The Sustainability Design of EU Policy – Economic Growth and Climate Change

Bodislav Dumitru Alexandru[1], Dumitrescu Oana Catalina[2], Bran Florina[3] and Mateescu Vicențiu-Mihai[4]
[1)] *Bucharest University of Economic Studies, Bucharest, Romania*

E-mail: alex.bodislav@ase.ro; E-mail: oana.dumitrescu@man.ase.ro;
E-mail: florina.bran@eam.ase.ro; E-mail: mateescuvicentiu15@stud.ase.ro

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Abstract

This study aims to analyse the solutions developed for the long-term implementation of proactive climate change policies and the introduction of new mechanisms to modify behaviours across European Union countries, with a particular focus on Romania. Using a qualitative research methodology based on document analysis and a systematic review of legal and economic policy frameworks, the study evaluates the current instruments employed by the EU and Romania in pursuing sustainability and decarbonization goals. The analysis is grounded in publicly available legislative acts, strategy documents, and performance indicators relevant to the European Green Deal and "Fit for 55" package. The results delineate a decision-making matrix built around four primary features of the Romanian economy as an EU member state. The study contributes to the academic discourse by offering a comprehensive synthesis of EU climate governance practices contextualized for an emerging economy. From a policy-making perspective, it identifies institutional and structural alignments required for effective climate action implementation in Romania, offering guidance for adaptive national strategies aligned with EU directives.

Keywords

Climate change, clean energy, sustainability, competitiveness, economic growth.

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Introduction

Consistent with the principles of the United Nations Framework Convention on Climate Change (UNFCCC), to which Romania is a committed signatory, climate change is now broadly recognized as a critical challenge stemming from both direct and indirect human activities that alter the global atmosphere and accelerate long-term climate variability (Acocella, 2009; Angheluta et al., 2019). These changes pose escalating threats to ecosystems, public health, food security, and economic development trajectories (Burlacu et al., 2022). Despite extensive global and national mitigation efforts, the average world temperature continues to rise, driving environmental degradation and diminishing agricultural productivity (Buzoianu et al., 2024.

Romania, like other EU member states, is now compelled to manage the twin challenge of adapting to climate impacts while contributing to mitigation efforts through legislative reform, green innovation, and public awareness campaigns (Mogos et al., 2021). Recent years have seen Romania strengthen its alignment with EU environmental strategies, notably through its commitment to the European Green Deal, the “Fit for 55” package, and energy transition objectives — all of which aim to reduce greenhouse gas emissions, increase the share of renewable energy, and improve energy efficiency by 2030.

The aim of this study is to analyze and systematize the legal and economic instruments underpinning climate change policy implementation within the European Union, with a focus on their application and relevance to Romania. The paper seeks to address the following research questions:

1. What are the primary legal and policy instruments adopted by the EU to promote sustainability and decarbonization?
2. How have these instruments been transposed and operationalized in Romania?
3. What are the challenges and opportunities faced by Romania in aligning with EU sustainability goals?

The study's novelty lies in its systematic integration of economic and legal perspectives on climate policy in the EU and Romania, offering a cross-sectoral understanding that bridges academic literature and policymaking. Existing research tends to either isolate legal frameworks or economic dynamics; this study contributes by unifying them in a comparative context tailored to an emerging economy. Moreover, it addresses a critical gap in the literature related to the institutional coherence and operational capacity of member states like Romania to implement EU-mandated climate policies in real-world governance settings. In the post-pandemic and post-Ukraine-conflict context, energy security and sustainability are no longer parallel goals but converging necessities — making this analysis both timely and policy-relevant.

The structure of the paper is as follows. Section 1 explores the legal and economic frameworks that shape the implementation of climate and energy policy in Romania under the umbrella of EU directives. Section 2 examines the institutional interplay between markets and governments in driving sustainability outcomes. Section 3 discusses macroeconomic stability and output generation within the context of sustainable economic growth. The paper concludes by synthesizing the findings, outlining key policy recommendations, and suggesting directions for future research.

1. The legal and economic perspective for implementation

To foster the energy economy and increase the appeal of the energy industry to investors, the European Union must establish competitive prices to establish an internal energy market. The national objective is to satisfy immediate energy needs while simultaneously establishing a foundation for long-term energy security that is consistent with the needs of a modern market economy, thereby promoting a robust economy (Alchian, 1950). The Kyoto Protocol requires countries to reduce greenhouse gas emissions by 8% by promoting and adopting policies that address climate change and implementing sustainable development strategies (Cocean, Ilovan, 2008).

As a member of the European Union, it is crucial for Romania to align its energy sector policy framework with the EU's long-term objectives. The primary aims are enhancing security in energy distribution, fostering competition within the energy sector, mitigating environmental effect, and integrating Romania's smart grid into the regional energy market (Rojanschi et al., 2006). The primary strategic avenues in the energy sector's strategy that Romania aims to adopt in accordance with EU standards are:

1. *Energetic security.*

   Maintaining national integrity on basic resources for energy and respecting national options in:

   a) The energy industry,
   b) Growing the supply of energy and keeping a good degree of dependence in tune with the imports by hedging the import sources, their own energetic sources,
   c) The national and regional grid,
   d) International cooperation and protecting the infrastructure.

2. *Durable development.*

   Improving energetic efficiency in the supply chain (resources-production-transportation-distribution-final consumption) by:

   a) Optimizing the production and distribution processes and by lowering the end consumption of energy yielded with the real value of goods or services,
   b) By increasing the percentage of renewable energy in the total production and consumption of energy,
   c) Rational and efficient usage of not-renewable resources and progressive decreasing of its part in the final consumption,
   d) Promoting the production of electric energy at a high level of efficiency,
   e) Giving a bigger role to secondary energy resources,

f) Supporting Research, Development and Innovation divisions in the energy sector,
g) Decreasing the negative impact of the energetic sector on the environment and applying all measures on polluters.

3. *Competitiveness.*
a) Continuing development and tuning markets for energy, natural gases, oil, coal, uranium,
b) Promoting renewable resources by using green certificates in the international context,
c) Creating white certificates on yielded efficiency for energy,
d) Creating a market for green certificates,
e) Letting a free float for energy transit and assuring the access for participants to the national and international grid,
f) Developing the energy infrastructure,
g) Continuing the restructuring and privatization process in the energetic, thermal and natural gases sector,
h) Doing complete cycles on the restructuring process in the extractive sectors for growing the profitability and market access,
i) Developing a regional energy market in which Romania should play an important role.

In addition to national energy policies, there has been an increasing emphasis on regional and local execution, particularly through the energy rehabilitation of the extant building inventory and the modernization of urban heating systems. It is imperative to retrofit a minimum of 30% of older residential and public buildings to reduce energy consumption and CO_2 emissions. These initiatives are essential to Romania's comprehensive commitment to the EU Renovation Wave and the energy transition objectives of the Green Deal.

Concurrently, Romania is developing a more socially inclusive energy framework that helps vulnerable consumers by subsidizing their energy expenses and improving their access to contemporary energy services. Rural communities are the primary focus of attention, as improvements to energy infrastructure and heating systems are essential for bridging the energy access and efficiency disparity between urban and rural areas (Bodislav, 2011). Romania is promoting private-sector involvement in sustainable energy investments to expedite the green transformation. This encompasses facilitating the establishment of new renewable energy facilities that utilize eco-technologies, so aiding in emissions reduction and the decarbonization of the national energy infrastructure (Popescu et al., 2018).

Romania is susceptible to climate change and requires study and development of new solutions for biodiversity, agriculture, water resources, forestry, road infrastructure, transit, tourism, energy, industry, and healthcare (Mogos et al., 2021). Underprivileged communities rely on the direct utilization of natural resources due to their inadequate resources and limited ability to confront climate change and its consequences, such as natural catastrophes (Burlacu et al., 2018).

The legal framework established by the European Parliament and the EU Council mandates that Romania elevate the proportion of renewable energy sources (solar, wind, hydro, geothermal, biogas, etc.) in end-user energy consumption from 17.8% in 2005 to 30% by 2030, while the European average was 8.5% in 2005, with a target reached of 20% by 2020. The reference year was 2005, as the actual implementation commenced in that year for both Romania and the European Union. Moreover, Romania must achieve a renewable energy component of 55% by 2030. The Romanian energy distribution grid has integrated new production components to meet increasing demand and to proactively manage potential hazards, including two nuclear reactors at Cernavodă, the completion of hydroelectric projects, and the establishment of wind power facilities.

In Romania, each prospective sector has its adverse aspects assessed about climate change. The subsequent measures have been formulated and are progressing towards implementation:

- Implementing a proactive climate change system at both the application level and the legal framework for current and future policies.
- Budget configuration in accordance with the plans and national programs established to ensure the integration of sectoral policies.
- Establishing communication channels for the implementation of adaptation measures from the local to the international level. The initial focus is at the local level, as modifications are implemented based on solutions tailored specifically to the circumstances.
- Enhancing understanding of the impacts of climate change, as knowledge ultimately fosters behavioral modifications within societies and communities by informing them of the challenges they face.

The long-term strategy for 2030 for the European Union, including Romania, aims to comply with international and union laws to achieve climate change objectives by reducing gas emissions and establishing a proactive system to mitigate potential effects of climate change. By enhancing energy efficiency, direct energy consumption will diminish by 30%, and end-user consumption will decline by 26% relative to the current European Union average.

Clean technologies will expand in utilization, particularly in the energy sector and electric heating systems characterized by minimal carbon emissions. New power plants, particularly hydropower facilities, will be constructed to enhance the already underutilized capacity by 20%. To meet the demand for electrical energy required for economic development and consumption, two additional nuclear-powered reactors will be constructed. The thermal rehabilitation will expand to encompass 40 to 50% of the entire multi-leveled buildings as a concluding element of the proactive climate change system.

2. The purpose of markets and governments in the policy scheme for sustainability

To examine the notion of economic growth, one must begin with the complete framework (Aristotle, 2004), encompassing the market as the stage and the government as the director, to ensure the quality of the performance and its progression to new heights. The globally recognized definition of a market is a venue where commodities and services are exchanged. The market does not require a physical manifestation; it may be viewed as a worldwide telecommunications network in which economic agents, whether privately or state-owned, engage with the populace during the process of economic realization. When a model that is not associated with the market for state governance is incorporated, it is characterized by a limited degree of freedom, which typically contradicts the principles of competitiveness and capitalism; hence, this study will see the market as entirely free.

Market-based economies operate competitively, influenced by labor dynamics, where supply and demand serve as the primary factors for the medium and long-term prospects of welfare, development, and economic progress of a nation (Lipsey, Chrystal, 2002). In the contemporary economic landscape, we navigate a mixed economy wherein several factors exert influence on market operations, necessitating government involvement to restore market stability as required. While the market economy serves as the primary global economic model, there are discussions emphasizing the ideal and efficient level necessary to sustain competitiveness within the global economic framework. This paper's developed system emphasizes the correlation between the public and positive aspects of the private environment to establish a guiding framework for optimal intervention through corporate governance, implemented at the state level and tailored to the characteristics of an emerging state, such as Romania. The global notion of government and state governance denotes an entity that formulates, enacts, executes, and administers public policies (the government) while exercising executive, political, and legislative authority through mechanisms, statutes, and institutions within a specified territory (state governance).

Governance of the State

The governance process of a state is defined by the regulation and management of public policy within a political system. This governance approach is predicated on a government that operates under the principle of political unity, which ensures that its influence is felt throughout the entire apparatus and that all actions are carried out in accordance with the current political philosophy, which is determined by the situational context. In a parliamentary system, a linear process requires a coalition formed by the majority political parties. In contrast, governance in the private sector is the administration or management of a corporation, which is solely focused on achieving economic growth. The concept of corporate economic growth underscores the significance of achieving profits by satisfying the interests of shareholders and stakeholders through either comprehensive or intensive strategies, or by achieving other growth objectives in the medium to long term. All concerns must be assessed in relation to the way specific economic entities respond to laws or governmental procedures that define economic interactions among individuals. This ensures that the principles and objectives established by these laws and procedures are upheld. A precise examination of the boundaries of the economic framework and the legitimate participants involved is necessary to provide a coherent understanding of the complete economic process aimed at achieving economic growth. The market and the government are two critical components that are currently under scrutiny because of the interplay between social and economic factors. This is accomplished by focusing the conversation on the economy from a framework perspective. Certainly, there are other entities of potential greater significance, such as corporations (a concept that was initially explored by Coase in 1937 but has since failed to produce a sustained direct correlation or a lasting mathematical microeconomic model in economic research) (Coase, 1937), as well as nonprofit organizations that extend beyond households or government institutions.

Frequently, the Market and the Government produce opposing outcomes because of their divergent ideologies in the pursuit of individual or collective objectives. The contrast between democracy and oligarchy serves as a stark illustration of this (Bodislav, 2012a). Corporations and other organizations may pursue their corporate objectives by aligning with concealed group interests or other entities with social missions that may not conform to the government's social model (nonprofit organizations).

3.Macroeconomic stability and output generation

In order to promote economic development, it is necessary to harness growth in order to accomplish production that is in close proximity to the economy's potential output, or potential Gross Domestic Product. A foundation based on long-run aggregate supply is required to establish macroeconomic equilibrium, as its primary characteristics suggest that an increase in aggregate supply can increase real output and short-run employment rates, while also potentially contributing to inflation in the short term. At the convergence of short-run aggregate supply and aggregate demand, equilibrium is achieved.

The Gross Domestic Product is the primary metric used to evaluate the effectiveness of government actions and state governance and to measure economic growth. Nevertheless, it is essential to implement an optimal strategy that operates within the potential output range, thereby preventing both economic excess and underperformance (Pareto, 1906). This involves maintaining a GDP that is below its potential, a situation that is frequently observed in unstable economic conditions or under a government that fails to coordinate market activities. Consequently, the development and competitiveness of the nation or its economic agents are impeded. The output gap is represented by the positive gap (which exceeds the potential point) or the negative gap (which falls short of the potential). Short-term equilibrium is achieved by the intersection of aggregate demand and short-run aggregate supply, which determines the actual GDP level. A negative output gap is indicated when the actual GDP is less than the prospective GDP. This outcome is the result of the optimal utilization of production factors in conjunction with elevated unemployment. It can be rectified by diminishing real wages or aligning real GDP with its potential. This is in stark contrast to the situation in which the economy overheats, resulting in an excess of actual GDP over potential GDP.

The paradigm of economic growth and its associated policies underwent transformation following the conclusion of World War II, driven by the aspiration for economic recovery and the attainment of economic and social prosperity. The primary illustration of advantages derived from the pursuit of economic growth is provided by Far Eastern countries that, post-World War II, successfully established an environment conducive to social welfare enhancement while aligning national interests with those of the populace. The procedures for enhancing living standards in the Far East were protracted endeavors. The favorable view of economic growth is evident and accurate, provided that certain mechanisms conducive to economic growth are comprehended.

The conventional framework — the classical economic growth model

Wall Street's derivability (the economic valuation of certain components lacking tangible foundations, such as tertiary services, services derived from services, which in turn are based on other services) and the network economy, which achieved global productivity, transcended geographical limitations, and operated within a continuous 24-hour work cycle, were components that the traditional model of economic growth was unable to handle due to their complexity (the Internet emerged as a remedy for various issues that were not legally or commercially delineated). The local transaction model was transformed into a global operations framework with a 24-hour work cycle when NASDAQ New York staged its initial public offering in 2005 after merging with the well-known international electronic platform, Archipelago Exchange Chicago. The current economic growth model is under pressure from the new approaches based on modern norms and principles and in line with technological, economic, social, and environmental changes.

Since the third century has created a "global village" built on a network of global expansion that serves individual or collective interests (national, union, or global), the geographic component is another element that is not fully assessed. Engaging with changes in socio-economic life is necessary since the idea of globalization has led to changes in the concept of economic growth (Leibstein, 1966). Although the concepts of economic growth and economic policy to attain it were developed after World War II, they are constantly being altered by the economic changes that occurred at the beginning of this millennium, such as the dot-com crisis and the economic-financial-social crisis that began in 2007. The new problems lead to a new idea for a sustainable way to carry out economic expansion.

The phrase "economic growth" may appear generic, especially in times of recession, but it is not synonymous with the concepts of healthy or sustainable economic growth. This concept was initially

formulated in an economic setting over two centuries ago and was designed as a strategy for enhancing productivity at the firm level (microeconomic rationale). The trajectory of economic growth commenced with the formulation of economic growth theory in the 1940s, prompted by the Great Depression of 1929–1933, therefore illustrating the limitations of a microeconomic perspective on macroeconomic phenomena. What constitutes economic growth? This can be characterized as a favorable trend in certain global economic indicators (such as GDP growth or income growth) over an extended timeframe, as economic growth cannot be accurately assessed through short-term projections; it requires several annual cycles to manifest, and annual fluctuations should not be regarded as economic growth. To enhance economic growth, the upward trajectory must be sustained over the long term rather than being influenced by exogenous forces. While grounded in GDP growth, the methodology must incorporate a social perspective in relation to GDP per capita and its upward trajectory. Academic standards advocate for positive economic growth in every society due to the aspiration to enhance individual wellbeing; yet, scenarios such as stagnation, characterized by "zero economic growth," and decline, referred to as "negative economic growth," may arise (Georgescu, 2020).

One qualitative measure of economic growth is the expansion of welfare, which is based on structural and quantitative changes that take place over the medium to long term (Bodislav et al., 2025a). The roll-over phenomenon is an irreversible event that is independently brought about by the effectiveness of the production forces that support development (Smith, 1998). There is a conventional understanding of changes in the economic environment brought about by economic growth from a quantitative standpoint. This includes the measurement of the macroeconomic outcome and the idea of the amount of economic activity that produces a validated result as economic growth. As disparities between production growth and the availability of natural resources, between the well-being of the present generation and the capacity of future generations to meet their needs, and between economic performance and environmental preservation began to appear in the 1970s, the conventional model started to show its limitations.

Economic expansion was disrupted by the limitations of classical vision and post-1970s economic fluctuations, especially when the Bretton Woods agreement (fiat currency) ended and the standard parity between the US dollar and gold was terminated. The stress caused by this circumstance led to a reconsideration of the traditional view of the economic, social, and environmental landscape by embracing new, flexible concepts that arose at the beginning of the third millennium: sustainable growth.

The sustainable economic growth paradigm used today

In what ways did it result in long-term economic expansion? The need for these plans to create the new economy, known as "the information economy," which depends on information technology not included in the classical paradigm, was made clear by the reinterpretation of the theoretical framework, which was brought about by the demands of the crisis of the 1980s. The new economy fundamentally relies on the notion of unconventional, non-depleting resources, specifically know-how and the innovative capacity of human capital.

The primary asset affected by the accelerated effects of extensive and intensive development is nature, which possesses finite resources. This has resulted in an exacerbation of resource scarcity due to exponential consumption growth and excessive exploitation, leading to environmental degradation (Beckett, Hencke, 2009). Consequently, this ongoing issue threatens long-term economic growth and hinders societal development. This challenge is compounded by inequalities in educational levels, which generate instability both domestically and internationally, so complicating or even rendering impossible the process of convergence between emerging and developed economies.

Durable economic growth relies on its three-dimensional development (Angelescu, Stanescu, 2004):

- Economic: predicated on investments in scientific research and information technology, enhancing the innovative capacity of human capital.
- Social: aimed at diminishing disparities among various social groups, ensuring equal opportunities and access to education, culture, information, and the means to generate tangible welfare.
- Ecological: Rational exploitation, consumption, and efficient utilization of resources yield long-term effects that foster sustainable economic growth, hence providing replenishment time for utilized resources and extending their life cycle.

Over the medium and long term, sustainable economic growth ensures and promotes the development of human society in balance with the environment. It maximizes the use of resources in relation to the given goods. The business services sector, which produces scientific and informational services with less of an environmental impact than the sectors that produce tangible goods, is the engine of sustainable economic growth. Its primary resource is human intelligence (innovation, execution, and analytical capability).

Reevaluating hard skills (the technical aspect) while placing less emphasis on soft skills (the interpersonal aspect) is a fresh development in human capital management. The main drivers of advancement are not the factors of production; rather, it is the individual who must be managed with social fairness and equity as both the executor and the beneficiary of sustainable economic growth. Strong economic growth depends on the elements identified at the beginning of this study, namely the market or the government, since they provide the framework required for efficient operation and progress. The GDP per capita is a key metric for tracking the upward trend of a state's development and is also a good example of how economic potential and social welfare are maintained and improved, which helps to fight poverty.

The sustainable economic growth model as the new paradigm

According to Simon Kuznets, economic growth is the expansion of a country's capacity to produce a growing range of economic goods by sophisticated production technologies and institutional and ideological adaptability (Muler, 2008), which exemplifies the macroeconomic nature of the concept in terms of social, economic, and ecological aspects (Ruttan, Hayami, 2011).

Both GDP output and the direct relationship between resource input and production are necessary for economic growth. The disparity measures the efficiency of the growth process, the judicious consumption of allocated resources across industrial sectors, and the effectiveness of qualitative distribution and redistribution in areas that excel and provide a competitive or comparative advantage over other nations.

Sustainable economic growth is a reform of durable economic growth, selected as a response to the current context established by the Great Recession, which is based on the durable economic growth concept. Sustainable economic growth relies on achieving economic advancement by applying the same mechanisms and levers utilized in a firm but adapted to the context of a national or union economic system (Bodislav et al., 2025b). This method facilitates an ultra-efficient strategy for addressing pollution and social security concerns, with the primary innovation being the attainment of long-term economic stability and the advancement of social welfare, ensuring a harmonious balance among the economy, society, nature, and technology.

Sustainable economic growth, influenced by globalization, has fostered the concept of the network economy, which yields positive externalities such as access to new markets and an expanded client base (resulting in increased demand and production). This also facilitates occupational restructuring, reducing unemployment in nations with a labor force willing to accept wages below the sector's average in the host country, or through the outsourcing of services to countries where labor costs are lower than those in the home country of the outsourced service or product. A checkpoint for the imported flow from the corporate framework is established by maintaining standard restrictions that do not adversely affect workforce migration, economic, social, and educational gaps, as well as the equitable and efficient distribution of resources (Sen, 1970).

4. Research methodology

This research aims to investigate the way the European Union's climate policies, particularly those enshrined in the European Green Deal and "Fit for 55" framework, are implemented within the Romanian economic and legislative context. The objective of the investigation is to pinpoint the gaps, structural modifications, and national opportunities for convergence between the sustainability objectives of the European Union and Romania's development agenda.

To achieve this objective, a qualitative research design was implemented, which involved the critical comparative review of pertinent institutional strategies and policy frameworks, as well as descriptive analysis and documentary analysis. This method is suitable considering the investigation's emphasis on the interpretation of strategic documents, legal texts, and socio-economic contexts. It enables a comprehensive comprehension of nation-wide policy responses, regulatory frameworks, and institutional processes, as opposed to causal inference or numerical measurement.

The methodological framework is based on the established literature in qualitative research and policy analysis. Qualitative methods are particularly effective in investigating contemporary phenomena within real-world policy environments, particularly when the boundaries between phenomena and context are not clearly defined, as Yin (2014) argued in his foundational work on case study research. Additionally, Creswell (2013) endorses the necessity of qualitative inquiry in the examination of the operation and evolution of policies within intricate institutional frameworks, a topic that is fundamental to the objectives of this paper.

5. Results and discussion

The analysis of the implementation of EU climate and sustainability policies in Romania reveals four critical findings that support the development of policy and academic understanding: (1) Partial institutional alignment with EU frameworks, (2) structural gaps in energy and environmental governance, (3) a bias toward public investment over private innovation, and (4) obstacles to regional and social equity in the decarbonization process.

Initially, Romania has formally synchronized its legal and strategic documents with critical EU directives, such as the Renewable Energy Directive (RED II), the Energy Efficiency Directive, and the climate frameworks incorporated into the European Green Deal. Nevertheless, effective implementation is significantly impeded by institutional fragmentation and inconsistent coordination among ministries, agencies, and subnational authorities. This discovery aligns with Giddens (2009), who underscored that the success of climate governance in the EU is contingent upon institutional coherence and administrative capability at the national level, in addition to target-setting. In the same vein, Diaconu et al. (2019) observed that sustainable development necessitates proactive integration across government levels and policy sectors, in addition to the transposition of EU norms.

Secondly, Romania's energy transition is still heavily reliant on centralized, top-down mechanisms. Community-led initiatives, decentralized renewable energy sources, and green technology innovation are not widely adopted, despite substantial EU funding and regulatory support. The paper's findings are consistent with the concerns of Ruttan and Hayami (2011), who contend that institutional innovation is necessary for sustained economic growth in the presence of environmental constraints, particularly in emerging economies. Although the construction of new nuclear reactors and hydropower plants contributes to the reduction of emissions, these infrastructure-heavy responses have the potential to reinforce legacy energy models rather than enabling distributed and resilient systems, as the European Commission has envisioned.

Third, Romania has made progress in reducing greenhouse gas emissions and increasing the proportion of renewables; however, this progress has been primarily driven by public-sector financing and compliance-driven investments. Scalable private-sector involvement in energy startups, eco-innovation, or green R&D is scarcely documented. This supports the findings of prior research conducted by Popescu et al. (2018) and Angheluta et al. (2019), which identified the absence of long-term investment frameworks, policy stability, and fiscal incentives as significant obstacles to green entrepreneurship in Romania. Although the green certificate mechanism is in place, it has not achieved the desired level of market dynamism, particularly in terms of attracting foreign investment and promoting local industrial transformation.

Fourth, the paper identifies regional disparities and social vulnerabilities as unresolved dimensions of Romania's climate policy implementation. Despite being the most vulnerable to climate risks, rural areas are particularly underserved in terms of access to modern energy services, heating infrastructure, and energy-efficient housing. This is in accordance with the findings of Burlacu et al. (2022), who documented the varying effects of climate-related economic shocks on marginalized communities in Central and Eastern Europe. Additionally, the prioritization of infrastructure modernization in urban areas may serve to exacerbate existing disparities unless it is accompanied by targeted initiatives, including energy subsidies, housing rehabilitation programs, and capacity-building initiatives in underdeveloped regions.

In general, this study serves to substantiate the notion that sustainable economic growth in an EU context must be multifaceted, encompassing not only environmental objectives but also economic competitiveness, institutional quality, and social inclusion. It is based on Kuznets' (as cited in Muler, 2008) concept of adaptive institutional capacity as a critical component of long-term growth, demonstrating that Romania's present trajectory is partially successful but also demonstrates a policy gap between transposition and transformation.

The results also verify that Romania is not the only country facing these obstacles. Throughout the EU, member states with transitional economies encounter comparable challenges in reconciling rapid decarbonization with energy security and economic stability. Nevertheless, Romania's experience demonstrates that the EU's climate objectives may be pursued in a form rather than substance in the absence of a more cohesive legal-economic framework and stronger incentives for innovation and equity.

Conclusions

The institutional, legal, and economic aspects of Romania's endeavours to implement European Union sustainability and climate change policies have been examined in this study, which has also explored the

broader context of the European Green Deal and the "Fit for 55" initiative. The analysis has shown that Romania has made substantial formal progress in aligning its policy frameworks with EU directives. However, practical challenges regarding governance, equity, innovation, and systemic transformation remain intractable.

Strengthening cross-sectoral coordination mechanisms, particularly between environmental, energy, and economic institutions, is the subsequent step for policymakers. It is imperative to develop policies that transcend formal compliance and promote the genuine integration of sustainability principles into public investment, fiscal policy, and industrial strategy. Furthermore, policymakers should prioritize inclusive transition strategies that mitigate rural-urban disparities and guarantee that vulnerable populations are not neglected. By conducting policy benchmarking across EU member states, producing impact evaluations of green policies, and developing models to evaluate the long-term socio-economic benefits of sustainable transitions, researchers have a clear opportunity to support evidence-based policymaking.

This investigation is not without its constraints. Initially, the analysis is predicated on secondary data and policy documents, which may be indicative of strategic intent rather than actual implementation or outcomes. Secondly, the analysis is restricted to the Romanian context within the EU and does not include comparative fieldwork or interviews with institutional actors, which would have enhanced its depth. Third, the findings may not be fully generalizable to countries with different political economies or institutional capacities, even though the focus on Romania is relevant for understanding the dynamics of a transitional EU economy.

Mixed-method approaches, such as interviews with policy stakeholders, implementation agencies, and community representatives, should be integrated into future research to address these limitations. A comparative analysis of the drivers and constraints of policy effectiveness between Eastern and Western European member states could provide valuable insights. Furthermore, future research could concentrate on the micro-level effects of climate policy, including household adaptation behaviours, SME participation in green innovation, or regional decarbonization trajectories, thereby enriching the macro-institutional focus of this paper. To facilitate a fair and efficient climate transition throughout the European Union, it will be imperative to advance interdisciplinary research that unites law, economics, public administration, and environmental science.

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