific research, expertise, and practical experience. Published in 2007, the Eurocodes are a series of ten European technical standards providing a common approach to the design of structures for buildings and other civil engineering works. Their goal is to make European enterprises more competitive and to increase safety in the field of construction. Since the beginning of 2012, European standards have been officially introduced in the Republic of Bulgaria [24], taking into account the require-

ments of the national applications for Bulgaria. The Eurocodes consist of ten groups:

1. EN 1990 Eurocode 0 – “Basis of Structural Design”;
2. EN 1991 Eurocode 1 – “Actions on structures”;
3. EN 1992 Eurocode 2 – “Design of concrete structures”;
4. EN 1993 Eurocode 3 – “Design of steel structures”;
5. EN 1994 Eurocode 4 – “Design of composite steel and concrete structures”;
6. EN 1995 Eurocode 5 – “Design of timber structures”;
7. EN 1996 Eurocode 6 – “Design of masonry structures”;
8. EN 1997 Eurocode 7 – “Geotechnical design”;
9. EN 1998 Eurocode 8 – “Design of structures for earthquake resistance”;
10. EN 1999 Eurocode 9 – “Design of aluminum structures”.

EU Member States, including Bulgaria, are actively working towards updating and aligning the policies and legislation for sustainable construction. Over the past few years, national legislation has gradually been harmonized in line with the sustainability requirements in construction at the European level. The provisions included in European directives and standards are reflected in national laws and subordinate normative acts for their implementation, some of which include:

- Spatial Planning Act [25] – according to this law, the territory of Bulgaria is a national asset, and its planning guarantees sustainable development and favorable conditions for living, work, and leisure of the population.
- Environmental Protection Act [26] – establishes the legal framework for a comprehensive approach to environmental issues. Sustainable development is foremost among the principles on which environmental protection is based.
- Technical Requirements to Products Act [27] – it aims to harmonize the product requirements with the essential requirements adopted in the European Union Directives under the “New Approach”. It also regulates the placing on the market and/or putting into operation of energy-related products that comply with the requirements for eco-design and do not endanger the life and health of people, animals, the interests of consumers, or the state of the environment. This would lead to achieving sustainable development by improving energy efficiency.
- Regional Development Act [28] – this law is directly related to the planning, programming, management, resource provision, monitoring, control, and evaluation of the strategic planning of regional and spatial development in the country. The state policy creates conditions for balanced and sustainable integrated development in this area, encompassing a system of

regulatory documents, resources, and actions of competent authorities.

- Renewable Energy Act [29] – this law regulates public relations related to the production of electricity, heat, cooling energy, and energy for cooling from renewable sources, biogas, green hydrogen, biofuels, and renewable energy in transport. The main goal of the Act is to stimulate and encourage their broader production and consumption by the population.
- Health Act [30] – it regulates public relations and aims to protect the health of the citizens of the Republic of Bulgaria, including their physical, mental, and social well-being. The state, represented by the Council of Ministers, guarantees the achievement of positive results by adhering to several basic principles.

The analysis of the regulatory framework in the field of sustainable construction indicates that there is a progress in introducing requirements related to various aspects of the sustainable approach. However, there is still a lack of a unified regulatory provision that consolidates all indicators characterizing sustainable construction. According to K. Antonova [31], some reasons why our country still does not pay enough attention to the issues of sustainable construction include the lack of information about the requirements, the lack of information about the benefits, the insufficient regulatory framework that creates obstacles for the implementation of investment projects, as well as the lack of fairness on the part of the state regarding tax policy. In Bulgaria, taxes and fees are calculated based on the tax assessment of the building, and for sustainable buildings, it is higher since more expensive materials and technologies are used in their construction. According to Y. Ivanov, A. Yanakieva, and R. Kazandzhiev [32], an important task of the construction industry is active participation in addressing the issues of energy “poverty” by improving the energy characteristics and performance of buildings and strengthening the control to ensure compliance with regulatory provisions. The declared “new wave of rehabilitation” poses a serious challenge for the construction business. According to the same authors [33] another challenge for the state is to prepare specialists in the field of sustainable construction.

In this sense, the need for the introduction and synchronization of legislative changes regulating sustainable construction would facilitate the participants in the process in more decisively implementing the sustainable approach to construction.

REFERENCES

- [1] Areas of EU action, online: https://commission.europa.eu/about-european-commission/what-european-commission-does/law/areas-eu-action_bg.
- [2] A Sustainable Europe by 2030, online: https://commission.europa.eu/publications/sustainable-europe-2030_bg.
- [3] Low-carbon economy, online: https://ec.europa.eu/regional_policy/policy/themes/low-carbon-economy_en.
- [4] Regulation – 2021/241, online: <https://eur-lex.europa.eu/legal-content/BG/TXT/?uri=CELEX:32010L0031>.
- [5] Communication from the commission to the european parliament and the council, Strategy for the sustainable competitiveness of the construction sector and its enterprises /* COM/2012/0433 final */, online: <https://eur-lex.europa.eu/legal-content/BG/TXT/?uri=CELEX%3A52012DC0433>.
- [6] Regulation (EU) 2021/241, online: <https://eur-lex.europa.eu/legal-content/BG/TXT/?uri=CELEX:32010L0031>.
- [7] The European Green Deal, online: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_bg.
- [8] The European Green Deal, online: <https://www.consilium.europa.eu/en/policies/green-deal/>.
- [9] European Climate Law, online: https://climate.ec.europa.eu/eu-action/european-climate-law_bg.
- [10] Renovation Wave, online: https://ec.europa.eu/commission/presscorner/detail/bg/ip_20.1835.
- [11] Renovation wave: creating green buildings for the future, ONLINE: <https://www.consilium.europa.eu/bg/infographics/renovation-wave/>.
- [12] Regiostars Guide 2023 BG, online: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/european-industrial-strategy_bg.
- [13] REPowerEU, Affordable, secure and sustainable energy for Europe, online: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/repowereu-affordable-secure-and-sustainable-energy-europe_bg.
- [14] Recovery plan for Europe, online: https://commission.europa.eu/strategy-and-policy/recovery-plan-europe_bg.
- [15] Natsionalen plan za vazstanovyavane i ustoychivost, online: <https://www.nextgeneration.bg/#one>.
- [16] A. DOBREVA AND V. LILYANOVA, Implementation of Next Generation EU (NGEU) – How are the Member States doing? EPRS, European Parliamentary Research Service (2023).
- [17] Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings, online: <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:153:0013:0035:en:PDF>.

- [18] Integriran Plan v Oblastta na Energetikata i Klimata na Republika Bulgariya 2021-2030, online: <https://www.me.government.bg/news/integriran-plan-v-oblastta-na-energetikata-i-klimata-na-republika-bulgariya-2021-2030-2823.html>.
- [19] Na kakav etap e razvitiето na natsionalniya fond za dekarbonizatsiya, online: <https://industryinfo.bg/article/31015-na-kakav-etap-e-razvitiето-na-nacionalniia-fond-za-dekarbonizaciia>.
- [20] Izpalnen e parviyat klyuchov etap za sazdavaneto na natsionalen fond za dekarbonizatsiya, online: <https://www.me.government.bg/themes/izpalnen-e-parviyat-klyuchov-etap-za-sazdavaneto-na-nacionalen-fond-za-dekarbonizaciya-2429-1641.html>.
- [21] National Recovery and Resilience Plan of the Republic of Bulgaria, p. 93, online: [https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/733662/EPRS_BRI\(2022\)733662_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/733662/EPRS_BRI(2022)733662_EN.pdf).
- [22] <https://www.mrrb.bg/bg/energiyna-efektivnost/nacionalna-programa-za-ee-na-mnogofamilni-jilistni-sgradi/>.
- [23] Internal Market, Industry, Entrepreneurship and SMEs, Construction Sector, online: https://single-market-economy.ec.europa.eu/sectors/construction/eurocodes_en.
- [24] Ordinance No RD-02-20-19 of 29 December 2011 on the Design of Building Structures through the Application of the European System for the Design of Building Structures, online: <http://eurocode.bg/index.php>, <https://lex.bg/laws/ldoc/2135163904>.
- [25] Environmental Protection Act, online: <https://www.moew.government.bg/en/environmental-protection-act-7628/>.
- [26] Zakon za tehničeskite iziskvaniya kam produktite, <https://lex.bg/laws/ldoc/2134683136>.
- [27] Zakon za regionalnoto razvitie, online: <https://lex.bg/laws/ldoc/2135589285>
- [28] Zakon za energiyata ot vazobnovyaemi iztochnitsi, online: <https://lex.bg/bg/laws/ldoc/2135728864>.
- [29] Zakon za zdraveto, online: <https://lex.bg/laws/ldoc%20/2135489147>
- [30] K. ANTONOVA, Impact of the Sustainable Development Strategy of the European Union on the Bulgarian Construction Sector, Science and Economics, Varna (2016).
- [31] Y. IVANOV, A. YANAKIEVA AND R. KAZANDJIEV, On the EU Green Deal and Building Branch, Engineering Sciences (2021) **LVIII** (3) 47–59, <https://doi.org/10.7546/EngSci.LVIII.21.03.05>.
- [32] Y. IVANOV, A. YANAKIEVA AND R. KAZANDJIEV, Role of Construction in The Execution of the EU Recovery and Sustainability Program, Engineering Sciences (2021) **LVIII** (4) 47–59, <https://doi.org/10.7546/EngSci.LVIII.21.04.04>.

Received February 10, 2024