

Melania-Gabriela Ciot
(Editor)

Guidelines for Negotiating the Implementation of Green Deal to National, Regional and Local Levels



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MELANIA-GABRIELA CIOT

Editor

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FOREWORD

Professor Dr. Melania-Gabriela CIOT

The volume *Guidelines for Negotiating the Implementation of Green Deal to National, Regional and Local Levels* is developed within the framework of the Jean Monnet Green Deal and European Negotiations project and aims to provide an analytical and applicative framework on how the ambitious European green transition project is negotiated, interpreted and implemented at different levels of governance: European, national, regional and local.

Starting from the unprecedented complexity of the European Green Deal, the work brings together contributions from several academic and practitioner authors, with the aim of collecting, synthesizing and disseminating relevant examples of green policy negotiation and implementation. The initial intention of the project was to bring together not only theoretical perspectives, but also concrete experiences of national and local authorities involved in the implementation process. Despite the sustained efforts and the declared openness of several institutional actors, not all the expected final materials could be collected. This absence becomes, in itself, a significant element of our analytical approach, reflecting the real difficulties of operationalizing the Green Deal and the complexity of multi-level governance processes. It highlights the need for more coherent mechanisms of coordination, transparency and communication between decision-making levels, but also the necessity of building stronger bridges between the academic and institutional environments.

From this perspective, the volume is not only a synthesis of ideas and studies, but also a reflection on the structural tensions that accompany the green transition: between ambition and administrative capacity, between the European vision and local realities, between normative frameworks and effective implementation practices.

The structure of the volume is organized gradually, following the logic from conceptual to application and from strategic to operational levels.

The first chapter, *The European Green Deal: Vision and Strategic Objectives*, by Gabriela Ciot, introduces the conceptual framework of the volume through a critical analysis of the limits of the dominant narrative on the Green Deal, which she reinterprets as a project for the systemic transformation of the European economy and society. The chapter highlights the role of innovation and entrepreneurship as essential vectors of this vision, as well as the need to involve a plurality of actors — European institutions, states, local authorities, the private sector and civil society — in the implementation process. In conclusion, it emphasizes that the transition from vision to action depends fundamentally on the capacity for negotiation and coordination between levels of governance, thus establishing the conceptual premises for the rest of the volume.

The second chapter, *European Green Deal: Navigating the Security Paradox*, by Silviu Nate, brings into question the security dimension of the green transition, exploring the emerging tensions between climate objectives, energy stability and geopolitical dynamics. This perspective introduces a critical reading of the Green Deal as a project at the intersection of sustainability and security.

The third chapter, *Multi-level Governance and the Principle of Subsidiarity*, by Gabriela Drăgan, analyses the architecture of European governance and the principle of subsidiarity, highlighting the role of European institutions and the responsibilities distributed between national, regional and local levels. Vertical and horizontal coordination models are discussed, essential for understanding the mechanisms for implementing green policies.

Next, the chapter *Negotiation as an Implementation Tool*, signed by Andreea Stretea, proposes an innovative approach, treating negotiation as a central instrument for the implementation of green public policies. It analyzes the theories of negotiation, the actors involved — governments, local administrations, the private sector and civil society — as well as the mediation and participation tools, essential for building consensus around the green transition.

Chapter 5, *Implementation of the European Green Deal through Cohesion Policy at the Regional Level: The Case of Romania*, by Georgeana-Ionela Cautiș and Gabriela Carmen Pascariu, analyses how the objectives of the European Green Deal are operationalised at regional level through cohesion policy, with a focus on the case of Romania. The chapter highlights the role of cohesion funds and mechanisms as essential instruments for reducing territorial disparities and facilitating the green transition, but also the challenges specific to the Romanian context related to administrative capacity, multi-level coordination and the adaptation of European strategies to regional realities. Overall, the paper underlines that the implementation of the Green Deal at regional level depends on the efficient use of cohesion resources and the strengthening of territorial governance, capable of transforming European priorities into concrete results at local level.

The chapter *Practical Instruments for Policymakers and Practitioners: Addressing Vulnerability and Energy Poverty in Europe's Green Transition*, signed by George Jiglău, offers an applied perspective on the implementation of the green transition, focusing on the public policy instruments needed to respond to social vulnerability and the phenomenon of energy poverty in Europe. The chapter highlights how the transition to climate neutrality must be correlated with the social dimension of sustainability, proposing practical solutions for decision-makers and practitioners in order to reduce the inequalities generated or accentuated by climate policies. The emphasis is placed on the need for flexible instruments, adapted to national and local contexts, capable of ensuring an inclusive green transition that does not leave vulnerable groups behind.

The final chapter, *Towards a Green and Inclusive Cluj-Napoca: Activist Perspectives for Sustainable and Social Urban Development in the Logic of the European Green Deal*, signed by Adrian Dohotaru, brings a critical and civic dimension, exploring how the green transition is perceived and contested at the urban level. The case study of the municipality of Cluj-Napoca highlights the role of activism and civil society in shaping models of sustainable and inclusive urban development.

The volume ends with a section dedicated to case studies and examples of good practices in the volume brings together a series of contributions prepared by doctoral students of the Doctoral School of International Relations and European Studies within the "Babeş-Bolyai" University, for whom this exercise represented not only an applied research opportunity, but also an important formative approach in developing analytical skills, academic writing and understanding the complexities of European governance. Through their involvement, the section gains additional value, reflecting both the diversity of perspectives on the implementation of the Green Deal and the connection of the doctoral environment to current debates on European public policies.

The included contributions cover a wide range of topics and contexts. The study *Negotiation and Communication – A Theoretical Perspective on Negotiation and Communication regarding Green Industrial Policy in the Context of the European Green Deal*, by Luciana-Mirela Butișcă and Cristina-Matilda Vănoagă, proposes a theoretical approach to the role of negotiation and communication in the configuration of green industrial policies. The paper *Implementing the Green Deal in Romania. Climate and energy strategies, economic and political implications and the geopolitical dimension. Case study: Black Sea Energy Projects*, by Svetlana Mureșan, analyses the implementation of the Green Deal in Romania, with a focus on the energy and geopolitical dimensions, including projects in the Black Sea area. Also, *Poland and the European Green Deal: Policy and Governance for a Greener Europe*, by Valeriu Sargarovschi, explores Poland's experience in relation to European environmental policies and the associated governance challenges. At the same time, the study *Green Deal policies in the Netherlands*, signed by László Bocsay, offers a perspective on an advanced model of green policy implementation, highlighting good practices and efficient institutional mechanisms.

Together, these contributions illustrate both the diversity of national contexts in the implementation of the European Green Deal and the importance of academic training through applied research, strengthening the link between theoretical analysis and empirical understanding of the European green transition.

Overall, this volume aims to provide not only an academic analysis of the European green transition, but also a reflection tool for practitioners, policymakers and researchers interested in multi-level climate change governance. It highlights that the implementation of the Green Deal is not a linear process, but a continuously negotiated one, marked by compromises, adaptations and institutional learning. In this sense, the difficulties encountered in collecting the final empirical materials are not a limitation of the approach, but an integral part of its diagnosis. They faithfully reflect the real complexity of contemporary European governance and the need to build stronger bridges between the level of policy formulation and that of their effective implementation. So, this work assumes a dual mission: to contribute to the academic debate on the European green transition and to support, through critical reflection and analytical tools, the process of its negotiation and implementation at all levels of governance.

Cluj-Napoca,
June 22, 2026

Professor Dr. Melania-Gabriela Ciot

THE EUROPEAN GREEN DEAL: VISION AND STRATEGIC OBJECTIVES

Professor Dr. Melania-Gabriela CIOT

Abstract: *This study is part of the current debate on the role of the European Green Deal in a global context marked by multiple crises – climatic, economic and geopolitical – that require rethinking traditional development models. The paper starts from the observation that, although the EGD has generated significant academic and political interest, a large part of the existing analyses remain descriptive, without fully capturing its implications as a project of systemic transformation. In this context, the study proposes a critical reinterpretation of EGD, analyzing it as a complex strategic vision, characterized by both ambition and coherence, as well as internal tensions and structural limitations. Essential dimensions are addressed such as the relationship between economic and sustainability objectives, the role of multi-level governance and the need to integrate a broader perspective on sustainable development. A particular emphasis is placed on the innovative and entrepreneurial dimension, arguing that the success of EGD depends not only on public policy instruments, but also on the capacity to mobilize innovation ecosystems, entrepreneurial initiatives and new economic models adapted to the green transition. At the same time, the analysis highlights the role of the plurality of actors involved – from European institutions and Member States to the private sector and international partners – underlining the complexity of the implementation process. The study's conclusions show that EGD must be understood as a dynamic and adaptive process, the effectiveness of which depends on the ability to integrate the economic, social and ecological dimensions of sustainability, as well as to harness the potential of innovation and entrepreneurship. Thus, the paper contributes a critical and original perspective on EGD, highlighting the need for an evolution towards a more coherent, inclusive and future-oriented transformation model.*

Introduction – limits of the dominant narrative

From the moment of its launching, the European Green Deal (EGD) proved to be not only a debated topic, but a resilient and adaptative instrument of European development, because it exerted pressure on actors from political, business, civic fields to understand, adapt and find new solutions for its implementation at national and local level. Some of Member States and business fields understood clearly this message from the beginning, while others (especially from Central and Eastern Europe) are still in the process of thinking and adapting to it. From the approaches linked only with climate and environmental European policies, then to energy policy and industrial policy, EGD managed to transform the decision-making

process, policymaking, European negotiations and legislative transposition, like no other strategy or program.

Despite the loud voices that were shouting its inadequacies and lack of usefulness, the European development, in the last 7 years, proved to foresee correctly the need for such approach – strategic autonomy and increased competitiveness of European continent. Because this is what EGD is aiming for. It could be agreed that there are parties of EGD that could be improved, that there is a need for many debates and adaptation of the legislation, but this is the only way to go forward, to adapt to the contemporary fluid context and international environment.

The present chapter will try to dig into the meanings of EGD, its pillars, results obtained since its implementation and will try to foresee some developments. To make the transition from the introductory framework to the actual analysis of the European Green Deal, it is necessary to clarify the analytical approach assumed in this study. Although the specialized literature offers numerous relevant contributions, a significant part of them remains predominantly descriptive, focusing on the presentation of the objectives, instruments and institutional architecture of the EGD. In this context, the present paper aims to overcome this limitation, through a critical and reinterpreted analysis of these contributions, integrating them into its own perspective, oriented towards identifying the deeper implications of this European project. Consequently, the following section does not merely seek to present the strategic framework, but proposes an analytical reading of EGD as a project of systemic transformation. This will highlight both the coherence and ambition of its vision, as well as the structural tensions, conceptual limits, and potential directions of evolution, in relation to the broader dynamics of the international system and contemporary socio-economic transitions.

The Strategic Vision of EGD as A Project of Systemic Transformation

Globally, climate crisis is one the major threats of XXIst century and an international problem that required coordinated actions in different regions of the world (Smoll, 2022). Individual regions or states initiated different programs and approaches for sustainability that will include not only the environmental and economic dimensions, but also social and ideological ones. As Smol (2022) mentions, the concept of green deal was originally used by the United States, referring to the “New Deal”, when President Franklin D. Roosevelt presented as a response to the Great Depression of the 30s. Then, the term was used as an answer to the financial crisis of 2007-2008, referring to the inclusion of the environmental features in the “economic and social recovery plans”. Also, in 2008 the term was used by UK to address to a program with long- and short-term initiatives in financial regulatory system. In European approaches, the term was used firstly, in 2008, by environmental organizations, and was shortly taken in the ideology of European Green Party. It could be stated that the European approach added the environmental aspects to the economic and social approach of the national and international policies, introducing a call for a “green transformation” as a macro-economic and financial program (Smoll, 2022, apud Aşici and Bünül, 2012).

In the official European politics and policies, the term green deal was introduced in 2019, with the program of the new European Commission at that time, when the European

Green Deal (EGD) was the new growth strategy of European Union (European Commission, 2019). The EC's Communication designed the roadmap for European economic development through the key policies, in the field of climate, environment, energy, agriculture, transport, industry, foreign policy (Ciot, 2021). To these fields, the defense policy was added, as an answer to the war from Eastern Europe. The approach of these policies was sustainable, meant to improve the health, quality of life, resilience, and competitiveness of European states and individuals. The strategic autonomy was the foundations of this growth strategy, not often mentioned by the European leadership, which jeopardizes, from the beginning of its inception, a fair and clear implementation. In a world where the competition between state-actors and non-state actors is increasing, the European Union is struggling to find a better place, by using EGD in a new transformative way, to increase its competitiveness.

It is worth mentioning that the climate policies and environmental policies were built from 1972 (Domorenok, Graziano, 2023), then followed a neofunctionalist approach in the 1980s, an intergovernmentalist approach continued, especially after 2004 enlargement. But the regulatory dimension suffered the most, leading to division in the decisions at Commission level (regarding the level of targets for renewable energy), determined a reduction of it, due to the economic concerns. From 2019, the climate policies and environmental policies returned into attention of European decision-makers, with the EGD proposal of Ursula von den Leyen first Commission. A lot of political effort has been putted for the translation into legislation of the targets, the compromise being very hard to achieved. The divisions among Member States continues nowadays on the topic related with EGD.

The benefits of the application of EGD resides in the creation of a set of program and policies at European, national and sectoral level; integration of social and environmental elements in economic activities; fight against climate change; fight against depletion of non-renewable resources; use of renewable energy (and resources); building a low-carbon economy; creation of new (green) working places; sustainable consumption and production (Smol, 2022). The key aim of the EGD is to reshape the EU into an "ethical society", which use efficiently its resources and develop a competitive economy (Arta and Fogarassy, 2021, Smol et al, 2020).

The analysis conducted by Kounduri et al. (2024, 2021) provides a useful quantitative mapping of the alignment between European Green Deal (EGD) policies and the Sustainable Development Goals (SDGs), offering additional depth to the understanding of the EGD's strategic orientation. The results indicate a particularly strong alignment with SDG7 (Affordable and Clean Energy), SDG12 (Responsible Consumption and Production), SDG13 (Climate Action) and SDG17 (Partnerships for the Goals). This distribution is largely consistent with the core priorities of the EGD, which center on decarbonization, resource efficiency and systemic transformation of energy systems. At the same time, the strong presence of SDG17 highlights the structural reliance of the EGD on multi-level and multi-actor cooperation, reinforcing the idea that its implementation is inherently collaborative. A more granular perspective shows that specific policy components—such as the Circular Economy Action Plan or the EU Hydrogen Strategy—cluster around SDGs, especially SDG12 and SDG13. While such alignments are broadly expected given the sectoral focus of these

initiatives, the use of machine learning techniques in the study allows for a more nuanced interpretation, revealing overlaps across multiple SDG targets and capturing the systemic nature of EGD policies beyond their primary objectives. This methodological contribution is particularly relevant, as it supports a more integrated reading of the EGD as a cross-sectoral policy framework rather than a collection of discrete initiatives. At the same time, the results point to a differentiated distribution of attention across the SDG spectrum. Areas such as industry, innovation and infrastructure (SDG9), sustainable cities (SDG11), and biodiversity (SDG14 and SDG15) are moderately represented, suggesting an expanding but still uneven integration of broader sustainability dimensions within the EGD. By contrast, social-oriented goals—including poverty reduction (SDG1), education (SDG4), gender equality (SDG5) and inequality reduction (SDG10)—appear less directly embedded in the current configuration of EGD policies. From an analytical and policy perspective, these findings are significant for at least two reasons. First, they confirm that the EGD remains predominantly anchored in its environmental and energy transition logic, with social dimensions integrated more indirectly or through complementary frameworks. Second, they point to a potential limitation in the long-term development of the EGD: the relative underrepresentation of social SDGs may affect both the inclusiveness and the political sustainability of the transition, particularly in contexts where distributional effects become more visible. In this sense, the study by Kounduri et al. (2024) not only validates the core priorities of the EGD but also highlights areas for further evolution. A more balanced integration of social and economic dimensions—potentially through stronger links with innovation ecosystems, labor market policies and inclusive growth strategies—could enhance the overall coherence of the EGD and strengthen its role as a comprehensive framework for sustainable development.

The below tables synthesize the results of the Kounduri et al (2024) study and will detail the representation and the main topics of SDSs in EGD's policies.

Table no. 1: The degree of SDGs representation in EGD policies (after Kounduri et al, 2024)

Ranking	SDGs	EGD's component
Highly represented	SDG 7	Affordable and Clean Energy
	SDG12	Responsible Consumption Production
	SDG13	Climate action
	SDG17	Partnerships for the Goals
Medium representation	SDG9	Industry, Innovation, and Infrastructure
	SDG11	Sustainable Cities and Communities
	SDG14	Life Below Water
	SDG15	Life on Land
Low representation	SDG2	Zero Hunger
	SDG3	Good Health and Well-being
	SDG6	Clean Water and Sanitation
	SDG8	Decent Work and Economic Growth
	SDG16	Peace, Justice, and Strong Institutions
Very low representation	SDG1	No Poverty
	SDG4	Quality Education
	SDG5	Gender Equality
	SDG10	Reduced Inequalities

Table no. 2: Main topics of SDGs in EGD policies (after Koundri et al, 2024)

Year	Main topics of SDGs in EGD
2019	SDG7 (Affordable and Clean Energy) and SDG13 (Climate Action)
2020	SDG9 (Industry, Innovation & Infrastructure)
2021	SDG9 (Industry, Innovation & Infrastructure); SDG8 (Decent Work and Economic Growth); SDG13 (Climate Action); SDG11 (Sustainable Cities and Communities)
2022	SDG6 (Clean Water and Sanitation)
2023	SDG5 (Gender Equality); SDG2 (No Hunger); SDG14 (Life Below Water)

As a concluding remark following the results presented above, the analysis by Kounduri et al. (2024) suggests that the European Green Deal should be understood not only as a pathway toward economically efficient climate neutrality, but as a broader strategic opportunity to advance a more comprehensive sustainability agenda. The findings indicate that a narrow focus on a limited set of SDGs—primarily those related to energy and climate—risks overlooking the systemic nature of sustainability. A development model marked by persistent inequalities, economic instability or geopolitical tensions cannot be considered sustainable, even under conditions of decarbonization and high industrial performance. From this perspective, the study reinforces the need to treat the SDGs as an interconnected framework, where environmental, social and economic dimensions are mutually reinforcing rather than sequential. This has direct implications for the future evolution of the EGD: a more balanced allocation of resources across multiple, cross-cutting objectives—particularly those addressing social cohesion and broader environmental challenges—would strengthen both the internal coherence and the long-term effectiveness of the initiative. In this sense, the EGD's next phase may depend less on increasing ambition in isolated areas, and more on its capacity to integrate sustainability across policy domains (Kounduri et al, 2024).

The study by Hereu-Morales, Segara, Valderrama (2023) provides a critical perspective on EGD plans, complementing the analysis by Kounduri et al. (2024).

The authors show that although EGD represents a progress in public planning for sustainability in the EU, current plans have fundamental shortcomings in terms of environmental sustainability. Specifically, they continue to privilege economic growth at any cost, which may jeopardize objectives related to the conservation of natural capital or other dimensions of sustainability that are not directly correlated with economic dynamics. In this sense, the study reveals that EGD plans, as currently formulated, do not constitute a complete guide to achieving global climate goals, nor to materializing the EU vision for 2050. This critical perspective has direct implications for the strategic understanding of EGD. The results of the study by Hereu-Morales et al. (2023) suggest that, without a fundamental reformulation, plans risk limiting this potential, maintaining traditional economic priorities to the detriment of actions that could strengthen environmental sustainability in the long term. The authors propose that future EGD plans should more clearly integrate environmental sustainability principles, including quantifying climate neutrality objectives and assessing climate impacts across economic sectors. This would allow not only for better policy guidance and resource allocation, but also for a framework for monitoring progress, aligned with the objectives of the Paris Agreement. At the same time, the study acknowledges that its analysis is limited to the environmental dimension, leaving for future research the integration of social and

economic aspects, as well as the examination of other components of EGD that are not strictly linked to the plans. Thus, integrating the perspective of Hereu-Morales, Segara, Valderrama (2023) into the strategic analysis of EGD confirms that the Green Deal vision must be approached as a holistic project, combining economic, social and environmental objectives, and not just as a set of decarbonization initiatives. This critical approach contributes to strengthening a framework for reflection for decision-makers, allowing for the adjustment of strategies to transform climate ambition into real and resilient sustainability.

EU prioritized the fight against climate change with the primary goal of being the first climate neutral continent by 2050 (European Commission, 2019). The Fit for 55 was the first important legislative package proposed by European Commission in 2021 (European Commission, 2021), aiming to reduce with 55% the greenhouse gas emission by 2030, which went into practice from 2023, with the Council as co-legislator (Council of EU, 2026). The package ensured a fair social transition, strengthen the competitiveness of EU industry and support the EU's position as the global leader in fight against climate change. Important financial instrument were allocated through programs as Financing NextGenerationEU and REPowerEU (275 billion €), Just Transition Fund (20 billion €), Social Climate Fund, EU Solidarity Fund, and it is worth mentioning the plans that were elaborated and need to be implemented by the European Member States, as Green Industrial Plan, Critical Raw Materials Act, Net-Zero Industry Act, Zero Pollution Action Plan, EU Emissions Trading System, Carbon Border Adjustment Mechanisms.

Even though the strategy was well elaborated, with policies, plans and financial instruments designed, the understanding of it was different in the Member States. A lot of critics appeared especially in the Central and Eastern part of the EU, as well as in the political discourses of the populist and far right movement, mainly during the electoral campaigns. The ideology of the EGD was not presented and understood properly by the national leaders of Member States and the connection with the macro-economic and financial elements were not enough underlined, generated a lot of confusions in public debates, which generated errors in national implementation of its policies and transposition of its legislation at the level of Member State. The targets of EGD set for 2050 and 2040 hit hardly different industrial branches (energy sector, automotive, car industry, etc), with negative effects on private sector and individuals, fueling also the populist and extremist political movements. Some of the state and non-state actors used their negotiation capacities and managed to adapt the targets, strategies and actions, and some did not.

If the EGD set the direction for Union's climate transformation, the post-2023 debate has shifted the focus from regulatory ambition to economic feasibility and institutional capacity. In this context, industrial competitiveness – as analyzed in the Draghi Report (Draghi, 2024) – and the climate governance architecture become structural conditions for implementing climate objectives (European Commission, 2025). In the systemic logic of Draghi's report, the three dimensions of competitiveness (capacity of technological innovation, investment mobilization and reducing the fragmentation of Internal Market) are configuring not as autonomous variables, but as interdependent nodes of an institutional ecology deeply anchored in EGD's architecture, as the dynamic of decarbonization

simultaneously redefines the incentive for innovation, capital allocation and the logic of market integration. The effectiveness of this tryptic ultimately depends on the coherence of the EU's climate governance mechanisms, which mediated the relationships between normative ambition and material implementation capacity.

For the private sector, the industrial challenges of the EGD are big. In an interesting study, Gómez (2021) identify these challenges and proposes some solutions that could be use by the European companies, to comply with the new regulations and to maintain and increase its competitiveness. Bellow, the table present the challenges that EGD posted on private European companies:

Table no. 3: EGD's challenges on private companies (adaptation after Gómez, 2021, pp. 195-196)

EGD objective	Challenges on industrial companies
Increased consumption of renewable energy	• secure energy supply contracts with an increased share of renewable energy. • renewable energy self-consumption solutions.
Reduction in GHG emissions and other pollutants	• substitute clean energy sources for fossil fuels • change core and non-core processes to use innovative zero-, low- or negative-emissions technological solutions (e.g., hydrogen, carbon capture, utilization and storage • control fugitive GHG emissions and pollutants
Increase in energy Efficiency	• advance in the digitalization and automatization of business processes • implement effective active energy demand management measures • upgrade infrastructure, assets and equipment • continue to implement standard energy efficiency measures (insulation, efficient lighting and climatization, etc.)
Increase in material use and product efficiency	• optimize the use of materials • advance in product ecodesign • invest in and promote innovation in materials • substitute or reduce the use of hazardous materials and substances • develop and implement circular activities and processes
Reduction of the total environmental footprint	• take steps to optimize value-chain activities • adopt waste reduction and valorization policies • advance in product ecodesign, circularity and durability • develop new services based on optimal use of assets and equipment • implement green procurement practices (materials, products, services) • adopt a life-cycle approach to activities and processes • explore GHG negative emissions and compensation solutions

One of the key actions to align with the EGD's objective is to adopt the sustainability approach on the development, values and interest of companies. The environmental perspective of sustainability will guide companies to achieve the environmental footprint, and this will conduct the activity of the companies toward low or zero footprint (Gómez, 2021). To this, the need to adopt new technologies, to develop new technology and materials, as well as innovative operative solutions at organizational level become compulsory. Several solutions were provided by specialist in the field, and Gómez (2021) present for the steel, iron and other metal industries these solutions, as: clean technologies and processes for production, fuel substitution and fuel use optimization, energy efficiency and waste heat recovery, electrification, process digitalization, procurement of energy, materials and supplies, green certification of products and services, cooperation with competitors, clients and suppliers, etc.

Reducing carbon emissions and improvement of the environmental footprint for industrial activities will become the focus of innovation, which will become the center of the EGD's implementation. New and adaptive technical and economic solutions will be needed for the decarbonization activities from transport and industrial sectors, as well as digital activities such as data storage, processing, transmission, etc., that will conduct to a new business model and new services (Gómez, 2021). This will be a transformation that will influence working force and managing and organizational processes in companies and institutions, as well as collaborations between different entities. Based on author proposals, two modalities of supporting innovation in industrial sector through European policies, could be envisioned: 1) internal R&D policies at Member States level, adapted to the new geopolitical realities; and 2) diversify the solutions for the financial resources for private companies that will support the EGD's implementation. The key for the companies to succeed is to reorient their business strategies to the achieving of sustainable results that will increase their competitiveness.

Practically, new policies are needed, mission-oriented (Gómez, 2021), which will boost innovation and will be different from the traditional approach on policies, which were focus on market failures and limited innovation. The author is pledging for the new policies that will be oriented to specific objectives and missions, that will increase the role of governments and public institutions, with governments becoming active agents, that will not only regulate and set the directions for innovation, but will invest by financing investments, assuming risks. As for the EGD, the author mentioned, and I agree, that regulatory dimensions are imbedded, aligned with major climate agreements, designing the future framework for the companies and markets to compete in the future. For a better preparation for the future, EU, through EGD, foreseen its development through the sustainability and competitiveness perspectives and created the financial instruments to invest in innovation: Horizon Program and the European Innovation Council, aiming to develop collaborations between private and public stakeholders. Under the umbrella of EGD, these partnerships will be called green partnerships and will be co-funded by the European Commission and their activity will be developed under the following missions: (a) Healthy Oceans, Seas, Coastal and Inland Waters; (b) Climate Neutral and Smart Cities; (c) Soil Health and Food; (d) Adaptation to Climate Change and Societal Transformation; and (e) Cancer.

It is a new vision on the EGD, that foster innovative policies that will require sustainable projects that will support the transformative process. The governments of Member States will play a central role in this transformation by providing new financial instruments, that will encourage private companies to generate capital flows, and by using a new form of governance, suitable for the new ecosystems.

For the improvement of the European and national policies for the improvement of EGD's implementation, Arta and Fogarassy (2021) proposed the following: (a) supplementary allocation of funds for EGD, rather than a reorganization of the former budget; (b) follow-up proposal regarding legal political restrictions that could stimulate public institutions toward EGD's implementation and a proposal for the adjustment of price system; (c) guarantees through policies that the employers which will receive benefits of sustainability – in terms of

salaries, employment, capacities; (d) encouragement of public institutions which will set the green economy as their mission, favoring collaborations between universities, private companies, through research; and (e) a more clear proposal on how the social effect of EGD's implementation, meaning social disparities, deindustrialization and climate change will be addressed.

The findings of an interesting study elaborated by Domorenok and Gatti (2026) indicated that the regulatory package of EGD moved from the economy-energy-innovation approach to new priorities, such as: agriculture, climate, green business, innovation and jobs, environment, energy and transport, governance and regulatory standards. The relevant topics identified by the two researchers, from the areas mentioned before are: (a) strategic plan for CAP; (b) climate goals and targets; (c) sustainability and taxonomy for business and consumers; (d) innovation, support for research; (e) soil, land, biodiversity, ecosystem; (f) transport, renewable energy infrastructure; (g) regulatory provisions and institutions and (h) obligations, compliance, diligences. Another important element is the connection between the social dimension, linked with environmental issues, transversal into different topics, such as jobs, income, resilience, trust, etc. so, it is about a new holistic approach, cross-sectoral, with social, ecological and economic dimensions. The political discourse evolved toward topics as: renewable energy, research, innovation, investments, greenhouse gas and emissions reduction, green production and consumption, energy, jobs, skills and health. Still, the authors mention that some of the European policies are not enough integrated, especially CAP, transport, environmental protection, etc., and still, the legislative package of EGD has a limited integration of climate adaptation.

Innovation and Entrepreneurship as Vectors of the Vision

In a very interesting study, Pietras (2023) offers some advice for easier the economic transition associated with green transformation of EU. The author underlined that the economic transition is not happening in a linear pathway and that the support of public opinion is harder to be obtained then it was before, due to the economic costs. From the launching moment of EGD (2019), there were developments on international arena that influenced it, for example pandemic, which created windows of opportunities for the development of pharmaceutical industry, online communication and e-commerce, so the CO2 emitting industries were slowdown, but not a reduction in their capacities.

One of the green components of European economic resilience were the funds allocated through Resilience and Recovery Facility, that offered the possibilities to Member States, through public and private actors, to a greener and more digital transition. The 750bn€ funds allocated from the European budget were a good support instrument for industries to envisage their long-term development. Unfortunately, this priority is not fully reflected in the reality of national recovery plans. The structure of the Recovery and Resilience Facility (RRF), built around national allocations and country-specific plans, creates challenges for ensuring coherent implementation across the EU. While the European Commission evaluates these plans and can shape the design of proposed measures, Member States retain significant discretion. All plans formally comply with the general requirements, notably the obligation to

allocate at least 37% of funding to the green transition—a threshold that is consistently met or even exceeded. However, countries with the highest dependence on carbon-intensive energy sectors often allocate less funding to green measures than their structural context would warrant. Moreover, a closer examination reveals that much of the spending labeled as supporting the green transition is dispersed across projects that vary considerably in scale, impact, and focus. In several cases, the plans display notable weaknesses, resembling earlier national energy strategies submitted prior to the pandemic and the war in Ukraine. While continuity in policy action can be seen as a strength, these plans often lack a meaningful recalibration considering the significantly higher level of ambition introduced by the ‘Fit for 55’ package (Pietras, 2023).

The author’s highlights a recurring pattern in times of crisis: as pressure on firms intensifies, expectations for government intervention increase significantly. In this reading, the response to the 2008 financial crisis is particularly telling, as public funds were mobilized at a scale far exceeding those allocated to the green transition. A similar dynamic can be observed during the Covid-19 pandemic, when governments deployed unprecedented financial support to stabilize businesses and protect household incomes. As the author suggests, these interventions were primarily geared toward preserving the existing economic structure, rather than using the crisis as an opportunity to accelerate structural transformation (Pietras, 2023).

The author further argues that the war in Ukraine marked a second major turning point, with direct implications for the implementation of the EGD. In this context, Russia’s weaponization of energy supplies exposed the structural vulnerability of Europe’s dependence on a limited number of external providers, leading to a sharp increase in fossil fuel prices. Importantly, the author underlines that these price surges were driven primarily by geopolitical factors rather than by climate policies. At the same time, the impact on households and businesses prompted governments to adopt short-term measures aimed at cushioning energy costs, often prioritizing immediate stability over longer-term changes in consumption patterns. However, as the author suggests, the crisis also had a transformative effect: it reinforced the strategic value of domestic energy sources, particularly renewables, which remain one of the few scalable options available to most EU Member States. In this sense, the war in Ukraine—and the resulting energy crisis—can be seen as a critical catalyst, reshaping both the urgency and the strategic framing of the European Green Deal’s implementation (Pietras, 2023).

The escalation of tensions and conflicts in the Middle East adds a new layer of uncertainty for the business environment and indirectly influences the pace of implementation of the European Green Deal. Volatility in energy prices, risks on trade routes and possible disruptions in the supply of raw materials are causing companies to prioritize short-term stability and cost management, at the expense of accelerated investments in the green transition. For entrepreneurs, this context can mean more difficult access to financing, increased operational costs and increased caution in assuming risks related to emerging technologies. At the same time, however, the crisis can also generate opportunities: the pressure for energy security and reducing external dependencies stimulates investments in renewable energy, efficiency solutions and local innovation. Thus, although in the short term the conflict may slow down certain components of the transition, in the medium term it can

strengthen the strategic logic of the Green Deal, repositioning it not only as a climate project, but also as an instrument of economic and geopolitical resilience.

As Robert Pollin (2019) argues, scaling up clean energy investments to the level required—around 1.5 percent of global GDP—cannot occur in the absence of strong and coherent industrial policies. Even in cases where investments in energy efficiency generate relatively rapid returns, or where renewable energy technologies have reached cost parity with fossil fuels, the challenge of mobilizing upfront capital and absorbing project risk remains significant. In this context, public institutions, private firms, and hybrid arrangements are all called upon to play a role in advancing the transition. Building on this perspective, the European Green Deal can be understood not only as a policy framework, but as a platform for innovation-driven transformation. Industrial policies aimed at supporting research and development, incentivizing clean investments, and shaping markets through public procurement are essential—but they also create space for entrepreneurial experimentation. Start-ups, scale-ups and new business models become key actors in adapting and deploying clean technologies across diverse national contexts, often moving faster than traditional industrial structures.

Pollin (2019) further emphasizes the importance of a diversified policy mix, including regulatory instruments, price interventions and public financing mechanisms. The example of Germany, where institutions such as the KfW development bank have successfully leveraged public resources to mobilize private capital, illustrates how state-backed financial ecosystems can accelerate the transition. From an entrepreneurial perspective, such frameworks are equally critical in reducing entry barriers and enabling smaller, innovative firms to participate in the green economy. At the same time, the question of ownership becomes central. As Pollin highlights, expanding clean energy investment may require reconsidering conventional expectations regarding profitability and control. In this regard, alternative ownership models—ranging from public and community-based initiatives to small-scale private enterprises—can play a decisive role. These models not only diversify risk, but also open up the transition to a broader set of actors, reinforcing the idea that the implementation of the European Green Deal is not solely a top-down process, but one increasingly shaped by distributed innovation and entrepreneurial initiative (Pollin, 2019).

From Vision to Plurality of Actors

Pietras (2023) points to a central risk associated with advancing the green transition without securing durable social support. While the energy crisis and recent geopolitical shocks have, at least temporarily, strengthened public backing for measures such as renewable energy deployment and energy efficiency, this support remains inherently volatile. As the author suggests, public opinion is highly sensitive to shifting political narratives and media framing, meaning that the perceived urgency of climate action can fluctuate rapidly. From a broader analytical perspective, this fragility has implications beyond the domestic level: it affects the credibility and consistency of the EU as a global actor in the climate domain, at a time when leadership and predictability are essential in shaping the evolving international order. At the same time, the implementation of the EGD requires sustained political commitment over the long term, despite increasing fragmentation within national political landscapes. The adoption

of the 'Fit for 55' package illustrates both the difficulty and the resilience of the EU decision-making process, with key compromises ultimately brokered at the level of the European Council. Although political diversity and the rise of coalition governments introduce greater uncertainty into domestic policy agendas, a broad—if sometimes fragile—consensus in favor of the green transition has been maintained. Taken together, these dynamics suggest that the green transition is becoming not only an internal policy project, but also a factor in the gradual restructuring of the international system.

The EU's ability to maintain coherence despite internal heterogeneity strengthens its position as a normative and regulatory power, while inconsistencies or reversals could weaken its influence in global climate governance. In this sense, the stability of domestic political support and the capacity to manage internal diversity are directly linked to the EU's role in shaping emerging patterns of competition, cooperation and leadership in the global transition toward a low-carbon economy (Pietras, 2023).

The analysis by Leonard et al. (2021) significantly expands the understanding of the European Green Deal beyond its domestic dimension, proposing its interpretation as an emerging instrument of the European Union's foreign policy. From this perspective, the EGD no longer appears only as a project of decarbonization and internal economic transformation, but as a vector of reconfiguration of international relations, with direct implications for geopolitical balances, global markets and relations with strategic partners. The authors emphasize that the European energy transition will directly influence relations with fossil fuel exporting countries, the EU's energy security and the dynamics of global trade, including through instruments such as the Carbon Border Adjustment Mechanism. In this logic, the EU's internal decisions generate significant external effects, sometimes with negative impacts on partner countries, which transforms the implementation of the EGD into a process involving a plurality of actors beyond the European space. Based on this analysis, EGD contributes to the emergence of a complex ecosystem of international actors: neighboring states dependent on energy exports, major economic powers such as the US or China, but also industrial and financial actors involved in the global value chains of the green transition. In this context, the instruments proposed by the authors—from supporting the economic diversification of neighboring states, to securing critical raw materials, developing "climate clubs" or global standardization of new technologies—reflect an extension of EGD into the sphere of global governance.

From the perspective of the strategic analysis of EGD, this approach is relevant because it reinforces the idea that the green transition is not just a technical or economic process, but a deeply political and negotiated one, both internally and externally. Moreover, it highlights the role of the EU as a global normative and regulatory actor, but also the need to manage the tensions generated by this positioning. Thus, EGD becomes an instrument through which the EU tries to shape the rules of the game at the international level, but also a framework in which the interaction between diverse actors—states, companies, financial institutions—becomes essential for its success. In this reading key, the contribution of Leonard et al. (2021) completes the perspective on the strategic vision of the EGD, highlighting the fact that the EU's climate ambition is inseparable from its geopolitical ambition and its capacity to build alliances, manage interdependencies and integrate a plurality of actors in a project of global transformation.

The analysis proposed by Almeida et al. (2023) opens a different and much more sophisticated perspective on the European Green Deal, shifting the focus from the technical and economic dimension of the transition to its social, moral and epistemic implications. The

authors argue that dominant approaches to the EGD tend to ignore the externalities of promoting “green” economies in Europe, how they can generate what Zografos and Robbins (2020, apud Almeida et al, 2023) describe as “green sacrifice zones”, located outside European borders. In this interpretation, the green transition is not globally neutral but produces asymmetric redistributions of costs and benefits. Moreover, the study draws attention to the historical dimension of this dynamic, emphasizing that current climate policies cannot be detached from Europe’s colonial legacies and its disproportionate contribution to ecological degradation. From this perspective, the universalization of the European model of green transition risks reproducing subtle forms of dominance, in which states and economies outside Europe are integrated into the logic of EGD as spaces of intervention, investment and regulation, rather than as equal partners in defining the agenda.

The authors develop this critique through a reading of EGD as part of a broader regime, marked by continuities with colonial and neo-colonial logics, in which peripheral states are often perceived as insufficiently prepared or ambitious from a climate perspective and therefore dependent on European expertise and intervention capacity (in line with the arguments formulated by Rutazibwa, 2010, apud Almeida et al, 2023). In this sense, the pro-growth orientation of EGD may contribute, even unintentionally, to the consolidation of forms of “resource imperialism”, in which the green transition is supported by expanding access to external resources and markets. This interpretation is also supported by broader theoretical frameworks on the concept of “empire”, as discussed by Hardt and Negri (2000, apud Almeida et al, 2023) and Wood (2003, apud Almeida et al, 2023), but also by epistemic critiques formulated by authors such as wa Thiong’o (2005, apud Almeida et al, 2023) and Ndlovu-Gatsheni (2021, apud Almeida et al., 2023). In this vein, EGD can be interpreted not only as a project of economic transformation, but also as a mechanism through which a global order based on the universalization of Eurocentric development models is reproduced, which can marginalize local alternatives and social actors from outside Europe. The integration of this perspective into the strategic analysis of EGD is relevant from at least two points of view. On the one hand, it introduces an essential normative dimension, questioning the global legitimacy of the European green transition and the need for a more equitable approach. On the other hand, it broadens the understanding of EGD as a process involving a plurality of actors and interests, not only within the EU, but also globally, where social, political and moral dimensions become as important as economic and technological ones.

The study by Ottomano Palmisano et al. (2025) provides a relevant empirical perspective on how the European Green Deal is being put into practice across Member States, highlighting the structural differences that mark the implementation process. The authors start from the premise that the EGD represents a systemic response of the European Union to contemporary challenges, proposing a sustainable, resource-efficient and climate-resilient development model. However, their analysis shows that this common vision is implemented in a profoundly differentiated way, depending on the economic, institutional and structural conditions specific to each Member State. By using the PROMETHEE II method and a set of indicators structured on several thematic dimensions, the study provides not only a ranking of the performance of the Member States, but also an operational tool for assessing progress towards the EGD objectives. The essential contribution of the authors lies precisely in this applied approach, which transforms a complex strategic framework into a tool usable by decision-makers. From this perspective, the results should not be read as a simple classification, but as a map of vulnerabilities and intervention potential. Interpreting these findings reveals that the implementation of EGD is not a uniform process, but a fragmented

and asymmetrical one, in which some states act as leaders of the transition, while others encounter significant difficulties. This differentiation has direct implications for the overall coherence of EGD: its success depends not only on ambition at European level, but also on the capacity to manage these gaps and adapt public policy instruments to national realities.

Another important element highlighted by Ottomano Palmisano et al. (2025) is the need to involve a plurality of actors in the implementation process. The authors emphasize that the identification of priorities and the formulation of country-specific actions must be the result of a continuous interaction between public institutions, the economic environment and other relevant actors of the green transition. This observation reinforces the idea that EGD functions as a polycentric governance framework, in which decision-making and implementation are distributed among multiple levels and categories of actors. From a strategic perspective, the study makes an important contribution to understanding the future evolution of EGD. While its vision is integrated and ambitious, implementation remains dependent on the EU's capacity to turn internal diversity into an advantage, through mechanisms for coordination, learning and replication of good practices. In this sense, the identification of "hotspots" and high-performing states is not just an analytical exercise, but a starting point for a more flexible and adaptive policy approach.

Conclusions: Premises for the Negotiations for EGD's

The European Commission report – Delivering the EU Green Deal: Progress towards targets (2025) – provides a solid empirical basis for assessing the current state of implementation of the European Green Deal, and its interpretation, in correlation with the previous analyses included in your paper, highlights a complex dynamic, marked by real progress, but also by structural tensions and systemic limitations. First, the report's data suggest significant but insufficiently consolidated progress. The fact that 62% of the targets are showing positive developments indicates the functionality of the institutional framework and public policy instruments developed at European level. However, only 21% of them are fully "on track", which confirms the observations made in the analysis of previous studies: the strategic ambition of the EGD is not always matched by an equivalent operational capacity at Member State level. This discrepancy precisely reflects the fragmentation of implementation also highlighted by the study by Ottomano Palmisano et al. (2025), suggesting that the problem is not the design of the policy, but the heterogeneity of the execution capacity.

Second, the high proportion of objectives requiring accelerated progress (41%) indicates a systemic speed deficit, which can be interpreted in the context of EGD governance analyses. This situation confirms that the green transition is not just a technological or economic process, but a deeply political and social one, dependent on the stability of public consensus and decision-making coherence – aspects already discussed in relation to the volatility of social support and the fragmentation of the European political landscape. At the same time, the 10–14% of targets in stagnation or regression reveal critical areas of transition, where current policies are either insufficient or generate contradictory effects. From the perspective of critical analyses (such as those of Hereu-Morales et al., 2023, or Almeida et al., 2023), these results can be interpreted as signals of deeper imbalances: a possible over-emphasis of the economic and technological dimension to the detriment of the ecological or social one, as well as the difficulty of integrating sustainability objectives into a coherent and balanced logic between all dimensions of the SDGs.

A key element that emerges from the report is the high proportion of targets for which data is not yet available (up to 28–38%). This does not necessarily indicate a failure, but rather the prospective and experimental nature of the EGD, whose recent policies have not yet generated measurable results. In the logic of your analysis, this can be interpreted as evidence that the EGD functions as an ongoing transformation framework, in a consolidation phase, in which the impact assessment is still incomplete. The thematic structure of the report – covering areas such as energy, industry, mobility, agriculture or biodiversity – confirms the systemic and cross-cutting nature of EGD. However, this complexity also raises coordination issues, as evidenced by the need to involve multiple directorates-general and institutional levels. In this sense, the results support the idea that the success of EGD depends on the Union's capacity to function as an integrated governance system, capable of linking diverse sectoral policies into a coherent vision.

Finally, the reaffirmation of political commitment by the European Council and the involvement of the Joint Research Centre in identifying solutions and implementation conditions underlines the fact that EGD is not just a set of policies, but an adaptive strategic process, in which institutional learning and continuous adjustment play a central role.

In conclusion, interpreted in the context of the entire analysis developed previously and of the European Commission report, it is confirmed that the European Green Deal is at an intermediate stage: sufficiently advanced to demonstrate the viability of the assumed direction, but still marked by gaps, inconsistencies and uncertainties that may affect the achievement of the final objectives. Thus, the main challenge is no longer defining the vision, but accelerating and harmonizing implementation, in a way that integrates the economic, social and ecological dimensions of sustainability, both internally and in the external projection of the European Union.

Bibliography

- Almeida, D. V., Kolinjivadic, V., Ferrando, T., Roye, B., Herrera, H., Vecchione Gonçalves, M., Van Hecken, G. (2023), <The “Greening” of Empire: The European Green Deal as the EU first agenda>, in *Political Geography*, 105, <https://doi.org/10.1016/j.polgeo.2023.102925>.
- Arta, C., Fogorassy, Ch (2021), “European Green Deal policy for the circular economy: opportunities and challenges”, in *Hungarian Agricultural Engineering*, no. 39/2021, DOI: 10.17676/HAE.2021.39.65.
- Aşici, A.A., Bünül, Z., (2012). “Green new deal: a green way out of the crisis?”, in *Environmental Policy and Governance*, 22, 295–306. <https://doi.org/10.1002/eet.1594>.
- Ciot, M.-G., (2021), “On European Green Deal and Sustainable Development Policy (the Case of Romania)”, in *Sustainability*, 2021, 13, 12233, <https://doi.org/10.3390/su132112233>.
- Council of EU, (2026), Fit for 55, <https://www.consilium.europa.eu/en/policies/fit-for-55/#what>, accessed on 20 February 2026.
- Domorenok, E., Gatti, F., “The EU's Strategy for Sustainability: A Landmark Turn With the European Green Deal?”, in *European Policy Analysis*, 2026, pp. 1-15, DOI:10.1002/epa2.70035.
- Domorenok, E., Graziano, P., “Understanding the European Green Deal: A narrative policy framework approach”, in *European Policy Analysis*, 2023, DOI: 10.1002/epa2.1168.

- Draghi, M. (2024), The future of European competitiveness: A competitiveness strategy for Europe, https://commission.europa.eu/document/download/97e481fd-2dc3-412d-be4c-f152a8232961_en?filename=The%20future%20of%20European%20competitiveness%20_%20A%20competitiveness%20strategy%20for%20Europe.pdf, accessed on 20 February 2026.
- European Commission (2026), The European Green Deal. Striving to be the first climate-neutral continent, https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en, accessed on 30 January 2026.
- European Commission, Joint Research Centre, Marelli, L., Trane, M., Barbero Vignola, G., Gastaldi, C., Guerreiro Miguel, M., Delgado Callicó, L., Borchardt, S., Mancini, L., Sanye Mengual, E., Gourdon, T., Maroni, M., Georgakaki, A., Seigneur, I., M'Barek, R., Acs, S., Listorti, G., et al. (2025), "Delivering the EU Green Deal - Progress towards targets", Publications Office of the European Union, Luxembourg, <https://data.europa.eu/doi/10.2760/3105205,JRC140372>.
- European Commission, (2019), Communication from the Commission: the European Green Deal, COM No. 640, https://commission.europa.eu/publications/communication-european-green-deal_en, accessed on 20 February 2026.
- European Commission, (2025), Competitiveness compass, https://commission.europa.eu/topics/competitiveness/competitiveness-compass_en, accessed on 20 February 2026.
- Gómez, J.F. (2021), "The European Green Deal and the energy transition: challenges and opportunities for industrial companies", in *Boletín de Estudios Económicos*, Vol. XXV, n. 232 – December 2021, pp. 191-211.
- Hardt, M., Negri, A., (2000), *Empire* (Vol. 15), Cambridge, MA: Harvard University Press.
- Hereu-Morales, J., Segara, A., Valderrama, C. (2023), "The European (Green?) Deal: a systematic analysis of environmental sustainability", in *Sustainable Development*, 2024;32:647–661, DOI: 10.1002/sd.2671.
- Kondouri, P., Alamanos, A., Plataniotis, A., Stavridis, C., Perifanos, K., Devves, S., (2024), "Assessing the sustainability of the European Green Deal and its interlinkages with the SDGs", in *Climate Action*, 3:23, <https://doi.org/10.1038/s44168-024-00104-6>.
- Kondouri, P., Devves, S., Plataniotis, A., (2021), "Alignment of the European Green Deal, the Sustainable Development Goals and the European Semester Process: Method and Application", in *Working Paper Series*, 21-13, November 2021, Athens University of Economics and Business.
- Leonard, M., J. Pisani-Ferry, J. Shapiro, S. Tagliapietra and G. Wolff (2021), "The geopolitics of the European Green Deal", Policy Contribution 04/2021, Bruegel.
- Ndlovu-Gatsheni, S. J., (2021), "The cognitive empire, politics of knowledge and African intellectual productions: Reflections on struggles for epistemic freedom and resurgence of decolonisation in the twenty-first century", in *Third World Quarterly*, 42 (5), 882–901.
- Ottomano Palmisano, G., Rocchi, L., Negri, L., Piscitelli, L., (2025), "Evaluating the Progress of the EU Countries Towards Implementation of the European Green Deal: A Multiple Criteria Approach", in *Land*, 14, 141. <https://doi.org/10.3390/land14010141>.
- Pietras, J. (2023), "The path forward for Europe's green transition", in *European View*, 2023, Vol. 22(1) 131- –139, DOI: 10.1177/17816858231163940.
- Pollin, R. (2019), "Advancing a viable Global Climate Stabilization Project: Degrowth versus the Green New Deal", in *Review of Radical Political Economics*, 2019, Vol. 51(2) 311- –319, DOI: 10.1177/0486613419833518.

- Rutazibwa, O. U. (2010), "The problematics of the EU's ethical (Self)Image in Africa: The EU as an 'ethical intervener' and the 2007 joint Africa-EU strategy", in *Journal of Contemporary European Studies*, 18(2), 209–228.
- Smol, M. (2022), "Is the green deal a global strategy? Revision of the green deal definitions, strategies and importance in post-COVID recovery plans in various regions of the world", in *Energy Policy*, *Energy Policy* 169 (2022) 113152, <https://doi.org/10.1016/j.enpol.2022.113152>.
- Smol, M., Marcinek, P., Duda, J. and Szoldrowska, D. (2020), "Importance of Sustainable Mineral Resource Management in Implementing the Circular Economy (CE) Model and the European Green Deal Strategy. Management, Environment, Energy and Sustainability under a Circular Economy", in *Resources*, 9 (5), 55, <https://doi.org/10.3390/resources9050055>, accessed on 30 January 2026.
- wa Thiong'o, N., (2005), *Decolonising the mind: The politics of language in African literature* (reprint., transferred to digital print).
- Wood, E. M. (2003), *Empire of Capital*, Verso.
- Zografos, C., Robbins, P. (2020), "Green sacrifice zones, or why a green new deal cannot ignore the cost shifts of just transitions", in *One Earth*, 3(5), 543–546.

EUROPEAN GREEN DEAL: NAVIGATING THE SECURITY PARADOX

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Abstract: This chapter critically examines the European Green Deal's transformation (EGD) from its inception as a climate policy framework into a geotechnological security strategy following the Russian invasion of Ukraine. Drawing upon the Copenhagen School's securitization theory and the concept of "Open Strategic Autonomy," the analysis argues that the convergence of the climate emergency, energy insecurity, and geopolitical competition has fundamentally redefined European security paradigms. The core thesis posits that while the EGD aims to achieve carbon neutrality, it inadvertently generates a "substitution paradox," wherein Europe's reliance on Russian fossil fuels is being replaced by a material dependence on Chinese-dominated supply chains for critical raw materials and green technologies. The study explores the emergence of "green dual-use technologies" – specifically lithium-ion batteries, rare earth permanent magnets, and hydrogen systems – which serve civilian decarbonization objectives while possessing significant military applications. The analysis contends that existing governance frameworks, such as the Wassenaar Arrangement, are insufficient for managing these hybrid assets, as they were designed for conventional military technologies rather than dual-use innovations driven by civilian markets. Furthermore, the chapter highlights the cybersecurity vulnerabilities introduced by the digitization of energy infrastructure, identifying smart grids as a new frontier for hybrid warfare and "technological blackouts". A significant part of the analysis is dedicated to the "climate-security-economy trilemma," illustrating the inherent conflicts Europe faces in simultaneously pursuing rapid decarbonization, strategic autonomy, and economic competitiveness. The text evaluates various partnership models and policy responses, such as the Critical Raw Materials Act, arguing that absolute autonomy is unattainable and that Europe must instead manage unavoidable dependencies through strategic risk mitigation. Finally, the chapter applies this analytical framework to a case study of Romania, identifying specific strategic priorities for the nation. It suggests that Romania can leverage its position as a NATO frontline state and its Black Sea energy resources to transition from a peripheral actor to a pivotal regional energy security hub. It concludes that the success of the Green Deal depends on Europe's ability to integrate disparate climate and defence objectives into a cohesive strategy that transcends traditional sectoral boundaries.

1. "The Zeitenwende Moment" of European Green Security

On the morning of 24 February 2022, as Russian tanks crossed the Ukrainian border, Europe became acutely aware not only of the presence of war on its continent but also of the inherent fragility within its energy infrastructure. The longstanding reliance on Russian gas -

accounting for approximately 40% of imports - built through decades of change through trade, swiftly transitioned from an economic asset to a geopolitical tool. Concurrently, in Brussels, negotiations concerning the Critical Raw Materials Act (European Critical Raw Materials Act - European Commission, n.d.) gained renewed urgency: the green transition, initially envisaged as a response to the climate crisis, suddenly assumed the characteristics of a matter of strategic necessity.

This convergence of crises - comprising the climate emergency, energy security concerns, and geopolitical competition - has prompted a fundamental reorientation of European security paradigms. The European Green Deal (EGD) (The European Green Deal - European Commission, n.d.), introduced in December 2019 as the European Union's flagship climate policy with the goal of reaching carbon neutrality by 2050, has matured into a more intricate framework: a geotechnological strategy that concurrently addresses climate change, energy independence, and strategic autonomy amidst an era of escalating great power rivalry.

The conflict in Ukraine has highlighted a critical insight that the COVID-19 pandemic had previously suggested: Europe's significant vulnerabilities within its strategic supply chains. These dependencies encompass a broad spectrum, including protective equipment, semiconductors, natural gas, and rare earth elements, which have become starkly evident. Although initially conceptualized primarily through an environmental perspective, the European Green Deal has undeniably acquired a security dimension. As articulated by European Commission President Ursula von der Leyen in her 2022 State of the Union address, the challenge is to transform dependencies into a strategic outcome and to foster economic resilience (State of the Union Address by President von Der Leyen, n.d.).

However, this transformation engenders significant paradoxes. The green transition advocates for energy independence through renewable sources, yet it also introduces new dependencies on critical materials concentrated in geopolitically sensitive regions. Technologies aimed at civilian decarbonization - such as batteries, hydrogen systems, smart grids, and rare earth magnets - possess inherent dual-use potential, serving both climate objectives and military applications. Efforts to achieve "open strategic autonomy" seek to balance openness to global trade with the protection of strategic interests; however, these goals often conflict.

This chapter analyses the ways in which the European Green Deal influences and redefines European security paradigms and practices, with particular emphasis on three core questions.

1. *How does the Green Deal reshape the paradigms of European security, transitioning from traditional military-centric frameworks to multidimensional approaches that incorporate energy, technological, and resource security?*
2. *What strategic dilemmas are posed by dual-use green technologies, and in what ways do they challenge existing governance structures that were originally designed for conventional military technologies?*
3. *Is it feasible for Europe to concurrently attain climate neutrality, strategic autonomy, and economic competitiveness within a multipolar international order characterized by Sino-American rivalry and resource nationalism?*

The core thesis of the chapter posits that the European Green Deal operates as a geotechnological strategy, thereby reshaping European security through three interrelated mechanisms.

First, the substitution paradox involves replacing energy dependence on Russian gas with material dependence on Chinese rare earths, thereby exchanging one vulnerability for another that presents distinct yet equally complex geopolitical challenges.

Second, the emergence of dual-use technologies transforms ostensibly civilian green innovations into strategic dual-use assets, necessitating the development of new governance frameworks beyond traditional export control regimes.

Third, the reconfiguration of power shifts the locus of influence from control of fossil resources to the dominance of green technology supply chains, creating novel arenas for geopolitical competition.

Drawing upon critical security studies literature, notably the Copenhagen School's securitization theory (Buzan et al., 1998), as well as political economy analyses of strategic autonomy (Leonard et al., 2021) and empirical investigations into green technology supply chains (Overland, 2019), this chapter argues that the Green Deal transcends a mere climate policy, constituting a comprehensive - albeit contested and incomplete - reconceptualization of European security in the twenty-first century.

2. Paradigm Shift: From Fossil Energy Security to Green Technological Security

2.1. *The Securitization of the Green Transition*

The evolution of the European Green Deal from a climate policy framework to a security imperative exemplifies the Copenhagen School's definition of securitization – namely, the discursive process by which an issue is articulated as an existential threat necessitating exceptional measures (Buzan et al., 1998). Initially introduced in December 2019 as an ambitious yet predominantly environmental initiative, the European Green Deal experienced rapid securitization in the aftermath of the Russian invasion of Ukraine.

This securitization operates on multiple levels. At the most fundamental level, climate change has been characterized as a “threat multiplier” that intensifies existing security challenges, including migration and resource conflicts (NUPI_Fact_Sheet_Sahel_LR5.Pdf, n.d.). NATO's 2022 Strategic Concept acknowledges climate change as a “defining challenge” with significant security implications (NATO 2022 Strategic Concept, n.d.), whereas the EU's 2021 Integrated Approach on Climate Change and Security explicitly associates climate action with conflict prevention (EEAS Annual Activity Report – 2021, n.d.).

Nevertheless, post-2022 securitization extends beyond merely addressing climate impacts to include the transition process itself. The REPowerEU plan, announced in March 2022, redefined renewable energy deployment as not only a climate policy measure but also an urgent security imperative. European Commission President von der Leyen stated that “we must become independent from Russian oil, coal, and gas. We simply cannot rely on a supplier who explicitly threatens us” (Joint European Action for More Affordable, Secure Energy, n.d.).

This rhetorical shift facilitated the implementation of extraordinary measures, such as the expedited permitting of renewable energy projects, the mobilization of substantial public investments, and increased flexibility in state aid regulations.

Unfortunately, securitization may entrench zero-sum perspectives rooted in national interests, perspectives which are incompatible with the collective effort required to address climate change (Oels, 2012).

The Green Deal's securitization thus exhibits a triple character:

Climate securitization involves framing climate change as an existential threat that necessitates emergency measures, which may potentially justify the circumvention of usual democratic processes in the pursuit of climate action.

Energy securitization frames renewable deployment as a strategic measure to safeguard against energy weaponization, thereby facilitating significant state intervention in energy markets and allowing for reversals in industrial policy.

Technology securitization involves establishing control over green technology supply chains as a vital aspect of sovereignty, thereby justifying the implementation of protectionist measures and strategic industrial policies that could potentially conflict with EU competition regulations or WTO commitments.

This triple securitization fundamentally alters how the Green Deal is conceived, implemented, and contested within European politics.

2.2. Open Strategic Autonomy – The Organizing Concept

If securitization establishes the discursive framework, then “open strategic autonomy” (OSA) constitutes the conceptual foundation of Europe's green security strategy. Originally articulated in defence contexts in 2013, the notion of strategic autonomy has since expanded significantly to encompass nearly all policy domains, with the green transition now a central component (Fiott, 2022).

The evolution of the concept reflects shifts in Europe's geopolitical stance. The 2016 EU Global Strategy (A Global Strategy for the European Union's Foreign and Security Policy | EEAS, n.d.) underscored the importance of sovereignty in defence and security. By 2020, amid transatlantic tensions during the Trump era and intensifying Sino-American competition, the scope of the concept expanded to include economic and technological dimensions. The inclusion of the term “open” was intended to address concerns about European protectionism or autarky, demonstrating a sustained dedication to multilateralism and rules-based trade (Borrell, 2021).

However, as several scholars have observed, the concept of “open strategic autonomy” embodies inherent tensions (Leonard et al., 2021). How can Europe simultaneously maintain openness to global economic engagement while safeguarding its strategic interests through autonomy? The COVID-19 pandemic and the Ukraine conflict have accentuated this challenge. Disruptions in supply chains have demonstrated that openness can introduce vulnerabilities; thus, achieving autonomy necessitates a certain degree of strategic enclosure. In the green transition context, OSA translates into three concrete policy pillars embodied in the Critical Raw Materials Act (CRMA):

Promote: Building European leadership in green technologies through targeted industrial policy, research and development investment, and the establishment of relevant standards. The Net-Zero Industry Act aims to fulfil 40% of the EU's annual deployment requirements via European manufacturing capacity by 2030 (COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN COUNCIL, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS A Green Deal Industrial Plan for the Net-Zero Age, 2023).

Protect: Screening foreign investments in strategic sectors, controlling exports of sensitive technologies, and securing research against foreign interference. The 2023 Economic Security Strategy identifies “technology security and leakage” as a critical risk category (European Economic Security, n.d.).

Partner: The diversification of supply chains is pursued through strategic partnerships with democracies that share similar values and with resource-rich developing nations. The Global Gateway initiative commits to investing €300 billion in infrastructure, explicitly positioning Europe as a competitive alternative to China's Belt and Road initiative (Global Gateway - European Commission, 2023).

Efforts to enhance security through friend-shoring increase costs, potentially compromising economic competitiveness. Conversely, prioritizing affordability via Chinese imports sustains dependency, thereby conflicting with security objectives. The European Union faces a complex dilemma between accelerating climate action, maintaining strategic autonomy, and ensuring economic viability – simultaneously achieving all three may be infeasible.

The European Parliament's analysis similarly indicates that “tensions between the objectives of environmental sustainability and increased autonomy have emerged in political discourse,” with some member states advocating a temporary suspension of environmental legislation to enhance competitiveness (Damen, 2023). This conflict became particularly evident in the 2024 farmer protests across Europe, prompting several governments to reconsider Green Deal regulations.

2.3. Economic Security – The New Doctrine

The 2023 European Economic Security Strategy signifies a doctrinal shift from unconditional globalization toward a more selective approach to economic engagement. The strategy explicitly recognizes that “the openness of our system constitutes the fundamental basis for our innovative economies,” while concurrently acknowledging that “certain economic flows and activities may pose risks to our security” (European Economic Security, n.d.).

This represents a significant deviation from the post-Cold War consensus that economic interdependence fosters peace and prosperity. The strategy delineates four primary risk areas: supply chain resilience, critical infrastructure protection, technology security and

leakage, and economic coercion. Each area intersects directly with the imperatives of the green transition.

The concept of “de-risking” rather than “de-coupling” seeks to balance the approaches of the United States and China. In contrast to the United States, which is increasingly pursuing technological decoupling from China, Europe aims for a targeted reduction of dependency in critical sectors while continuing economic engagement in non-strategic areas. As European Commission Executive Vice-President Valdis Dombrovskis articulated, “we are not de-coupling, we are de-risking” (Bund Summit speech, n.d.).

However, operationalizing this distinction presents considerable challenges. What delineates “strategic” from “non-strategic”? Who holds the authority to decide? The CRMA designates 17 of 34 critical raw materials as “strategic,” based on their significance to the green and digital transitions and supply risk (European Critical Raw Materials Act - European Commission, n.d.). However, this classification remains contested. Member states diverge on inclusion criteria, and industries advocate for favourable classifications. The boundary between strategic and non-strategic materials continually shifts in response to evolving geopolitical conditions.

The January 2024 Economic Security Package delineates two key research and innovation initiatives: a White Paper on Enhancing R&D Support for Technologies with Dual-Use Potential (7ae11ca9-9ff5-4d0f-A097-86a719ed6892_en.Pdf, n.d.) and a Proposal for a Council Recommendation on Research Security (Council Adopts a Recommendation to Enhance Research Security, n.d.). These initiatives acknowledge the increasing dual-use nature of green technologies, necessitating governance frameworks that balance openness – fostering innovation and protection, preventing technology transfer to strategic competitors.

Horizon Europe, the European Union’s principal research and development initiative, now incorporates a safeguards framework guided by the principle “as open as possible, as closed as necessary.” Article 22.5 permits the restriction of participation in strategic projects to EU member states and select associated countries (European Commission, 2021). However, the criteria for determining when restrictions are deemed “necessary” remain contentious.

2.4. Dual-Use Green Technologies – A New Conceptual Category

Traditional dual-use frameworks, exemplified by the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies, primarily aim to prevent the proliferation of weapons of mass destruction and conventional military capabilities. These regimes typically employ a narrow definition: technologies and materials that can be utilized for both civilian and military purposes, with an emphasis on military applications (Wassenaar, 2025).

Green dual-use technologies pose unique challenges to this framework. Primarily, their development is driven by civilian objectives, such as addressing climate change, rather than military enhancement. For example, lithium-ion batteries are primarily designed to facilitate electric vehicles and renewable energy storage; although they have military applications, these

are secondary. Unlike traditional dual-use technologies, which are developed mainly for military purposes with civilian applications as a spin-off, green dual-use technologies invert this relationship.

Second, the security concern transcends military proliferation and encompasses strategic autonomy as well as economic security. Control over battery supply chains is important not primarily because batteries facilitate military drones, but because they are vital to the entire green economy. The security interest, therefore, is rooted in structural economic power rather than tactical military advantage.

Third, the relevant actors extend well beyond states and defence contractors to include civilian technology firms, universities, and investors. For instance, companies such as Tesla, Northvolt, and CATL – civilian battery producers – become security-relevant entities despite lacking direct military operations. This significantly broadens the scope of potential security governance. Conceptualizing green dual-use thus requires integrating three dimensions:

The lack of comprehensive governance frameworks for green dual-use technologies engenders a policy vacuum. The 2021 update to the EU Dual-Use Regulation (EU 2021/821) encompasses certain emerging technologies but fails to specify provisions for numerous green dual-use applications. While the CRMA emphasizes supply security, it offers limited guidance on technology transfer controls. NATO's Green Defence Framework addresses reductions in military emissions but does not encompass the strategic dimensions of green dual-use technologies (NATO 2022 Strategic Concept, n.d.).

3. Anatomy of the Paradox. Dual-Use Green Technologies Between Opportunity and Vulnerability

3.1. Batteries and Energy Storage, From Mobility to Military

Lithium-ion batteries exemplify a quintessential green dual-use technology. Their high energy density, rechargeability, and decreasing costs have rendered them essential for both electric vehicles - anticipated to reach 130 million units worldwide by 2030 - and renewable energy grid storage (Global Hydrogen Review 2023 – Analysis, 2023). Nonetheless, these same characteristics also render them highly valuable for military applications.

Military applications encompass both tactical and strategic systems. Contemporary military drones, ranging from reconnaissance UAVs to offensive strike platforms, increasingly rely on advanced lithium battery technology to achieve extended operational range and reduced acoustic signature. The Turkish Bayraktar TB2, widely deployed in Ukraine, uses lithium batteries that enable a 27-hour endurance (Bayraktar
 TB2, n.d.). Electric military vehicles offer silent mobility in combat scenarios. Similarly, submarine propulsion systems - historically based on diesel-electric or nuclear power - are exploring lithium battery alternatives that offer stealth capabilities and enhanced performance.

The geopolitical landscape predominantly revolves around China's dominance in the battery value chain. While lithium extraction occurs in geographically diverse regions such as Australia, Chile, Argentina, and China, processing capacity is heavily concentrated within China, accounting for approximately 80% of lithium refining, 70% of cobalt refining, and 100% of natural graphite processing for batteries (Geopolitics of the Energy Transition: Critical Materials, n.d.). Additionally, China holds a dominant position in battery cell manufacturing, accounting for 75% of global capacity, although this share may decrease as battery factories in Europe and North America become operational (vhenze, 2022).

This situation introduces significant vulnerability. As documented by Overland (Overland, 2019), the transition to green energy shifts reliance from OPEC oil to Chinese processing and manufacturing capabilities. The strategic implications became evident when China announced export restrictions on several critical minerals, citing national security concerns (Cefai, 2025). Although not yet strictly enforced, these measures revealed China's strategic leverage.

Europe requires substantial battery capacity to meet 2030 climate objectives, yet constructing an autonomous European manufacturing sector exceeds the timeframe of these targets. Consequently, reliance on imports – primarily from China – becomes necessary, thereby entrenching the dependency Europe aims to diminish. This creates a cyclical dilemma wherein objectives of speed, independence, and affordability are mutually incompatible.

The European Defence Fund has initiated funding for projects developing military-grade battery systems and energy-autonomous military bases powered by smart microgrids (European Defence Fund (EDF) - Official Webpage of the European Commission. - Defence Industry and Space, n.d.). However, military procurement volumes remain modest compared to civilian demand, resulting in an insufficient market to support exclusively European production at competitive costs. Consequently, military and civilian applications must cross-subsidize each other, necessitating integrated industrial strategies that many member states have yet to establish.

3.2. Rare Earth Elements and Permanent Magnets – The Geopolitical Chokepoint

Batteries exemplify dependence across a value chain, while rare earth elements (REEs) illustrate concentration risk at a single critical node: processing. Comprising seventeen metallic elements with distinctive magnetic, catalytic, and luminescent properties, REEs are essential for high-performance permanent magnets utilized in wind turbines, electric vehicle motors, military applications, and electronic devices.

China's dominance in modern commodity markets is unparalleled. The country accounts for roughly 60% of the world's rare earth element (REE) mining output, with substantial deposits also found in Australia, the United States, and Myanmar. Additionally, China holds approximately 90% of global processing capacity and 85% of permanent magnet manufacturing, as reported by USGS in 2023 (Rare Earths Statistics and Information | U.S. Geological Survey, n.d.). This dominance results from decades of strategic investment,

environmental externalization – given that REE processing produces toxic waste – and vertical integration spanning from mining operations to the production of final goods.

The strategic implications became evident in 2010 when China temporarily restricted rare earth element (REE) exports to Japan amid a diplomatic dispute, leading to global market panic and a tenfold increase in prices (Hurst, 2010). More recently, China has articulated explicit policies on resource nationalism. In 2023, export controls on gallium and germanium – both critical for semiconductor and solar panel industries – illustrated a willingness to leverage material dependencies as strategic tools (MOFCOM Regular Press Conference (July 6, 2023), n.d.). High-ranking Chinese officials have also discussed the potential for imposing REE export restrictions, with a particular focus on neodymium and dysprosium magnets, as strategic measures in trade conflicts or in scenarios related to Taiwan.

The military component underscores the urgency of the issue. NATO's dependence on Chinese rare-earth element (REE) supplies for defence applications creates an unprecedented vulnerability. The U.S. Department of Defense has classified REEs as critical to national security and has launched initiatives to restore domestic supply chains (FY_2022_NDAA_Report_on_Congressional_Increases_June_2022.Pdf, n.d.). Similarly, European defence ministries face comparable imperatives. However, military procurement alone is insufficient to sustain economically viable European REE industries; the scale of civilian demand driven by the green transition is essential.

This interdependence between civilian climate objectives and military security engenders complex political and economic dynamics. Justifying substantial investments in European renewable energy processing necessitates integrating climate priorities – such as energy security and industrial policy – with defence considerations, including supply chain resilience and technological sovereignty. Individually, neither justification is sufficient to secure the broad political backing required for the extensive public funding and regulatory support.

3.3. Green Hydrogen: The Ambiguous Solution

The Hydrogen holds a unique position in the discourse on the green transition, being both essential for decarbonizing challenging sectors such as steel, chemicals, aviation, and shipping and subject to criticism as a costly diversion from direct electrification (“Response to the EU’s Draft Definition of Low-Carbon Hydrogen,” n.d.). This ambiguity also pertains to its dual-use nature and associated security considerations.

The civilian sector primarily involves areas where direct electrification poses technical challenges or is economically infeasible. Hydrogen-based direct reduction in steel manufacturing could significantly reduce CO₂ emissions associated with blast furnaces. Additionally, green ammonia - produced using hydrogen generated via electrolysis - can facilitate decarbonization in fertilizer manufacturing and serve as a potential fuel for shipping. For long-distance aviation, synthetic kerosene derived from hydrogen and captured CO₂ is a prospective solution (Global Hydrogen Review 2023 – Analysis, 2023).

The European Union’s Hydrogen Strategy aims to achieve a production of 10 million tonnes of domestic renewable hydrogen by 2030, complemented by an additional 10 million

tonnes through imports. This objective requires the large-scale deployment of 40 GW of electrolyzers, the expansion of renewable electricity generation, and the development of supporting infrastructure, including pipelines, storage facilities, and refueling stations. Total estimated investments range from €320 billion to €460 billion through 2030 (2024.10_HE_Hydrogen-Infrastructure-Report.Pdf, n.d.).

Electrolyzer manufacturing is currently concentrated in China, accounting for 60% of global capacity, and is also dominated by a few European companies. Attaining Europe's 2030 objectives necessitates a twenty-fivefold expansion in capacity, raising pressing concerns regarding technology sovereignty and supply chain security (Geopolitics of the Energy Transition: Critical Materials, n.d.).

Europe's hydrogen import strategy delineates partnerships with North Africa - focused on solar hydrogen through pipelines – Middle Eastern countries – utilizing existing oil and gas infrastructure – and potentially Australia or Chile for shipping liquid hydrogen or ammonia. Each of these partnerships involves specific geopolitical risks: North African political instability, exemplified by recent coups in Sahel nations and migration pressures, complicates sustained energy cooperation; engagement with the Middle East involves navigating complex regional dynamics and addressing human rights considerations.

Russia's hydrogen strategy exemplifies geopolitical manoeuvring. Despite its invasion of Ukraine and status as a petrostate, Russia has articulated ambitions to become a major hydrogen exporter, leveraging vast natural gas reserves for blue hydrogen production (Mitrova et al., 2019). This represents an attempt to remain energy-relevant in a decarbonizing world - transitioning from selling fossil fuels to selling hydrogen produced from fossil fuels. Europe faces awkward choices: can it accept Russian hydrogen imports while maintaining sanctions? If not, from whom else can it import the massive volumes targeted?

The military dimensions of hydrogen application remain largely classified while holding considerable significance. NATO member states investigating hydrogen technologies for military use must establish secure, allied supply chains. Reliance on potentially antagonistic or unreliable suppliers for military hydrogen is strategically untenable. However, purely military demand alone cannot sustain competitive production; civilian and military applications must utilize shared infrastructure and supply chains, thereby intertwining climate policies, industrial strategies, and defence planning.

3.4. Smart Grids and Distributed Energy Systems – The Cybersecurity Frontier

Traditional electrical grids historically consisted of a limited number of generation sites, such as coal, gas, and nuclear power plants, characterized by predictable power flows and restricted digital connectivity. Security measures primarily focus on the physical safeguarding of critical infrastructure and on maintaining frequency stability. In contrast, smart grid systems, which are essential for integrating intermittent renewable energy sources and facilitating bidirectional electricity flows – where consumers also function as producers through rooftop solar installations – rely heavily on widespread digital connectivity, real-time data analytics, and automated control mechanisms.

This transformation significantly expands the grid's attack surface. A contemporary smart grid comprises millions of interconnected devices, including smart meters, inverters, sensors, communication networks, and control systems. Each connection constitutes a potential vulnerability for cyberattacks. Advanced persistent threats may exploit these vulnerabilities to compromise grid stability, potentially leading to cascading blackouts. Ransomware attacks could also lock control systems, demanding a ransom to restore them. Additionally, state-sponsored actors might pre-position capabilities for activation during conflicts (Onyeji et al., 2014).

Ukraine's experience offers sobering lessons. In December 2015, the BlackEnergy malware attack resulted in power outages affecting 225,000 individuals for several hours, marking the first confirmed successful cyberattack to cause power outages (Cyber-Attack Against Ukrainian Critical Infrastructure | CISA, 2021). A year later, in December 2016, more advanced attacks using the Industroyer malware targeted the electricity transmission sector, indicating an evolution in adversary capabilities. Since February 2022, Russia has consistently conducted cyber operations against Ukrainian critical infrastructure in conjunction with kinetic military actions, aiming to induce a "technological blackout" (Russia's Cyber Tactics: Lessons Learned in 2022 — SSSCIP Analytical Report on the Year of Russia's Full-Scale Cyberwar against Ukraine, n.d.).

Chinese manufacturers lead the production of smart grid components, including inverters (e.g., Huawei, Sungrow), transformers, and control systems. The debate over whether to exclude Chinese equipment from European electricity infrastructure – similar to the discussions surrounding 5G – presents significant trade-offs. While Chinese technology offers cost savings of approximately 20-30% and enables faster deployment, its acceptance raises concerns about surveillance risks and vulnerabilities to kill switches (Kaska et al., 2019).

Smart meters collect detailed data on residential and industrial electricity usage, enabling the analysis of behavioural patterns, production routines, and occupancy rates. In military settings, monitoring base electricity consumption can provide insights into operational tempo and activity levels. Consequently, issues of data privacy and operational security become intertwined.

Both civilian and military stakeholders require resilient power systems that can operate effectively during crises. The concept of "island mode" – disconnection from the main grid to operate independently – serves a critical role for renewable energy communities during grid outages and for military installations amid conflicts. Investment and standardization aimed at enhancing resilience support both the civilian transition to sustainable energy and military readiness.

The NIS2 Directive, enacted in 2022, delineates cybersecurity obligations for critical infrastructure operators, including entities within the energy sector (European Parliament, 2022). Nonetheless, the implementation of these requirements varies considerably across member states, resulting in fragmented security postures. Furthermore, the directive primarily emphasizes protecting existing systems, with less focus on integrating security-by-design principles into new smart grid infrastructure intended for renewable energy deployment.

Standards development introduces significant governance challenges. The IEC 62351 standards series, developed by the International Electrotechnical Commission, addresses power system security; however, its adoption remains voluntary and inconsistent. Additionally, NATO member countries lack standardized protocols for military base microgrids, which hampers interoperability during joint operations and multinational deployments (NATO 2022 Strategic Concept, n.d.).

The emerging zero-trust architecture in cybersecurity – centred on the premise of assuming breach and validating every connection – may conflict with the operational imperatives of smart grids, which prioritize speed and reliability. Implementing overly stringent security measures could hinder grid responsiveness, thereby risking instability during critical periods such as extreme weather events, when renewable energy output can vary rapidly.

China's involvement presents distinct dilemmas. In addition to manufacturing equipment, Chinese firms make significant investments in European energy infrastructure through acquisitions and partnerships. The State Grid Corporation of China operates electricity transmission networks across several European nations. Reconciling the economic advantages of Chinese investments with security concerns regarding critical infrastructure control poses ongoing policy challenges (Le Corre, 2018).

4. Strategic Dilemmas. Navigating Contradictory Imperatives

4.1. The Trilemma: Climate, Security, and Economy

The European green transition strategy aims to achieve three core objectives: attaining climate neutrality by 2050 in line with the Paris Agreement, ensuring strategic autonomy through reduced dependencies, and maintaining economic competitiveness by preserving industrial leadership and living standards. However, as Paleari (Paleari, 2024) elucidates in her analysis of the Green Deal Strategic Framework, these objectives often conflict, leading to challenging trade-offs.

The climate imperative demands the rapid deployment of proven technologies at scale. Meeting 2030 interim targets (a 55% emissions reduction) requires deploying millions of heat pumps, solar panels, wind turbines, and electric vehicles within just a few years. Speed is essential; delay locks in fossil infrastructure and makes 1.5°C pathways unreachable.

The security imperative requires reducing reliance on suppliers deemed geopolitically unreliable, with particular emphasis on China for critical technologies and materials. This strategy entails adopting friend-shoring, supporting domestic manufacturing, and potentially accepting increased costs and slower deployment to develop autonomous capabilities.

The economic imperative emphasizes competitiveness, employment, and affordability. European industries contend with fierce global competition. To sustain public support and prevent the offshoring of industries, the costs of renewable energy and green technologies must remain reasonable.

Achieving all three simultaneously appears impossible given current technological and geopolitical realities. Three scenarios emerge:

Scenario A: Climate and Security

Emphasize swift decarbonization primarily through European and allied technologies. Implement policies such as subsidies, carbon pricing, and public procurement preferences to support higher costs. Mandate friend-shoring, even when it entails increased expenses. The outcome: accelerated emissions reductions and decreased dependencies, albeit at considerable economic expense. Potential drawbacks include loss of competitiveness and public opposition to the costly green transition.

Scenario B: Climate and Economy

Highlight the prompt and cost-efficient deployment of renewable energy technologies regardless of their origin. Acknowledge China's leadership in solar, battery, and wind sectors. Prioritize procurement of the most affordable available technologies to accelerate implementation. This approach facilitates more rapid emissions reductions at lower financial cost but results in increased reliance on specific suppliers. Such dependence raises concerns about vulnerabilities to supply disruptions and geopolitical influences.

Scenario C: Security and Economy

Stress the rapid development of autonomous capabilities in alignment with industrial constraints. Allow for a delay in climate mitigation efforts during the capacity-building phase. Concentrate on maintaining competitiveness and strengthening strategic industries. Consequently, this approach may yield enhanced long-term autonomy and industrial resilience; however, it risks failure to meet the 2030 climate targets and increases the likelihood of climate tipping points.

Current European Union policy seeks to address all three objectives, but this approach creates internal tensions and inconsistencies. The anti-subsidy investigation into Chinese electric vehicles exemplifies these contradictions. While safeguarding European manufacturers may impede electric vehicle adoption and increase consumer costs – potentially hindering climate objectives – it also risks fostering strategic dependence on Chinese dominance in European EV markets, thereby undermining the continent's industrial capacity.

Similarly, the debate concerning Chinese solar panel imports – currently accounting for 95% of European deployment – highlights conflicting pressures (Eu-Solar-Market-Outlook-2025-2030 - SolarPower Europe, n.d.). Imposing restrictions to bolster emerging European manufacturing would significantly raise solar energy costs and hinder deployment. Nonetheless, ongoing dependence perpetuates Chinese dominance in a critical renewable technology.

4.2. The Partnership Dilemma: With Whom and at What Price?

Strategic autonomy should not be equated with autarky; Europe lacks sufficient domestic resources to achieve comprehensive self-sufficiency in all critical materials and technologies. While strategic partnerships are indispensable, the question remains: with which partners?

Three partnership models compete:

Atlantic Alliance Plus

It involves strengthening collaboration with longstanding democratic allies such as the United States, Canada, Japan, South Korea, and Australia through initiatives like the Minerals Security Partnership. Such efforts are consistent with a values-driven foreign policy and serve to mitigate geopolitical risks.

Pragmatic Engagement with China

Maintaining significant economic collaboration with China in non-strategic sectors while actively mitigating risks in critical domains serves to preserve market access and facilitate technology transfer.

Global South Resource Partnerships

Establishing partnerships with resource-abundant developing nations, especially in Africa and Latin America, via initiatives such as Global Gateway.

Each model encounters considerable challenges. The Atlantic partnership, though politically advantageous, remains incomplete. Allied democracies collectively lack adequate capacities in rare earth processing, battery manufacturing, and solar panel production to sufficiently replace Chinese capabilities within foreseeable timeframes. Furthermore, the U.S. Inflation Reduction Act illustrates that even close allies adopt protectionist industrial policies, thereby generating transatlantic tensions.

Continued Chinese engagement enhances economic efficiency but conflicts with security considerations. Chinese technological advancements are frequently superior and more cost-effective across various green technologies, including solar energy, batteries, and electric vehicles. Nonetheless, reliance on a strategic competitor introduces vulnerabilities that China could potentially exploit. The prospect of Chinese export controls – similar to measures on critical minerals or technology embargoes during conflicts such as Taiwan scenarios – renders deep dependency strategically unsustainable.

Global South partnerships offer access to resources but encounter significant implementation challenges. As Kohnert (Kohnert, 2008) illustrates through an analysis of EU-Africa collaborations, European strategies are frequently viewed as neo-colonial resource extraction. African leaders are increasingly pressing for value-added processing within their countries, rather than exporting raw materials – precisely the type of value chain enhancement Europe aims for itself. Additionally, China's Belt and Road Initiative has established extensive infrastructure and relationships across Africa, further complicating European engagement.

The ethical dimension further complicates these issues. Europe's transition to a low-carbon economy must uphold the principle that environmental and social costs are not externalized onto developing countries. However, European ESG (environmental, social, governance) standards tend to raise costs for mining and processing activities, thereby rendering European collaborations less competitive compared to Chinese counterparts that offer capital without rigorous human rights or environmental stipulations.

4.3. The Temporal Dilemma: Speed vs. Security

Climate science demonstrates that the remaining carbon budget consistent with 1.5°C warming is extremely limited. The IPCC Special Report on 1.5°C (WeForest, 2018) estimates that limiting global temperature rise necessitates a reduction in emissions of approximately 45% by 2030 relative to 2010 levels. Europe's target of a 55% reduction by 2030 reflects the urgency of these findings. Delays in action are not benign; they result in the permanent locking-in of fossil fuel infrastructure and render climate targets increasingly unattainable.

Developing strategic autonomy in green technologies necessitates considerable time investments. The transition from nearly non-existent European capacity for rare earth processing to substantial levels is projected to require a minimum of 10 to 15 years, accounting for permitting procedures, construction phases, and operational scaling (Critical Raw Materials Act - Internal Market, Industry, Entrepreneurship and SMEs, n.d.). The construction of battery gigafactories typically spans 4 to 5 years, even after financing is secured (Sustainability & Annual Report 2023, 2024). Moreover, establishing intricate supply chains for green hydrogen – encompassing electrolyzer manufacturing, pipeline infrastructure, and refuelling networks – extends across several decades.

This situation introduces a significant timing discrepancy. The period from 2024 to 2035 marks a phase of heightened vulnerability for Europe: climate objectives necessitate prompt implementation prior to the development of autonomous capabilities, thereby increasing reliance on existing suppliers, predominantly China. This timeframe aligns with a period of potentially escalating geopolitical tensions, including scenarios involving Taiwan, disputes in the South China Sea, and an intensification of Sino-American rivalry.

The European Union implicitly endorses initiatives such as CRMA, the Net-Zero Industry Act, and substantial REPowerEU funding. Nonetheless, the magnitude of investments and the level of political commitment necessary may fall short. According to the European Court of Auditors (European Court of Auditors, 2024), fragmentation among member states, inconsistent implementation, and insufficient funding relative to needs jeopardize the attainment of declared objectives.

4.4. The Governance Dilemma: Openness vs. Control

Innovation in green technologies requires open scientific collaboration, international talent mobility, and venture capital funding. However, security considerations impose restrictions on technology transfer, foreign investment screening, and research security, creating significant governance challenges in balancing these conflicting demands. The Horizon Europe framework attempts balance through its principle “as open as possible, as closed as necessary.” Article 22.5 allows restricting participation in strategic projects. A new toolkit addresses foreign interference in research (European Commission, 2022). Yet determining when restrictions are “necessary” remains controversial.

Scientists contend that overly restrictive policies may hinder Europe's competitive edge. Collaborative research endeavours with Chinese institutions have led to significant advancements in batteries, photovoltaic technologies, and materials science. Banning such

partnerships could potentially shift innovation to other regions, notably the United States, where, despite security concerns, research collaborations with China persist across various fields (Science Europe et al., 2025).

Security agencies contend that technological leakage resulting from research collaborations, student training, and commercial partnerships facilitates the transfer of European technological advantages to strategic competitors. An illustrative case is that of rare earth expertise: European scientists have trained numerous Chinese engineers, who now form the core of China's leading rare earth industry.

The dual-use issue further complicates governance. When research on battery chemistry or hydrogen storage serves both civilian climate goals and military interests, who should determine publication restrictions? How can academic freedom be balanced with national security concerns? European traditions of open science conflict with securitization priorities.

Export controls pose similar challenges. The revised EU Dual-Use Regulation (Dual-Use Export Controls | EUR-Lex, 2024) has broadened its scope, yet implementation of its green technology provisions remains inconsistent. For example, battery technology is not explicitly regulated, despite its clear military applications. This situation highlights conceptual gaps - specifically the inadequate recognition of green dual-use - and industry influence, as manufacturers oppose controls that could restrict market access.

The foreign direct investment (OECD, 2022) screening mechanisms empower member states to scrutinize foreign investments in critical technologies. Nonetheless, implementation exhibits significant variability across nations. While countries such as France, Germany, and Italy conduct stringent screenings, others remain more permissive. This inconsistency creates arbitrage opportunities, allowing investors to exploit jurisdictions with more lenient screening policies to access the EU-wide market.

The fundamental question of governance is whether liberal democratic frameworks committed to openness, multilateralism, and free-market principles can effectively compete in strategic technological rivalries with authoritarian state-capitalist regimes willing to subordinate all considerations to strategic objectives. Alternatively, it questions whether achieving security requires adopting more restrictive measures that may conflict with liberal values.

5. Toward Strategic Coherence in Europe's Green Security Transition?

The shift from reliance on fossil fuels to renewable energy sources introduces new dependencies on critical materials and technologies, which are often concentrated among geopolitically sensitive suppliers. Additionally, technologies originally developed for civilian climate applications inherently possess dual-use capabilities that can be adapted for military systems. The pursuit of strategic autonomy emerges as a guiding principle aimed at balancing climate action, economic competitiveness, and security interests.

Nevertheless, substantial contradictions persist unresolved. The climate-security-economy trilemma presents complex challenges with no straightforward solutions. Strategic partnerships confront difficult trade-offs among allies with limited capacity, competitors who prioritize efficiency over security, and developing nations wary of European motives. Timing discrepancies create a vulnerability window coinciding with potential peaks in geopolitical tensions. Additionally, governance structures tailored for traditional dual-use military technologies are ill-suited to the distributed innovation ecosystems generating green technologies.

Policy Recommendations: Toward an Integrated Green Security Strategy

Urgent Measures (2024-2027)

1. Establish Green Dual-Use Coordination Mechanism

Establish a high-level coordination body comprising DG Energy, DG Defence Industry and Space, DG Internal Market, and EEAS. The mandate of this body is to develop a cohesive strategy to address the green-security nexus, reconciling the sometimes-conflicting objectives of climate policies, industrial strategies, and security considerations.

2. Accelerate CRMA Implementation with Security Lens

Fast-track permitting for strategic projects, such as rare earth processing and battery gigafactories, through coordinated efforts among member states. Priority is given to projects involving trusted partners, including the EU and allied democracies, even when these options are more costly than alternatives.

3. NATO Green Defence Roadmap

Establish comprehensive alliance-wide standards for dual-use green military technologies and develop joint procurement mechanisms for batteries, hydrogen systems, and microgrids to realize economies of scale. Incorporate green transition strategies into defence planning frameworks.

Medium-Term Initiatives (2027-2035)

4. Democratic Green Technology Alliance

Establish a formalized cooperation framework with the United States, Japan, South Korea, Australia, and Canada to facilitate joint research and development, harmonize standards, and coordinate export controls on strategic green technologies.

5. Circular Economy as Security Strategy

Implement large-scale urban mining strategies to source critical materials such as rare earth elements, lithium, and cobalt. Enforce design-for-disassembly principles in electronic devices and vehicles to facilitate recycling. Aim to meet 50% of the demand for these critical materials through recycling by 2040, thereby reducing reliance on imports from over 95% currently.

6. Updated Dual-Use Governance

Revise the Wassenaar Arrangement and EU Dual-Use Regulation to explicitly incorporate provisions concerning green dual-use technologies. Establish definitive criteria delineating when battery technology, rare-earth processing, and hydrogen systems require

export licensing. Strive to balance security controls with innovation requirements through streamlined yet rigorous procedures.

7. Strategic African Partnerships

Restructure the Global Gateway initiative to emphasize authentic development benefits. Prioritize value-chain enhancement in resource-rich nations over solely extraction activities. Facilitate technology transfer, capacity building, and infrastructure investment within transparent frameworks that address neo-colonial concerns.

Scenarios for 2035

Optimistic Scenario: “Green Autonomy Achieved” (low probability)

Europe has successfully expanded its processing capacity for critical materials by over 40% through sustained investment and political commitment. Partnerships with African and allied nations are yielding diversified supply sources beyond China. Advances in technology - such as REE-free motors, next-generation batteries, and affordable green hydrogen - are decreasing dependency risks. These efforts enable achieving climate targets while strengthening strategic resilience.

Most Likely Scenario: “Muddling Through” (medium to high probability)

Partial capacity development results in 20-25% processing within Europe, which falls short of CRMA targets. Dependence on China has decreased but still remains significant, exceeding 50% for key materials. Climate targets have been delayed by 2 to 3 years. The situation reflects neither full autonomy nor complete vulnerability, representing an ongoing managed dependency.

Pessimistic Scenario: “Strategic Failure” (low probability)

Investments decline due to economic crises, political backlash, or fragmentation. European capacity development remains below 15%. Dependence on China exceeds 80%, as European industries prioritize the lowest-cost inputs. Climate targets are missed by more than 5 years. Security vulnerabilities and climate failures occur simultaneously.

Final Reflection: The Inseparable Paradox

The European Green Deal operates at the nexus of three historical forces: the climate emergency necessitating urgent intervention, the restructuring of global power relations through geopolitical competition, and a fundamental transformation of security paradigms beyond conventional military domains. The attempt to reconcile these forces engenders paradoxes that cannot be definitively resolved – only strategically managed.

Europe must recognize that the green transition represents not only a technical or economic challenge but also a reconfiguration of global power structures and value chains, wherein dual-use green technologies emerge as a new strategic battleground. The critical question is not whether Europe can afford to pursue both sustainability and security simultaneously, but whether it can afford not to. Inaction on climate change risks long-term security by destabilizing the environment. Conversely, a green transition lacking strategic foresight may lead to dangerous dependencies that could be exploited by geopolitical rivals.

The ultimate effectiveness of the Green Deal hinges on Europe’s capacity to integrate climate, economic, and security objectives into a cohesive strategic framework. Progressing

beyond mere rhetorical commitments to “open strategic autonomy,” the continent must pursue tangible, sustained implementation, acknowledging the inherent trade-offs and costs involved. The importance of this endeavour is profound: failure could lead not only to a worsening climate crisis but also to strategic marginalization and economic decline within the emerging green technology sector.

The paradox, ultimately, may be inherently linked to the very process of transition. Mastery in managing it entails recognizing its persistent tensions as integral and requiring ongoing strategic adaptation. Absolute solutions are unattainable; therefore, strategic sagacity involves acknowledging this reality and developing institutions, partnerships, and capacities resilient enough to steer through continuous contradictions toward the most favourable outcomes possible.

6. Strategic Priorities for Romania in the Green-Security Transition

For Romania, situated at the nexus of Europe’s green transition objectives and the security dynamics of the Black Sea region, this shift presents both novel opportunities and intricate challenges. As a frontline member of NATO, an energy producer, and a potential transit route, the country necessitates strategic approaches that extend beyond conventional sectoral boundaries.

Romania’s effective management of the green-security nexus necessitates a shift from mere compliance with EU regulations to a proactive role as a pivotal actor within Europe’s developing green-security framework. The convergence of pressing climate issues, increased threat perception following Russia’s invasion of Ukraine, and escalating geopolitical competition over green technology supply chains delineates a narrow window during which targeted strategic investments can generate significant advantages. Nonetheless, actualizing this potential requires cohesive institutional frameworks, robust strategic alliances, and coordinated planning across various levels of governance.

Based on the analytical framework, six strategic priorities are identified for Romanian policymakers, negotiators, and implementers across national, regional, and local levels. These priorities integrate lessons learned from European dual-use technology governance, dependencies on critical materials, and the practical challenges of balancing climate, security, and economic objectives.

Romania must **first establish an integrated green-security governance** framework to address existing institutional fragmentation. The analysis indicates that the effective management of dual-use green technologies necessitates coordination among energy ministries, defence agencies, economic development bodies, and intelligence services – sectors that traditionally operate independently. The country should develop a high-level inter-ministerial mechanism, endowed with Prime Ministerial authority, to oversee major green infrastructure projects from both climate and security perspectives. This body would ensure that initiatives such as renewable energy deployment in border regions, smart grid implementation, and critical materials processing undergo a comprehensive strategic assessment, transcending narrow sectoral interests.

Second, Romania should **strategically position itself as Europe's hub for Black Sea green energy**, capitalizing on its geographic advantages and strategic location. The analysis of energy geopolitics indicates that dominance over renewable energy generation and transit infrastructure represents a new dimension of strategic influence. Romania's offshore wind resources in the Black Sea exceed 60 GW – enough to meet domestic demand and to support neighbouring countries, including Ukraine's post-war reconstruction efforts. By expanding offshore wind capacity, developing hydrogen production facilities, and establishing Constanța as a regional energy logistics hub, Romania can transition from an energy-peripheral state to a vital link in European energy security. This strategic positioning enhances Romania's leverage in EU negotiations, justifying preferential treatment in funding and regulatory policies. Furthermore, as Ukraine undertakes extensive reconstruction of its energy infrastructure post-conflict, Romania's capacity to supply renewable electricity and hydrogen would yield economic benefits and enhanced geopolitical influence. The strategic importance extends beyond economics; energy interdependence with Ukraine, Moldova, and Bulgaria fosters resilience networks that mitigate collective vulnerabilities to hybrid threats from Russia.

Third, Romania must develop a **comprehensive critical materials strategy** that addresses the substitution paradox identified in this chapter's analysis. The transition away from fossil fuel dependence towards renewable energy systems shifts vulnerabilities from Russian gas to Chinese-controlled rare earth processing and battery manufacturing. Romania possesses untapped rare earth deposits, potential lithium reserves in the Western Carpathians, and copper resources. Instead of allowing these resources to remain undeveloped and importing processed materials, Romania should pursue strategic extraction, prioritizing long-term energy sovereignty.

Fourth, Romania should **establish strategic technology partnerships with allied democracies** to co-develop and manufacture dual-use green technologies. The analysis indicates that attaining technological sovereignty does not necessitate autarky or ongoing reliance on strategic competitors. Romania can host allied manufacturing facilities, gaining technology transfer, employment opportunities, and enhanced resilience, while also reinforcing allied presence on NATO's eastern flank. Specific opportunities include forming battery manufacturing partnerships with the United States to serve both civilian electric vehicle markets and military applications for forward-deployed forces; collaborating with Germany on advanced wind turbine and smart grid manufacturing, integrating Romanian capacity into established industrial supply chains; engaging with France on nuclear technology cooperation for small modular reactors with civilian and potential naval propulsion uses; and developing solar panel manufacturing partnerships with Japan or South Korea to establish EU-allied supply chains and reduce dependence on Chinese imports.

Fifth, Romania must prioritize the implementation of **cyber-resilient energy infrastructure designed from the outset**, rather than relying on costly retrofitting initiatives. The empirical evidence presented in this chapter – highlighting recurrent Russian cyberattacks on electricity grids coupled with kinetic strikes – underscores that energy infrastructure remains a primary target in contemporary hybrid warfare. As Romania advances the

deployment of smart grids essential for integrating renewable energy sources, including wind farms, hydrogen facilities, and distributed generation systems, each connection point introduces potential vulnerabilities. It is imperative to establish cybersecurity-by-design standards for all new green energy infrastructure, incorporating military-grade security protocols for critical installations to prevent systemic weaknesses from becoming embedded within systems expected to operate over multiple decades. This approach necessitates collaboration with NATO's Cooperative Cyber Defence Centre of Excellence, integration of Romanian cyber units into energy infrastructure protection efforts, and the conduct of regular red-team exercises to simulate cyberattacks. Additionally, implementing redundancy measures, such as island-mode operation capabilities, will ensure the resilience of critical systems during grid disruptions. The dual-use rationale remains pertinent: investments in civilian grid resilience concurrently bolster military base energy security, thereby justifying co-financing within the defence budget and adherence to NATO interoperability standards.

Sixth, Romania should implement **equitable transition strategies to mitigate social backlash**, which could undermine both climate and security objectives. The increasing political contestation faced by the European Green Deal implementation, exemplified by farmer protests and populist opposition, threatens its momentum. Romania's coal-dependent regions, such as Oltenia and the North-East – employing thousands in industries subject to phased closures – present significant social challenges. Without proactive interventions – including comprehensive reskilling programs for coal miners to renewable energy technicians, community benefit-sharing from green infrastructure, transparent dialogue mechanisms, and viable economic alternatives – these regions risk becoming focal points for political opposition exploiting grievances related to the green transition. Achieving this requires sophisticated communication strategies, early engagement with communities in project planning, and equitable distribution of transition benefits to prevent concentration in already prosperous regions.

Romania faces a constrained temporal window – approximately from 2024 to 2035 – within which it can strategically position itself before global green technology supply chains and geopolitical alignments become entrenched in stable configurations. The nation has the opportunity to leverage its frontline NATO status, energy resources, strategic geographical position, and industrial base to transition from a marginal EU member to a pivotal nexus in European green-security policy. Conversely, a passive approach centred solely on compliance with EU mandates, absent a strategic vision, would result in Romania remaining on the periphery of European integration and increasingly dependent on external factors – an opportunity lost that is unlikely to recur. The decision is not whether to implement the Green Deal – EU membership obligations mandate this – but whether such implementation will be narrowly focused on compliance or strategically oriented toward repositioning.

Bibliography

- 7ae11ca9-9ff5-4d0f-a097-86a719ed6892_en.pdf. (n.d.). Retrieved January 27, 2026, from https://research-and-innovation.ec.europa.eu/document/download/7ae11ca9-9ff5-4d0f-a097-86a719ed6892_en
- 2024.10_HE_Hydrogen-Infrastructure-Report.pdf. (n.d.). Retrieved January 28, 2026, from https://hydrogeneurope.eu/wp-content/uploads/2024/10/2024.10_HE_Hydrogen-Infrastructure-Report.pdf
- A Global Strategy for the European Union's Foreign and Security Policy* | EEAS. (n.d.). Retrieved January 27, 2026, from https://www.eeas.europa.eu/eeas/global-strategy-european-unions-foreign-and-security-policy_en
- Bayraktar
 TB2. (n.d.). Retrieved January 27, 2026, from <http://baykartech.com/en/uav/bayraktar-tb2/>
- Borrell, J. (2021). Why European Strategic Autonomy Matters. *Federalist Debate* (16829670), (2).
- Bund Summit speech*. (n.d.). [Text]. European Commission - European Commission. Retrieved January 27, 2026, from https://ec.europa.eu/commission/presscorner/detail/es/speech_23_4582
- Buzan, B., Wæver, O., & De Wilde, J. (1998). *Security: A new framework for analysis*. Lynne Rienner Publishers.
- Cefai, S. (2025, November 11). China suspends export prohibition on gallium, germanium, antimony, superhard materials to US. *Fastmarkets*. <https://www.fastmarkets.com/insights/china-suspends-export-prohibition-on-superhard-materials-us/>
- COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN COUNCIL, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS A Green Deal Industrial Plan for the Net-Zero Age (2023). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52023DC0062>
- Council adopts a recommendation to enhance research security*. (n.d.). Consilium. Retrieved January 27, 2026, from <https://www.consilium.europa.eu/en/press/press-releases/2024/05/23/council-adopts-a-recommendation-to-enhance-research-security/>
- Critical Raw Materials Act—Internal Market, Industry, Entrepreneurship and SMEs*. (n.d.). Retrieved January 28, 2026, from https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/critical-raw-materials/critical-raw-materials-act_en
- Cyber-Attack Against Ukrainian Critical Infrastructure* | CISA. (2021, July 20). <https://www.cisa.gov/news-events/ics-alerts/ir-alert-h-16-056-01>
- Damen, M. (2023). EU green strategic autonomy: The challenge of combining two objectives. *European Parliamentary Research Service*.
- Dual-use export controls* | EUR-Lex. (2024, September 10). <https://eur-lex.europa.eu/EN/legal-content/summary/dual-use-export-controls.html>
- EEAS Annual Activity Report – 2021*. (n.d.).
- European Court of Auditors. (2024). *EU audit in brief, 2023*. Publications Office. <https://data.europa.eu/doi/10.2865/567705>
- European Critical Raw Materials Act—European Commission*. (n.d.). Retrieved January 27, 2026, from https://commission.europa.eu/topics/competitiveness/green-deal-industrial-plan/european-critical-raw-materials-act_en

- European Defence Fund (EDF)—Official Webpage of the European Commission. - Defence Industry and Space.* (n.d.). Retrieved January 28, 2026, from https://defence-industry-space.ec.europa.eu/eu-defence-industry/european-defence-fund-edf-official-webpage-european-commission_en
- European economic security.* (n.d.). Consilium. Retrieved January 27, 2026, from <https://www.consilium.europa.eu/en/policies/european-economic-security/>
- eu-solar-market-outlook-2025-2030—SolarPower Europe.* (n.d.). Retrieved January 28, 2026, from <https://www.solarpowereurope.org/insights/outlooks/eu-solar-market-outlook-2025-2030#download>
- Fiott, D. (2022). *Strategic Autonomy: Towards' European Sovereignty'in Defence?*. JSTOR.
- FY_2022_NDAA_Report_on_Congressional_Increases_June_2022.pdf.* (n.d.). Retrieved January 28, 2026, from https://comptroller.war.gov/Portals/45/Documents/execution/NDAA_Reports/FY_2022_NDAA_Report_on_Congressional_Increases_June_2022.pdf
- Geopolitics of the Energy Transition: Critical Materials.* (n.d.). Retrieved January 27, 2026, from <https://www.irena.org/Digital-Report/Geopolitics-of-the-Energy-Transition-Critical-Materials>
- Global Gateway—European Commission.* (2023, March 1). https://commission.europa.eu/topics/international-partnerships/global-gateway_en
- Global Hydrogen Review 2023 – Analysis.* (2023, September 22). IEA. <https://www.iea.org/reports/global-hydrogen-review-2023>
- Hurst, C. (2010). *China's rare earth elements industry: What can the west learn?*
- Joint European action for more affordable, secure energy.* (n.d.). [Text]. European Commission - European Commission. Retrieved January 27, 2026, from https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1511
- Kaska, K., Beckvard, H., & Minárik, T. (2019). Huawei, 5G and China as a security threat. *NATO Cooperative Cyber Defence Center for Excellence (CCDCOE)*, 28, 1–26.
- Kohnert, D. (2008). *EU-African Economic Relations: Continuing Dominance, Traded for Aid?* (SSRN Scholarly Paper No. 1155041). Social Science Research Network. <https://doi.org/10.2139/ssrn.1155041>
- Le Corre, P. (2018). China's rise as a geoeconomic influencer: Four European case studies. *Carnegie Endowment for International Peace.*
- Leonard, M., Pisani-Ferry, J., Shapiro, J., Tagliapietra, S., & Wolff, G. B. (2021). *The geopolitics of the European green deal.* Bruegel policy contribution.
- Mitrova, T., Melnikov, Y., Chugunov, D., & Glagoleva, A. (2019). The Hydrogen Economy—A path towards low carbon development. *Moscow, Skolkovo.*
- MOFCOM Regular Press Conference (July 6, 2023).* (n.d.). Retrieved January 27, 2026, from https://english.mofcom.gov.cn/News/PressConference/art/2023/art_36fb2d80e4b4453891bb8fc83e2b3c4e.html
- NATO 2022 Strategic Concept.* (n.d.). Official Texts and Resources | NATO. Retrieved January 27, 2026, from <https://www.nato.int/en/about-us/official-texts-and-resources/strategic-concepts/nato-2022-strategic-concept>
- NUPI_Fact_Sheet_Sahel_LR5.pdf.* (n.d.). Retrieved January 27, 2026, from https://www.sipri.org/sites/default/files/NUPI_Fact_Sheet_Sahel_LR5.pdf
- OECD. (2022). *Framework for Screening Foreign Direct Investment into the EU: Assessing effectiveness and efficiency.* OECD. <https://doi.org/10.1787/f75ec890-en>

- Oels, A. (2012). From 'securitization' of climate change to 'climatization' of the security field: Comparing three theoretical perspectives. In *Climate change, human security and violent conflict: Challenges for societal stability* (pp. 185–205). Springer.
- Onyeji, I., Bazilian, M., & Bronk, C. (2014). Cyber security and critical energy infrastructure. *The Electricity Journal*, 27(2), 52–60.
- Overland, I. (2019). The geopolitics of renewable energy: Debunking four emerging myths. *Energy Research & Social Science*, 49, 36–40.
- Paleari, S. (2024). The role of strategic autonomy in the EU green transition. *Sustainability*, 16(6), 2597.
- Rare Earths Statistics and Information* | U.S. Geological Survey. (n.d.). Retrieved January 28, 2026, from <https://www.usgs.gov/centers/national-minerals-information-center/rare-earths-statistics-and-information>
- Response to the EU's draft definition of low-carbon hydrogen. (n.d.). *Hydrogen Science Coalition*. Retrieved January 28, 2026, from <https://h2sciencecoalition.com/briefings/response-to-the-eus-draft-definition-of-low-carbon-hydrogen/>
- Russia's Cyber Tactics: Lessons Learned in 2022—SSSCIP analytical report on the year of russia's full-scale cyberwar against Ukraine*. (n.d.). Retrieved January 28, 2026, from <https://cip.gov.ua/en/news/russia-s-cyber-tactics-lessons-learned-in-2022-ssscip-analytical-report-on-the-year-of-russia-s-full-scale-cyberwar-against-ukraine>
- Science Europe, Borrell-Damián, L., Woźniakowska, J., & Groeneveld, I. (with Famprikezi, T., Begum, R., Feakes, H., Sharman, B., Bonenkamp, B., Kuipers, J., Dobrzańska-Bzowska, M., & Verbaeys, I.). (2025). *Science Europe Report on Research Security: Key Messages and Actions from the Workshop Series*. Science Europe. <https://doi.org/10.5281/ZENODO.17433204>
- State of the Union Address by President von der Leyen*. (n.d.). [Text]. European Commission - European Commission. Retrieved January 27, 2026, from https://ec.europa.eu/commission/presscorner/detail/ov/speech_22_5493
- Sustainability & Annual Report 2023*. (2024, June 19). <https://northvolt.com/sustainability/report2023/>
- The European Green Deal—European Commission*. (n.d.). Retrieved January 27, 2026, from https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en
- vhenze. (2022, November 12). China's Battery Supply Chain Tops BNEF Ranking for Third Consecutive Time, with Canada a Close Second. *BloombergNEF*. <https://about.bnef.com/insights/clean-energy/chinas-battery-supply-chain-tops-bnef-ranking-for-third-consecutive-time-with-canada-a-close-second/>
- Wassenaar. (2025, December 5). List of Dual-Use Goods and Technologies & Munitions List (2025) Corr. *The Wassenaar Arrangement*. <https://www.wassenaar.org/list-of-dual-use-goods-and-technologies-munitions-list-2025/>
- WeForest. (2018, October 10). IPCC Special Report, "Global Warming of 1.5°C." *WeForest*. <https://www.weforest.org/blog/opinion/ipcc-global-warming-15-c-special-report-6-oct-2018/>

MULTI-LEVEL GOVERNANCE AND THE PRINCIPLE OF SUBSIDIARITY

Gabriela DRĂGAN

Abstract: *The European Green Deal (EGD) has evolved from a strategic initiative of the late 2010s into the central – yet increasingly contested framework - shaping the European Union’s socio-economic transformation. Its implementation now unfolds in a context marked by renewed institutional leadership for the 2024–2029 cycle, the persistent geopolitical and energy implications of Russia’s war against Ukraine, and renewed uncertainty in global climate governance following policy shifts associated with the Trump 2.0 administration in the United States. These developments have intensified debates over energy security, industrial competitiveness, distributional fairness, and the political feasibility of climate reforms. As a result, the Green Deal must operate within a fragmented and volatile environment, where ambitious climate objectives intersect with acute geopolitical and socio-economic pressures. The chapter examines the governance architecture of the Green Deal through the analytical lens of multi-level governance, placing the principle of subsidiarity at the core of the allocation of authority and responsibility. It argues that the EGD cannot be understood as a top-down project but rather as a complex, multi-layered governance process in which authority, responsibility, and capacity are distributed across supranational, national, regional, and local levels.*

The analysis begins with an assessment of the role of EU institutions as structural anchors of Green Deal governance. The European Commission exercises strategic leadership, policy integration, and implementation oversight; the European Parliament functions as a norm entrepreneur and democratic legitimiser; the Council and European Council aggregate national preferences and broker political compromises; and advisory bodies, agencies, and the European Investment Bank expand territorial participation, scientific expertise, and financial leverage. The chapter then investigates how responsibilities are allocated across domestic governance levels, drawing on theories of state capacity, policy coherence, Europeanisation, and place-based governance. National governments remain central actors in translating EU-wide objectives into coherent domestic strategies, but their effectiveness depends on transformative administrative capacity and inter-ministerial coordination. Regional authorities play a key role in territorial adaptation and in the management of cohesion instruments, particularly in coal-dependent or structurally vulnerable regions. Local authorities — especially cities — emerge as critical sites of implementation, experimentation, and innovation, yet their ability to act is conditioned by significant disparities in fiscal, administrative, and political capacity. Finally, the chapter analyses models of vertical and horizontal coordination, emphasising that the Green Deal’s success hinges on the EU’s ability to align supranational ambition with domestic feasibility, while fostering collaboration across territorially and functionally differentiated actors. Subsidiarity emerges as the foundational governance logic enabling this alignment. The chapter concludes that the viability of the Green Deal in the second half of the 2020s ultimately depends on how effectively subsidiarity is operationalised through

administrative capacity, policy coherence, and adaptive coordination mechanisms across different levels of governance.

SECTION 1. The Role of EU Institutions

Understanding the role of EU institutions in shaping and implementing the European Green Deal (EGD) requires situating the analysis within core debates in European integration theory, multi-level governance, and EU environmental policy. The EU is widely described as a compound polity characterised by dispersed authority, overlapping competences, and institutional interdependence (Scharpf, 1997; Piattoni, 2010; Kelemen, 2014). Within this complex governance environment, EU institutions not only legislate but also interpret, coordinate, negotiate, and steer the trajectory of climate action. The Green Deal amplifies these dynamics by embedding climate objectives across multiple policy fields—energy, transport, industry, agriculture, finance—and by requiring coordinated long-term efforts across governance levels. In this context, EU institutions perform not only legislative functions but also agenda-setting, policy integration, implementation orchestration, financial steering, and legitimacy-building. The governance of the EGD therefore reflects the hybrid nature of EU authority: supranational leadership, intergovernmental bargaining, and network-based coordination coexist and shape outcomes (Peterson & Bomberg, 2011; Fabbrini, 2019).

1.1. The European Commission: Supranational leadership, policy entrepreneurship, and orchestration

The European Commission has long been described as the supranational engine of European integration (Sandholtz & Stone Sweet, 1998; Pollack, 2003). In the context of the Green Deal, it embodies what Delreux and Happaerts (2016) term environmental policy entrepreneurship—the capacity to define long-term objectives and craft integrated solutions that transcend national boundaries.

A. The Commission as “policy integrator”

Historically, environmental and climate policies evolved across fragmented legal bases and sectoral silos, with limited strategic coherence between energy, transport, agriculture and industrial domains. The Green Deal marks the first comprehensive attempt to integrate these domains into a unified strategic narrative. The literature suggests that the Commission is well positioned to assume this integrative role due to its cross-sectoral mandate, strong analytical capacity, and ability to formulate long-term strategic visions beyond national electoral cycles. These attributes allow the Commission to shape climate governance in ways that member states would find difficult to replicate on their own (Nugent & Rhinard, 2015).

B. The Commission as “guardian of implementation”

Scharpf (1997) describes the EU as a system operating through “joint-decision traps” where policy adoption depends on consensus but implementation varies widely. The Commission mitigates this by evaluating National Energy and Climate Plans (NECPs), monitoring progress through the Governance Regulation, linking reform commitments to EU financial support and issuing Country-Specific Recommendations within the European Semester.

This reflects a form of orchestration, in the sense described by Abbott & Snidal (2009): the Commission coordinates national actors without hierarchical authority, relying on soft power, conditionality, and expertise.

C. The Commission as financial broker

No transformative transition is possible without large-scale investment. Through instruments such as the Recovery and Resilience Facility, InvestEU, the Social Climate Fund, and the Just Transition Fund, the Commission exercises governance-by-conditionality (Sabel & Zeitlin, 2010), using financial leverage to shape national reform trajectories and align investments with EU climate objectives.

1.2. The European Parliament: Norm entrepreneurship, democratic legitimisation, and discursive shaping

The academic literature increasingly recognises the European Parliament (EP) as a central norm entrepreneur in environmental and climate governance (Burns, 2013). Although it shares legislative authority with the Council under the ordinary legislative procedure, its influence extends beyond co-decision. The EP shapes climate ambition and political discourse while reinforcing the democratic legitimacy of transformative policies such as the European Green Deal.

A. Normative pressure and the pursuit of ambition.

One of the Parliament's most distinctive contributions is its consistent push for more ambitious climate targets. This reflects what Richardson (2012) describes as the "acceleration logic" of EU climate policy. The EP advocates stricter emissions caps, more demanding sectoral standards, and faster implementation timelines through strategic amendments, assertive rapporteurship, coalition-building, and engagement in trilogues. It also seeks to strengthen the social dimension of climate policy by promoting just transition provisions and enhanced accountability mechanisms. In this way, the EP operates not merely as a co-legislator but as a driver of upward policy ambition.

B. Deliberative function and democratic legitimacy

Beyond legislative bargaining, the Parliament serves as a deliberative arena where climate policy is publicly debated and justified. Drawing on Schmidt's discursive institutionalism (2008; 2013), the EP provides a space in which climate measures are contested, reframed, and connected to societal expectations. Through plenary debates, committee hearings, and stakeholder dialogues, the Parliament exposes Green Deal legislation to democratic scrutiny, thereby strengthening its legitimacy. This deliberative dimension ensures that climate governance remains anchored in representative democracy rather than technocratic insulation.

C. Representation of political cleavages

Ideological divisions between green-progressive groups, liberal market-oriented actors, and conservative or sovereigntist parties shape legislative dynamics.

CASE BOX 1 — The Carbon Border Adjustment Mechanism (CBAM): The European Parliament as a Driver of Climate Ambition

Context: The legislative process leading to the adoption of the Carbon Border Adjustment Mechanism (CBAM) offers one of the clearest examples of the European Parliament acting as a **climate ambition driver** under the Green Deal. Throughout the negotiations between 2021 and 2023, the Parliament consistently pushed for a more stringent design than the European Commission's original proposal and well beyond the preferences of several Member States represented in the Council.

- The Parliament's initial position (adopted June 2022) called for the **rapid phase-out of free ETS allowances**, proposing full elimination by 2030, whereas the Council supported a much slower trajectory extending to 2035. Parliamentary rapporteurs argued that maintaining free allowances would weaken the environmental integrity of CBAM, undermine the EU's industrial decarbonisation incentives, and delay the transformation of high-emitting sectors such as steel, cement, and fertilisers (European Parliament, 2023). This strong stance forced the Council to modify its position during trilogue negotiations, ultimately agreeing to a significantly accelerated phase-out schedule — one of the Parliament's most notable victories.
- The Parliament also advocated for a **broader sectoral scope**, pressing for the inclusion of organic chemicals, hydrogen, polymers, and indirect emissions. Although not all additions were accepted immediately, the final regulation includes a mandatory review clause instructing the Commission to evaluate the inclusion of these sectors by 2026, reflecting the Parliament's insistence on future-proofing the mechanism (CBAM Regulation, 2023).
- Another area in which the Parliament shaped ambition concerns **governance and transparency**. MEPs demanded clearer reporting obligations for importers, stricter monitoring of embedded emissions, and reinforced anti-circumvention measures to avoid trade diversion — concerns shared by several NGOs and research institutes (ECA, 2024). The final text integrates many of these provisions, strengthening the institutional architecture around CBAM and improving its enforcement capacity.
- Importantly, the Parliament insisted that CBAM must be embedded in a **broader social and international fairness framework**, calling for revenues to be channelled toward the EU budget and climate-related spending, and emphasising support for developing countries affected by carbon pricing. While the Council softened this language, the Parliament secured recognition of these principles in the joint statement annexed to the final agreement.

The CBAM negotiations thus illustrate the Parliament's growing role as a **"climate accelerator"**: an institution capable of pushing the policy frontier, shaping ambition levels, and leveraging co-decision to constrain the Council's more cautious preferences. In the context of the Green Deal, CBAM stands as a landmark demonstrating how supranational and intergovernmental dynamics collide and converge to produce high-impact climate legislation.

Sources: *CBAM Regulation (EU) 2023/956, European Court of Auditors (2024), European Parliament & Council Trilogues (2022–2023).*

These cleavages influence negotiation outcomes and mediate the balance between environmental ambition, industrial competitiveness, and social protection. The EP thus acts both as an ambition driver and as an arena where competing visions of climate transition are politically contested.

1.3. The Council and the European Council: Intergovernmental bargaining and political aggregation

The Council of the European Union and the European Council represent the core of the EU's intergovernmental dimension. Both institutions operate as strategic arenas where national preferences, domestic economic structures, and political constraints must be aggregated into EU-wide decisions (Hix & Høyland, 2011; Bailer, 2011). Their role is particularly significant in climate governance, where policy commitments require high levels of coordination, but where the distributive consequences of decarbonisation vary significantly across Member States.

A. The Council as “joint decision-maker”

In line with Scharpf's (1988) concept of joint decision-making, the Council must continuously reconcile diverse and sometimes conflicting national interests. Member States display substantial asymmetries: some remain heavily dependent on fossil fuels, such as Poland or the Czech Republic; others rely on nuclear energy and defend technological neutrality, as seen in France and Finland; renewable-energy front-runners like Denmark or Sweden push for more stringent targets; while industrial powerhouses such as Germany and Italy tend to prioritise competitiveness, technological feasibility, and regulatory predictability. These divergences give rise to multiple and shifting coalitions — the Visegrád group, the Nordic states, Mediterranean countries, and other ad hoc alignments — each seeking to influence the shape and timing of climate legislation. The Council therefore functions as a complex negotiation system in which climate policy becomes a balancing act between environmental ambition, energy security, and industrial strategy. The outcomes of these negotiations reflect not only scientific imperatives but also the political economies of Member States, making the Council a pivotal arena for shaping the compromises that underpin the Green Deal.

B. The European Council as crisis manager and strategic guide

While the Council is the primary legislative actor, the European Council increasingly sets the strategic direction of EU climate governance. Fabbrini (2019) emphasises its evolving role as the institution capable of resolving political deadlocks that other bodies cannot overcome. The European Council has provided decisive guidance at several critical junctures: it endorsed the 2050 climate neutrality objective, negotiated the multiannual financial framework for 2021–2027, and approved the creation of NextGenerationEU, the unprecedented recovery instrument linking financial solidarity to climate and digital priorities. Moreover, it brokered the political compromise that allowed the adoption of the rule-of-law conditionality mechanism, demonstrating its capacity to mediate highly polarised situations. The European Council thus acts as a strategic governor — not legislating itself, but setting the parameters within which legislative and financial decisions unfold. Its interventions often determine the level of ambition the EU can realistically pursue and ensure that climate commitments remain politically viable across all Member States.

C. Balance between national autonomy and collective ambition

A persistent tension underpins the Green Deal: while the Council protects national sovereignty and acknowledges differentiated national circumstances, it must also deliver on climate commitments collectively agreed at EU level. This dual responsibility generates ongoing negotiation between national autonomy and the need for harmonised action. The politics of the Green Deal are therefore defined by efforts to reconcile these two imperatives. On one hand, Member States retain discretion over their energy mix, industrial policy, and socio-economic transitions. On the other, they are bound by EU-wide targets, regulatory standards, and the governance mechanisms designed to ensure collective progress. This tension is not a flaw but a structural characteristic of EU multi-level governance. It reflects the reality that climate policy must be simultaneously European in its ambition and national in its implementation.

1.4. The Committee of the Regions and the European Economic and Social Committee: Institutionalising territorial and societal participation

The multi-level governance literature (Bache & Flinders, 2004; Piattoni, 2010) consistently underscores that effective EU policymaking requires structured mechanisms through which territorial and societal actors can participate in decision-making. Climate and environmental governance, with their strong territorial differentiation and distributive consequences, make this requirement even more acute. In this context, the Committee of the Regions (CoR) and the European Economic and Social Committee (EESC) play a complementary and increasingly important role. Although both bodies hold consultative status, they institutionalise channels of influence that ensure EU climate policy reflects territorial diversity, socio-economic realities, and public expectations.

A. Committee of the Regions (CoR)

The Committee of the Regions serves as the institutional voice of subnational authorities — regions, counties, municipalities, and metropolitan areas. Its relevance for the European Green Deal stems from the place-dependent nature of climate action. Cities implement a substantial share of emissions reduction measures, from building renovation to urban mobility, while regional authorities manage significant cohesion policy resources, including funds dedicated to the green and just transition. Local governments shape everyday energy consumption, spatial planning, waste management, and adaptation strategies. As Tatham (2016) notes, the CoR functions as a platform for territorial mobilisation, enabling local and regional actors to articulate collective positions and influence EU-level debates. Through opinions, monitoring activities, and structured dialogue with the Commission, it helps align legislation and funding instruments with territorial realities. Its growing role in climate governance reflects a broader recognition that subnational capacity and local knowledge are essential for delivering the Green Deal.

B.The European Economic and Social Committee (EESC)

While the CoR represents territorial actors, the European Economic and Social Committee provides an institutional voice for organised civil society — trade unions, employer organisations, and NGOs. Its relevance extends beyond its formal advisory mandate to its role in channelling societal concerns related to labour markets, industrial restructuring, competitiveness, and social fairness — all central dimensions of the Green Deal's transformative agenda. The EESC contributes to debates on the just transition by articulating the concerns of workers in carbon-intensive sectors and highlighting the social implications of climate measures. It also informs industrial and competitiveness strategies by representing business perspectives and identifying regulatory or financial constraints. Such societal input is particularly relevant for policies including CBAM, ETS reform, the Social Climate Fund, and the industrial dimension of the Green Deal.

1.5. EU Agencies and the European Investment Bank: Technical governance and capacity expansion

Beyond the main political institutions, a substantial part of the European Green Deal's governance architecture relies on the technical expertise, monitoring systems, and financial instruments provided by EU agencies and the European Investment Bank (EIB). Although these bodies do not legislate, they supply the knowledge, regulatory coordination, and investment capacity necessary for effective implementation. Their role reflects what scholars describe as the rise of technical governance within the EU — a system in which specialised institutions support policy design and provide continuity across political cycles (Knill & Lenschow, 2004).

A.EU agencies as epistemic authorities

EU agencies, particularly the European Environment Agency (EEA) and the Agency for the Cooperation of Energy Regulators (ACER), constitute the epistemic backbone of climate governance. They provide independent scientific assessments, harmonised monitoring systems, and cross-national data that inform both policymaking and implementation. The EEA evaluates environmental trends, models emissions pathways, and assesses gaps between targets and performance, while ACER coordinates national energy regulators and supports the integration of electricity and gas markets essential for renewable deployment. As the literature emphasises, agencies act as knowledge brokers in highly technical domains (Knill & Lenschow, 2004), enabling evidence-based decision-making. In the context of the Green Deal, these epistemic functions reinforce coherence across levels of governance and support coordinated implementation in a rapidly evolving regulatory environment.

B.The European Investment Bank (EIB): The “EU climate bank”

The European Investment Bank occupies a unique position within the EU's institutional ecosystem, functioning simultaneously as a financial institution, a policy accelerator, and a standard-setter in green finance. Its strategic repositioning as the “EU climate bank” represents one of the most significant institutional transformations associated

with the Green Deal. As Szulecki and Overland (2020) argue, the EIB now shapes the direction of European climate governance not only by financing green projects but also by influencing how governments, regions, and private actors conceptualise sustainable investment. By bridging EU priorities with national and local realities, the EIB facilitates coordinated investment pathways and reduces disparities in implementation capacity. In sectors where private capital remains hesitant or where public administrations lack expertise, the EIB becomes a catalyst for overcoming structural financial barriers to the Green Deal.

SECTION 2. Responsibilities at National, Regional and Local Levels

The European Green Deal (EGD) requires profound socio-economic transformation across all layers of governance. As numerous scholars emphasise, transformative climate governance depends not only on ambitious supranational objectives, but critically on the capacities, coordination mechanisms, and adaptive behaviours of domestic actors (Sabel & Zeitlin, 2010; Jordan & Matt, 2014; Biesbroek et al., 2015). This section examines the distribution of responsibilities across national, regional, and local authorities through several theoretical lenses — state capacity, policy coherence, Europeanisation, and place-based governance — all essential for understanding multi-level implementation dynamics. The EU's governance architecture creates what Hooghe & Marks (2003) call a Type I and Type II hybrid system, combining formal hierarchies with flexible task-specific jurisdictions. In environmental and climate governance, this hybrid nature is not an option but a structural necessity: climate problems are transboundary, deeply embedded in national economic structures, and territorially differentiated (Jordan & Lenschow, 2008, 2010). The responsibilities allocated to national, regional, and local levels therefore reflect not only legal competences, but also capacity differentials, institutional path-dependencies, and the territorial logic of decarbonisation.

2.1. National Responsibilities: State Capacity, Policy Coherence, and Europeanisation

National governments carry the primary responsibility for translating EU-level climate goals into integrated policy frameworks. The academic literature conceptualises national-level responsibilities through three main analytical pillars:

A. State capacity and transformative governance

State capacity is a long-established determinant of policy effectiveness (Skocpol, 1985; Fukuyama, 2004), but climate governance magnifies its importance. In the context of the EGD, state capacity encompasses analytical expertise for modelling emissions trajectories and evaluating policy options, regulatory competence for drafting and enforcing complex rules, fiscal capacity to mobilise public and private investment, administrative capability to coordinate across ministries, and political capacity to negotiate societal trade-offs.

Meadowcroft (2009) argues that decarbonisation requires a form of transformative state capacity, one that supports long-term structural change while withstanding the short-term pressures of electoral politics. This is evident in national responsibilities for managing rapid regulatory reform, redesigning electricity and transport markets, accelerating industrial decarbonisation, planning large-scale infrastructure such as grids and charging networks, and ensuring distributional fairness in climate policy. Oberthür et al. (2021) note that climate transitions intensify cross-sectoral interdependence, thereby increasing the complexity of governing and elevating demands on state capacity.

B. Policy coherence and inter-ministerial governance

Climate governance is inherently cross-sectoral, touching domains such as energy, transport, industry, agriculture, taxation, housing, and social policy. Ensuring coherence across these domains is a major challenge for national administrations (Nilsson et al., 2012). Modern states face what Trondal et al. (2015) describe as polycentric administrative pressures: ministries behave as semi-autonomous entities with their own priorities, leading to fragmented strategies and occasional contradictions. In many EU countries, the implementation of the Green Deal has exposed tensions between environment and energy ministries, especially in debates over nuclear versus renewables; between transport and finance ministries regarding fuel taxation and mobility reform; and among departments responsible for industrial strategy, building renovation, and cohesion policy. To address these structural coordination problems, scholars advocate whole-of-government approaches (Christensen & Lægreid, 2007), climate cabinets, and strategic inter-ministerial task forces capable of centralising oversight and reducing policy fragmentation.

C. Europeanisation and domestic adaptation

Europeanisation research (Radaelli, 2003; Börzel & Risse, 2000) provides a framework for understanding how EU policy pressures reshape domestic institutions. These mechanisms — downloading of obligations, uploading domestic preferences, cross-loading through networks, socialisation, and conditionality — are intensified under the Green Deal. The requirement to prepare National Energy and Climate Plans (NECPs) has forced governments to align domestic strategies with EU-wide targets. The Recovery and Resilience Facility (RRF) introduced performance-based conditionality linking reforms to milestones, reinforcing strategic coherence (Sabel & Zeitlin, 2010). Reforms to the EU Emissions Trading System (ETS) have required adjustments to national carbon markets and compensation mechanisms. The Carbon Border Adjustment Mechanism (CBAM) has triggered industrial and trade policy redesign to maintain competitiveness. National responsibilities thus emerge at the intersection of EU-driven adaptation pressures and domestic political-economy structures — a dynamic that Héritier (1996) describes as differential empowerment under institutional constraints. National governments are therefore not merely implementers of EU climate goals but active agents negotiating between European obligations and domestic feasibility.

2.2. Regional Responsibilities: Place-Based Governance, Cohesion Policy, and Just Transition

For Regional authorities function as vital intermediaries between national strategy and local implementation. Their responsibilities derive from the territorial logic of EU governance (Barca, 2009) and from the principle of place-based policy, which argues that development and transition strategies must be tailored to the unique characteristics of each territory (Rodríguez-Pose, 2013).

A. Place-based governance and territorial differentiation

Regions differ significantly in their economic structures, energy systems, labour markets, administrative expertise, and spatial patterns of development. These variations shape the pathways through which decarbonisation can unfold. Regional governments therefore play strategic roles in designing policies for renewable energy siting, industrial transformation zones, integrated public transport networks, land-use planning for climate adaptation, and developing green skills strategies. From this perspective, regions are not merely administrative intermediaries but strategic agents of territorial decarbonisation, translating national goals into territorially appropriate pathways.

B. Cohesion policy as multi-level governance instrument

Cohesion Policy exemplifies multi-level governance in action (Bache & Flinders, 2004). Regional authorities participate extensively in drafting operational programmes, managing ERDF, ESF+, and the Just Transition Fund (JTF), selecting and monitoring projects, applying conditionalities, and engaging stakeholders. Bachtler and Ferry (2019) demonstrate that regions with stronger administrative capacity absorb EU funds more effectively, deliver more coherent investments, and maintain strategic continuity. Cohesion Policy thus becomes both a financing instrument and a vehicle for institutional learning and regional development.

C. Just Transition Mechanism: Regions as transition managers

The Just Transition Mechanism (JTM) assigns explicit territorial responsibility for managing socio-economic restructuring in carbon-intensive regions. Academic analyses (Phillips et al, 2022) frame regions as central coordinators of economic diversification, responsible for preparing Territorial Just Transition Plans, identifying vulnerable labour markets, designing reskilling strategies, and coordinating social partners and local stakeholders. This governance model reflects a new form of regional transition authority, where climate action intersects with industrial restructuring, social inclusion, and long-term territorial development.

D. Capacity asymmetries and institutional vulnerabilities

Despite their importance, regional capacities vary widely across the EU. Advanced regions such as Bavaria, Flanders, or Catalonia exhibit strong planning, analytical, and innovation capabilities, while less-developed regions face staff shortages, limited expertise, and weaker fiscal autonomy. Dąbrowski (2014) argues that regional climate planning is constrained primarily by administrative capacity rather than political ambition. These disparities influence project pipeline quality, public procurement, monitoring capabilities, and

the ability to engage in cross-border cooperation. Without targeted support, capacity gaps risk exacerbating territorial inequalities during the transition.

CASE BOX 2 — Silesia and the EU Just Transition Mechanism: Regional Transition Governance in Practice

Context: Silesia (Śląsk), Poland's largest coal region, is one of the European territories most profoundly affected by decarbonisation. Because of its deep historical dependence on coal and the strong cultural identity tied to mining, Silesia illustrates the complex interplay between economic restructuring, social vulnerability, and political negotiation. It is also a flagship case for understanding **regional responsibility, capacity challenges, and multi-level coordination** under the Just Transition Mechanism (JTM).

1. Territorial Just Transition Plan as a Regional Governance Blueprint

The region's Territorial Just Transition Plan (TJTP) for Silesia serves as a comprehensive blueprint for managing decarbonisation. It identifies vulnerable labour sectors, maps skill needs, outlines strategies for developing new economic clusters such as electromobility and circular economy industries, and defines milestones for monitoring progress. The TJTP demonstrates how regional authorities mediate between EU conditionality and national policy priorities while responding to local socio-economic structures.

2. Coordinated Multi-Actor Governance Structure

Transition governance in Silesia relies on a dense web of actors. The Marshal Office acts as the regional coordinator, while the Polish central government shapes funding rules and regulatory frameworks. Trade unions defend labour interests, private industries explore alternative technologies, research institutes — notably the Silesian University of Technology — provide expertise, and local municipalities oversee spatial planning and infrastructure changes. This multi-actor configuration reflects a place-based governance model where transition pathways emerge from negotiated compromise rather than top-down direction.

3. EU Funding and Conditionality as Drivers of Change

EU funding plays a pivotal role. Silesia is the largest beneficiary of the Just Transition Fund (over €2 billion for 2021–2027), supporting projects such as industrial site redevelopment, clean mobility corridors, extensive vocational retraining programmes, and SME diversification. Milestone-based conditionality imposed by the European Commission exemplifies the Europeanisation dynamic highlighted by Börzel & Risse.

4. Social and Economic Challenges: Managing Vulnerability

The region's challenges, however, are substantial. Strong coal-mining identities, entrenched local economic dependencies, and labour market rigidity generate resistance to change. Recent academic analyses emphasise that successful transition requires sustained stakeholder engagement, stable political commitment, and the creation of credible long-term economic alternatives capable of replacing carbon-intensive activities.

Relevance for Multi-Level Governance: Silesia illustrates how regional authorities function as **transition managers**, navigating between EU strategic direction, national political constraints, and local socio-economic realities. It is one of the EU's clearest examples of how place-based governance operates under Green Deal conditionalities.

Sources: Börzel & Risse (2000), European Commission (2024), Phillips et al (2022), Ministry of Development Funds and Regional Policy (Poland) (2024).

2.3. Responsibilities at the Local Level: Cities as Decarbonisation Nodes, Innovation Ecosystems, and Political Arenas

Cities have emerged as critical actors in contemporary climate governance. Urban areas concentrate emissions, infrastructure, vulnerability, innovation potential, and social mobilisation (Bulkeley & Betsill, 2013; Hajer et al., 2015; Castán Broto, 2020).

A. Urban policy domains and the depth of local responsibility

Local governments hold extensive authority in policy domains essential to climate neutrality. They regulate spatial planning and zoning, oversee building renovation and district heating systems, operate public transport, manage waste and circular economy structures, deploy renewable energy solutions such as solar rooftops or community energy projects, and design green and blue infrastructure for climate adaptation. Romero-Lankao and Dodman (2011) emphasise that these domains not only drive decarbonisation but also affect everyday life, local budgets, and electoral accountability. Cities thus emerge as political arenas in which climate transitions are negotiated among competing interests rather than merely administrative implementers of externally defined targets.

B. Cities as governance innovators: Experimentalism and adaptive learning

A growing literature conceptualises cities as “laboratories of climate governance” (Evans et al., 2016). Local authorities innovate through pilot projects, experimentation, and adaptive learning because they can implement changes faster, engage stakeholders more directly, and absorb failure at lower political cost. Inspired by Sabel and Zeitlin’s (2010) experimentalist governance, cities test solutions such as low-emission zones, smart mobility platforms, green public procurement, climate participatory budgeting, and integrated urban renovation programmes. Research shows that cities often bypass national inertia by engaging in transnational municipal networks, adopting best practices from their peers (Acuto, 2013; Kern & Bulkeley, 2009), and co-producing climate strategies with local universities, businesses, and civil society.

C. Transnational city networks and Europeanisation from below

Climate governance no longer flows exclusively from EU institutions to national and then local authorities. Increasingly, cities set their own ambitious climate targets, adopt standards developed transnationally, and shape EU debates through collective mobilisation. This phenomenon has been described as Europeanisation from below (Töller, 2010; Dupuy & Bollen, 2023). Through networks such as the Covenant of Mayors, ICLEI, C40, and EUROCITIES, cities exchange expertise, benchmark performance, attract funding, and indirectly influence national and EU policy. They thus become norm entrepreneurs and strategic actors within a multi-level climatic polity.

D. Local state capacity, administrative inequalities, and political economy constraints

Despite their centrality, cities face substantial capacity disparities. Local state capacity includes fiscal resources, administrative expertise, political legitimacy, and learning ability. Differences between capital cities, secondary cities, and small municipalities create uneven implementation landscapes. Urban climate action is also shaped by political economy constraints (Anguelovski & Carmin, 2011). Mobility reforms may conflict with business interests; renovation programmes intersect with housing affordability and rental markets; energy communities require legal and technical support; and waste reforms may challenge entrenched private-sector interests. As a result, cities act not only as implementers but as arenas of contestation where climate priorities are negotiated.

SECTION 3. Models of Vertical and Horizontal Coordination

The implementation of the European Green Deal (EGD) takes place within a governance system that is both institutionally dispersed and deeply interdependent. Although subsidiarity allocates responsibilities across levels of government, it is the quality of coordination—vertical, horizontal, and hybrid—that determines whether ambitious EU objectives can be translated into coherent national strategies and practical local policies. As several scholars emphasise (Scharpf, 1997; Peters, 2015; Jordan & Lenschow, 2010), even well-designed multi-level systems fail without effective coordination mechanisms. Coordination thus becomes the practical expression of multi-level governance: it links the regulatory capacity of EU institutions with the strategic choices of national governments, the territorial knowledge of regions, and the implementation capabilities of cities.

3.1. Vertical Coordination: Aligning Ambition and Implementation Across Levels of Governance

Vertical coordination refers to the mechanisms through which EU-level objectives, regulations, and financial instruments interact with national, regional, and local strategies. Because enforcement powers at EU level remain limited, coordination must rely on a mixture of regulatory authority, negotiated commitments, shared learning, and adaptive feedback. Although EU institutions define long-term climate objectives and adopt the legislative frameworks necessary to pursue them, implementation ultimately depends on extensive domestic adaptation. This dynamic reveals what Scharpf (1997) identifies as a structural tension inherent to European integration: supranational policy ambition must be reconciled with national administrative diversity and uneven implementation capacities. The EU's vertical governance architecture is therefore characterised by interdependence without hierarchy (Scharpf, 1988), a condition that fundamentally distinguishes the Union from federal systems.

As Hooghe and Marks (2001) argue, the EU functions as a multi-level polity in which authority is dispersed, shared, and negotiated across levels rather than imposed from above. The need for vertical coordination becomes evident in climate governance, where misaligned competences (with EU institutions defining goals, national governments orchestrating strategies, regional authorities mediating territorial specificities, and local actors implementing concrete measures) generate significant coordination challenges. These challenges are amplified by implementation asymmetries across member states, by pronounced territorial differentiation in socio-economic and infrastructural conditions, and by cross-border externalities that no single government can manage alone. Thus, vertical coordination is not merely a managerial requirement but a systemic necessity intrinsic to the multi-level nature of the European Green Deal. Building on the literature on multi-level and experimentalist governance, four ideal-typical models of vertical coordination can be distinguished:

- o Hierarchical–Regulatory Coordination (EU → Member State)

A first mode of vertical coordination is grounded in the EU’s regulatory capacity. Environmental and energy legislation—such as the Emissions Trading System, renewable energy directives, and energy market rules—creates binding obligations for member states. Although this resembles a hierarchical relationship (EU institutions set binding targets, national governments transpose and implement and the Commission monitors compliance), research shows that implementation depends heavily on national administrative capacity, political will, and domestic institutional arrangements (Knill & Lenschow, 2004). In the Green Deal context, hierarchy alone is insufficient, because national implementation depends strongly on domestic administrative capacities and socio-economic structures, echoing Héritier’s (1996) notion of negative integration through regulatory harmonisation.

- o Conditionality-Based Vertical Coordination (RRF, JTF, Cohesion Policy)

A second mode of vertical coordination has emerged through conditionality-based governance, particularly in the Recovery and Resilience Facility (RRF) and the Just Transition Mechanism (JTM). Here, coordination is structured around negotiated national plans, milestones, and periodic assessments. This model can be interpreted as a form of experimentalist governance combined with financial conditionality.

The Commission evaluates progress, but member states retain significant discretion in designing domestic pathways, creating a hybrid system that blends hierarchy with cooperation. This model is less hierarchical and more iterative, reflecting the experimentalist governance paradigm (Sabel & Zeitlin, 2010).

- o Networked Vertical Coordination (EU ↔ National ↔ Regional ↔ Local)

A third mode relies on networked coordination. Numerous platforms—such as National Energy and Climate Plans (NECP) peer reviews (informal Commission-led review cycles where Member States assess each other’s National Energy and Climate Plans and exchange implementation challenges), the Covenant of Mayors (the largest EU-supported network of cities committed to voluntary climate and energy targets and local action plans), the Mission for 100 Climate-Neutral Cities (an EU initiative supporting 100 selected cities with tailored technical assistance, innovation funding, and experimentation frameworks), or cross-border energy cooperation structures (regional platforms such as the Baltic Energy Market Interconnection Plan and Pentalateral Energy Forum, which coordinate regional grid integration, renewable deployment, and market coupling)—facilitate knowledge exchange and learning across levels. These patterns align with Ostrom’s idea of polycentric governance, in which multiple centres of authority coexist, collaborate, and learn from one another (Ostrom, 2010). This networked dimension is increasingly important in sectors where EU regulation cannot reach directly, such as local mobility, building renovation at municipal scale, and community energy.

- o Adaptive Vertical Coordination (learning loops and feedback mechanisms)

Finally, vertical coordination under the Green Deal incorporates adaptive mechanisms. Adaptive governance, as conceptualised in resilience theory (Folke, 2006), complements the

experimentalist governance model developed by Sabel and Zeitlin (2010). National Energy and Climate Plans are revised every five years; long-term strategies evolve as technologies and socio-economic conditions change; and cities experiment with pilot projects whose outcomes feed into national debates. This iterative cycle exemplifies the experimentalist governance model developed by Sabel and Zeitlin (2010), where actors collectively define goals, experiment with solutions, and revise their strategies based on monitored outcomes.

3.2. Horizontal Coordination at National Level: Inter-Ministerial, Cross-Sectoral, and Stakeholder Governance

While vertical coordination concerns the alignment across levels, horizontal coordination focuses on the coherence of policies within levels of government, particularly at the national level. Climate transitions inevitably cut across ministerial boundaries—energy, transport, industry, agriculture, finance—and scholars have long warned that such cross-sectoral pressures generate “structural fragmentation” in policymaking (Peters, 2015; Howlett & Ramesh, 2014). Most member states employ inter-ministerial structures to address these tensions. Climate cabinets, coordination councils, or task forces—often situated under the Prime Minister or President—seek to ensure that ministries align their strategies with national climate targets and EU obligations. The effectiveness of such bodies varies significantly. As Christensen and Lægreid (2007) note in their work on whole-of-government approaches, coordination depends on political authority, administrative resources, and the capacity to resolve conflicts between powerful sectoral ministries.

A complementary dimension of horizontal coordination is climate policy integration (CPI). Policy integration has been conceptualised not merely as the addition of environmental objectives to sectoral policies, but as a structured governance process that requires institutional alignment, cross-sectoral coherence, and political commitment. Candel and Biesbroek (2018) show that effective integration depends on both formal coordination mechanisms and the administrative capacity to align objectives, instruments, and implementation processes across policy domains. In this light, tools such as green budgeting, regulatory impact assessments, integrated planning cycles, and cross-ministerial monitoring represent operational dimensions of CPI within national governance systems. Because the Green Deal affects labour markets, business models, and social structures, national climate governance increasingly relies on structured dialogues with corporations, trade unions, local authorities, NGOs, and research institutions. This reflects the principles of network governance described by Sørensen and Torfing (2007), where policy outcomes emerge from negotiation among actors who hold different resources and perspectives. Yet such networks may also reproduce existing power asymmetries if some actors dominate agenda-setting. The quality of horizontal coordination thus determines whether national climate strategies function as coherent transition pathways or fragmented collections of sectoral measures.

3.3. Horizontal Coordination at Regional and Local Levels: Place-Based and Collaborative Governance

Regional and local authorities face distinct coordination challenges that arise from territorial diversity and the practical demands of implementation. Regions play an important role in planning transport corridors, managing industrial clusters, supporting labour-market transitions, and implementing cohesion policy instruments. Barca's place-based governance paradigm (Barca, 2009) highlights that such responsibilities require context-sensitive strategies built on territorial knowledge, not uniform national prescriptions. In Just Transition regions, coordination becomes even more central. Territorial Just Transition Plans require collaboration among regional administrations, local governments, businesses, educational institutions, and social partners. Recent research suggests that regional transition governance is most effective when regions have sufficient administrative and institutional capacity to coordinate a diverse set of actors and build shared strategic visions for long-term transformation. Decentralized governance arrangements and participatory approaches can strengthen regions' ability to engage multiple stakeholders, align priorities across policy domains, and navigate multi-level governance interfaces, ultimately enhancing the effectiveness of transition pathways (Soobaroyen, Gulyev, & Wieczorek-Kosmala, 2025). Local authorities, especially cities, operate within dense networks of public utilities, metropolitan partners, private operators, universities, civic organisations, and citizen groups. Their responsibilities—building renovation, sustainable mobility, circular economy initiatives, district heating decarbonisation—demand coordination beyond the boundaries of municipal government. The collaborative governance framework developed by Ansell and Gash (2008) illuminates these dynamics: municipalities must facilitate trust-building, negotiation, and shared problem-solving among actors with divergent interests. Metropolitan governance adds yet another layer. In many areas, mobility systems, energy infrastructure, and waste management require inter-municipal coordination. Such arrangements resemble Ostrom's polycentric governance model, where multiple authorities with overlapping jurisdictions seek collective solutions. While polycentricity fosters innovation and adaptability, it also raises concerns about coordination fatigue, uneven administrative capacity, and divergent political priorities.

CASE BOX 3 — Netherlands Climate Agreement: Whole-of-Society Horizontal Coordination

Context: The Dutch Climate Agreement (Klimaatakkoord) — adopted in 2019 and updated in 2024–2025 — remains one of the EU’s most advanced examples of whole-of-society coordination. The Netherlands has institutionalised a governance model where government, industry, municipalities, trade unions, NGOs, and knowledge institutions share responsibility for climate policymaking.

Sectoral “Climate Tables” with Shared Decision-Making: A defining feature is the system of sectoral climate tables (klimaattafels). These platforms bring together public and private actors from industry, electricity, mobility, agriculture, and buildings to jointly negotiate emissions reduction pathways aligned with the Climate Act. Each table is co-chaired by representatives of government and civil society, ensuring shared ownership of decisions. Analytical coherence is supported by annual assessments produced by the Dutch Environmental Assessment Agency (PBL), which monitor progress and identify cross-sectoral inconsistencies.

Industrial Decarbonisation Through Coordinated Instruments: Industrial decarbonisation has been strengthened through carbon contracts for difference, reforms to the SDE++ subsidy scheme, and the integration of fiscal incentives supervised by the Ministry of Finance. These measures reflect an increasingly coordinated approach to transforming carbon-intensive industries.

Regional and Local Implementation Coalitions (RES 2.0): At regional and local levels, implementation takes shape through the Regional Energy Strategies (RES 2.0) and Local Heat Plans. These instruments enable municipalities and provinces to adapt national objectives to local territorial conditions while preserving overall coherence. The Dutch model thus aligns horizontal coordination with territorial flexibility.

Iterative Monitoring and Annual Climate Dialogues : An important innovation is the system of annual Climate Progress Dialogues, mandated by the Climate Plan 2025–2035. These dialogues bring together government, business, unions, NGOs, and knowledge partners to review progress, revise commitments, and introduce new measures. They closely mirror the iterative, experimentalist governance cycles described by Sabel & Zeitlin (2010).

Relevance for Multi-Level Governance: The Netherlands demonstrates how a structured, collaborative, and iterative governance model can generate societal buy-in, align competing interests, and enhance the resilience of climate policy through continuous adjustment.

Sources: *Government of the Netherlands (2024), Government of the Netherlands (2025), PBL Netherlands Environmental Assessment Agency (2024), Sabel & Zeitlin (2010).*

3.4. Hybrid Coordination Models: Integrating Vertical and Horizontal Dynamics

In practice, coordination rarely fits neatly into hierarchical, networked, or collaborative models. Most Green Deal governance takes the form of hybrid arrangements that combine vertical and horizontal mechanisms. Germany’s federal–Land model, the Dutch Climate Agreement (2019), regional innovation ecosystems, and EU missions such as “100 Climate-Neutral Cities” (launched in 2021) illustrate this hybridity in practice. These frameworks integrate EU strategic direction, national regulatory oversight, regional planning, and local experimentation. Hybrid governance aligns closely with Sabel and Zeitlin’s (2010) theory of multi-level experimentalist governance, which posits that actors at different levels jointly define objectives, develop diverse local strategies, compare results through monitoring and benchmarking, and revise their approaches in light of shared learning. Such systems are particularly suited to the uncertainty and complexity inherent in climate transitions. However, hybrid coordination also presents risks. It demands consistent communication channels, adequate administrative capacity at all levels, and mechanisms to mediate conflicts between competing priorities. Without these elements, hybrid models may produce incoherence rather than synergy, leading to what Jordan and Lenschow (2010) term “governance overload” — a proliferation of strategies and plans without a corresponding increase in implementation

capacity. Recent developments, including REPowerEU and the revision of National Energy and Climate Plans, further illustrate the consolidation of hybrid coordination models under conditions of geopolitical pressure.

Conclusion: Towards Effective Multi-Level Green Deal Governance

The implementation of the European Green Deal demonstrates that climate governance in the EU is fundamentally a multi-level process shaped by political, administrative, and territorial realities. The chapter has shown that no single governance level—EU, national, regional, or local—possesses the authority or capacity to deliver the Green Deal independently. Rather, its success depends on the interplay of leadership, coordination, and adaptation across the entire governance spectrum. EU institutions remain central architects of the Green Deal: the Commission provides strategic direction and regulatory integration; the European Parliament strengthens democratic legitimacy and ambition; the Council and European Council mediate divergent national interests; and advisory bodies, agencies, and the EIB offer territorial representation, technical capacity, and financial leverage. Together, they anchor the Green Deal within a stable yet adaptive institutional framework.

National governments, on the other hand, bear primary responsibility for translating EU-wide objectives into coherent domestic strategies. Their effectiveness depends on transformative state capacity, inter-ministerial policy coherence, and responsiveness to Europeanisation dynamics. Regional authorities design place-based transition strategies and manage cohesion instruments, while local governments act as essential implementers and innovators, shaping the infrastructures and behaviours crucial for achieving climate neutrality. Capacity asymmetries across Member States and regions underscore the need for sustained investment in administrative capability and for flexible, territorially sensitive governance instruments. A recurring theme is the necessity of strong coordination mechanisms. Vertical coordination aligns supranational ambition with national and local feasibility, while horizontal coordination integrates sectoral policies that often operate in silos. The Green Deal's complexity cannot be managed solely through hierarchical control; it requires collaborative, networked, and experimental governance capable of learning, adapting, and responding to emerging geopolitical and socio-economic challenges—including the consequences of the war in Ukraine and shifting transatlantic relations under the Trump 2.0 administration.

In this evolving landscape, subsidiarity emerges as a foundational governance logic. It structures how authority is distributed, how responsibilities are shared, and how tensions between national autonomy and collective European ambition are resolved. When supported by effective coordination and sufficient capacity at all levels, subsidiarity enables innovation closer to citizens while ensuring coherence with EU-wide climate objectives. Ultimately, the Green Deal's viability in the second half of the 2020s will depend on the Union's ability to strengthen administrative capacity, maintain political legitimacy, and foster cooperation

across governance levels. If these conditions are sustained, the EU can advance climate leadership not through centralisation, but through an adaptive multi-level system capable of managing complex transitions in a volatile geopolitical context.

Bibliography

- Abbott, K. W., & Snidal, D. (2009). The governance triangle: Regulatory standards institutions and the shadow of the state. In W. Mattli & N. Woods (Eds.), *The politics of global regulation* (pp. 44–88). Princeton University Press.
- Acuto, M. (2013). The new climate leaders? *Review of International Studies*, 39(4), 835–857.
- Ansell, C., & Gash, A. (2008). Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory*, 18(4), 543–571.
- Bache, I., & Flinders, M. (Eds.). (2004). *Multi-level governance*. Oxford University Press.
- Bachtler, J., & Ferry, M. (2019). Cohesion policy and regional development. *Regional Studies*, 53(1), 1–10.
- Bailer, S. (2011). Structural, domestic, and strategic interests in the EU: Negotiations positions in the Council of Ministers. *Negotiation Journal*, 27(4), 447–475.
- Barca, F. (2009). *An agenda for a reformed cohesion policy*. European Commission.
- Biesbroek, R., Dupuis, J., & Wellstead, A. (2015). Explaining policy responses to climate change. *Policy Sciences*, 48(2), 111–135.
- Börzel, T. A., & Risse, T. (2000). When Europe hits home: Europeanisation and domestic change. *European Integration Online Papers*, 4(15).
- Bulkeley, H., & Betsill, M. (2013). *Cities and climate change: Urban sustainability and global environmental governance*. Routledge.
- Burns, C. (2013). Consensus and compromise in EU environmental policy. *Environmental Politics*, 22(5), 830–847.
- Candel, J. J. L., & Biesbroek, R. (2018). Policy integration in the EU governance of global food security. *Food Security*, 10, 195–209. <https://doi.org/10.1007/s12571-017-0741-2>
- Castán Broto, V., & Westman, L. K. (2020). Ten years after Copenhagen: Reimagining climate change governance in urban areas. *Wiley Interdisciplinary Reviews: Climate Change*, 11(4), e643.
- Christensen, T., & Lægreid, P. (2007). The whole-of-government approach to public sector reform. *Public Administration Review*, 67(6), 1059–1066.
- Dąbrowski, M. (2014). Europeanising urban climate governance: Capacity challenges. *Cities*, 44, 12–20.
- Delreux, T., & Happaerts, S. (2016). *Environmental policy and politics in the European Union*. Palgrave Macmillan.
- European Court of Auditors. (2024). *Special report 14/2024: Green transition* [PDF]. Luxembourg: European Court of Auditors.
- European Commission. (2024). *Official communications and legislative proposals relevant for climate policy* [COM documents].
- European Parliament & Council. (2023). *Legislative Observatory data on EU climate files*. European Parliament Legislative Observatory (OEIL).
- Fabbrini, S. (2019). *Europe's future: Decoupling and reforming*. Cambridge University Press.

- Folke, C. (2006). Resilience: The emergence of a perspective. *Global Environmental Change*, 16(3), 253–267.
- Fukuyama, F. (2004). *State-building: Governance and world order in the 21st century*. Cornell University Press.
- Government of the Netherlands. (2025). *Second Party Opinion – Green Bond Report 2024* (Government of the Netherlands).
- Government of the Netherlands. (2024). *Mitigating climate change: Dutch climate policy 2030 and 2050*. Government.nl.
- Hajer, M., Nilsson, M., Raworth, K., et al. (2015). Beyond cockpit-ism: Four insights to enhance the transformative potential of the Sustainable Developments Goals. *Sustainability*, 7(2), 1651–1660.
- Héritier, A. (1996). The accommodation of diversity in European policy-making. *Journal of European Public Policy*, 3(2), 149–167.
- Hix, S., & Høyland, B. (2011). *The political system of the European Union* (3rd ed.). Palgrave Macmillan.
- Hooghe, L., & Marks, G. (2001). *Multi-level governance and European integration*. Rowman & Littlefield.
- Hooghe, L., & Marks, G. (2003). Unravelling the central state, but how? Types of multi-level governance. *American Political Science Review*, 97(2), 233–243.
- Jordan, A. J., & Lenschow, A. (Eds.). (2008). *Innovation in environmental policy? Integrating the environment for sustainability*. Edward Elgar Publishing.
- Jordan, A., & Lenschow, A. (2010). Environmental policy integration revisited. *Environmental Policy and Governance*, 20(3), 147–158.
- Jordan, A., & Matt, E. (2014). Designing policy for climate innovation. *Policy Sciences*, 47(2), 137–158.
- Kelemen, R. D. (2014). The political foundations of environmental regulation in the EU. *Journal of European Public Policy*, 21(3), 507–528.
- Kern, K., & Bulkeley, H. (2009). Cities, Europeanization and multi-level governance: Governing climate change through transnational municipal networks. *Journal of Common Market Studies*, 47(2), 309–332.
- Knill, C., & Lenschow, A. (2004). Modes of regulation in the governance of the European Union: Towards a comprehensive evaluation. In J. Jordana & D. Levi-Faur (Eds.), *The politics of regulation* (pp. 218–244). Edward Elgar Publishing.
- Meadowcroft, J. (2009). Climate change governance. *Environmental Politics*, 18(4), 487–502.
- Ministry of Funds and Regional Policy (Poland). (2024). *Overview of ministry roles and functions*. gov.pl – Ministry of Funds and Regional Policy.
- Nilsson, M., Zamparutti, T., Petersen, J. E., et al. (2012). Understanding policy coherence. Analytical Framework and Examples of Sector–Environment Policy Interactions in the EU. *Environmental Policy and Governance*, 22(6), 395–423.
- Nugent, N., & Rhinard, M. (2015). *The European Commission*. Palgrave Macmillan.
- Oberthür, S., Hermwille, L., & Rayner, T. (2021). A sectoral perspective on global climate governance: Analytical foundation. *Earth System Governance*, 8, 100104.
- Ostrom, E. (2010). Polycentric governance of climate change. *Global Environmental Change*, 20(4), 550–557.
- Peters, B. G. (2015). *Pursuing horizontal management*. University Press of Kansas.
- Peterson, J., & Bomberg, E. (2011). Decision-making in the European Union. In J. Richardson (Ed.), *The EU handbook* (pp. 38–56). Routledge.

- Phillips, J., Bouzarovski, S., Zheng, W., Boamah, F., Fuller, S., Furlong, K., Knuth, S., Mould, I., & Thomson, H. (2022). Just transitions in cities and regions: A global agenda.
- PBL Netherlands Environmental Assessment Agency, TNO, CBS, & RIVM. (2024). *Climate and Energy Outlook of the Netherlands 2024*. The Hague: PBL Netherlands Environmental Assessment Agency.
- Piattoni, S. (2010). *The theory of multi-level governance*. Oxford University Press.
- Pollack, M. (2003). *The engines of European integration*. Oxford University Press.
- Radaelli, C. M. (2003). The Europeanisation of public policy. In K. Featherstone & C. M. Radaelli (Eds.), *The politics of Europeanisation* (pp. 27–56). Oxford University Press.
- Regulation (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023 establishing a Carbon Border Adjustment Mechanism. *Official Journal of the European Union*.
- Richardson, J. (2012). Environmental policy in the EU. *Journal of European Public Policy*, 19(2), 201–219.
- Rodríguez-Pose, A. (2013). The revenge of the places that don't matter. *Cambridge Journal of Regions, Economy and Society*, 6(2), 153–170.
- Sabel, C., & Zeitlin, J. (2010). *Experimentalist governance in the European Union: Towards a new architecture*. Oxford University Press.
- Sandholtz, W., & Stone Sweet, A. (1998). *European integration and supranational governance*. Oxford University Press.
- Scharpf, F. W. (1988). The joint-decision trap: : Lessons from German Federalism and European Integration. *Public Administration*, 66(3), 239–278.
- Scharpf, F. W. (1997). *Games real actors play. Actor-centered Institutionalism In Policy Research*. Westview Press.
- Schmidt, V. A. (2008). Discursive institutionalism: The explanatory power of ideas and discourse. *Annual Review of Political Science*, 11, 303–326.
- Schmidt, V. A. (2013). Democracy and legitimacy in the European Union revisited: Input, output and throughput. *Political Studies*, 61(1), 2–22.
- Skocpol, T. (1985). Bringing the state back in. In P. Evans, D. Rueschemeyer, & T. Skocpol (Eds.), *Bringing the state back in* (pp. 3–37). Cambridge University Press.
- Sørensen, E., & Torfing, J. (2007). *Theories of network governance*. Palgrave Macmillan.
- Soobaroyen, T., Guliyev, H., & Wieczorek-Kosmala, M. (2025). *Governance in the process of regional transition: An evaluation of decentralization models*. *Studies in Risk and Sustainable Development*, 399. <https://doi.org/10.22367/srsd.2025.399.6>
- Szulecki, K., & Overland, I. (2020). Energy democracy as a process, an outcome and a goal: A conceptual review. *Energy Research & Social Science*, 69, 101768. <https://doi.org/10.1016/j.erss.2020.101768>
- Michaël Tatham (2016). *With, Without, or Against the State? How European Regions Play the Brussels Game*. Oxford: Oxford University Press
- Töller, A.-E. (2010). Subnational actors and Europeanisation from below. *Journal of European Integration*, 32(1), 39–57.
- Trondal, Jarle & Bauer, Michael. (2015). Conceptualizing the European multilevel administrative order: capturing variation in the European administrative system. *European Political Science Review*.

NEGOTIATION AS AN IMPLEMENTATION TOOL FOR THE EUROPEAN GREEN DEAL: HYBRID BARGAINING, MULTI-LEVEL GATEKEEPERS AND PARTICIPATION INSTRUMENTS

Andreea STRETEA

Abstract: *The European Green Deal (EGD) has redefined the European Union’s climate and environmental agenda as an economy-wide transformation project rather than a sectoral regulatory programme. Yet EGD success is determined less by the ambition of its targets than by the negotiated work of implementation: turning EU-level objectives into national laws, budgets, permits, investment decisions, behavioural change and compliance routines. This chapter argues that negotiation should be treated as an implementation tool—an institutionalised set of practices through which public authorities and stakeholders align incentives, manage distributive conflict, and design credible commitments under conditions of multi-level governance. Negotiation is not confined to “policy making” upstream; it is embedded in delivery chains where interdependent decisions, multiple veto points and local acceptability shape what can be built, financed and enforced. Building on implementation studies and polycentric governance, the chapter synthesises major negotiation theories—distributive and integrative bargaining, interest-based negotiation, game-theoretic bargaining, multi-level and network negotiation, and deliberative negotiation—and evaluates their analytical value for green public policy delivery. It advances a core claim that Green Deal implementation is best understood as a hybrid negotiation environment. Climate policies trigger distributive conflicts because decarbonization reallocates costs, jobs and risks across regions, sectors and households; however, durable implementation requires integrative solutions that package regulation with compensation, regional development and credible investment pathways. The chapter therefore proposes a “hybrid implementation bargaining” lens that connects burden-sharing disputes with joint-gains problem-solving through issue linkage, sequencing and side-payments. The chapter then maps key negotiation actors—EU institutions, national governments, local and regional administrations, private investors and firms, and civil society—highlighting the distinct resources and constraints that shape their bargaining power. National governments negotiate in a two-level setting between EU compliance demands and domestic political win-sets; local authorities act as gatekeepers through planning, permitting and the construction of social licence; and the private sector influences implementation through investment, technology choices and control of operational expertise. Finally, the chapter reviews mediation and participation instruments relevant to Green Deal implementation, including procedural environmental rights (Aarhus Convention), environmental assessment procedures (SEA/EIA), stakeholder engagement frameworks, deliberative mini-publics, benefit-sharing agreements and dispute-resolution mechanisms. The conclusion distils design principles for practitioners: make distributive effects explicit, institutionalise integrative package-building, reduce information*

asymmetries, and embed participation early enough to reshape projects rather than merely legitimate predetermined decisions.

Keywords: *European Green Deal; negotiation; policy implementation; hybrid bargaining; multi-level governance; mediation; just transition*

Introduction

The European Green Deal (EGD) frames the EU's response to climate and environmental risks as a comprehensive transformation agenda, aiming to place Europe on a pathway towards climate neutrality while improving environmental quality and reshaping industrial competitiveness (European Commission, 2019). While the EGD provides strategic direction, implementation is the point at which targets become projects, budgets, permits, behavioural change and enforcement routines. Implementation research has long shown that delivery depends on chains of interdependent decisions across organisations and levels of government, rather than a simple top-down sequence from law to compliance (Pressman & Wildavsky, 1984). In such settings, formal authority is necessary but rarely sufficient: the “space” between EU objectives and local outcomes is filled by negotiated coordination.

Negotiation becomes central under conditions typical of green policy delivery: multiple veto points, contested distributions of costs and benefits, scientific uncertainty, long time horizons, and heterogeneous stakeholders with asymmetric resources. These conditions are structural features of climate and environmental governance, which is frequently polycentric—composed of multiple decision centres interacting across scales (Ostrom, 2010). In the EU, multi-level governance and the subsidiarity principle reinforce the reality that many implementation decisions are legitimately taken at national, regional, and local levels (Hooghe & Marks, 2001). As a result, vertical coordination often functions less as hierarchical instruction and more as bargaining across arenas where each level controls a subset of crucial levers (finance, planning, permitting, enforcement, or public legitimacy).

This chapter's central claim is that negotiation is an implementation tool in at least four senses. First, negotiation aligns incentives and secures commitments in multi-actor settings where authority is fragmented. Second, it manages distributive conflict through burden-sharing, compensation and benefit-sharing arrangements. Third, it creates legitimate decisions via inclusive, publicly justifiable processes, which is particularly important for environmentally contentious projects. Fourth, it designs adaptive pathways—agreements that can survive uncertainty through monitoring and renegotiation mechanisms (Emerson, Nabatchi, & Balogh, 2012). These functions are not merely descriptive: they can be used as design criteria for negotiation processes aimed at improving implementation.

The chapter proceeds in three steps. It adopts a conceptual-analytical approach. It does not aim to provide a single empirical case study, but to synthesize negotiation theory, implementation research, and governance scholarship in order to develop an analytical lens for Green Deal delivery. The argument is therefore built through theory-guided interpretation of implementation dynamics across multiple governance levels, with particular attention to distributive conflict, gatekeeping power, and participatory design. The first section links

negotiation theory to implementation challenges and proposes a hybrid bargaining lens for Green Deal delivery. Section 2 analyses the main negotiation actors, emphasising how national governments, local administrations, private firms and civil society shape implementation through distinct resources and constraints. Section 3 reviews mediation and participation instruments and identifies conditions under which they increase legitimacy and reduce conflict rather than producing token participation. The conclusion summarises practical implications for negotiating Green Deal implementation across levels.

Negotiation theories and their applicability to green policy delivery

Negotiation theory offers complementary lenses for diagnosing the structure of conflicts and designing processes capable of producing durable agreements. For Green Deal implementation, theoretical relevance is not measured by elegance alone, but by whether concepts help practitioners manage recurring implementation problems: burden-sharing disputes, credible commitments under uncertainty, coordination across levels, and legitimacy deficits.

Distributive and integrative bargaining remain foundational for understanding negotiation structure. Walton and McKersie's distinction clarify that many environmental conflicts begin as distributive disputes over a perceived fixed pie—costs, jobs, land, or regulatory burdens—yet may contain integrative potential if parties can enlarge the set of feasible outcomes through issue linkage and creativity (Walton & McKersie, 1965). In Green Deal implementation, distributive questions are unavoidable: who pays for decarbonisation, who receives compensation, who bears local externalities, and how quickly transformation will occur. These disputes can dominate early stages of implementation and generate political backlash, especially where communities perceive transitions as imposed and unfair.

At the same time, green transitions also create scope for integrative bargaining because implementation is rarely a single decision: it is a package of design choices about sequencing, technology options, funding modalities, and complementary social policies. Integrative bargaining focuses attention on “joint gains” and on redesigning the policy package so that those who bear concentrated costs can receive tangible benefits, whether through employment transition, regional development, or targeted affordability measures. In practice, integrative solutions often take the form of negotiated compensation, side-payments, and benefit-sharing schemes coupled to binding implementation commitments.

Interest-based negotiation, popularized by Fisher, Ury and Patton, offers a pragmatic method for converting positional conflict into problem-solving: focus on interests rather than positions, generate options for mutual gain, and use objective criteria to assess proposals (Fisher et al., 2011). Its implementation relevance is high in contexts where local disputes are framed as binary choices - “build the wind farm” versus “stop the project”—but where underlying interests may overlap, for example around affordability, energy security, biodiversity protection, and community wellbeing. In addition, the concept of a best alternative to a negotiated agreement (BATNA) helps diagnose power relations: in

environmental conflicts, litigation, permitting delays, or the possibility of relocating investment can shape parties' leverage and their willingness to compromise (Raiffa, 1982).

A critical limitation is that interest-based approaches can underplay structural power asymmetries. When communities have fewer resources than corporate developers, "mutual gains" may become rhetoric unless process design provides independent expertise, transparency, and safeguards against procedural manipulation. Therefore, interest-based negotiation needs to be complemented with institutional design choices that address asymmetries in information and capacity.

Game-theoretic bargaining models add analytical precision about strategic interdependence, commitment problems, and time. Nash's bargaining solution formalised bargaining as a non-zero-sum problem under axioms of rational choice (Nash, 1950), while Rubinstein's alternating-offers model demonstrates how delay costs and discounting factors systematically influence outcomes (Rubinstein, 1982). Schelling's analysis of focal points and commitments highlights that bargaining power often stems from credible commitments and the ability to make threats or promises believable (Schelling, 1960). These insights translate directly into green implementation questions: credible coal exit schedules, enforceable investment commitments, and conditional disbursement of funds can change bargaining dynamics by shifting expectations about future payoffs and penalties.

Moreover, many implementation interactions are repeated over years: national plans are revised, funding is disbursed in tranches, and compliance is monitored. Repeated interaction can support cooperation when parties expect future dealings and can condition behaviour on past performance, as Axelrod's work on cooperation suggests (Axelrod, 1984). From an implementation standpoint, this implies that agreements should be designed to sustain cooperation over time, for example by specifying monitoring indicators, review clauses, and staged commitments that lower the political and financial risks of immediate full compliance.

The EU's Green Deal is implemented through a multi-level governance system in which authority is dispersed across EU institutions, Member States, regions, and local administrations. Putnam's two-level games model explains how external negotiations interact with domestic constraints: leaders must craft agreements acceptable both internationally and domestically, and negotiating outcomes are bounded by domestic "win-sets" (Putnam, 1988). In the EU context, Member States negotiate climate and energy obligations with the Commission and Council while anticipating domestic ratification constraints, coalition politics, and distributional consequences. The analytical value of two-level games lies in clarifying why technically "efficient" policies may be politically infeasible and why governments may seek side-payments or flexibility mechanisms to enlarge their domestic win-sets.

Multi-level governance research adds that the dispersion of decision-making is not merely an obstacle; it is a structural feature that shapes bargaining, creating multiple arenas in which actors can influence outcomes (Hooghe & Marks, 2001). In practice, implementation resembles linked bargaining across arenas: EU funding conditionalities, national budget allocations, local permitting and planning, and private investment decisions must align.

Network governance perspectives further emphasise that policy delivery often occurs through inter-organisational networks rather than a single hierarchy (Rhodes, 1997). This suggests that negotiation capacity is not simply a personal skill but an institutional capability embedded in routines, platforms, and boundary-spanning roles.

A central analytical implication for Green Deal delivery is that negotiations are typically hybrid: they combine distributive conflict over transition costs with integrative problem-solving aimed at building implementable packages. The politics of climate change is increasingly characterised by distributive conflict among “winners” and “losers” of decarbonisation rather than a simple collective-action dilemma (Aklin & Mildenberger, 2020). Carbon pricing, fossil-fuel phase-outs, industrial restructuring, and renewable deployment create concentrated losses for some sectors and regions while diffusing benefits over time. These distributional tensions structure implementation bargaining as disputes over burden-sharing, compensation, and sequencing. For example, coal regions may resist rapid closure schedules if alternative employment and regional investment are not credible, while low-income households may oppose policies perceived to increase energy costs without adequate protection.

Yet successful implementation requires integrative solutions that connect climate ambition with socio-economic security. Policy packages associated with “just transition” logics illustrate integrative bargaining in practice: regulation is coupled with investment in regional development, retraining, social protection, and infrastructure, converting a perceived zero-sum conflict into a broader set of negotiated trade-offs. In such packages, integrative outcomes are produced not by denying distributive conflict but by making it explicit and addressing it through transparent compensation and benefit-sharing mechanisms. The resulting negotiation pattern is hybrid: distributive bargaining is unavoidable when allocating costs and responsibilities, but integrative bargaining becomes necessary to construct durable agreements and sustain compliance over time. Just transition processes in carbon-intensive regions exemplify hybrid implementation bargaining. Here, distributive conflict is explicit: workers, local authorities, and firms bargain over closure timelines, compensation, and future employment pathways. Integrative solutions require credible regional development packages—investment in new industries, reskilling, and social protection—linked to binding decarbonization commitments. Without credible packages, national governments face domestic resistance that shrinks their win-sets and weakens EU compliance incentives. With credible packages, however, the negotiation can shift from a zero-sum dispute over losses to an integrative bargaining process about regional development pathways. This logic is particularly salient for Member States with structurally carbon-intensive regions, including Romania, where place-based transition needs intersect with EU funding conditionality and domestic socio-economic pressures (European Commission, 2019).

This hybrid perspective also supports a critical diagnosis: implementation failure often results from treating distributive conflict as a communication problem rather than a material one. When compensation is vague, delayed, or administratively inaccessible, stakeholders interpret participation as symbolic and may mobilise litigation or political vetoes. Conversely, when integrative packages are designed with credible funding, clear timelines, and locally

salient benefits, they can shift stakeholder positions and reduce resistance. Negotiation, understood as an implementation tool, therefore includes the design of credible integrative packages that make distributive trade-offs politically and socially manageable.

Negotiation actors: incentives, leverage, and gatekeeping roles

Implementation negotiations involve multiple actor categories with distinct incentives, resources, and constraints. Analytically, their influence depends not only on formal authority but also on control of bottlenecks (permits, land, finance, expertise), agenda-setting capacity, and the ability to mobilise legitimacy or opposition.

National governments occupy a central but structurally constrained position in negotiating Green Deal implementation. They function as principal agents for EU compliance, translating EU-level objectives into national regulations, fiscal measures, and investment programmes. At the same time, they operate under domestic constraints shaped by electoral competition, coalition management, and the distributional impacts of climate policies on strategic sectors and regions. Putnam's two-level games logic illuminates this condition: governments must simultaneously negotiate in the European arena and manage domestic ratification and acceptance constraints, so that implementation choices are bounded by domestic win-sets (Putnam, 1988). This helps explain why Member States often seek flexibility mechanisms, transitional derogations, or compensatory funding—tools that enlarge domestic political feasibility while maintaining EU compliance.

From an implementation perspective, this two-level constraint produces a recurring pattern: governments may publicly endorse ambitious EU targets while bargaining for implementation pathways that reduce immediate domestic costs or concentrate resources on politically salient constituencies. Such bargaining is not inherently illegitimate; rather, it reflects a governance reality where distributive consequences are politically mediated. The critical question is whether negotiated national pathways sustain the credibility of EU commitments or create implementation gaps through optimistic planning, delayed action, or under-funded compensation. Negotiation capacity at the national level therefore includes the ability to articulate credible domestic packages—linking regulation with investment, social policy, and administrative capacity—so that EU obligations become domestically implementable rather than merely symbolic.

Romania illustrates particularly clearly why Green Deal implementation must be understood as a negotiated process rather than as a linear act of legal transposition. The country faces the dual pressure of complying with EU climate obligations while managing the socio-economic legacies of carbon-intensive sectors, uneven territorial development, and persistent administrative capacity constraints (Voicu-Dorobanțu et al., 2021; Nicola & Schmitz, 2022; Marcu et al., 2020). In practice, this means that national authorities cannot rely on formal transposition alone; they must negotiate implementation pathways that remain politically credible for affected communities, fiscally feasible for the central government, and administratively workable for local and regional authorities responsible for permits, infrastructure coordination, and project delivery (Țigănașu et al., 2018; European Commission,

2024). At the same time, Romania's green transition is closely tied to the mobilisation of EU cohesion and just transition resources intended to support the country's green and territorial transformation, especially in the counties most affected by structural change (European Commission, 2022; European Commission, 2025). Romania therefore exemplifies a broader Green Deal dilemma in Central and Eastern Europe: where regional inequalities are pronounced and implementation capacity is uneven, successful decarbonisation depends on building multi-level bargains that connect EU conditionality, domestic political legitimacy, and place-based development strategies rather than treating the transition as a purely technocratic exercise (Voicu-Dorobanțu et al., 2021; Nicola & Schmitz, 2022).

Local and regional administrations increasingly function as gatekeepers of green implementation because many key delivery levers are territorially embedded. Spatial planning, permitting decisions, local infrastructure coordination, and the delivery of social policies that shape perceived fairness are often controlled sub-nationally. Even when national governments set targets for renewable energy or building renovation, local decisions determine whether projects obtain permits, whether grid upgrades are coordinated, and whether implementation is socially acceptable. Multi-level governance scholarship emphasises that dispersed authority transforms implementation into a negotiated process in which local actors can facilitate, reshape, or block delivery depending on administrative capacity and political incentives (Hooghe & Marks, 2001).

In practice, gatekeeping is reinforced by "community acceptance" dynamics. Research on the social acceptance of renewable energy shows that public support at the general level can coexist with strong opposition to specific projects, and that local opposition often reflects perceived unfairness, lack of voice, and distributional concerns rather than irrational "NIMBYism" (Wüstenhagen, Wolsink, & Bürer, 2007). For Green Deal delivery, this implies that implementation is negotiated in place-based arenas where local authorities mediate between national decarbonisation objectives, private developers, and community expectations. When participation is late or superficial, local actors may use planning rules, political vetoes or litigation support to delay projects. Conversely, when local administrations possess capacity and credible benefit-sharing mechanisms are in place, they can accelerate implementation by building social licence and coordinating local service delivery. Therefore, strengthening local administrative capacity and participation design is not a "soft" complement but a hard condition for implementation speed and durability.

Transnational municipal networks also shape local bargaining capacity by diffusing policy models and legitimising ambitious local action. Kern and Bulkeley (2009) show how cities engage in transnational municipal networks within multi-level European governance, affecting local climate policy learning and diffusion. Such networks can expand local administrative capability and provide reputational resources that strengthen local bargaining positions vis-à-vis national governments and private actors, especially in contested projects.

Green Deal implementation is capital-intensive and therefore structurally dependent on the private sector's investment decisions and technological capacity. Decarbonisation in energy, industry, transport, and buildings requires large-scale deployment of low-carbon technologies, supply-chain reconfiguration, and financing capacity that public budgets alone

rarely provide. This dependency gives firms, utilities, developers, and financiers a specific form of bargaining power: they can accelerate or delay implementation through investment timing, technology choice, and the provision (or withholding) of operational expertise. Business influence is not uniformly oppositional; rather, firms adopt different political strategies—opposition, hedging, support, or non-participation—depending on distributional effects and perceived regulatory pressure (Meckling, 2015). Urban decarbonization—mobility policies, building renovation programmes, and low-emission zones—further demonstrates how implementation depends on negotiated coordination among local governments, businesses, and residents. Local administrations must reconcile climate objectives with distributive concerns about accessibility, affordability, and social inclusion. Because cities operate in multi-level governance contexts, they also negotiate with national governments over funding, legal competences, and data infrastructures. Transnational municipal networks can enhance local capacity and policy learning, strengthening cities' bargaining positions in these negotiations (Kern & Bulkeley, 2009).

Moreover, corporate and labor coalitions can shape the political feasibility of climate policies by influencing governments' perceptions of economic competitiveness and employment risks. Comparative research on domestic climate politics emphasises that business and labour organisations often have substantial capacity to shape policy design and to constrain government choices (Mildenberger, 2020). In implementation bargaining, this translates into negotiated demands for regulatory predictability, subsidy design, state aid compatibility, and infrastructure commitments (e.g., grid expansion, hydrogen networks). Governments, in turn, seek credible private commitments to invest and to deliver technological performance, often using contracts, auctions, and public-private partnerships as bargaining instruments. The critical governance challenge is to avoid "capture" while still mobilising private capacity: negotiation design must balance investor certainty with transparency, accountability, and public value objectives.

Finally, the private sector's influence is increasingly shaped by global interdependence and supply chains. Meckling and Hughes (2018) argue that clean energy transitions are affected by shifts in global interdependence among firms, with implications for domestic policy choices and competitive strategies. For Green Deal implementation, this implies that investment bargaining is not only domestic: technology dependence, supply constraints, and cross-border value chains can reshape what is feasible at national and local levels, reinforcing the need for coordinated, multi-level negotiation rather than fragmented project-by-project bargaining.

Civil society actors—environmental NGOs, community groups, labour unions, and affected residents—shape implementation through participation rights, advocacy, litigation, community mobilisation, and local knowledge. Their influence is often indirect but decisive: they can alter political incentives, raise reputational costs, or trigger judicial review processes that delay projects. The Aarhus Convention institutionalises procedural rights of access to information, participation in decision-making, and access to justice in environmental matters (UNECE, 1998). These rights shift implementation from discretionary consultation toward

rights-based engagement, increasing the expectation that implementation decisions are publicly justifiable and procedurally fair.

Analytically, civil society provides a “legitimacy resource” that can increase the durability of implementation agreements. Deliberative governance research suggests that perceived procedural fairness—early involvement, transparent reasoning, and meaningful influence—affects acceptance and compliance, particularly in high-stakes, long-horizon policies (Fung, 2006; Dryzek, 2010). However, civil society participation can also be distorted by resource asymmetries and unequal capacity to engage. A critical approach therefore treats participation as a design problem: participation must be structured to balance expertise, representation, and influence, rather than serving as a symbolic add-on after core decisions are taken.

Mediation and participation instruments for Green Deal implementation

Mediation and participation instruments constitute the procedural infrastructure that shapes implementation bargaining. They influence who gets a voice, when conflict is addressed, and how disputes are resolved when negotiation stalls. For Green Deal implementation, these instruments range from legally mandated procedural rights to voluntary engagement toolkits and formal dispute-resolution mechanisms. This section reviews major instruments and offers a critical assessment of their effectiveness and common failure modes.

At the international level, the Aarhus Convention (UNECE, 1998) codifies procedural environmental rights and requires public authorities to operationalise access to information, public participation, and access to justice. At EU level, these obligations are implemented through a body of directives, including the Directive on public access to environmental information (Directive 2003/4/EC) and the Directive on public participation in environmental plans and programmes (Directive 2003/35/EC). These instruments institutionalise minimum procedural standards and, importantly, create enforceable expectations that participation must occur “early and effectively”, when options are still open.

From an implementation standpoint, rights-based participation affects bargaining dynamics in two ways. First, it increases information symmetry by requiring disclosure of relevant environmental information and thereby reducing the ability of powerful actors to control narratives. Second, it creates credible “outside options” for civil society through access to justice: if participation is procedurally flawed, opponents can seek judicial review, increasing delay costs for developers and authorities. Therefore, procedural rights not only legitimate decisions; they also create bargaining incentives for early compromise and improved process quality. However, rights-based participation can still produce tokenism when consultation occurs too late to influence design, or when technical documentation is inaccessible to non-experts. Process quality thus depends on administrative capacity and on the translation of formal rights into usable opportunities for influence.

The Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) procedures are central arenas where implementation conflicts become structured and negotiable. The SEA Directive (Directive 2001/42/EC) requires environmental assessment for plans and programmes likely to have significant effects, while the EIA Directive (Directive 2011/92/EU as amended by Directive 2014/52/EU) requires assessment for major projects. Both procedures embed consultation and information disclosure into planning and authorisation processes, with the potential to integrate environmental considerations early and reduce conflict later.

Critically, SEA and EIA can function either as learning-and-negotiation devices or as bureaucratic compliance rituals. When used well, they create a structured sequence of engagement: scoping, alternatives analysis, mitigation design, and monitoring plans, enabling parties to negotiate trade-offs with a shared evidence base. When used poorly, they become formalistic, producing voluminous technical reports that do not meaningfully inform decision-making and that trigger adversarial contestation rather than problem-solving. A negotiation-as-implementation perspective suggests three design implications: (1) embed negotiation early at scoping and alternatives stages; (2) ensure independent expertise and accessible information; and (3) treat mitigation and compensation measures as negotiable commitments with monitoring and enforcement clauses, not aspirational statements.

Beyond legal minimums, stakeholder engagement frameworks provide practical guidance for designing participatory processes. Fung's "democracy cube" highlights that participation choices involve trade-offs among who participates, how they communicate, and what authority they possess (Fung, 2006). In Green Deal contexts, this is crucial: "consultation" that does not affect project design may increase cynicism and mobilise opposition. By contrast, collaborative forums can build trust and produce "small wins" that sustain cooperation over time (Ansell & Gash, 2008).

Deliberative mini-publics—citizens' assemblies, juries, and panels—have gained prominence as instruments for increasing legitimacy in contentious policy domains. Their relevance for Green Deal implementation lies in their capacity to create informed public judgement and to clarify values and priorities under uncertainty. Yet deliberative instruments face limits: they may be disconnected from actual decision authority, and their representativeness and impact depend on careful design and political commitment. A critical approach therefore treats deliberation as complementary to, not a substitute for, distributive bargaining: deliberation can legitimate difficult trade-offs, but it cannot replace material compensation for those who bear concentrated costs.

Mediation and arbitration can provide dispute-resolution capacity when consent-based processes stall. Mediation is particularly relevant for place-based environmental conflicts where parties must continue interacting even after formal decisions are taken. A key advantage is flexibility: mediation can help parties explore package deals, clarify interests, and identify implementable commitments without the adversarial framing of litigation. Arbitration can function as a backstop for disputes where parties seek binding resolution. At the international level, the Permanent Court of Arbitration's Optional Rules for Arbitration of Disputes Relating to Natural Resources and/or the Environment (Permanent

Court of Arbitration, 2001) provide a specialised framework and have been discussed as a mechanism capable of addressing lacunae in environmental dispute resolution (Ratliff, 2001).

However, dispute-resolution mechanisms do not automatically produce legitimacy: they may exclude affected publics or privilege well-resourced parties. For Green Deal implementation, the most productive role of mediation is often preventive and design-oriented: introducing facilitated negotiation early enough to influence project design and incorporating dispute-resolution clauses in implementation agreements (e.g., contractual grievance mechanisms, independent ombudspersons, or escalation ladders). Such “procedural backstops” can reduce the likelihood that conflicts escalate into protracted litigation that undermines implementation timelines.

Benefit-sharing mechanisms—community benefit agreements, local ownership models, and targeted investment in local services—are particularly important integrative instruments for Green Deal implementation. They operationalise the hybrid negotiation insight: since distributive conflict is unavoidable, implementation requires tangible mechanisms that redistribute benefits and reduce perceived injustice. Empirical research on renewable energy acceptance suggests that fairness, procedural quality, and local benefit distribution influence acceptance more than “backyard motives” alone (Wüstenhagen et al., 2007).

From a negotiation perspective, benefit-sharing instruments work when they are credible, transparent, and tied to enforceable commitments. If benefits are vague, one-off, or framed as “compensation” for harm rather than as participation in value creation, they may be perceived as bribery and undermine legitimacy. Conversely, when benefits are negotiated with local representatives, structured as long-term development opportunities (skills, infrastructure, local revenues), and monitored publicly, they can transform opposition into conditional support. This makes benefit-sharing not merely a distributive side-payment but an integrative element of implementation design.

Conclusion

Negotiation is often treated as a pre-implementation activity—something that happens when policies are made, not when they are delivered. The European Green Deal challenges this separation. In polycentric, multi-level governance systems, implementation is a negotiated process in which EU institutions, national governments, local administrations, private investors, and civil society continuously align incentives, manage distributive conflict, and design credible commitments under uncertainty. Negotiation therefore functions as an implementation tool: a set of institutionalised practices that shapes what can be financed, permitted, built, and enforced.

The chapter synthesized major negotiation theories and showed why Green Deal delivery is best conceptualised as a hybrid negotiation environment. Its original contribution lies in conceptualizing Green Deal delivery as a hybrid implementation bargaining process shaped by distributive conflict, territorial gatekeeping, and investment-dependent governance. Climate policies trigger distributive conflicts because they reallocate costs and

risks, yet durable implementation depends on integrative solutions that package regulation with compensation, regional development, and investable pathways. National governments negotiate between EU obligations and domestic win-sets; local administrations act as gatekeepers through planning, permitting, and the construction of social licence; and the private sector shapes implementation through investment and technological capacity. Mediation and participation instruments—from Aarhus-based procedural rights to SEA/EIA procedures and benefit-sharing mechanisms—constitute the procedural infrastructure that can either facilitate early compromise or amplify conflict when used as symbolic compliance devices.

For practitioners, the implication is practical and normative: implementation negotiations should be designed to make distributive trade-offs explicit, to institutionalise integrative package-building, and to embed participation early enough to shape decisions rather than merely legitimise them. Treating negotiation as an implementation capability can help bridge the persistent gap between Green Deal ambition and delivery, especially in Member States where regional inequalities and administrative capacity constraints make just transition bargaining a decisive condition for success.

Bibliography

- Ansell, C., & Gash, A. (2008). Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory*, 18(4), 543–571. <https://doi.org/10.1093/jopart/mum032>
- Aklin, M., & Mildenberger, M. (2020). Prisoners of the wrong dilemma: Why distributive conflict, not collective action, characterizes the politics of climate change. *Global Environmental Politics*, 20(4), 4–27. https://doi.org/10.1162/glep_a_00578
- Axelrod, R. (1984). *The evolution of cooperation*. Basic Books.
- Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment. *Official Journal of the European Communities*, L 197, 30–37.
- Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information and repealing Council Directive 90/313/EEC. *Official Journal of the European Union*, L 41, 26–32. <http://data.europa.eu/eli/dir/2003/4/oj>
- Directive 2003/35/EC of the European Parliament and of the Council of 26 May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending Council Directives 85/337/EEC and 96/61/EC. *Official Journal of the European Union*, L 156, 17–24. <http://data.europa.eu/eli/dir/2003/35/oj>
- Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (codification). *Official Journal of the European Union*, L 26, 1–21.
- Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment. *Official Journal of the European Union*, L 124, 1–18.
- Dryzek, J. S. (2010). *Foundations and frontiers of deliberative governance*. Oxford University Press.

- Emerson, K., Nabatchi, T., & Balogh, S. (2012). An integrative framework for collaborative governance. *Journal of Public Administration Research and Theory*, 22(1), 1–29. <https://doi.org/10.1093/jopart/mur011>
- European Commission. (2019). Communication on the European Green Deal (COM(2019) 640 final). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52019DC0640>
- European Commission. (2022). €31.5 billion for Romania's economic, social and territorial cohesion, competitiveness and green and digital transition in 2021–2027.
- European Commission. (2024). Preparing for a just transition in Jiu Valley: Policy approach. Directorate-General for Regional and Urban Policy.
- European Commission / Pact for Skills. (2025). Just Transition Fund (JTF) – Romania.
- Fisher, R., Ury, W., & Patton, B. (2011). *Getting to yes: Negotiating agreement without giving in* (3rd ed.). Penguin.
- Fung, A. (2006). Varieties of participation in complex governance. *Public Administration Review*, 66(S1), 66–75. <https://doi.org/10.1111/j.1540-6210.2006.00667.x>
- Hooghe, L., & Marks, G. (2001). *Multi-level governance and European integration*. Rowman & Littlefield.
- Kern, K., & Bulkeley, H. (2009). Cities, Europeanization and multi-level governance: Governing climate change through transnational municipal networks. *Journal of Common Market Studies*, 47(2), 309–332. <https://doi.org/10.1111/j.1468-5965.2009.00806.x>
- Marcu, L., Kandzija, T., & Dorotic, J. (2020). EU Funds Absorption: Case of Romania. *Postmodern Openings*, 11(4). DOI: 10.18662/po/11.4/222.
- Meckling, J. (2015). Oppose, support, or hedge? Distributional effects, regulatory pressure, and business strategy in environmental politics. *Global Environmental Politics*, 15(2), 19–37. https://doi.org/10.1162/GLEP_a_00296
- Meckling, J., & Hughes, L. (2018). Global interdependence in clean energy transitions. *Business and Politics*, 20(4), 467–491. <https://doi.org/10.1017/bap.2018.25>
- Mildenberger, M. (2020). *Carbon captured: How business and labor control climate politics*. MIT Press. <https://doi.org/10.7551/mitpress/12393.001.0001>
- Nash, J. F. (1950). The bargaining problem. *Econometrica*, 18(2), 155–162. <https://www.jstor.org/stable/1907266>
- Nicola, S.-E., & Schmitz, S. (2022). Discordant agendas on a just transition in Romanian coal mining areas: The case of the Jiu Valley. *Moravian Geographical Reports*, 30(4), 257–269. DOI: 10.2478/mgr-2022-0017.
- Ostrom, E. (2010). Polycentric systems for coping with collective action and global environmental change. *Global Environmental Change*, 20(4), 550–557. <https://doi.org/10.1016/j.gloenvcha.2010.07.004>
- Permanent Court of Arbitration. (2001). Optional rules for arbitration of disputes relating to natural resources and/or the environment (effective 19 June 2001). https://docs.pca-cpa.org/2015/11/Optional-Rules-for-Arbitration-of-Disputes-Relating-to-the-Environment-and_or-Natural-Resources1.pdf
- Pressman, J. L., & Wildavsky, A. (1984). *Implementation: How great expectations in Washington are dashed in Oakland* (3rd ed.). University of California Press.

- Putnam, R. D. (1988). Diplomacy and domestic politics: The logic of two-level games. *International Organization*, 42(3), 427–460. <https://doi.org/10.1017/S0020818300027697>
- Raiffa, H. (1982). *The art and science of negotiation*. Harvard University Press.
- Ratliff, D. P. (2001). The PCA Optional Rules for Arbitration of Disputes Relating to Natural Resources and/or the Environment. *Leiden Journal of International Law*, 14(4), 887–896. <https://doi.org/10.1017/S0922156501000425>
- Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality ('European Climate Law'). *Official Journal of the European Union*, L 243, 1–17. <https://op.europa.eu/en/publication-detail/-/publication/365a2e8e-e04f-11eb-895a-01aa75ed71a1/language-en>
- Rhodes, R. A. W. (1997). *Understanding governance: Policy networks, governance, reflexivity and accountability*. Open University Press.
- Rubinstein, A. (1982). Perfect equilibrium in a bargaining model. *Econometrica*, 50(1), 97–109. <https://www.jstor.org/stable/1912531>
- Schelling, T. C. (1960). *The strategy of conflict*. Harvard University Press.
- Țigănașu, R., Încălțărău, C., & Pascariu, G. C. (2018). Administrative Capacity, Structural Funds Absorption and Development: Evidence from Central and Eastern European Countries. *Romanian Journal of European Affairs*, 18(1), 39–59.
- UNECE. (1998). *Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention)*. <https://unece.org/environment-policy/public-participation/aarhus-convention/text>
- Voicu-Dorobanțu, R., Volintiru, C., Popescu, M.-F., Nerău, V., & Ștefan, G. (2021). Tackling Complexity of the Just Transition in the EU: Evidence from Romania. *Energies*, 14(5), 1509. DOI: 10.3390/en14051509.
- Walton, R. E., & McKersie, R. B. (1965). *A behavioral theory of labor negotiations*. McGraw-Hill.
- Wüstenhagen, R., Wolsink, M., & Bürer, M. J. (2007). Social acceptance of renewable energy innovation: An introduction to the concept. *Energy Policy*, 35(5), 2683–2691. <https://doi.org/10.1016/j.enpol.2006.12.001>

IMPLEMENTATION OF THE EUROPEAN GREEN DEAL THROUGH COHESION POLICY AT THE REGIONAL LEVEL: THE CASE OF ROMANIA

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Abstract: *The European Green Deal (EGD) represents the European Union's overarching strategy for achieving climate neutrality by 2050 through the integration of environmental objectives across major policy areas. Within this framework, Cohesion Policy plays a key role in translating EU climate priorities into territorial investment strategies and actions. This chapter examines how the objectives of the European Green Deal are reflected in the regional programming architecture of Romania for the 2021–2027 period. The analysis focuses on the eight Romanian Regional Programmes and investigates the extent to which the thematic priorities of the EGD are integrated into regional strategic documents. Methodologically, the study applies a systematic content analysis of the narrative sections of the programmes, using a coding grid derived from nine dimensions of the European Green Deal, including climate mitigation, climate adaptation, energy efficiency, renewable energy, circular economy, biodiversity protection, pollution reduction, sustainable mobility, and the social dimension of the transition. The results show that regional programming strongly emphasises energy efficiency, climate mitigation, and sustainable mobility, while other dimensions—such as renewable energy, climate adaptation, and the social aspects of the transition—are integrated more selectively. These findings suggest that the regional implementation of the EGD reflects both alignment with EU strategic priorities and adaptation to territorial development challenges.*

Keywords: *European Green Deal; EU Cohesion Policy; regional development programmes; green transition; Romania*

Introduction

The European Green Deal (EGD) that was launched in 2019 is the strategic framework through which the European Union aims to transform its economy into a model of sustainable development, characterised by the reduction of greenhouse gas emissions, the efficient use of resources and the protection of natural capital. The adoption of the European Green Deal is an important step in reshaping the strategic framework of the European Union, with an integrated economic and climate transformation agenda geared towards achieving climate neutrality by 2050 and reinforced by interventions in areas such as clean energy, circular economy, biodiversity protection, pollution reduction, and sustainable mobility.

Beyond the overarching objective of climate neutrality, the EGD proposes a reshaping of the economic, energy and environmental policies of the European Union, based on integrating climate and sustainability objectives into all public policies (Ozcelik et al., 2025).). In the literature, the European Green Deal is analysed as a framework strategy bringing together multiple areas of intervention and aiming to mobilise existing European Union instruments to support the transition to a low-carbon economy (Fetting, 2020). In this respect, the EGD is not conceived as a distinct sectoral policy, but as a cross-cutting strategy that integrates climate objectives into the broader architecture of European policies.

In this context, the literature highlights that the implementation of the objectives of the European Green Deal depends to a large extent on the capacity of existing European policies to integrate the climate and environmental dimension into programming and funding processes. This process, often called climate policy integration, involves incorporating climate objectives into other public policy areas so that they become integral to policy formulation and implementation (Rietig & Dupont, 2021). Climate integration can range from limited forms, where environmental goals are only taken into account, to deeper forms, where they are central to policy design (Skagen & Boasson, 2024). The development of European climate action shows that this integration has become a core element of European climate governance and of how sustainability objectives are embedded in public policy instruments (Oberthür & von Homeyer, 2023).

In this process of mainstreaming climate objectives into European policies, Cohesion Policy plays an important role as a financial and programmatic instrument to support the green transition at the territorial level. For the programming period 2021–2027, this policy includes an explicit focus on investments that contribute to the environmental and climate objectives of the European Union, such as energy efficiency, renewable energy, sustainable mobility, or ecosystem protection (Christou et al., 2025). According to more recent research, the green transition can be supported by allocating financial resources and integrating climate objectives into the programmatic priorities of the Structural Funds, with the Cohesion Policy being one of the main instruments (Tijanić & Kersan-Škabić, 2025). From this perspective, Cohesion Policy is not only a tool to reduce regional disparities, but also a mechanism through which European strategic objectives are translated into concrete territorial interventions.

According to the study conducted by Pîrvu et al. (2018) on the effects of cohesion policy, it is observed that the impact of these policies on regional development in Romania is influenced by the socio-economic and institutional context of the regions, as well as by their capacity to capitalise on the Structural Funds. From this perspective, regional development policies and instruments become the framework through which European objectives are adapted to territorial specificities and integrated into regional development strategies.

Analyses on the role of the regional level in achieving climate objectives show that the implementation of the energy and climate transition depends on the ability of regions to adapt European objectives to their own socio-economic realities and on the configuration of institutional competences at sub-national level (Pukis et al., 2023). In this respect, regional programmes funded by the Cohesion Policy are becoming an important tool through which European strategic guidelines are integrated into regional development strategies.

The literature also points out that the process of implementing climate and energy policies in the European Union is not uniform. Research on energy and climate sustainability

shows significant differences between states and regions in the level of climate mainstreaming and clean energy performance (Tutak, Brodny & Bindzár, 2021). Similarly, studies on the green transition highlight that European regions can develop different adaptation trajectories to new technologies and economic sectors associated with the green economy, depending on the economic structure and the existing industrial base (Grashof & Basilico, 2025). These differences suggest that the way the objectives of the European Green Deal are reflected in regional strategies and programmes may vary depending on the territorial context and development priorities undertaken at regional level (Nauwelaers et al., 2022; Maris & Flouros, 2021).

In this context, regional programmes funded by the Cohesion Policy are becoming an important tool through which European strategic guidelines are integrated into regional development strategies. The literature highlights that how climate objectives are integrated into EU-funded programmes depends on regional development priorities and how they are operationalised in programming documents. The relationship between climate objectives, innovation, and regional development may vary depending on the national and regional context and how these priorities are reflected in the programmatic documents according to the analyses on the implementation of climate policies under the Cohesion Policy (Murzyn, 2025).). This perspective highlights the role of regional programmes as tools for translating European objectives into interventions tailored to the territorial context.

In general, the literature relevant to this research points to convergence of several central ideas. First, the European Green Deal requires implementation mechanisms embedded in existing European Union policies. Secondly, Cohesion Policy is one of the main instruments by which these objectives are translated into territorial interventions. Third, integrating climate objectives into regional programmatic documents is a process that differs in each region, being influenced by the existing economic and institutional context.

In this context, the analysis of regional programmes provides a relevant insight into how European strategic objectives are integrated into programming documents and how they are adapted at regional level. Examining the content of these programmes can therefore highlight how different dimensions of the European Green Deal are reflected in programmatic priorities and allow for the identification of thematic differences between regions.

This chapter examines how the objectives of the European Green Deal are reflected in the programmatic architecture of the Romanian Regional Programmes for the programming period 2021–2027. The analysis assumes that regional programmes represent a relevant level of observation of how the strategic orientations of the European Union are translated into investment priorities adapted to the territorial context. To this end, the research aims to identify and compare how the different thematic dimensions associated with the European Green Deal are integrated into the content of regional programming documents.

The analysis is carried out by applying a content analysis method to the texts of regional programmes, using a set of thematic categories derived from the main strategic directions of the European Green Deal. On this basis, the chapter pursues two main objectives:

- (i) assessment of the European Green Deal topics and objectives integration in the Romanian Regional Programmes; and
- (ii) comparing the thematic reflection of these dimensions between the eight development regions, in relation with the key regional development challenges.

Consequently, the research question that guides the analysis is to what extent and by what thematic configuration the objectives of the European Green Deal are integrated in the regional programmatic documents in Romania. Through this approach, the chapter contributes to the literature on the subnational implementation of European climate strategies, providing an empirical perspective on how the objectives of the European Green Deal are reflected in regional programming funded by the Cohesion Policy.

Methodology

This research is based on a systematic content analysis of regional programmatic documents, with the objective of examining how the thematic guidelines of the European Green Deal are integrated into the 2021-2027 regional programmes in Romania. The methodological approach is focused exclusively on official strategic documents and does not aim to assess the actual implementation of projects, financial allocations, or the performance of interventions.

The analysis is based on a set of documents consisting of the eight Regional Programmes for the 2021–2027 programming period, corresponding to the North-West, North-East, Centre, West, South-West Oltenia, South-Muntenia, South-East and Bucharest-Ilfov development regions. These documents are the formal framework through which Cohesion Policy priorities are translated at the regional level and constitute the main strategic tool through which European guidelines are adapted to territorial specificities. We would point out that the analysis was limited to the Regional Programmes managed by the Romanian Regional Development Agencies financed from the ERDF, the ESF+, the Cohesion Fund and the European Maritime and Fisheries Fund. Although the Just Transition Programme exists at national level, it is not the subject of this study to avoid altering the regional dimension of the analysis.

The analysis covered the narrative sections of the programmes, i.e., the chapters dedicated to analysing the existing situation, justifying the interventions, and describing the priorities and specific objectives. Technical annexes, financial tables, or administrative sections were not included in the analysis, as the objective of the research was to identify thematic orientations and strategic emphasis, not to quantify budget allocations.

In order to allow for a systematic examination of the integration of the European Green Deal into regional documents, it was necessary to define a thematic analysis grid. The nine dimensions used in research represent an analytical operationalisation derived from the main strategic directions formulated in Communication COM(2019) 640 (European Commission, 2019) on the European Green Deal. These dimensions do not reproduce an explicit formal classification in the European strategic document, but constitute a conceptual adaptation to allow coherent coding of the content of regional documents.

In order to allow for a systematic examination of the integration of the European Green Deal into regional documents, it was necessary to define a thematic analysis grid. The nine dimensions used in research represent an analytical operationalisation derived from the main strategic directions formulated in Communication COM(2019) 640 (European Commission, 2019) on the European Green Deal. These dimensions do not reproduce an explicit formal

classification in the European strategic document, but constitute a conceptual adaptation to allow coherent coding of the content of regional documents.

The dimensions analysed are: climate mitigation, climate adaptation, energy efficiency, renewable energy, circular economy, biodiversity and ecosystems, pollution reduction, sustainable mobility, and the social dimension of the transition.

Each dimension was associated with a set of relevant terms and expressions, extracted from the terminology used in European strategic documents and adjusted by preliminary testing on a subset of Regional Programme texts. The adjustment process aimed to adapt the vocabulary to the specific language of regional programming in Romania, in order to avoid the inclusion of non-relevant contextual terms or the omission of frequently used regional formulations.

In this respect, the analysis grid used in the research reflects the conceptual structure of the European Green Deal, but adapted to allow for the systematic encoding of regional documents (Table 1).

Table no. 1. Dimensions of the European Green Deal used as a coding grid in the content analysis of Regional Programmes 2021–2027

EGD Dimension (Coding Category)	Conceptual Scope	Examples of Aspects Identified in Regional Programmes
Climate mitigation	Reduction of greenhouse gas emissions and decarbonisation of economic sectors	CO2 emission reduction; decarbonisation measures; low-carbon development; electrification of transport; clean technologies
Climate adaptation	Adaptation to climate change impacts and resilience building	Flood prevention; climate risk management; heatwave mitigation; resilience infrastructure; disaster risk reduction
Energy efficiency	Improvement of energy performance in buildings and infrastructure	Thermal rehabilitation; reduction of energy consumption; modernisation of heating systems; energy performance improvement
Renewable energy	Production and use of energy from renewable sources	Photovoltaic installations; wind energy; biomass; green energy production; renewable energy systems
Circular economy	Efficient use of resources and waste minimisation	Recycling; reuse; waste management systems; resource efficiency; circular production processes
Biodiversity and ecosystems	Protection and restoration of natural capital	Green infrastructure; protected areas; ecosystem restoration; biodiversity conservation measures
Pollution reduction (zero pollution)	Reduction of air, water and soil pollution	Air quality improvement; PM10 reduction; wastewater treatment; pollution control measures
Sustainable mobility	Development of low-emission and multimodal transport systems	Sustainable urban mobility; public electric transport; cycling infrastructure; multimodal transport solutions
Just transition (social dimension)	Social inclusion and support measures linked to green transition	Social housing with energy efficiency; professional reconversion; inclusive development; support for vulnerable groups

Source: own development on the basis of Communication COM(2019) 640 (European Green Deal) and the desk review of Regional Programmes 2021–2027.

Content analysis was performed in the R environment, using scripts developed for text processing and quantification. The documents were converted to processable format and subsequently underwent a cleaning process that included uniform formatting, removal of irrelevant characters, and standardisation of the text. Based on the lists of terms associated with each dimension, relevant occurrences were automatically identified in the corpus analysed, and frequencies were aggregated at the regional programme level.

In order to ensure comparability between documents of different sizes, the results were not expressed in absolute values but in the form of relative frequencies. Thus, for each Regional Programme, the share of each dimension in the total references associated with the green transition identified in that document was calculated. This approach makes it possible to compare the thematic profile of the regions without the differences in the volume of documents influencing the interpretation of the results.

In order to facilitate the interregional comparison of the thematic profile, the results were visually represented by a dot plot matrix generated in environment R. In this representation, the horizontal axis reflects the nine dimensions of the European Green Deal, and the vertical axis reflects the development regions. The size of each point corresponds to the relative weight of the references identified for each dimension in the Regional Programme under review.

It is important to note that the analysis carried out exclusively captures the thematic distribution of references in programmatic documents. It does not measure the intensity of interventions, the level of financial allocations, or the impact of implementation. The results reflect how the priorities associated with the European Green Deal are shaped at a discursive and strategic level in regional programming.

Through this methodological approach, it is possible to identify the thematic profile of each region and compare the relative emphasis given to the different dimensions of the green transition, thus providing an analytical framework for examining how the European strategic discourse is translated into regional programming in Romania.

Comparative analysis of Regional Programmes in Romania – From European Green Deal Discourse to Regional Strategic Programming in Romania

The strategic framework set up by the adoption of the European Green Deal aims to transform the European Union's development model by integrating sustainability and environmental objectives into all public policies. The strategy promotes coordinated interventions in a number of interlinked areas, such as clean energy, circular economy, biodiversity protection, pollution reduction, sustainable mobility, and resource efficiency. The implementation of these strategic guidelines is not limited to legislative or regulatory initiatives at European Union level, but also entails their integration into national and regional programming documents. In this context, Cohesion Policy is one of the main instruments

through which the objectives of the green transition are translated into investment priorities and programmatic interventions at sub-national level.

This Chapter does not seek to assess the effectiveness or regulatory coherence of the European Green Deal as a public policy strategy. The analysis focuses on how the thematic guidelines associated with the EGD are reflected in the 2021–2027 Romanian Regional Programmes. This is limited to the examination of programmatic documents and does not concern the assessment of financial allocations, implementation results or performance indicators. The focus is solely on the thematic configuration of the priorities associated with the green transition, as they appear in the programme texts.

For the purpose of this analysis, the strategic orientations of the European Green Deal have been synthesised through nine thematic dimensions, used as coding categories in the content analysis carried out in environment R. These dimensions are: climate mitigation, climate adaptation, energy efficiency, renewable energy, circular economy, biodiversity and ecosystems, reduction of pollution (pollution zero), sustainable mobility, just transition (social dimension).

For each dimension analysed, a number of relevant terms and expressions have been identified, selected based on the wording used in Communication COM(2019) 640 and the documents associated with the European Green Deal. The list of terms has been gradually revised and improved through preliminary testing on a subset of regional programmes.

These dimensions constitute the analytical grid used to identify the specific objectives included in each Regional Programme. The analysis measures the relative weight of each dimension within the set of references associated with the green transition identified in the programmatic documents. The resulting distribution makes it possible to make an interregional comparison and identify patterns of thematic concentration or differentiation between regions.

With this approach, the chapter moves from the level of European strategic discourse to the level of regional strategic programming. The objective is not to assess the performance of policies, but to examine how the priorities associated with the European Green Deal are transposed and comparatively configured in the framework of regional development in Romania for the 2021–2027 programming period.

The comparative analysis of the thematic profile of the dimensions of the European Green Deal in regional programmes requires, in advance, an understanding of the regional context in which they were developed. In this respect, the examination of the 2021–2027 programming documents highlights the fact that each development region bases its intervention priorities on its own analysis of structural needs and constraints.

Table 2 summarises the main environmental and climate challenges identified at the regional level and the associated funding priorities as formulated in the Romanian Regional Programmes 2021–2027. The information presented is not an external evaluation of the regional situation, but a systematisation of the diagnoses and directions of intervention explicitly assumed in the official programmatic documents.

This structuring outlines the necessary reference framework for interpreting the thematic differences subsequently identified in the content analysis of the Regional Programmes.

Tabel no. 2. Summary of regional challenges – Regional programmes 2021-2027

Region	Regional challenges	Associated funding priorities
North West	Urban pollution, pressure on green spaces, high transport emissions, and the need for energy efficiency in buildings.	Support for sustainable urban mobility (green public transport), energy efficiency investments for public and residential buildings, and green and blue infrastructure in the urban environment.
North East	Vulnerability to climate change in rural areas, poorly developed water and canal infrastructure, and increased natural risks (floods, slips).	Modernisation of water supply and sewerage systems, investments in green infrastructure, urban green spaces, energy efficiency in social housing and public buildings.
Sud Est	Coastal erosion, pollution in industrial areas (Galati, Braila), and poor access to water-channel networks.	Interventions to prevent and adapt to climate risks (flooding, erosion), support for energy efficiency and emission reduction, modernisation of water, sewerage and waste infrastructure.
Sud Muntenia	Low air quality in cities, lack of urban green spaces, and low recycling of waste.	Financing for energy-efficient public buildings, sustainable urban mobility: bicycle lanes, green vehicles, and urban green infrastructure development.
Sud Vest Oltenia	Poor water and sewerage infrastructure, poor waste management, drought and aridity risks in the south of the region.	Energy efficiency of housing and social infrastructure, support for waste management infrastructure, and reduction of emissions from urban transport.
Vest	Pressures on biodiversity, poor air quality in large cities, vulnerability to heat waves and urban floods.	Green energy transition through support for renewables, thermal renovation of buildings, investments in sustainable mobility and green infrastructure.
Centru	Waste management problems, urban pressure on protected natural areas, and localised industrial pollution.	Climate adaptation infrastructure, measures to reduce urban pollution, urban regeneration and blue infrastructure.
Bucureşti Ilfov	High air pollution (PM10, NOx), heavy traffic, urban heat islands, and scarcity of green spaces.	Integrated sustainable urban mobility projects, expanding green and blue infrastructure, and reducing emissions through clean technologies in the public and private sectors.

Source: Author's own elaboration based on the Romanian Regional Programmes 2021–2027.

Examination of the challenges described in the regional programmes shows that certain problems occur repeatedly in several regions, while others are closely linked to the local context. Most documents mention issues such as pollution in urban areas, pressure on green infrastructure or the need to increase the energy efficiency of buildings. The fact that these aspects are constantly present in several programmes indicates the existence of common structural difficulties associated with the transition to a lower-carbon development model.

In addition to these common elements, the documents also highlight region-specific situations. In the North-East and South-East there are frequent references to natural risks, especially floods and erosion processes. In South-West Oltenia and South-Muntenia, however, the issue of waste management and water resources is particularly highlighted. The Bucharest-

Ilfov region faces a different type of pressure. Here the programmes pay more attention to heavy traffic and high urban density, which explains the focus on sustainable urban mobility and the expansion of green infrastructure.

Financing priorities associated with these challenges frequently include investments in sustainable urban mobility, increasing the energy efficiency of public and residential buildings, developing green and blue infrastructure, modernising environmental infrastructure and climate adaptation measures. The formulation of these priorities reflects the attempt to link the identified regional needs to the overall Cohesion Policy framework for 2021–2027.

The analysis of the challenges and funding priorities presented in the regional programmes does not allow conclusions to be drawn on the adequacy or effectiveness of the proposed interventions. It exclusively reflects how each region defines its own development needs and opportunities in the 2021–2027 programmatic documents. In this respect, the thematic differences subsequently identified in the analysis of the dimensions of the European Green Deal can be interpreted in relation to these regional diagnoses formally assumed in the programmes, which structure the investment agenda and the strategic orientation of each region.

In general, comparative analysis of challenges and priorities highlights a dual level of convergence and differentiation. On the one hand, the existence of recurrent themes – such as energy efficiency in buildings, sustainable urban mobility, or green infrastructure – suggests a structural alignment with the overall objectives of the green transition promoted by the Cohesion Policy. On the other hand, the differentiated distribution of territorial risks and constraints indicates that the integration of the priorities associated with the European Green Deal is not uniform but adapted to regional specificities. Thus, the implementation process at the regional level does not appear as a mere replication of European guidelines, but rather as a transposition filtered through local diagnoses, which confirms the role of the territorial dimension in shaping interventions.

In this respect, the next analytical step is to examine how the Specific Objectives (SG) included in the Regional Programmes are linked to the Policy Objectives of the European Union (PO1–PO5) and the thematic priorities associated with the European Green Deal. This correlation makes it possible to identify the formal framework within which the dimensions of the green transition are integrated into the regional programmatic structure.

Before presenting the content analysis of the Regional Programmes, it is necessary to explain the formal framework within which the interventions financed by the Cohesion Policy 2021–2027 are structured. To this end, Table 3 summarises the information resulting from the examination of regional programmatic documents, with reference to the architecture of the policy objectives of the European Union (PO1–PO5) and the specific objectives (RSO) included in each programme.

Data on POs and SNS have been extracted directly from the official structure of the eight regional programmes, and the frequency mentioned in the table indicates in how many regions a specific objective is included. Based on this desk review, the programmatic objectives were then thematically linked to the European Green Deal guidelines as set out in

Communication COM(2019) 640 and its annex, which details the main strands of action at European level.

The association between the SNS and the European Green Deal does not reflect direct legal conditionality, but results from the analysis of the thematic convergence between the Cohesion Policy objectives and the strategic directions of the green transition. In this respect, the table does not aim to assess implementation or financial allocations but provides a summary of how the regional programmatic structure fits into the broader framework of the European priorities for climate, environment, and sustainable development.

In order to ensure consistency with the content analysis presented later, the correlation of RSO-EGD is expressed by reference to the nine dimensions used as coding categories in the analysis performed in environment R (climate mitigation; climate adaptation; energy efficiency; renewable energy; circular economy; biodiversity and ecosystems; pollution reduction; sustainable mobility; just transition – social dimension). In this logic, Table 4 represents an intermediate level of conceptual structuring between the formal architecture of the Cohesion Policy and the operational grid used for the comparative analysis of the thematic profile of the Regional Programmes.

Tabel no. 3. Alignment of Regional Programme Specific Objectives with European Green Deal Priorities in Romania (2021–2027)

RP Specific Objective (RSO)	EU Policy Objective (PO)	Frequency (Regions)	Regions	EGD dimensions (coding grid)
RSO 1.1 Research and innovation	PO 1	8/8	BI, NE, NW, W, SW, SM, SE, C	circular economy; climate mitigation (clean technologies)
RSO 1.2 Digitalisation	PO 1	8/8	BI, NE, NW, W, SW, SM, SE, C	energy efficiency; climate mitigation (enabling technologies)
RSO 1.3 SME competitiveness	PO 1	8/8	BI, NE, NW, W, SW, SM, SE, C	circular economy; energy efficiency
RSO 1.4 Skills for smart specialisation	PO 1	6/8	NE, W, SW, SM, SE, C	just transition (social dimension)
RSO 1.6 Strategic Technologies for Europe (STEP)	PO 1	6/8	BI, NE, NW, SW, SM, SE	renewable energy; climate mitigation
RSO 2.1 Energy Efficiency and Reduced GHG Emissions	PO 2	8/8	BI, NE, NW, W, SW, SM, SE, C	energy efficiency; climate mitigation
RSO 2.2 Renewable energy	PO 2	1/8	NW	renewable energy; climate mitigation
RSO 2.4 Climate adaptation and risk prevention	PO 2	3/8	BI, SM, SE	climate adaptation
RSO 2.7 Biodiversity and green infrastructure	PO 2	8/8	BI, NE, NW, W, SW, SM, SE, C	biodiversity and ecosystems; pollution reduction
RSO 2.8 Sustainable multimodal urban mobility	PO 2	8/8	BI, NE, NW, W, SW, SM, SE, C	sustainable mobility; climate mitigation
RSO 2.10 Post-disaster reconstruction	PO 2	2/8	NE, SE	climate adaptation

RP Specific Objective (RSO)	EU Policy Objective (PO)	Frequency (Regions)	Regions	EGD dimensions (coding grid)
RSO 3.2 National, regional and local mobility (TEN-T)	PO 3	8/8	BI, NE, NW, W, SW, SM, SE, C	sustainable mobility; climate mitigation
RSO 3.3 Critical infrastructure (security)	PO 3	1/8	BI	climate adaptation
RSO 4.2 Inclusive educational infrastructure	PO 4	8/8	BI, NE, NW, W, SW, SM, SE, C	just transition (social dimension)
RSO 4.3 Socio-economic inclusion and social housing	PO 4	2/8	SW, SM	just transition (social dimension); energy efficiency
RSO 4.6 Culture and sustainable tourism	PO 4	4/8	NW, W, SE, C	circular economy; biodiversity and ecosystems
RSO 4.7 Access to affordable and sustainable housing	PO 4	1/8	BI	energy efficiency; just transition (social dimension)
RSO 5.1 Integrated urban development	PO 5	8/8	BI, NE, NW, W, SW, SM, SE, C	sustainable mobility; energy efficiency; biodiversity and ecosystems
RSO 5.2 Integrated local development (non-urban)	PO 5	7/8	BI, NE, NW, SW, SM, SE, C	biodiversity and ecosystems; circular economy

*The column EU Policy objectives (PO) refers to the five European Union Policy Objectives for the 2021–2027 cohesion policy framework: PO1 (A Smarter and More Competitive Europe), PO2 (A Greener, Low-Carbon Europe), PO3 (A More Connected Europe), PO4 (A More Social Europe), and PO5 (A Europe Closer to Citizens).

Source: Author's own elaboration based on the European Commission (2019) and Romanian Regional Programmes 2021–2027.

The results summarised in Table 3 highlight how the specific objectives included in the Regional Programmes 2021-2027 are distributed at the territorial level and how they can be thematically linked to the dimensions of the European Green Deal used in the content analysis.

Data show that some of the specific objectives of direct relevance to the green transition are present in all eight Regional Programmes. In particular, under PO2 (a greener Europe), PO3 (a more connected Europe) and PO5 (a Europe closer to citizens), objectives such as RSO 2.1 (Energy Efficiency and Reduced GHG Emissions), RSO 2.7 (Biodiversity and green infrastructure), RSO 2.8 (Sustainable multimodal urban mobility), RSO 3.2 (National, regional, and local mobility - tent) and RSO 5.1 (Integrated urban development) are consistently included. Compared to the analysis grid used in this study, these objectives can be mainly associated with the dimensions of energy efficiency, sustainable mobility, biodiversity and ecosystems, and pollution reduction, indicating the existence of recurring themes in the regional programmatic structure.

At the same time, the analysis reveals a more limited territorial distribution for other objectives relevant to the green transition. RSO 2.2 (Renewable energy) is included in one region and RSO 2.4 (Adaptation to climate change and risk prevention) is present in three regions. The targets associated with the social dimension of the transition, such as RSO 4.3 (Socio-economic inclusion and social housing) and RSO 4.7 (Access to affordable and

sustainable housing), also appear in a limited number of programmes. These differences indicate variations in the way that certain themes are explicitly integrated into the formal structure of specific objectives.

In the case of objectives under PO1 (a more competitive and smarter Europe), such as RSO 1.1 (Research and innovation), RSO 1.2 (Digitalisation), and RSO 1.3 (SME competitiveness), presence is widespread across all regions. Although these objectives are not formulated solely in the light of the European Green Deal, they can be linked to dimensions relevant to the green transition insofar as they support the development of clean technologies, energy efficiency, or economic transformation processes associated with emission reductions and resource efficiency.

This analysis therefore reflects the formal structure of regional programming and the territorial distribution of specific objectives relevant for the green transition. The analysis carried out at this level is limited to the examination of the programmatic framework and does not aim at assessing the intensity of interventions, financial allocations, or implementation results. However, it provides a necessary benchmark for the next stage of research, in which content analysis measures the relative weight of the nine dimensions of the EGD in the texts of the Regional Programmes, allowing for an interregional comparison beyond the formal architecture of the objectives.

Beyond the numerical distribution of the specific objectives, the analysis suggests a particular pattern of integration of the European Green Deal into regional programming. The constant presence of objectives associated with energy efficiency, mobility, and green infrastructure indicates that implementation at regional level is anchored mainly in infrastructural and technical interventions, compatible with the architecture of PO2 and PO3. By contrast, objectives such as renewable energy or adaptation to climate change appear in a smaller number of programmes, which may reflect either a complementary approach through other funding instruments or a more selective integration of these dimensions into the formal structure of regional programmes. This distribution suggests that the transposition of EGD at the regional level is achieved through a stable thematic core around energy efficiency and mobility, while other components of the green transition are differentially integrated.

However, the formal inclusion of a specific objective does not provide information on the actual thematic weight of the different dimensions of the European Green Deal in the content of the programmes. The presence of an RSO in a programme does not automatically reflect the discursive intensity or strategic focus given to a particular EGD dimension.

In this context, content analysis becomes necessary to go beyond the formal level of objectives and to examine the actual distribution of thematic references within programmatic documents. If the previous analysis highlights the institutional structure of the integration of green priorities, the textual analysis allows us to identify the relative weight of each dimension in the regional strategic discourse. This approach makes it possible to observe the differences in focus and the specific thematic profile of each region, providing a more detailed picture of how the European Green Deal guidelines are internalised at the programmatic level.

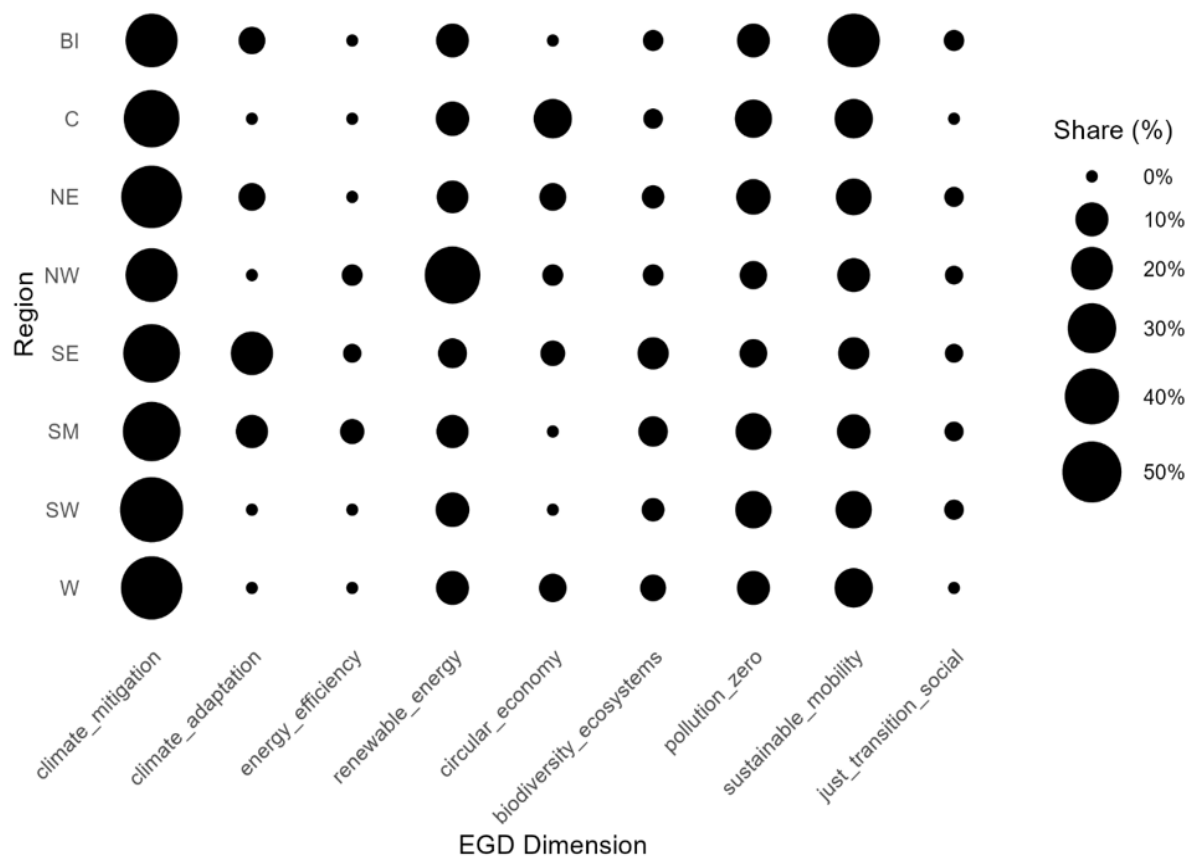
Therefore, in order to examine how the European Green Deal guidelines are integrated at the level of programmatic content, a systematic analysis of the texts of the Regional Programmes is needed, using the grid of the nine previously defined EGD dimensions.

For each programme, the references associated with each dimension were identified and aggregated, and the results were expressed as relative frequencies. The use of relative frequencies allows for comparability between documents of different sizes and avoids distortions due to the length of the text.

The analysis does not measure financial allocations, output indicators, or implementation results. It reflects exclusively the thematic distribution of references associated with EGD dimensions in the content of programmatic documents. Moreover, content analysis does not make it possible to assess the actual intensity of interventions but only captures the relative distribution of thematic references within programmatic documents.

With this approach, the thematic profile of each region can be observed, and differences in the focus on the different dimensions of the green transition can be identified.

Figure 1 - Thematic Profile of EGD by Region (Regional Programmes)



Source: Author's own elaboration based on European Commission (2019) and Romanian Regional Programmes 2021–2027.

Figure 1 shows the comparative thematic profile of the nine dimensions of the EGD in the eight Regional Programmes. The graphical representation uses relative proportions of the references identified for each dimension within each programme. The values represented

indicate the proportion of thematic references in the total content associated with the green transition identified in a regional programme, and not the level of funding or the degree of implementation.

Observing the thematic distribution, we can see that dimensions such as energy efficiency, climate mitigation, and sustainable mobility appear with a high share in most regions, which indicates a constant orientation towards interventions associated with reducing emissions and modernising energy and transport infrastructure.

At the same time, dimensions such as renewable energy, climate adaptation, or just transition show greater variation between regions. These differences can be related to the specificities of the challenges identified in the regional diagnostic phase, presented above in Table 2. For example, regions that explicitly mention climate risks or natural vulnerabilities in their needs analysis tend to give more weight to the dimension of climate adaptation.

The analysis does not point to a direct discrepancy between the objectives formulated in the EGD strategy and those taken up in the programmes, but it does show that thematic integration is not uniform. The comparative distribution of the nine dimensions reveals a predominantly energy efficiency, emission reduction, and sustainable mobility profile, which appears with a relatively high share in most regions. This thematic concentration suggests that the regional implementation of the EGD is configured around interventions deemed operational through the classical instruments of the Cohesion Policy, in particular investments in infrastructure and the modernisation of the built fund. Conversely, dimensions such as renewable energy, adaptation to climate change, or just transition show more pronounced variations between regions, indicating selective integration, dependent on territorial specificities and priorities assumed in the programming phase.

The analysis also shows that the social dimension of the transition, although present in the formal architecture of the objectives, occupies a lower position in the relative thematic profile of the programmes, which may suggest a predominantly technical approach to the green transition at regional level. This distribution does not indicate the absence of concern for social fairness, but reflects how the different components of the EGD are ranked in programmatic discourse. Some dimensions of the EGD are transversally integrated across all regions, while others are reflected differently depending on priorities and constraints identified at the regional level.

Overall, the results of the analysis indicate that the transposition of the European Green Deal into Romanian Regional Programmes is achieved through differentiated thematic integration, but structured around recurring dimensions. Energy efficiency and sustainable mobility emerge as central elements of regional implementation, while other components of the transition, such as renewable energy, climate adaptation, or the social dimension are reflected in a more selective manner. This configuration suggests that the regional implementation of the EGD is mediated by territorial constraints and priorities, but also by the logic of the funding instruments available through the Cohesion Policy, outlining an integration model that combines strategic convergence with local adaptation.

Discussions and Conclusions

The results of the content analysis highlight that the integration of the European Green Deal objectives into Romanian Regional Programmes 2021–2027 is achieved through a relatively convergent thematic set-up, but with variations between regions in terms of focus on the different dimensions of the green transition. Both the analysis of the formal structure of the specific objectives (Table 3) and the examination of the thematic distribution of references in the programmatic documents (Figure 1) indicate that certain components of the European Green Deal are consistently integrated into most regional programmes.

In particular, the dimensions associated with energy efficiency, emission reduction, and sustainable mobility occur with a high frequency in almost all regions analysed. This thematic concentration reflects the compatibility of these interventions with the classical instruments of the Cohesion Policy, which favour investments in infrastructure, the modernisation of the built fund and the development of low-emission transport systems. Thus, the regional implementation of the European Green Deal appears to be structured around relatively well-institutionalised areas of intervention in the programming of the Structural Funds.

At the same time, comparative analysis of the thematic profile of regional programmes highlights differences between regions in the presence of other dimensions of the green transition. Dimensions such as renewable energy, adaptation to climate change, or the social dimension of the transition appear to a lesser extent or are unevenly distributed across programmes. These differences can be interpreted in relation to the specificities of the regional diagnosis and the type of challenge identified in the strategic programming phase.

For example, regions where the needs analysis highlights vulnerabilities related to natural risks or exposure to climate change tend to pay more attention to the climate adaptation dimension. Similarly, regions with high urban pressures, such as Bucharest-Ilfov, give a higher weight to sustainable urban mobility and green infrastructure, in line with the identified problems of air quality, traffic congestion, and scarcity of green spaces.

However, dimensions such as renewable energy or just transition occur less often in the structure of regional programmes, suggesting a more selective integration of these priorities into regional programming. This distribution may reflect several factors. Firstly, some of these areas are addressed through distinct funding instruments at national or European level, which may limit their explicit presence in regional programmes. Secondly, certain dimensions of the European Green Deal, in particular those of a social nature or of a structural transformation of the economy, can be integrated through complementary policies or sectoral programmes rather than through the traditional instruments of Cohesion Policy.

The results of the analysis thus suggest that the transposition of the European Green Deal into regional programming is not achieved through a uniform replication of all dimensions of the European strategy, but through a process of thematic selection and adaptation. Regional programmes tend to integrate as a priority those components of the green transition that can be operationalised through infrastructure investments or technical

interventions, while other dimensions of the transition, such as structural transformations of energy systems or the social dimension of the transition, are reflected in a more limited way.

This configuration confirms the role of the territorial dimension in the implementation of the European Green Deal. Instead of a uniform application of European strategic priorities, the analysis highlights the existence of a regional adaptation process, in which the objectives of the green transition are integrated according to the economic context, the urban structure and the specific challenges of each region. In this sense, regional programming can be interpreted as a space for translating European strategic guidelines into intervention priorities adapted to territorial realities.

From the perspective of the literature on the implementation of climate action, these results support the idea that integrating climate objectives into regional development policies is a gradual and differentiated process. Cohesion Policy provides the financial and institutional framework to support the green transition, but the concrete way in which these priorities are integrated depends on a number of factors such as economic structure, local specificities, and locally assumed development priorities.

Overall, the analysis carried out shows that the Romanian Regional Programmes reflect to a significant extent the strategic orientations of the European Green Deal, but in a selective manner and adapted to the regional context. Dimensions such as energy efficiency, sustainable mobility, and green infrastructure constitute the thematic core of regional implementation, while other components of the green transition are integrated to a more limited or differentiated extent across regions.

However, the present research has certain limitations. The content of the programmatic documents was analysed exclusively, and the financial allocations, the implementation mechanisms, or the actual results of the interventions were not evaluated. Thus, the results reflect how the priorities of the green transition are transferred at the regional level within the operational programmes, without allowing for an assessment of the real impact of the programmes on the transition to a low-carbon economy.

Future research could extend the analysis by examining how investments are distributed across the different dimensions of the European Green Deal or by assessing the outcomes of projects funded by regional programmes. It would also be relevant to investigate how sectoral policies and national funding instruments complement regional interventions to support the green transition.

In conclusion, the comparative analysis of the Romanian Regional Programmes highlights the fact that the European Green Deal is integrated into regional programming through a set of recurrent thematic priorities, but adapted to the territorial context. This integration reflects both the strategic orientations of the European Union and the regional specificities of development challenges, confirming the role of Cohesion Policy as a central tool to operationalize the green transition at sub-national level.

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Bibliography

- Christou, T., García-Rodríguez, A., Heidelk, T., Lazarou, N. J., Monfort, P., & Salotti, S. (2025). Economic growth and environmental objectives: An evaluation based on 2021–2027 cohesion policy regional data. *Journal of Policy Modeling*. <https://doi.org/10.1016/j.jpolmod.2025.04.003>
- European Commission. (2019, December 11). *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions. The European Green Deal*. COM (2019) 640. Brussels: European Commission. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52019DC0640>
- European Commission. (n.d.). *Cohesion Policy priorities. Priorities for 2021-2027*. https://ec.europa.eu/regional_policy/policy/how/priorities_en?utm_source=chatgpt.com
- Fetting, C. (2020). The European green deal. *ESDN report, December, 2(9)*, 53. https://www.esdn.eu/fileadmin/ESDN_Reports/ESDN_Report_2_2020.pdf
- Grashof, N., & Basilico, S. (2025). Divergent paths for green transition: regional disparities in technology diversification. *Regional Studies*, 59(1), 2363327. <https://doi.org/10.1080/00343404.2024.2363327>
- Murzyn, D. (2025). Climate change adaptation and innovation—together or apart? The example of the European Union cohesion policy in Poland. *Economics and Environment*. [10.34659/eis.2025.92.1.841](https://doi.org/10.34659/eis.2025.92.1.841)
- Nauwelaers, C., Harding, R., Perianez, F. I., Haegeman, K., & Arregui, P. E. (2022). Case studies towards Green Transition in EU regions. doi:10.2760/382998
- Oberthür, S., & Von Homeyer, I. (2023). From emissions trading to the European Green Deal: the evolution of the climate policy mix and climate policy integration in the EU. *Journal of European Public Policy*, 30(3), 445-468. <https://doi.org/10.1080/13501763.2022.2120528>
- Ozcelik, N., Rey-García, M., & Mato-Santiso, V. (2025). Enablers and barriers to European Green Deal implementation: A systematic review and framework proposal. *Sustainable Production and Consumption*. <https://doi.org/10.1016/j.spc.2025.10.018>
- Parlamentul European & Consiliul Uniunii Europene. (2021). *Regulamentul (UE) 2021/1060*. Jurnalul Oficial al Uniunii Europene, L 231/159. <https://eur-lex.europa.eu/legal-content/RO/TXT/?uri=CELEX:32021R1060>
- Pîrvu, R., Bădîrcea, R., Manta, A., & Lupănescu, M. (2018). The effects of the cohesion policy on the sustainable development of the development regions in Romania. *Sustainability*, 10(7), 2577. <https://doi.org/10.3390/su10072577>
- Pūķis, M., Bičevskis, J., Gendelis, S., Karnītis, E., Karnītis, Ģ., Eihmanis, A., & Sarma, U. (2023). Role of local governments in Green Deal multilevel governance: the energy context. *Energies*, 16(12), 4759. <https://doi.org/10.3390/en16124759>

- Rietig, K., & Dupont, C. (2023). Climate policy integration and climate mainstreaming in the EU budget. In *Handbook on European Union climate change policy and politics* (pp. 246-258). Edward Elgar Publishing. <https://doi.org/10.4337/9781789906981.00030>
- Skagen, K., & Boasson, E. L. (2024). Climate policy integration as a process: from shallow to embedded integration. *Journal of Environmental Policy & Planning*, 26(3), 279-294. <https://doi.org/10.1080/1523908X.2024.2334707>
- Tijanić, L., & Kersan-Škabić, I. (2025). Tracking the Green Transition in the European Union Within the Framework of EU Cohesion Policy: Current Results and Future Paths. *Economies*, 13(2), 37. <https://doi.org/10.3390/economies13020037>
- Tutak, M., Brodny, J., & Bindzár, P. (2021). Assessing the level of energy and climate sustainability in the European Union countries in the context of the European green deal strategy and agenda 2030. *Energies*, 14(6), 1767. <https://doi.org/10.3390/en14061767>

PRACTICAL INSTRUMENTS FOR POLICYMAKERS AND PRACTITIONERS: ADDRESSING VULNERABILITY AND ENERGY POVERTY IN EUROPE'S GREEN TRANSITION

George JIGLĂU

Introduction

The European Green Deal (EGD) represents an unprecedented attempt to steer a comprehensive socio-economic transformation toward climate neutrality while preserving social cohesion and political stability. Unlike earlier environmental initiatives focused primarily on regulatory targets or sectoral reforms, the EGD articulates a systemic vision that spans energy, industry, housing, mobility, agriculture, and welfare domains. Such breadth inevitably raises questions that transcend technological feasibility: how can deeply embedded inequalities be addressed during transition processes, how can diverse institutional systems coordinate action, and how can policies be implemented in ways that are both effective and perceived as just? This chapter addresses these questions by examining the governance conditions under which environmental transitions unfold, using energy poverty as a particularly revealing empirical lens.

Energy poverty occupies a central position in contemporary debates because it exposes the intersection of climate policy with everyday social realities. It reflects not only income constraints but also housing quality, infrastructural legacies, market structures, and institutional arrangements, thereby illustrating how environmental measures redistribute risks and opportunities across populations. As decarbonization policies reshape energy prices, investment patterns, and regulatory frameworks, households with limited adaptive capacity may face disproportionate burdens unless targeted interventions are implemented. Energy poverty thus functions as both a social problem in its own right and a diagnostic indicator of whether transition policies are capable of addressing broader issues of vulnerability, inequality, and justice. By focusing on this phenomenon, the chapter seeks to derive insights that extend beyond the energy sector to environmental governance more generally.

The central purpose of the chapter is twofold. First, it develops a conceptual framework for understanding how institutions, multi-level governance (MLG), path dependence, and actor constellations shape the implementation of climate policy in unequal contexts. Rather than treating governance as a neutral administrative process, the analysis highlights how historical legacies, power asymmetries, and relational dynamics influence policy outcomes. Second, it translates these conceptual insights into practical considerations for policymakers and practitioners operating within the EGD framework. The aim is not to prescribe a single model of intervention but to identify conditions under which policy instruments are likely to be effective, legitimate, and socially inclusive.

The chapter proceeds in four interrelated stages. It begins by outlining a conceptual framework that situates climate governance within institutional constraints, multi-level governance dynamics, and path-dependent development trajectories, emphasizing how interactions among public authorities, market actors, and intermediaries shape policy implementation. It then examines environmental transitions through the lenses of vulnerability, inequality, and justice, highlighting their inherently redistributive character and the need to address both material disparities and procedural concerns. The third stage applies these insights to the European Green Deal, analyzing how its objectives are translated across governance levels and adapted to diverse national and regional contexts. The chapter subsequently focuses on energy poverty as a concrete case through which the social implications of decarbonization policies become visible. It concludes by identifying practical tools and governance innovations capable of alleviating energy poverty while advancing broader goals of equity, resilience, and sustainability within complex multi-level settings.

Conceptual foundations: institutions, multi-level governance, path dependence

Designing practical instruments for policymakers and practitioners under the EGD presupposes an analytic stance on how policy capacity is produced, constrained, and redirected in real-world settings. A core implication of the last decade of scholarship on energy transitions and energy poverty is that implementation outcomes rarely follow from policy intent alone. Instead, they are co-produced by institutional legacies, MLG architectures, and the strategic interaction of public and private actors operating under asymmetric resources and divergent incentives (Bouzarovski & Petrova, 2015; Bridge et al., 2013; Moesker & Pesch, 2022).

This section develops a conceptual lens that is useful beyond the specific domain of energy poverty, while retaining it as an empirically rich “diagnostic field” for the governance problems the EGD amplifies. The argument proceeds in four steps. First, it clarifies institutions as historically layered “rules-in-use” that structure feasible policy action. Second, it frames MLG as a coordination-and-contestation environment rather than a neutral arrangement of subsidiarity. Third, it explains path dependence as an interaction between institutional trajectories and infrastructural “lock-ins,” producing durable territorial inequalities. Fourth, it treats the state, market actors, and intermediaries as relationally constituted, emphasizing how

trust, legitimacy, and accountability mediate implementation capacity and distributional effects.

Institutions as structured constraints and enabling infrastructures

In the context of transitions, institutions should not be treated as interchangeable organizational units, nor as mere “containers” of policy choice. Rather, they are durable configurations of formal rules, informal norms, and organizational routines that stabilize expectations and reduce uncertainty, but also delimit the range of feasible change. This is one reason why “best practice transfer” often underperforms: instruments are rarely replicable across institutional fields and administrative cultures. Contemporary governance research emphasizes that institutions create patterned incentives and sanctioning mechanisms that shape how actors perceive problems, what they consider legitimate interventions, and which coalitions are likely to form around implementation (Moesker & Pesch, 2022).

For EGD policy, the institutional lens is especially salient because the policy object is multi-sectoral: decarbonization measures interact with welfare systems, housing regimes, regional development institutions, and (often) privatized or semi-privatized energy provision. As a result, the “same” intervention, such as building renovation support, can function as a social policy measure in one country, as an industrial strategy tool in another, and as a fragmented project-based programme in yet another (Bouzarovski & Petrova, 2015; Bridge et al., 2013). In short, institutions are not simply implementation channels; they help define the policy problem and the “reasonable” scope of action.

A second implication concerns institutional heterogeneity within the state. “The state” is analytically misleading if treated as a unitary actor with coherent preferences. In practice, ministries, agencies, regulators, local authorities, and publicly owned enterprises operate with distinct mandates, timelines, accountability structures, and professional cultures. This internal differentiation becomes pivotal in multi-level settings, where some units are incentivized to comply with EU funding and reporting logics, while others are geared toward domestic distributive politics or crisis management. Consequently, practical instruments must be understood as operating within a differentiated institutional ecology, often requiring “bridging” mechanisms – coordination platforms, shared data infrastructures, and clarified allocation of tasks – rather than assuming hierarchy will secure coherence.

Multi-level governance as coordination, contestation, and translation

MLG is frequently described in managerial terms (coordination across levels), but the more analytically useful view treats it as a field of translation and contestation in which meanings, responsibilities, and resources are renegotiated. Under the EGD, EU-level communications embed justice as a normative orientation and attach substantial funding mechanisms to it, notably through instruments such as the Just Transition Fund (European Union, 2021; European Union, 2020). Yet policy “translation” across levels reveals that justice is not a stable, shared referent: actors interpret justice differently depending on positionality, sectoral interests, and national policy traditions. This interpretive divergence has material

consequences because it shapes which populations are recognized as affected, which solutions are prioritized, and which level is held responsible for action (European Union, 2019; European Union, 2021; McCauley et al., 2013).

A useful conceptual move is to view MLG as an arena where three forms of alignment must be achieved, each vulnerable to breakdown.

1. **Normative alignment:** agreement on what counts as “just” and why. This extends beyond distributional justice (who gets what) to procedural and recognitional dimensions (who is heard; who is seen as affected) that are central to energy justice scholarship (McCauley et al., 2013; Sovacool et al., 2017; Jenkins et al., 2016).
2. **Instrumental alignment:** coherence among policy tools across levels (e.g., carbon pricing, renovation subsidies, social tariffs, local advisory services) such that instruments are complementary rather than contradictory. Without instrumental alignment, subnational actors may face overlapping reporting requirements, incompatible eligibility rules, or perverse incentives (European Union, 2021; Moesker & Pesch, 2022).
3. **Capacity alignment:** matching responsibilities to administrative, fiscal, and knowledge capacities. A recurring pattern in transitions is responsibility “download” without commensurate authority or resources, leading to formal compliance but weak substantive outcomes.

From this standpoint, MLG challenges are not simply failures of coordination. They are often rational outcomes of institutional incentives: EU funding rules privilege certain types of projects; national governments may prefer politically visible investments; local actors may prioritize immediate social stabilization over long-horizon decarbonization. The “non-hierarchical” language of governance can obscure these asymmetries, especially when funding conditionalities and regulatory mandates effectively concentrate agenda-setting power at higher levels.

Path dependence, infrastructural lock-in, and the production of territorial inequality

Path dependence offers a systematic way to understand why transitions unfold unevenly across states and regions, even under shared EU-level objectives. The relevant claim is not that change is impossible; rather, past decisions structure present possibilities by shaping institutional arrangements, physical infrastructures, and actor expectations. In transition policy, path dependence is intensified by the materiality of energy systems and the built environment. Housing stocks, district heating networks, grid architectures, and industrial geographies embody decades of investment and political compromise. They also distribute vulnerability: older housing, inefficient heating, and poorly insulated multi-unit buildings create durable exposure to energy poverty risks and constrain rapid decarbonization (Bouzarovski & Petrova, 2015; Bridge et al., 2013; Day et al., 2016).

Energy poverty research makes these mechanisms tangible because the phenomenon is typically produced by interacting drivers (income, prices, energy efficiency) but also by

“background conditions” such as infrastructure, housing policy, and legacies of socio-economic transformation (Boardman, 1991; Bouzarovski & Petrova, 2015). In post-socialist contexts, for example, privatized housing ownership patterns, deferred maintenance of multi-apartment blocks, and fragmented governance of renovations can amplify vulnerability even when nominal incomes rise. Path dependence thus works through (a) institutional legacies (welfare and housing governance), (b) infrastructural legacies (building stock and networks), and (c) political legacies (trust, legitimacy, and policy credibility).

Territorial inequality follows because these legacies are unevenly distributed. Some states and regions possess thicker administrative capacity, stronger regulatory infrastructures, and established policy toolkits for welfare and housing. Others face “thin” institutions, limited enforcement capacity, and dependence on short-term project cycles. Under a unified Green Deal narrative, this produces an adaptation dilemma: uniform targets and instrument templates can deepen inequality by advantaging those already able to design, absorb, and govern complex programmes. Consequently, adaptation to diversity is not merely a matter of “context sensitivity”; it is a distributive governance issue.

In conceptual terms, one can treat territorial inequality as a function of three interacting asymmetries: resource asymmetry (fiscal space, expertise, organizational capacity), authority asymmetry (who can decide vs. who must deliver), risk asymmetry (who bears transition costs and uncertainty). Transition instruments, especially those dependent on co-financing, complex procurement, and performance monitoring, can inadvertently penalize territories with weaker administrative infrastructures. This is precisely why some strands of energy justice scholarship emphasize “systems thinking” and the interdependence of justice tenets with institutional design (McCauley et al., 2013; Sovacool et al., 2017).

State and private actors as a relational governance system

A core reason energy poverty scholarship generalizes well to EGD governance is that it foregrounds the relational nature of provision: households do not access energy services “directly” from the state; they interact with a constellation of actors including welfare agencies, municipalities, regulators, energy suppliers, housing providers (including landlords), and third-sector intermediaries. Outcomes are mediated not only by rules and prices, but by relational dynamics such as trust, perceived fairness, and recognition (Grossmann et al., 2021; Middlemiss et al., 2019).

This relational framing matters because Green Deal instruments increasingly rely on “governing through markets” and “governing with intermediaries.” Examples include: subsidy schemes administered via private contractors or banks, renovation programmes relying on building managers and homeowner associations, behavioural interventions mediated through digital monitoring and advisory services, social tariff and consumer protection policies implemented by regulated suppliers.

Rather than treating public and private actors as separate spheres, it is more accurate to conceptualize a hybrid governance regime, where private actors perform quasi-public functions (service continuity, vulnerable consumer protection, information provision) while

public actors rely on regulatory steering, funding conditionalities, and partnership arrangements.

Two governance challenges follow. First, incentive alignment is not automatic. Private actors' profit motives, risk management practices, and customer segmentation strategies can conflict with social policy goals. Even where legal obligations exist, implementation may drift toward minimal compliance unless enforcement capacity and reputational accountability are credible. Second, accountability becomes multi-layered. When outcomes depend on networks of actors, it becomes harder for households and communities to identify responsible parties. This can erode legitimacy and create conditions for distrust, particularly among vulnerable groups who experience repeated administrative burden and perceived unfair treatment.

These challenges are not merely normative; they are causal. Trust and distrust shape policy uptake, coping strategies, and the ability of households to mobilize support. Qualitative evidence across Europe indicates that energy-poor households often report distrust in both public institutions (welfare agencies, local authorities) and private ones (suppliers), grounded in experiences of powerlessness, unfairness, or inferiority (Grossmann et al., 2021). Trust, in turn, functions as a resource: it can enable access to support, improve cooperation in renovation processes, and reduce the social costs of seeking help (Grossmann et al., 2021; de Wilde, 2019).

Trust, legitimacy, and the micro-foundations of governance capacity

Trust deserves explicit conceptual attention because it links the “actor layer” to implementation performance. Classical accounts view trust as a component of social capital and institutional performance, affecting cooperation and compliance (Putnam, 1993; Uslaner, 2002; Newton, 2001). At the institutional interface, trust is shaped by procedural fairness, transparency, and the perception that authorities are responsive and competent (De Cremer & Tyler, 2007). In contexts of austerity, administrative overload, or weak frontline capacity, institutions may inadvertently generate distrust through repeated negative encounters, even when policy designs are well intentioned.

In transition governance, trust is also multi-scalar. Local actors may distrust national agencies (e.g., regarding allocation criteria), while national actors may distrust EU institutions (e.g., perceiving conditionalities as misaligned with domestic realities). The EGD translation research explicitly points to “deficits of trust across governance levels” as a barrier to coherent justice-oriented policymaking, especially when interpretive flexibility becomes a source of conflict rather than complementarity (European Union, 2021; Moesker & Pesch, 2022).

A practical implication for instrument design is that “capacity” cannot be reduced to staffing numbers or technical skills. It also includes relational capacities: the ability to communicate credibly, to deliver predictable support, to coordinate with partners, and to provide respectful treatment. Energy poverty studies show that emotional and relational dimensions – shame, stigma, perceived disrespect – can prevent people from seeking help, thereby lowering the effectiveness of programmes (Middlemiss et al., 2019; Longhurst et al., 2019). Trust-sensitive instrument design therefore has direct performance implications.

Governance innovation and the role of intermediaries

A further generalizable insight from energy poverty policy research is the need to integrate technological and governance innovation. Renovation technologies, smart monitoring, and efficiency improvements may be necessary but insufficient: governance arrangements determine whether innovations scale, who benefits, and how risks and costs are distributed (Varo et al., 2022). Governance innovation in this literature takes several forms. Co-production and participatory design, by involving citizens not only as recipients but as active participants in designing and evaluating measures, especially to improve fit with lived realities and to reduce administrative burdens (Day et al., 2016). Partnerships and multi-actor coordination, by creating durable cooperation among local authorities, NGOs, housing actors, and suppliers. Intermediary organizations, by entities that translate between policy systems and households, provide trusted advice, and reduce information asymmetries.

Intermediaries are especially relevant in hybrid regimes where households face both bureaucratic complexity and market complexity. They can increase programme uptake by providing “navigation capacity” and by offering relational continuity where institutions are fragmented. However, intermediary-heavy governance also raises accountability questions: when NGOs or semi-private advisors perform frontline functions, the state may offload responsibility without transferring authority or stable funding. This can reproduce the “responsibility without power” pattern typical of austerity governance and projected funding. The broader lesson is that governance innovation must be evaluated not only by novelty, but by its ability to produce stable, scalable, and equitable outcomes under resource constraints (Varo et al., 2022; OECD, 2010).

Adaptation to diversity: policy instruments under unequal administrative and socio-economic conditions

Given the EU’s diversity, a central conceptual challenge is how to design instruments that are simultaneously (a) coherent with EU-wide objectives and (b) adaptable to unequal starting conditions. Energy poverty research underscores the multidimensionality of vulnerability and warns against one-dimensional targeting approaches (Bouzarovski & Petrova, 2015; Day et al., 2016). The EGD translation research similarly shows that even a shared normative slogan (“no one left behind”) can translate into divergent assumptions about affected groups, responsible actors, and appropriate solutions (European Union, 2019; European Union, 2021).

A workable conceptual position is to treat adaptation as a structured process rather than ad hoc contextualization. Three principles follow.

1. **Place-sensitivity in problem diagnosis.** Vulnerability arises from different combinations of drivers across places: income, building stock, energy infrastructure, market structure, and welfare capacity. Instruments that ignore these combinations risk mis-targeting (e.g., subsidizing households who would renovate anyway, while failing to reach renters dependent on landlords).

2. **Differentiated instrument mixes.** Instead of uniform measures, governance systems may require portfolios that vary in emphasis: some contexts need capacity-building and institutional strengthening; others need regulatory tightening or market re-design; others need stronger welfare integration. The conceptual backing for this portfolio approach comes from systems-oriented energy justice work emphasizing that distributional, recognitional, and procedural dimensions interact (McCauley et al., 2013; Sovacool et al., 2017).
3. **Institutional “fit” and enforceability.** Instruments that rely on complex compliance and monitoring regimes may be inappropriate in contexts with thin administrative capacity. Conversely, very light instruments may fail in contexts where market power is concentrated and enforcement is necessary. The key is to align tool complexity with implementer capacity and to invest in enforcement infrastructures where necessary.

The adaptation problem is therefore inseparable from inequality. If resources and capacities are uneven, “equal rules” do not produce equal outcomes; they may reproduce disparities. In an EGD context, this becomes politically consequential: perceptions of unfairness and neglect can erode trust and feed populist narratives exploiting transition costs (Grossmann et al., 2021; Sovacool, 2021). In turn, weakened legitimacy undermines implementation capacity, creating a feedback loop between distributive outcomes, trust, and governance performance.

Vulnerability, inequality, and justice in energy and environmental transitions

Energy and environmental transitions are frequently framed as technical projects of decarbonization, infrastructure renewal, or efficiency improvement. Yet a large body of academic research demonstrates that such transformations are fundamentally social processes that redistribute risks, opportunities, and resources across populations, territories, and institutional settings (Newell & Mulvaney, 2013; Sovacool et al., 2017). The move toward low-carbon societies therefore raises unavoidable questions of vulnerability, inequality, and justice. These questions are not external to environmental policy but are constitutive of its outcomes: transitions that fail to address social disparities can deepen existing inequalities, erode legitimacy, and provoke resistance, while transitions that incorporate equity considerations can enhance resilience and political sustainability (Jenkins et al., 2016; IPCC, 2022).

A central insight across this literature is that vulnerability is not simply an individual attribute but a socially produced condition shaped by economic resources, institutional arrangements, infrastructural access, and political voice. Climate change research conceptualizes vulnerability as a function of exposure to risks, sensitivity to those risks, and adaptive capacity, all of which are unevenly distributed across societies (IPCC, 2022). Energy poverty scholarship translates this framework into the domain of everyday life by demonstrating that households’ ability to secure adequate energy services depends not only on income but also on housing quality, tenure status, energy infrastructure, and access to welfare support (Bouzarovski & Petrova, 2015; Jiglău et al., 2023). This multidimensional perspective is crucial for understanding the social consequences of environmental policies. Measures such as carbon pricing, building renovation mandates, or electrification strategies

interact with these structural conditions, potentially alleviating vulnerability for some while intensifying it for others (Sovacool et al., 2017; Newell & Mulvaney, 2013).

Energy poverty offers a particularly instructive case because it sits at the intersection of markets, welfare systems, housing governance, and infrastructural development. Classic work on fuel poverty emphasized the role of high energy costs relative to income and the need for adequate warmth as a basic condition of well-being (Boardman, 1991). Subsequent research has expanded this perspective, highlighting how inadequate housing stock, inefficient heating systems, and fragmented governance arrangements create persistent energy insecurity even in relatively affluent societies (Bouzarovski & Petrova, 2015). These conditions are not merely residual problems but structural features of energy systems shaped by historical policy decisions and socio-economic inequalities. As a result, vulnerability to energy insecurity is spatially and socially patterned, often concentrating in older housing, peripheral regions, or marginalized communities (Jiglău et al., 2023).

The relevance of these findings extends far beyond the specific issue of energy poverty. Environmental transitions increasingly operate through the built environment, through retrofitting buildings, restructuring energy supply, transforming mobility systems. These domains are characterized by long-lived infrastructures and complex ownership patterns. Because these infrastructures evolve slowly and unevenly, they reproduce past inequalities into future trajectories. For instance, households living in poorly insulated rental housing may face higher energy costs and limited capacity to undertake improvements, while homeowners with greater resources can benefit from subsidies for efficiency upgrades or renewable technologies. Without targeted interventions, such policies can inadvertently transfer public resources toward already advantaged groups, thereby reinforcing inequality rather than reducing it (Jenkins et al., 2016; Sovacool et al., 2017).

Concerns about fairness in transitions have therefore coalesced around the concept of energy justice, which seeks to analyze how energy systems distribute benefits and burdens and how decision-making processes shape those outcomes. This scholarship typically distinguishes among distributional, procedural, and recognitional dimensions of justice (Jenkins et al., 2016; Heffron & McCauley, 2017). Distributional justice addresses who gains and who loses from energy policies, whether through costs, subsidies, environmental impacts, or employment effects. Procedural justice focuses on the fairness and inclusiveness of decision-making processes, including the extent to which affected communities can participate meaningfully. Recognitional justice concerns whether diverse needs and experiences are acknowledged, particularly for groups whose vulnerability may not fit standard policy categories. Although analytically distinct, these dimensions are deeply intertwined: exclusion from decision-making can lead to policies that misrecognize vulnerability, producing unequal outcomes even when distributive intentions are nominally egalitarian (Sovacool et al., 2017).

In the context of the EGD and similar policy frameworks, justice is often articulated through the language of “just transition.” This concept emerged from labor and environmental movements concerned with protecting workers and communities affected by structural economic change and has since been institutionalized in international and European policy discourse (ILO, 2015; Sandmann et al., 2024). However, empirical research shows that the

meaning of just transition is far from uniform. For some actors, it primarily concerns employment protection and regional development; for others, it encompasses broader goals of social inclusion, poverty reduction, and equitable access to energy and environmental goods. These differing interpretations matter because they shape policy priorities, funding allocation, and institutional responsibilities (Sandmann et al., 2024). When justice is interpreted narrowly, focusing, for example, on coal-dependent regions, other vulnerable groups such as low-income urban households or renters may receive less attention, despite facing significant transition burdens (Bouzarovski & Petrova, 2015; Jiglău et al., 2023).

Distributional concerns are particularly salient because decarbonization policies can have regressive effects if not carefully designed. Carbon pricing mechanisms, energy taxes, and market reforms may disproportionately impact households with limited financial flexibility, especially those already experiencing energy poverty. At the same time, incentives for renewable adoption or efficiency improvements often require upfront investment, which wealthier households are better positioned to provide. Empirical studies across Europe and beyond demonstrate that without compensatory measures, such policies can widen socio-economic gaps (Jenkins et al., 2016; Sovacool et al., 2017). Conversely, when redistribution and social protection are integrated into environmental policy design, transitions can deliver co-benefits such as improved health, reduced inequality, and enhanced social cohesion (IPCC, 2022).

Procedural justice introduces an additional dimension, emphasizing that the legitimacy of environmental policies depends on fair and inclusive decision-making processes. Transitions imposed without meaningful consultation can generate resistance, particularly when they affect local livelihoods, housing conditions, or energy costs. Multi-level governance structures complicate this picture further, as decisions made at supranational or national levels are implemented locally, often by actors with limited authority to modify them. Research on the translation of EGD policies shows that local governments and communities may bear implementation burdens while lacking influence over strategic priorities, creating tensions between responsibility and power (Sandmann et al., 2024). This mismatch can undermine both effectiveness and legitimacy, especially in contexts where trust in institutions is already fragile.

Recognitional justice highlights the importance of understanding vulnerability as heterogeneous and intersectional. Energy poverty, for example, may disproportionately affect elderly individuals, persons with disabilities, migrants, or single-parent households, each facing distinct constraints. Policies that treat vulnerable populations as homogeneous risk overlooking these differences and failing to address specific barriers to access. Scholars have emphasized that recognition involves not only identifying vulnerable groups but also respecting their dignity and agency, avoiding stigmatization, and acknowledging lived experiences as legitimate sources of knowledge (Jenkins et al., 2016; Bouzarovski & Petrova, 2015).

Trust emerges as a critical mediating factor linking these dimensions of justice to policy outcomes. Qualitative research across Europe indicates that households experiencing energy poverty often report distrust in both public institutions and private service providers, shaped by experiences of neglect, disrespect, or perceived unfairness (Grossmann et al., 2021). Such

distrust can discourage engagement with support programs, reduce compliance with policy measures, and weaken collective action. Trust, conversely, can function as a resource, facilitating cooperation and enhancing the effectiveness of interventions. These findings underscore that justice is not only about formal entitlements but also about everyday interactions between citizens and institutions.

Another strand of scholarship emphasizes the normative argument that access to adequate energy services should be considered a fundamental component of social citizenship. From this perspective, energy poverty represents a failure of the social contract rather than merely a market inefficiency. Rights-based approaches argue for stronger public responsibility in ensuring affordability, reliability, and protection against disconnection, particularly in liberalized energy markets where private actors play dominant roles (Jiglău et al., 2024; Heffron & McCauley, 2017). Such perspectives resonate with broader debates on environmental justice, which highlight historical inequalities in exposure to environmental harms and differential capacities to respond.

Importantly, vulnerability and inequality also influence environmental outcomes themselves. High levels of inequality can undermine collective action, as disadvantaged groups may prioritize immediate survival needs over long-term environmental goals, while affluent groups may resist redistributive policies perceived as threatening their interests (Newell & Mulvaney, 2013). Addressing social disparities is therefore not only an ethical imperative but also a practical condition for effective environmental governance. Integrated policy approaches that combine climate mitigation with poverty reduction, public health improvements, and social protection are increasingly recognized as necessary for sustainable transitions (IPCC, 2022).

Recent research further stresses that achieving justice in transitions requires governance innovation, not merely technological change. Studies of energy poverty interventions highlight the importance of coordinated policy packages, partnerships among public authorities, private actors, and civil society, and the use of intermediaries to bridge institutional gaps (Varo et al., 2022). While such arrangements can enhance accessibility and responsiveness, they also raise questions about accountability and long-term sustainability, especially when reliant on project-based funding or voluntary engagement.

Taken together, this body of scholarship suggests that vulnerability, inequality, and justice are not peripheral considerations but central determinants of how environmental transitions unfold. Energy poverty serves as a microcosm of broader socio-environmental challenges, revealing how technological systems, institutional arrangements, and social relations interact to shape everyday experiences of sustainability. The promise of a just transition therefore hinges on the capacity of governance systems to recognize diverse vulnerabilities, redistribute resources effectively, ensure inclusive participation, and maintain legitimacy across unequal societies (Sandmann et al., 2024; Sovacool et al., 2017; IPCC, 2022). Only by integrating these dimensions can environmental policies achieve not only ecological objectives but also socially durable outcomes.

The European Green deal as a governance-transforming paradigm

The EGD represents one of the most ambitious attempts at socio-economic transformation undertaken by the EU, aiming to achieve climate neutrality while maintaining social cohesion and economic competitiveness. Although frequently presented as a coherent strategy, in practice the EGD functions less as a single policy and more as a complex governance framework that must be translated, negotiated, and implemented across multiple levels of authority and across diverse institutional and socio-economic contexts. Its success therefore depends not only on technological innovation or financial investment but on the capacity of MLG arrangements to coordinate heterogeneous actors, reconcile competing interests, and manage distributional consequences in ways perceived as legitimate (European Commission, 2019; Piattoni, 2010; Hooghe & Marks, 2001).

From an institutional perspective, the EGD operates within a deeply stratified governance architecture in which competencies are distributed across EU institutions, Member States, regional authorities, and municipalities. This distribution reflects the principle of subsidiarity but also produces coordination challenges, as responsibilities for policy design, funding allocation, regulation, and implementation are dispersed across actors with different mandates and capacities (Bache & Flinders, 2004; Scharpf, 1997). Environmental policy has long been a domain of shared competence in the EU, but the breadth of the EGD, covering energy, transport, agriculture, industry, housing, and social policy, intensifies the need for cross-sector coordination within states as well as across them (Jordan et al., 2010). National governments remain pivotal because they transpose EU directives into domestic law, design fiscal instruments, and control welfare systems that mitigate transition costs, yet they themselves must negotiate between supranational objectives and domestic political constraints (Börzel & Risse, 2003; Schmidt, 2006).

At the subnational level, regional and local authorities play a decisive role in delivering policies that directly affect citizens, from building renovation programs to public transport reforms and local energy planning. Research on climate governance consistently shows that cities and regions function as key implementers, often innovating in policy design while relying on national frameworks for funding and regulatory authority (Bulkeley & Betsill, 2005; OECD, 2021). However, this “frontline” position does not necessarily correspond to decision-making power. Subnational actors may be responsible for implementation without having influenced policy design, producing tensions between responsibility and authority that can undermine effectiveness (Scharpf, 1997). Such mismatches are particularly pronounced in countries with strong centralization traditions or limited fiscal autonomy at the local level.

The EGD attempts to mitigate these disparities through dedicated funding instruments, notably cohesion policy funds and the Just Transition Mechanism, which aim to support regions facing structural challenges. Yet funding itself functions as a governance tool that shapes priorities and behavior. Eligibility criteria, co-financing requirements, and administrative procedures can advantage actors with greater institutional capacity, thereby reproducing territorial inequalities even as funds are intended to reduce them (Bachtler & McMaster, 2008; Mendez & Bachtler, 2017). Regions with established planning expertise and

bureaucratic resources are better positioned to design competitive projects and manage complex reporting obligations, while less-developed regions may struggle to absorb available resources effectively.

These dynamics illustrate how path dependence shapes the implementation of the EGD. Economic structures, energy systems, and administrative capacities differ markedly across Member States due to historical trajectories of industrialization, welfare development, and political reform. Countries with carbon-intensive industries face more disruptive adjustments than those with diversified economies, while post-socialist states often contend with aging infrastructure and weaker institutional capacity (Rodríguez-Pose, 2018). Infrastructure lock-in further constrains policy options: energy networks, housing stock, and transport systems embody long-term investments that cannot be rapidly reconfigured, making uniform policy timelines difficult to achieve (Bridge et al., 2013).

Interactions between public authorities and private actors constitute another crucial dimension of EGD governance. Many transition policies rely on market mechanisms, such as emissions trading, carbon pricing, green finance, and private investment in renewable energy, reflecting the EU's preference for regulatory steering rather than direct public provision. However, this approach creates hybrid governance arrangements in which private firms perform functions essential to public policy objectives. Energy utilities, financial institutions, construction companies, and technology providers become key intermediaries in delivering decarbonization measures, yet their incentives do not necessarily align with social goals (Newell & Mulvaney, 2013). Without effective regulation and accountability mechanisms, market-driven approaches may prioritize profitability over equity, leading to uneven distribution of benefits and costs.

Housing renovation policies illustrate these complexities. Improving energy efficiency in buildings is central to the EGD, but implementation depends on landlords, homeowners, banks, contractors, and local authorities. Renters may face "split incentives," where landlords control investment decisions while tenants bear energy costs, reducing the effectiveness of subsidy programs (Bouzarovski & Petrova, 2015). Financial institutions determine access to credit, influencing who can undertake renovations, while construction sector capacity affects the pace of implementation. Public authorities must therefore orchestrate a network of actors rather than simply issuing regulations.

Third-sector organizations – non-governmental organizations, community groups, and social enterprises – play an increasingly prominent role in this ecosystem. They often provide outreach to vulnerable populations, deliver advisory services, and facilitate participation processes that formal institutions struggle to manage. Studies of energy poverty interventions show that NGOs can act as trusted intermediaries, translating policy measures into accessible support and helping households navigate complex administrative systems (Varo et al., 2022). Yet reliance on third-sector actors also raises concerns about sustainability and accountability, particularly when funding is project-based and responsibilities are not matched with authority.

Participation and stakeholder engagement are widely recognized as essential for legitimacy, but their practical impact varies. Procedural justice research suggests that

meaningful participation can improve policy acceptance and effectiveness, especially when communities perceive that their concerns influence outcomes (Jenkins et al., 2016). However, participation processes may also be symbolic or dominated by organized interests, leaving marginalized groups underrepresented. In multi-level settings, participation becomes even more complex because decisions taken at one level may constrain options at another, limiting the scope for local deliberation.

The concept of just transition is intended to address these issues by integrating social considerations into environmental policy. At the EU level, it emphasizes support for workers, regions, and communities affected by decarbonization. In practice, however, justice is interpreted differently across Member States, reflecting domestic priorities and institutional traditions (Sandmann et al., 2024). Some countries focus on industrial restructuring and employment protection, while others emphasize energy affordability or regional development. This diversity underscores the role of interpretation and negotiation in translating EU frameworks into concrete policies.

Trust emerges as a cross-cutting factor influencing interactions among actors. Effective collaboration requires confidence that partners will fulfill commitments and that policies will be implemented fairly. Where trust is low, between governments and citizens, or between levels of government, coordination becomes more difficult and compliance weaker (Putnam, 1993). Research on energy poverty shows that households experiencing insecurity often distrust institutions and service providers, reducing engagement with support programs (Grossmann et al., 2021). Similar dynamics can affect public acceptance of transition measures more broadly.

The EGD thus operates within a governance environment characterized by interdependence rather than hierarchy. EU institutions provide strategic direction and funding, Member States design and regulate policies, subnational authorities implement programs, private actors supply technology and investment, and civil society mediates between institutions and citizens. Outcomes depend on how these actors negotiate responsibilities, align incentives, and manage conflicts. The process is iterative and adaptive, reflecting changing economic conditions, political priorities, and technological developments.

Importantly, inequality across states and regions shapes not only the distribution of transition costs but also the capacity to participate in governance processes. Regions with stronger administrative systems can engage more effectively with EU institutions, influence policy debates, and secure resources, while weaker regions may remain peripheral. This asymmetry challenges the assumption that uniform policy frameworks can produce equitable outcomes and highlights the need for differentiated support mechanisms.

Thus, the implementation of the EGD illustrates the practical implications of the conceptual themes discussed earlier – institutions, multi-level governance, path dependence, vulnerability, and justice. The transition toward sustainability is not a linear process directed from the top but a negotiated transformation embedded in complex networks of public, private, and third-sector actors operating under conditions of unequal capacity and competing priorities. Recognizing this complexity is essential for designing practical instruments that can

navigate institutional constraints, align diverse actors, and deliver socially just outcomes across the European Union.

Energy poverty within EGD – driven transformations

Alleviating energy poverty within the framework of the EGD represents one of the clearest tests of whether environmental transitions can be both effective and socially just. Energy poverty has increasingly been recognized as a multidimensional structural condition rather than a simple income deficit (Bouzarovski, 2014; Bouzarovski & Petrova, 2015; Jigla et al., 2023). European policy frameworks similarly conceptualize it as the outcome of interacting drivers including low income, high energy prices, and inefficient housing, embedded within broader socio-economic inequalities and infrastructural constraints (Jiglău et al., 2024). This understanding aligns closely with vulnerability frameworks in climate research, which emphasize exposure, sensitivity, and adaptive capacity as socially produced and unevenly distributed across populations (IPCC, 2022).

Within the EGD context, energy poverty is not merely a residual social problem but a central governance challenge because decarbonization policies directly reshape energy prices, housing systems, and access to infrastructure. Measures such as carbon pricing, the extension of emissions trading to buildings and transport under the “Fit for 55” package, and the phase-out of fossil fuels can raise short-term costs for households, particularly those with limited capacity to adapt (European Commission, 2021). Research consistently finds that lower-income households spend a higher proportion of their income on energy, making them more sensitive to price increases and policy-induced cost shifts (Boardman, 1991; Bouzarovski & Petrova, 2015; Healy & Clinch, 2004). Energy poverty therefore functions as a transmission mechanism through which climate policy interacts with social inequality.

At the same time, energy poverty is deeply rooted in the built environment, particularly the energy efficiency of housing stock. Much of Europe’s residential infrastructure predates modern efficiency standards, with particularly severe deficits in post-socialist and peripheral regions where renovation investment has lagged (Ürge-Vorsatz et al., 2012; Bouzarovski, 2014). Inefficient buildings require higher energy consumption to maintain adequate comfort levels, locking households into high expenditure regardless of behavioral choices. This infrastructural dimension illustrates how path dependence shapes vulnerability: past decisions about urban planning, construction, and energy systems constrain present options and future trajectories (Bridge et al., 2013). The EGD’s Renovation Wave initiative seeks to address this structural driver, but implementation requires coordination across property owners, financial institutions, construction sectors, and public authorities, an inherently complex multi-actor process.

Governance fragmentation is further intensified by tenure arrangements, particularly in rental housing. The “split incentive” problem arises when landlords control investment decisions while tenants pay energy bills, reducing incentives for efficiency upgrades even when socially desirable (Bird & Hernández, 2012; Bouzarovski & Petrova, 2015). This institutional barrier illustrates how market structures can perpetuate vulnerability

independently of income. Policies that rely solely on price signals or voluntary investments may therefore fail to reach energy-poor households unless complemented by regulatory measures targeting landlords and housing standards.

The EGD attempts to address these issues through an integrated policy architecture combining regulatory instruments, funding mechanisms, and social safeguards. The Clean Energy for All Europeans Package and subsequent legislation explicitly require Member States to identify and address energy poverty in their National Energy and Climate Plans (NECPs), embedding the issue within the core governance cycle of EU climate policy (Bouzarovski, 2012). However, empirical analyses reveal significant variation in the ambition and effectiveness of national responses, reflecting differences in administrative capacity, political priorities, and welfare systems. In some countries, energy poverty policies focus primarily on bill assistance, while others emphasize structural solutions such as renovation programs or social housing investment.

Funding instruments play a crucial role in mediating these disparities. The Social Climate Fund, for example, is designed to compensate households affected by the extension of carbon pricing to buildings and transport, supporting both direct income measures and long-term efficiency improvements. Yet access to such funds depends on national implementation frameworks and co-financing capacity, which can disadvantage poorer Member States or regions. Cohesion policy experience shows that administrative complexity and reporting requirements can limit the absorption of EU funds in areas most in need, thereby reproducing territorial inequality even within redistributive programs (Bachtler & McMaster, 2008; Mendez & Bachtler, 2017).

Energy poverty also highlights the hybrid nature of governance under the EGD, involving interactions among public authorities, private companies, and civil society actors. Liberalized energy markets mean that utilities are central to delivering energy services, while regulatory agencies set price controls, consumer protections, and obligations regarding vulnerable customers. Disconnection bans, social tariffs, and payment plans are commonly used tools, but their availability and enforcement vary across countries (Bouzarovski & Petrova, 2015). Financial institutions likewise influence outcomes by determining access to loans for energy renovations or renewable installations. Without inclusive financing mechanisms, households lacking creditworthiness may be excluded from programs designed to reduce long-term costs.

Third-sector organizations often function as intermediaries bridging gaps between policy design and household needs. NGOs, community groups, and social enterprises provide energy advice, assistance with administrative procedures, and outreach to marginalized populations who may distrust formal institutions or lack information. Research on energy justice emphasizes that such intermediaries can enhance procedural fairness and improve policy uptake, particularly when they are embedded in local communities (Sandmann et al., 2024). However, reliance on project-based funding can undermine continuity and limit coverage, raising questions about the sustainability of these arrangements.

The multidimensional nature of energy poverty also connects it to broader inequalities beyond income. Demographic factors such as age, disability, and household composition

influence both energy needs and adaptive capacity. Elderly individuals may require higher indoor temperatures for health reasons, while families with young children face different consumption patterns. Migrant households or those in informal housing may encounter additional barriers related to legal status or access to services. These intersectional vulnerabilities challenge one-size-fits-all policy approaches and underscore the importance of recognitional justice in transition governance (Jenkins et al., 2016).

Health impacts further illustrate the systemic consequences of energy poverty. Inadequate heating or cooling is associated with respiratory diseases, cardiovascular conditions, and mental health problems, generating costs for healthcare systems and reducing economic productivity (Liddell & Morris, 2010). Such outcomes reinforce cycles of disadvantage: poor health limits employment opportunities, which in turn constrains income and exacerbates energy insecurity. Conversely, improvements in housing efficiency and energy affordability can produce significant co-benefits, including reduced mortality, improved well-being, and lower public expenditure.

Recent crises have exposed the volatility of household energy security across Europe. The sharp escalation of energy prices following geopolitical tensions, particularly after the 2021–2023 energy crisis triggered by disruptions in gas supply, significantly expanded the population at risk of energy poverty, affecting not only low-income households but also segments of the middle class that had previously been considered energy secure (European Commission, 2022). Empirical analyses show that sudden price increases can rapidly alter affordability thresholds because energy expenditures constitute a relatively inflexible component of household budgets, especially where heating needs are high and substitution options are limited (Heindl & Schüssler, 2015). This episode demonstrates that energy poverty is not a static condition but a dynamic risk that can intensify quickly under external shocks such as market volatility, geopolitical conflict, or supply constraints (Bouzarovski & Petrova, 2015; Jiglău et al., 2023). It also underscores the importance of resilient governance mechanisms capable of rapid response, including emergency income support, regulated tariffs, disconnection bans, and demand-reduction programs designed to stabilize both household welfare and energy systems during crises (European Commission, 2022; IEA, 2023).

Within the broader EGD narrative, addressing energy poverty is closely linked to the concept of a just transition. The logic is both normative and pragmatic: decarbonization policies perceived as unfair are likely to face political resistance, undermining long-term climate objectives (Sovacool et al., 2017). Energy poverty thus serves as a barometer of social acceptance for environmental policy. If vulnerable groups experience the transition primarily as an increase in costs or administrative burdens, support may erode; if they experience tangible improvements in living conditions, legitimacy can be strengthened.

Importantly, alleviating energy poverty requires integrating short-term relief with long-term structural change. Income support measures can prevent immediate hardship but do not address underlying inefficiencies in housing or energy systems. Structural interventions such as building renovation, renewable energy deployment, and network modernization can deliver lasting benefits but take time to implement and may involve

upfront costs. Effective governance must therefore combine both approaches, sequencing policies to protect households during the transition while enabling systemic transformation.

Measurement and targeting also present significant challenges. Multidimensional indices reveal that energy poverty varies not only in prevalence but in intensity across countries and social groups, and that many affected households do not receive assistance due to targeting inefficiencies (Reaños et al., 2025, Jiglău et al., 2023). Accurate identification requires reliable data on income, housing conditions, energy consumption, and demographic characteristics—information often fragmented across administrative systems. Privacy concerns and data gaps further complicate monitoring.

Ultimately, energy poverty encapsulates the broader governance dilemmas of the EGD: balancing environmental ambition with social equity, coordinating actions across levels of government, and aligning public and private actors toward shared objectives. It demonstrates that technological solutions alone cannot deliver a just transition; institutional design, social policy integration, and participatory governance are equally critical. The persistence of energy poverty in advanced economies underscores that market mechanisms and incremental reforms may be insufficient without deeper structural interventions addressing housing, welfare, and infrastructure.

In this sense, alleviating energy poverty is not a peripheral task but a central pillar of sustainable transition. It reveals how vulnerability, inequality, and institutional capacity interact to shape the lived experience of environmental policy. By confronting these issues directly, the EGD has the potential to transform not only energy systems but also the social contract underpinning them—ensuring that the path to climate neutrality is inclusive, resilient, and politically durable.

Practical tools for stakeholder action within the EGD framework

Efforts to alleviate energy poverty within the EGD framework offer a concrete illustration of how practical policy tools can address broader issues of vulnerability, inequality, and social justice in climate governance. Unlike abstract commitments to fairness, energy poverty interventions operate at the interface of everyday life and structural transformation, revealing both the possibilities and limitations of MLG arrangements. Because energy poverty emerges from the interaction of energy systems, housing markets, welfare institutions, and socio-economic disparities, effective responses require coordinated action across sectors and levels of government, as well as engagement with private and third-sector actors (Bouzarovski & Petrova, 2015; Sandmann et al., 2024).

A first category of practical tools concerns income stabilization and affordability protections. In the short term, households facing energy insecurity often require direct financial support to maintain access to essential services. Mechanisms such as social tariffs, targeted subsidies, tax relief, and emergency payments have been widely used across Europe, particularly during the recent energy price crisis (European Commission, 2022). These instruments are administratively familiar and can be deployed relatively quickly, making them crucial for preventing acute hardship. However, research consistently shows that

income-based measures alone do not address the structural drivers of energy poverty and may create fiscal burdens without producing long-term resilience (Boardman, 1991; Bouzarovski & Petrova, 2015). Within the EGD context, the Social Climate Fund seeks to balance immediate relief with structural change by supporting both direct assistance and investments in energy efficiency. The effectiveness of such tools depends heavily on national implementation frameworks, including the ability to identify eligible households and deliver support without excessive administrative barriers.

A second set of tools targets the built environment, particularly through large-scale renovation programs aimed at improving energy efficiency and reducing consumption. The Renovation Wave initiative reflects the recognition that inefficient housing stock is a primary driver of energy poverty across Europe (Ürge-Vorsatz et al., 2012; Bouzarovski, 2014). By reducing energy demand, renovations can produce durable reductions in household expenditure while improving thermal comfort and health outcomes. Yet implementation is complex because it involves multiple actors, such as property owners, tenants, financial institutions, construction firms, and local authorities, whose incentives may not align. Policies must therefore combine financial incentives (grants, low-interest loans), regulatory measures (minimum efficiency standards), and coordination mechanisms to overcome barriers such as the landlord-tenant split incentive (Bird & Hernández, 2012; Bouzarovski & Petrova, 2015). Targeting vulnerable households is particularly challenging, as they may lack access to credit or control over property decisions. Without tailored support, renovation programs risk benefiting primarily higher-income homeowners, thereby reinforcing inequality.

Financial innovation represents a complementary tool for enabling structural improvements. Green loans, on-bill financing, and blended public-private funding mechanisms can reduce upfront costs and distribute repayment over time, making investments more accessible. Public guarantees and subsidies can encourage private lenders to support low-income households or high-risk projects that would otherwise be excluded. However, such instruments require robust regulatory frameworks to prevent over-indebtedness and ensure that savings from efficiency improvements translate into actual affordability gains. The design of financing schemes thus illustrates the hybrid nature of EGD governance, where public objectives are pursued through market-based mechanisms that must be carefully regulated to achieve equitable outcomes (Newell & Mulvaney, 2013).

Beyond financial and infrastructural measures, regulatory tools aimed at consumer protection play a crucial role. Disconnection bans during winter, obligations for suppliers to offer payment plans, and requirements for transparent billing practices can prevent vulnerable households from losing access to energy services. These measures reflect the recognition that energy is an essential service with significant implications for health and social participation. Regulatory approaches are particularly important in liberalized energy markets, where private utilities may prioritize profitability unless constrained by public obligations (Bouzarovski & Petrova, 2015). Enforcement capacity is critical: regulations are only effective if compliance is monitored and sanctions are credible.

The EGD also emphasizes the importance of information and advisory services as practical tools for addressing energy poverty. Many households lack knowledge about

available support programs, energy-saving practices, or renovation opportunities. Energy advice centers, one-stop shops, and community outreach initiatives can help bridge this gap by providing tailored guidance and assistance with administrative procedures. Research indicates that such services are most effective when delivered through trusted intermediaries embedded in local communities, as they can overcome barriers of distrust and complexity (Varo et al., 2022). These intermediaries often include NGOs, municipal agencies, or social enterprises that combine technical expertise with social support functions.

Participation and co-production constitute another dimension of governance innovation. Rather than treating households as passive recipients of policy, co-production approaches involve them in the design and implementation of interventions, enhancing relevance and legitimacy. Community energy projects, for example, allow residents to collectively produce renewable energy, potentially reducing costs and increasing local control. However, participation requires resources and organizational capacity, meaning that without deliberate inclusion strategies, such initiatives may disproportionately attract more advantaged groups (Jenkins et al., 2016). Ensuring equitable participation therefore requires supportive frameworks, including technical assistance and targeted outreach to marginalized populations.

Multi-level coordination mechanisms are essential for integrating these diverse tools into coherent strategies. The EGD paper on policy translation highlights that implementation outcomes depend on how EU-level objectives are interpreted and operationalized by national and subnational actors, often leading to divergent approaches (Sandmann et al., 2024). Effective coordination can take the form of intergovernmental agreements, joint planning platforms, and standardized monitoring systems that facilitate information sharing and accountability. Regional authorities often play a pivotal role as intermediaries between national governments and municipalities, aligning funding streams with local needs.

Capacity-building initiatives are particularly important for less-developed regions and municipalities. Technical assistance programs, training for public officials, and knowledge-sharing networks can enhance the ability of local actors to design and implement effective measures. Without such support, disparities in administrative capacity may limit the reach of EGD instruments, leaving vulnerable populations underserved. Capacity-building thus functions as a justice-oriented tool, addressing structural inequalities in governance capabilities rather than only outcomes.

Technological innovation also contributes to alleviating energy poverty when integrated with governance reforms. Smart metering, digital platforms for energy management, and distributed renewable systems can improve efficiency and enable new forms of service delivery. However, technological solutions must be accompanied by safeguards to ensure accessibility and affordability. For instance, digital tools may exclude households lacking internet access or digital literacy, while dynamic pricing schemes could expose vulnerable consumers to greater volatility. Varo et al. (2022) emphasize that technological innovation must be paired with social innovation to achieve equitable results.

Monitoring and evaluation frameworks constitute another practical tool for ensuring that interventions achieve intended outcomes. Reliable indicators of energy poverty are

essential for targeting resources effectively and assessing progress. Multidimensional measures that capture affordability, access, and adequacy provide a more comprehensive picture than simple expenditure thresholds. Continuous monitoring allows policymakers to adjust strategies in response to changing conditions, enhancing adaptive capacity within the governance system.

Finally, trust-building measures are critical for sustaining long-term effectiveness. Transparent communication, consistent policy implementation, and respectful treatment of beneficiaries can enhance public confidence in institutions, encouraging engagement with programs and compliance with transition measures. Conversely, perceptions of unfairness or neglect can undermine participation and fuel resistance. Trust thus functions as both an outcome and a precondition of successful policy interventions.

Taken together, these practical tools illustrate how alleviating energy poverty within the EGD framework requires an integrated approach combining immediate relief with structural transformation. Income support, renovation programs, financial mechanisms, regulatory protections, advisory services, participatory initiatives, capacity-building, technological innovation, and monitoring systems each address different aspects of vulnerability. Their effectiveness depends not only on individual design but on coordination across sectors and governance levels.

Conclusion

The EGD represents a transformative policy agenda whose success ultimately hinges on implementation within highly heterogeneous institutional, socio-economic, and territorial contexts. This chapter has argued that environmental transitions are not merely technical exercises in decarbonization but complex governance processes embedded in existing inequalities, infrastructural legacies, and power relations. Energy poverty illustrates these dynamics with particular clarity. It exposes how climate policies intersect with housing systems, welfare arrangements, energy markets, and everyday livelihoods, revealing both the risks of uneven transformation and the potential for integrated interventions to produce socially beneficial outcomes. Addressing energy poverty within the EGD is therefore not only a matter of protecting vulnerable households but also a test of whether climate governance can reconcile environmental ambition with social justice.

A practical orientation requires acknowledging that no single policy instrument can resolve such a multidimensional problem. Effective responses depend on coordinated packages combining short-term relief, such as income support and consumer protections, with long-term structural measures including building renovation, infrastructure modernization, and market reform. Equally important are governance innovations that facilitate collaboration among public authorities, private actors, and civil society organizations. Advisory services, intermediary institutions, participatory mechanisms, and capacity-building initiatives can enhance accessibility and legitimacy, helping policies reach those most in need. However, these tools must be tailored to local conditions and embedded within stable institutional frameworks to avoid fragmentation and duplication.

The challenge lies in translating general principles into context-sensitive action. Multi-level governance systems distribute responsibilities across actors with varying capacities, resources, and priorities, often creating gaps between policy design and implementation. Regions with strong administrative capabilities are better positioned to access funding and coordinate programs, while weaker regions may struggle despite facing greater needs. Similarly, reliance on market-based mechanisms can mobilize investment but may fail to protect vulnerable populations unless accompanied by robust regulation and social safeguards. Practical solutions must therefore address not only policy content but also the institutional environment in which policies operate.

Another difficulty is the temporal mismatch between immediate social needs and long-term structural transformation. Energy efficiency improvements and infrastructure upgrades deliver durable benefits but require time, investment, and organizational capacity, while households facing energy insecurity need prompt assistance. Policymakers must balance these time horizons, ensuring that short-term measures do not undermine long-term objectives and vice versa. This balancing act becomes particularly demanding during crises, when political pressure for rapid action may lead to ad hoc interventions that are difficult to sustain.

Trust and legitimacy further complicate implementation. Policies perceived as unfair, opaque, or imposed without consultation can encounter resistance, reducing effectiveness regardless of technical merit. Building trust requires transparent communication, consistent policy frameworks, and respectful engagement with affected communities. In practice, this often entails empowering local actors and intermediaries who possess contextual knowledge and social capital, even as coordination across governance levels remains essential.

Ultimately, being practical in such a complex environment means embracing adaptive governance rather than seeking definitive solutions. Continuous monitoring, learning, and adjustment are necessary to respond to evolving economic conditions, technological developments, and social expectations. The experience of addressing energy poverty suggests that climate policy effectiveness depends not only on ambitious targets but on the capacity to manage distributional consequences and institutional constraints. By integrating environmental objectives with social protection, housing policy, and regional development, the EGD can move closer to its promise of a just transition. Yet this outcome is contingent on sustained political commitment, adequate resources, and the willingness to confront structural inequalities that predate the transition itself.

Bibliography

- Bache, I. and Flinders, M., Eds. (2004) *Multi-Level Governance*. Oxford University Press, Oxford. <http://dx.doi.org/10.1093/0199259259.001.0001>
- Bachtler, J. and McMaster, I. (2008) 'EU cohesion policy and the role of the regions: Investigating the influence of structural funds in the new member states', *Environment and Planning C: Government and Policy*, 26(2), pp. 398–427. <https://doi.org/10.1068/c0662>
- Bird, S. and Hernández, D. (2012) 'Policy options for the split incentive: Increasing energy efficiency for low-income renters', *Energy Policy*, 48, pp. 506–514. <https://doi.org/10.1016/j.enpol.2012.05.053>

- Boardman, B. (1991) *Fuel Poverty: From Cold Homes to Affordable Warmth*. London: Belhaven Press.
- Börzel, T.A. and Risse, T. (2003) 'Conceptualizing the domestic impact of Europe', in Featherstone, K. and Radaelli, C.M. (eds.) *The Politics of Europeanization*. Oxford: Oxford University Press, pp. 57–80. <https://doi.org/10.1093/0199252092.003.0003>
- Bouzarovski, S. (2014) 'Energy poverty in the European Union: Landscapes of vulnerability', *WIREs Energy and Environment*, 3(3), pp. 276–289. <https://doi.org/10.1002/wene.89>
- Bouzarovski, S. and Petrova, S. (2015) 'A global perspective on domestic energy deprivation: Overcoming the energy poverty–fuel poverty binary', *Energy Research & Social Science*, 10, pp. 31–40. <https://doi.org/10.1016/j.erss.2015.06.007>
- Bouzarovski, S. and Tirado Herrero, S. (2017) 'The energy divide: Integrating energy transitions, regional inequalities and poverty trends in the European Union', *European Urban and Regional Studies*, 24(1), pp. 69–86. <https://doi.org/10.1177/0969776415596449>
- Bridge, G., Bouzarovski, S., Bradshaw, M. and Eyre, N. (2013) 'Geographies of energy transition: Space, place and the low-carbon economy', *Energy Policy*, 53, pp. 331–340. <https://doi.org/10.1016/j.enpol.2012.10.066>
- Bulkeley, H. and Betsill, M. (2005) 'Rethinking sustainable cities: Multilevel governance and the “urban” politics of climate change', *Environmental Politics*, 14(1), pp. 42–63. <https://doi.org/10.1080/0964401042000310178>
- De Cremer, D. and Tyler, T.R. (2007) 'The effects of trust in authority and procedural fairness on cooperation', *Journal of Applied Psychology*, 92(3), pp. 639–649. <https://doi.org/10.1037/0021-9010.92.3.639>
- European Union (2021). Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions. The European Green Deal (COM/2019/640 final). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2019%3A640%3AFIN>.
- European Union (2019). Turning challenge into opportunity on the course to becoming the first climate-neutral continent. https://ec.europa.eu/commission/presscorner/detail/en/AC_19_6778
- European Union. Regulation (EU) 2021/1056 of the European Parliament and of the Council of 24 June 2021 establishing the Just Transition Fund. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32021R1056>
- European Union (2020). The European Green Deal Investment Plan and Just Transition Mechanism. https://ec.europa.eu/commission/presscorner/detail/en/qanda_20_24
- Grossmann, K. et al. (2021) 'The critical role of trust in experiencing and coping with energy poverty: Evidence from across Europe', *Energy Research & Social Science*, 76, 102064. <https://doi.org/10.1016/j.erss.2021.102064>
- Healy, J.D. and Clinch, J.P. (2004) 'Quantifying the severity of fuel poverty, its relationship with poor housing and reasons for non-investment in energy-saving measures', *Energy Policy*, 32(2), pp. 207–220. [https://doi.org/10.1016/S0301-4215\(02\)00265-3](https://doi.org/10.1016/S0301-4215(02)00265-3)
- Heffron, R.J. and McCauley, D. (2017) 'The concept of energy justice across the disciplines', *Energy Policy*, 105, pp. 658–667. <https://doi.org/10.1016/j.enpol.2017.03.018>
- Heindl, P. and Schüssler, R. (2015) 'Dynamic properties of energy affordability measures', *Energy Policy*, 86, pp. 123–132. <https://doi.org/10.1016/j.enpol.2015.06.044>
- Hooghe, L. and Marks, G. (2001) *Multi-Level Governance and European Integration*. Lanham: Rowman & Littlefield.

- International Energy Agency (IEA) (2023) *World Energy Outlook 2023*. Paris: IEA. <https://www.iea.org/reports/world-energy-outlook-2023>
- International Labour Organization (ILO) (2015) *Guidelines for a Just Transition Towards Environmentally Sustainable Economies*. Geneva: ILO. <https://www.ilo.org/publications/guidelines-just-transition-towards-environmentally-sustainable-economies>
- IPCC (2022) *Climate Change 2022: Impacts, Adaptation and Vulnerability*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/9781009325844>
- Jenkins, K., McCauley, D., Heffron, R., Stephan, H. and Rehner, R. (2016) 'Energy justice: A conceptual review', *Energy Research & Social Science*, 11, pp. 174–182. <https://doi.org/10.1016/j.erss.2015.10.004>
- Jiglău, G. et al. (2023) 'Looking back to look forward: Reflections from networked research on energy poverty', *iScience*, 26(3), 106083. <https://doi.org/10.1016/j.isci.2023.106083>
- Jiglău, G. et al. (2024) 'Energy and the social contract: From “energy consumers” to “people with a right to energy”', *Sustainable Development*, 32(1), pp. 1321–1336. <https://doi.org/10.1002/sd.2727>
- Jordan, A., Huitema, D., van Asselt, H., Rayner, T. and Berkhout, F. (eds.) (2010) *Climate Change Policy in the European Union: Confronting the Dilemmas of Mitigation and Adaptation?* Cambridge: Cambridge University Press. https://doi.org/10.1162/GLEP_a_00108
- Liddell, C. and Morris, C. (2010) 'Fuel poverty and human health', *Energy Policy*, 38(6), pp. 2987–2997. <https://doi.org/10.1016/j.enpol.2010.01.037>
- Mendez, C. & Bachtler, J. (2017) 'Financial Compliance in the European Union: A Cross-National Assessment of Financial Correction Patterns and Causes in Cohesion Policy', *Journal of Common Market Studies*, Wiley Blackwell, 55(3), pp. 569–592.
- Middlemiss, L. et al. (2019) 'Energy poverty and social relations', *Energy Research & Social Science*, 55, pp. 227–235. <https://doi.org/10.1016/j.erss.2019.05.002>
- Moesker, K. & Pesch, U. (2022) 'The just transition fund – did the European Union learn from Europe's past transition experiences?' *Energy Research and Social Science*, 91, [10.1016/j.erss.2022.102750](https://doi.org/10.1016/j.erss.2022.102750)
- Newell, P. and Mulvaney, D. (2013) 'The political economy of the “just transition”', *The Geographical Journal*, 179(2), pp. 132–140. <https://doi.org/10.1111/geoj.12008>
- Newton, K. (2001) 'Trust, social capital, civil society, and democracy', *International Political Science Review*, 22(2), pp. 201–214. <https://doi.org/10.1177/0192512101222004>
- OECD (2010) *The OECD Innovation Strategy: Getting a Head Start on Tomorrow*. Paris: OECD Publishing. <https://doi.org/10.1787/9789264083479-en>
- OECD (2021) *Building Resilient Cities: Policy Highlights*. Paris: OECD Publishing. <https://www.oecd.org/regional/building-resilient-cities-policy-highlights-2021.pdf>
- Piattoni, S. (2010) *The Theory of Multi-Level Governance: Conceptual, Empirical, and Normative Challenges*. Oxford: Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199562923.001.0001>
- Putnam, R.D. (1993) *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton: Princeton University Press.
- Reaños, M.A.T. et al. (2025) 'Measuring and targeting energy poverty in Europe using a multidimensional approach', *Energy Policy*, 199.
- Rodríguez-Pose, A. (2018) 'The revenge of the places that don't matter (and what to do about it)', *Cambridge Journal of Regions, Economy and Society*, 11(1), pp. 189–209. <https://doi.org/10.1093/cjres/rsx024>

- Sandmann, L. et al. (2024) 'The European Green Deal and its translation into action: Multilevel governance perspectives on just transition', *Energy Research & Social Science*, 110, 103659. <https://doi.org/10.1016/j.erss.2024.103659>
- Scharpf, F.W. (1997) *Games Real Actors Play: Actor-Centered Institutionalism in Policy Research*. Boulder, CO: Westview Press. <https://doi.org/10.4324/9780429500275>
- Schmidt, V.A. (2006) *Democracy in Europe: The EU and National Politics*. Oxford: Oxford University Press.
- Sovacool, B.K., Heffron, R.J., McCauley, D. and Goldthau, A. (2016) 'Energy decisions reframed as justice and ethical concerns', *Nature Energy*, 1, 16024. <https://doi.org/10.1038/nenergy.2016.24>
- Sovacool, B.K., Sidortsov, R. and Jones, B. (2017) *Energy Security, Equality and Justice*. London: Routledge.
- Ürge-Vorsatz, D. and Tirado Herrero, S. (2012) 'Building synergies between climate change mitigation and energy poverty alleviation', *Energy Policy*, 49, pp. 83–90. <https://doi.org/10.1016/j.enpol.2011.11.093>
- Uslaner, E.M. (2010) *The Moral Foundations of Trust*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511614934>
- Varo, A. et al. (2022) 'Addressing energy poverty through technological and governance innovation', *Energy, Sustainability and Society*, 12, 49. <https://doi.org/10.1186/s13705-022-00377-x>

NATURE-BASED SOLUTIONS (NBS) AS AN ALTERNATIVE INTERVENTION FOR ROMANIA'S CITIES

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Abstract: *This article examines the emergence and institutionalisation of Nature-Based Solutions (NBS) as an alternative framework for urban intervention in Romania, with a particular focus on protected urban natural areas and ecological corridors. Grounded in political ecology and Participatory Action Research, the study draws on legislative analysis, specialised literature, fieldwork conducted in several Romanian cities, 15 semi-structured interviews, 33 questionnaire responses, and participatory mapping. It investigates how experts, activists, and public administrators conceptualise and operationalise NBS at the metropolitan scale in response to climate change, pollution, and biodiversity loss. Although the European Commission and IUCN have established consolidated definitions of NBS, and Romania has recently adopted technical regulations (e.g., NP 133-2022), implementation remains incipient and largely confined to pilot initiatives. The research identifies urban natural areas as potential incubators for scaling NBS, integrating renaturalisation, green-blue corridors, metropolitan forests, wetlands, community gardens, and hybrid infrastructures. However, significant obstacles persist: weak legislative frameworks, insufficient technical guidelines, limited administrative capacity, real estate pressures, fragmented metropolitan governance, and a dominant growth-oriented political economy. Environmental impact assessments are frequently formalistic, and cost-benefit methodologies tend to privilege grey infrastructure over ecological alternatives. The analysis also interrogates the conceptual tensions surrounding ecosystem services and the risk of technocratic depoliticisation or greenwashing. Without structural institutional reforms, independent funding mechanisms, and robust deliberative processes, NBS risk becoming a “sustainability fix” rather than a transformative paradigm. The article concludes that effective scaling requires an eco-developmental state, substantial public investment, and interdisciplinary advocacy capable of articulating compelling narratives that connect biodiversity, social justice, and urban quality of life.*

Keywords: *Nature-Based Solutions; protected urban natural areas; political ecology; green-blue infrastructure; metropolitan governance.*

Introduction

Nature-Based Solutions (NBS) represent an intervention concept with a positive impact on biodiversity, often minimally invasive, that is beginning to gain recognition in the Romanian context. However, it has not yet been generalised in practice beyond certain pilot

projects. The analysis below is a qualitative micro-research study in political ecology¹, based on the analysis of specialised literature and of legislative regulations at both international and national levels, but also grounded in dialogues with 15 interviewees, 33 respondents to an online questionnaire, as well as fieldwork conducted in several cities across the country and a participatory mapping process using maps and photographs². The political science analysis, through the Participatory Action Research methodology, examines how experts, activists, and representatives of administrations from several cities across the country envision, specifically at the level of the metropolitan area to which they belong, Nature-Based Solutions for issues related to pollution and climate change that have emerged in urban environments, with a particular, though not exclusive, focus on protected urban natural areas and ecological corridors. The category of urban natural areas, accepted by the Ministry of Environment as a distinct category through an amendment to GEO 57/2007, is now being incorporated into broader legislation on protected natural areas, also due to the advocacy efforts of the Urban Nature Network.

The European Commission defines Nature-Based Solutions as “solutions that are inspired and supported by nature, that are cost-effective, simultaneously provide environmental, social, and economic benefits, and help increase resilience.” Since 2016, the International Union for Conservation of Nature (IUCN) has defined Nature-Based Solutions as “actions to protect, sustainably manage, and restore natural or modified ecosystems that address societal challenges effectively and adaptively, while simultaneously providing benefits for human well-being and biodiversity.”

The umbrella concept of Nature-Based Solutions has an official definition and a technical implementation framework in Romanian legislation, following the adoption of the technical regulation NP 133-2022, thus establishing a link with territorial development and spatial planning activities: “The regulation extends the conceptual basis by including terms such as green infrastructure, natural water retention measures, low-impact solutions, and sustainable drainage systems.”³ In addition, government-level good-practice guidelines on Nature-Based Solutions have recently been adopted (Ministry of Development, Public Works and Housing, 2023). Public investments under the NBS framework, however, have not yet become widespread.

Despite the increase in investments under the NBS umbrella in recent years, they remain modest globally. Only 1% of total water infrastructure investment in 2020 can be estimated as NBS (Brears, 2020, p. 19).

¹ Political ecology, as a subfield of anthropology, political science, ecology, and more broadly of the social sciences, differs from the descriptive or taxonomic ecology, presumed “neutral,” of the natural sciences through its understanding of the power relations embedded in the interaction between humans and nature, showing how environmental issues and climate change are derived from processes of political economy.

² The analysis in this chapter is conducted under the auspices of the Center for the Study of Democracy Association (Babeş-Bolyai University), in partnership with the Urban Nature Network (RNU), within the project “Protected Urban Natural Areas – Nature at Your Doorstep!” (RO2020/ACF_A3_MM_10), implemented by the Văcăreşti Natural Park Association, the Organized Sustainable Society Association – SOS Cluj, the Transylvanian Carpathian Society (EKE) Satu Mare, the Mountain Ecology Center Foundation, the Funky Citizens Association, the Excelsior Association, the Ecotop Foundation, the Walden Association, the Bioteam Association, SOR Iaşi, and the RURALIS Association, with financial support from the Active Citizens Fund – Romania, through the EEA Grants 2014–2021. The Urban Nature Network was legally established by 13 associations and aims to expand to a membership of 20 associations during 2024–2025 across several cities in the country.

³ I thank the hydraulic engineer Dan Rădulescu, specialized in Nature-Based Solutions, for the guidance provided in the preparation of this study.

The main directions of action identified in the Romanian context, based on analyses conducted with specialists and environmental activists, consist of more general public policy proposals, as well as others of a more specific nature addressed to civil society:

- a. The need for a tandem between broadly projected densities and sufficiently generous spaces for nature, conceived within a compact building model.
- b. The need to prioritise NBS in all public works.
- c. The need to prioritise NBS within the processes of urban regulation, technical approval, execution and management of works (along watercourses), stormwater management, construction in general, with imposed measures for unbuilt green spaces (both qualitative and quantitative), infrastructure, land improvement works, etc.
- d. The need to designate protected urban areas to enhance nature conservation within Romanian municipalities, especially in a context of chaotic post-1989 real estate development.
- e. The intention to identify funding mechanisms for Nature-Based Solutions at the national level through the Environmental Fund Administration (AFM) and through local administrations. In 2023, AFM has a budget of 15 billion lei. Part of this budget could be managed by a network of civic actors and an independent jury of experts, similar to AFCN. Alternatively, if such a model of civil society involvement at the top level is not accepted, a national fund for Nature-Based Solutions could be established within AFM.
- f. The need to deepen the recently adopted regulations in Romanian legislation concerning NBS, which require detailed technical specifications, since no manuals currently exist regarding the design, operation, maintenance, or monitoring of these green techniques. More specifically, there is still no legislation for protected urban natural areas, nor for deliberative mechanisms to manage potential new urban natural areas.
- g. The relevance of advocacy campaigns conducted through the recently established Urban Nature Network (RNU), not only for protected natural areas, but more broadly for a package of ecological solutions under the umbrella concept of Nature-Based Solutions and hybrid solutions. Urban natural areas can serve as testing laboratories for Nature-Based Solutions that may later be disseminated at the metropolitan level.
- h. Strengthening the educational and informational component, albeit non-formal, of RNU, as well as of spaces proposed as protected areas, where the main characteristics are linked to education, accessibility, and biodiversity.

Even if we accept, as emerges from the conclusions of several specialists, that the main challenge of Nature-Based Solutions lies in scaling these solutions to achieve real impact, the analysis places a more moderate emphasis on pilot and laboratory-type measures that may subsequently lead to structural changes (legislation, norms, urban planning regulations, approval processes, and cultural shifts at the level of institutions, professional bodies, and civil society, etc.), for the simple reason that, at present, Romanian society lacks ideological, political, and civic forces or professional communities sufficiently strong as a critical mass to alter the extractivist status quo significantly.

SBN in the Romanian Space

One of the central ideas regarding protected urban natural areas is that they should function as incubators for Nature-Based Solutions⁴, where pilot NBS projects are tested and subsequently expanded at the city level. In this sense, urban natural areas not only conserve biodiversity but also entail renaturation projects, such as those in Parcul Est in Cluj, at Mamaia Beach in the Constanța metropolitan area, or along the chain of lakes on the Colentina River in Bucharest. The idea of an NBS incubator within or at the margins of urban natural areas is exemplified below.

Community urban gardens can be integrated at the edges of such potential natural areas.

Hybrid solutions consist of alternating “grey” solutions, such as bicycle lanes or pathways made of impermeable and permeable materials, with green solutions related to the designation and management of natural areas⁵.

Stormwater retention solutions in wetland areas can first be tested in spaces proposed as, or already designated as, natural areas, or at their margins, using bioretention basins and other methods, and later generalised⁶.

Non-formal educational activities and workshops for building insect hotels, bird feeders, bat shelters, and thematic trails made from natural materials, as well as other initiatives, can be conducted in natural areas, involving students in practical activities.

The creation of pollinator meadows instead of lawns can be tested in natural areas or at their margins, then scaled at the city level and adapted within people’s yards, whether at houses or apartment buildings.

In short, our thesis is that urban natural areas can become open-air laboratories accessible to the public.

The most frequent examples of Nature-Based Solutions from a spatial perspective are urban natural areas, currently structured around three complementary typologies:

- a. green-blue corridors along rivers and lakes – the chain of lakes on the Colentina River in Bucharest, the mouth of the Dâmbovița into Lake Morii, the Crișul Repede running through the city of Oradea and linking two Natura 2000 sites outside the city, the Someș in Satu Mare, the Mureș in Arad, the corridor between the Florești “Delta” and the Grigorescu neighbourhood in Cluj, the Urban Meadow of Bistrița, etc. All these represent planning initiatives involving specialists and activists from the Urban Nature Network (RNU).
- b. metropolitan forests requiring broader protection as urban natural areas through removal from exploitation circuits and through ecological corridors such as the Metropolitan Green Belt, which connects forests with pastures, watercourses, gardens,

⁴ The examples below represent a synthesis of proposals coming from experts and environmental activists in the Romanian context, gathered through interviews and questionnaires or derived from specialized studies.

⁵ Botanical and, more recently, ecological interest in ruins is almost as old as the science of botany itself, and this curiosity is being revived in proposals for urban natural areas developed over “grey” built infrastructure or on former brownfield sites, as well as in places where nature has reclaimed the hydro-energy and industrial infrastructure of cities.

⁶ Two such basins created specifically for stormwater retention and biofiltration have been developed in Feroviarilor Park in Cluj, a park arranged following an international design competition and opened in December 2023.

and green spaces, etc. – Brassovia Natural Park, forests within the Green Belt of Bucharest, Mount Cozla in Piatra Neamţ, the Iaşi Woodlands, Mamut Forest in Alba Iulia, the Metropolitan Green Ring in Cluj, and others.

- c. meadows and pastures with trees – the Petricani meadow in northern Bucharest, the pear-tree meadow in Bistriţa, or the meadows near Hoia-Baciu Forest overlooking the valley of the Someşul Mic, the Breite Plateau in Sighişoara, etc.

In a broader sense, the most frequently mentioned examples of Nature-Based Solutions by respondents in the Romanian context are also those compatible with urban natural areas or ecological corridors. However, NBS are not, of course, limited to the scale of a natural area or ecological corridor. The typologies below, as examples of green-blue infrastructure, may exist within natural areas or coexist alongside them:

- more trees: reforestation and/or conservation of metropolitan forests, forest belts, tree alignments along boulevards or new pathways. Due to the urban heat island effect, temperatures in cities increase by 4 to 12 degrees, in addition to the average temperature rises of 3–4 degrees Celsius recorded in Romanian cities over the last half-century⁷.
- natural riverbanks with “vegetative bank protections (cleionage)” (Ovidiu Ianculescu), as developed through collaboration between the Mureş Water Basin Administration, the UnDA Verde Association⁸, and specialists from Germany at the Morii Canal in Reghin, or green solutions combined with grey ones, meaning “arrangements of riverbanks and standing waters without concrete, or at least without visible concrete surfaces, but with boulders or blocks of natural rock, or with structures that conceal gabions, alongside vegetation that stabilises the bank” (Radu Mititean, CCN).
- wetlands aimed at increasing urban biodiversity, but also at stormwater management so as not to overload sewer systems, through filtering vegetation strips, grassed ditches, dry vegetative strips, rain gardens, bioretention basins, ponds, wetlands for biofiltration at wastewater treatment plants, grassed channels, etc. Over the last 300 years, nine-tenths of the world’s wetlands have disappeared, 54% since 1900 alone (Brears, 2020, p. 142). Bucharest has a wetland surface of only 5%, most of it artificial lakes created in the twentieth century, despite 75% of the territory of present-day Bucharest having been wetland in the Middle Ages (Ioja, 2022, p. 21). Foreign travellers once called the capital “the city of gardens.”
- inherently grey solutions such as overpasses and underpasses designed to create ecological corridors for large carnivores, but also for people through green rings or belts in metropolitan areas⁹. Ecoducts are not green solutions per se, but they help create ecological corridors.

⁷ V. Viorela Marin, “Every Tenth Matters and Is Felt – What a 3–4 °C Increase in Annual Average Temperature Means for Cities in Romania,” *Hotnews*, 12 August 2023, <https://www.hotnews.ro/stiri-medi-26456393-fiecare-zecime-conteaza-simte-inseamna-pentru-orasele-din-romania-crestere-3-4-grade-celsius-temperaturii-medii-anuale.htm>.

⁸ V. unDA Verde Conference, “Engineering Ecology. Protection of Riverbanks with Natural Methods by Georg Hermannsdorfer,” *YouTube*, <https://www.youtube.com/watch?v=8AhiaHbSLQI>.

⁹ The overpass between Floreşti/Gilău and Baciu for large carnivores such as bears is estimated by WWF expert Cristian-Remus Papp to cost approximately 10 million euros, with EU funds dedicated to green infrastructure.

- permeable soils in pathway construction, where average prices are comparable to asphalt pathways for flat surfaces, although maintenance costs are higher than those of impermeable surfaces.
- organic waste management: dead wood from naturally fallen trees or resulting from maintenance activities, left in place or stacked to support biodiversity.
- urban community gardens, permaculture farms, or agriculture incorporating biodiversity measures, with ecological compost treatment: gardens around apartment blocks, school gardens and orchards, urban farms, gardens in university spaces, in compact areas on municipal land, within sanitary protection zones, horizontal gardens¹⁰, green roofs¹¹, etc. There is a wide variation in garden typologies, with informal gardens being most common at the margins of areas proposed as urban natural zones, integrating harmoniously into the concept of an urban natural area. In the absence of a legislative framework for establishing community gardens, and with most large Romanian cities even prohibiting gardening on public land, such longstanding Nature-Based practices do not reach their full potential¹². In Bucharest, more than 3,000 hectares of agricultural land could be converted into community gardens or urban farms, given that, according to estimates (Ioja, 2022, p. 90), already 2% of Bucharest residents cultivate vegetables in front of their apartment blocks.
- natural materials in playgrounds instead of plastic and thematic educational trails are among the most compatible NBS within urban natural areas. Feeders, wooden artificial nests, insect hotels, bat shelters, etc., create healthier habitats by avoiding insecticides. These are Nature-Based Solutions through which “we reduce the intensity of nocturnal lighting in the city to allow bat populations to thrive, as they are the largest natural consumers of mosquitoes” (Adriana Măgerușan, architect).
- green solutions combined with hybrid solutions and healthy mobility integrated into the design of parks and urban natural areas. Natural areas within riparian habitats in metropolitan zones, as well as metropolitan forests, can be connected through bicycle

Such infrastructures are, of course, used by other animal species as well, but also by non-motorized traffic participants, who may access otherwise less reachable areas within future Metropolitan Green Rings as pedestrians or cyclists.

¹⁰ Green walls in arid climates can reduce temperatures by up to ten degrees, while green roofs have lowered temperatures by nearly twenty degrees (Kabisch et al. 2017). In Romania, the difference is considerably smaller, yet long-term studies adapted to local climatic conditions are necessary to estimate the extent of temperature reduction.

¹¹ “The Aviației Neighborhood Association also developed an online platform (<https://acoperisulverde.org/>) through which it sought to explain to the general public the legislative and institutional framework that must be navigated in Romania in order to implement NBS in the form of green roofs on existing buildings. Unfortunately, the initiative of the Aviației Neighborhood Association encountered such extensive bureaucracy and such widespread lack of interest (both from the local public administration and from the broader public) that the effort has since faded,” notes landscape architect Diana Culescu for the NBS research.

¹² The Organized Sustainable Society Association, in collaboration with Urbasofia, Clujul Sustenabil, and the Community Development Agency – Cluj Metropolitan Area, prepared a detailed public policy proposal on the regulation of community gardening, outlining, among other aspects, the possibility of establishing community gardens along the Someș, as also proposed by the metropolitan corridor architects. If adopted in Cluj—given that other cities have previously replicated Cluj’s policy models—this framework could lead to the creation of tens, perhaps hundreds of thousands of community gardeners in Romania, as is already the case in other countries. See the study on urban gardening: <https://www.clujmet.ro/resurse/>.

paths, in some cases using permeable materials, in others impermeable ones, especially when interurban mobility is encouraged. For example, linking the cities of Alba Iulia, Sebeş, and Teiuş, along with the communes between them located about 20 km from Alba Iulia, through bicycle paths along the Mureş, Ampoi, and Sebeş rivers, with minimally intrusive river areas arranged as natural zones, provides a feasible alternative to car traffic and also a leisure option. Such situations are suitable for most urban agglomerations in Romania, especially since 20% of the public wishes to use bicycles or electric scooters for longer distances (INSCOP 2023), provided that the necessary infrastructure is in place. The creation of cycling networks and pedestrian pathways¹³ is consistent with planting tree alignments that make transit cooler and more pleasant (Brears, 2020, p. 408). In this sense, green solutions must be combined with grey or hybrid ones to reduce the major pollution generated by car traffic. The Metropolitan Green Rings needed across Romania can integrate peri-urban natural areas with non-motorised or electric mobility.

Obstacles to the Implementation of NBS in Romanian Cities: “We Want to Live Like in the Movies” (Tamás Sike, biologist)

The main obstacles relate to the political economy of the Romanian context, to administrative practices, and to still-deficient legislation, despite the expansion of regulations on Nature-Based Solutions in stormwater management and urban intervention methods. Another obstacle is of a softer nature—mentalities that associate wealth predominantly with material rather than post-material values.

In theory, NBS should enjoy greater success within a neoliberal political economy. The idea of NBS as a problem-solving approach aligns with a global analytical and institutional framework in which everything must be justified and quantified to be considered valuable. Nevertheless, Romania, like other Central European countries, accepts the conceptual framework of NBS with greater difficulty than Western countries, because “modern solutions are usually associated with hard infrastructure rather than with greening” (Kronenberg et al., 2017, p. 303) or with social soft interventions.

Even in the international literature, there is more rhetoric than action, a conceptual hype surrounding NBS similar to the earlier enthusiasm for ecosystem services. Most projects are designed at a small scale, ad hoc, non-standardised, and within the logic of pilot initiatives (OECD, 2021). However, the European Nature Restoration Law constitutes a possible mechanism for scaling the NBS concept, although it leaves it to national states the discretion regarding implementation.

Theoretically, through maximal transposition in the residential, transport, and industrial sectors, NBS can reduce greenhouse gas emissions by one quarter. Combined with other engineering solutions, emissions can be reduced by more than half. These are large-scale

¹³ Bucharest is one of the European capitals most deprived of a network of cycling paths and walkways connecting green spaces: “The chain of green areas Văcăreşti – Tineretului – Carol Park – the Academy Garden – the House of the People – Izvor Park – Cişmigiu – Căzavilan. Access between them must be greened so that they become a single park,” states Răzvan Voinea, member of the Urban Planning Commission, Bucharest City Hall, researcher, Studio Zona Association (personal interview 2023).

efforts necessary for climate change mitigation (Pan et al., 2023). Among the few public policy examples in the Romanian context that reference this umbrella concept, NBS are estimated to reduce greenhouse gas emissions by only 1% within the climate strategy of the Cluj City Hall. The percentage is low, despite a declared objective of climate neutrality by 2030, under which, out of several billion euros, NBS alone would require investments of 300 million euros in Cluj over seven years (Cluj-Napoca City Hall 2023). The significant gap between investment levels and the calculated impact is due to the methodology for this umbrella-intervention approach not yet being fully understood.

Obstacles identified by respondents include lack of education, ignorance, absence of political will, the interest of companies and administrations in maintaining the status quo, weak implementation of strategic documents, lack of funding, corruption and indifference within the administration, real estate interests, and citizen passivity.

Not only are there no biodiversity strategies aimed at creating new natural areas, but we do not even have green space registries in cities,” notes Florin Stoican, president of the Urban Nature Network (personal interview 2023).

The first Romanian technical regulation opening the way for the implementation of NBS was approved only at the beginning of 2023 and is followed by additional regulations concerning construction in flood-prone areas, according to Dan Rădulescu, hydraulic engineer (United Waters of Romania):

“There are still no technical manuals, no domestic design, construction, and maintenance guides. There are no domestic academic and training programs for specialists in the field yet. There is an extremely limited number of specialists with experience in this area.¹⁴ Moreover, the absence of a performance history for these techniques, compared with the track record of grey techniques, makes them less preferable from the outset. Without this professional and academic support, even the best intentions of local administrations have little chance of success. Legislative support is, in turn, extremely weak and unclear. In the context of climate change, NBS are essential for sustainable development, for designing durable drainage systems adapted to new extreme rainfall regimes, capable of addressing both the quantity and quality of discharged water, limiting urban heat island effects, improving air quality, and offering opportunities to enhance the psychological well-being and health of residents, while simultaneously protecting biodiversity.”

We live within an economic growth paradigm.¹⁵ In which resources are considered infinite, even though ecological modes of thinking operate within alternative paradigms.

Another obstacle is genuinely discursive and consists of dressing old practices in new conceptual language, to create confusion regarding the real intentions of authorities or private investors who employ such terminology to access European funds or as a form of public relations, using conceptual forms devoid of substantive content. The concepts employed are vague, the methodologies unclear, functioning largely as metaphors; apparently “new” concepts are in fact older ones circulating under different labels: sustainability has been replaced by resilience, the circular economy replaces the linear economy, though often more as a corporate social responsibility commitment; Nature-Based Solutions frequently prove to

¹⁴ Domestic companies are also beginning to emerge that work with Nature-Based Solutions; see <https://www.invisiblenature.ro/>.

¹⁵ “We confuse standard of living with quality of life; we want things quickly, we want them in excess,” which points to “our greed” as the principal obstacle of the era in which we live, states Erika Stanciu, protected areas specialist (ProPark Foundation) (personal interview 2023).

be essentially engineering-driven, with a visible yet superficial ecological cosmetic layer (Corvellec, 2021).

For this reason, beyond accepting the technocratic, bioengineering, and ecological perspectives of NBS, a perspective rooted in the social sciences is necessary, one that underscores the risk of greenwashing by corporations that simulate ecological measures to market polluting products and services. Reflexivity is required so that NBS do not remain confined to technical solutions, excluding local communities with limited access to urban nature and situated outside circuits of capitalisation¹⁶, or reducing solutions merely to issues of “implementation.”

From a technocratic perspective, the market, the public, or the authorities are not sufficiently “mature” to understand NBS. However, it is specified that urban nature should not be viewed as “non-functional” in the same way as extra-urban nature. However, it should instead be granted—implicitly through inference—a utilitarian importance intended to render it more compatible with circuits of capital. According to domestic researchers who first popularised Nature-Based Solutions in Romania, multiple barriers lead not only capital actors or administrations, but even some researchers and representatives of the associative sector, “to regard the return of nature to cities as a threat to human well-being.” For this reason, urban nature “should not be a simplified and non-functional copy of original nature,” but rather a structure integrated into broader investments (Ioja et al., 2019, p. 7), based on the assessment of ecosystem services conceptualised in terms of supply and demand. This is a type of apparently technocratic thinking that, in fact, subordinates ecology to market ideology.

Ecosystem Services in Metropolitan Areas

For “ecosystem services,” let us imagine a barefoot walk on the sand, by the seaside, in the morning, in Constanța, whether as a tourist or as a resident, breathing in marine aerosols, perhaps unexpectedly catching sight of a dolphin in the distance. Alternatively, a dense shade in a park, with “fresh air”—as proposed by Laura Bouriaud, forestry researcher at Ștefan cel Mare University of Suceava—that lowers temperatures on a scorching day by 10–15 degrees in the context of climate change and may save the life of an elderly person during a 40-degree heatwave. Alternatively, quite legitimately, envision a recently built neighbourhood that no longer smells pungently of excrement after torrential rain because green spaces, bioretention basins, and broader stormwater management through permeable surfaces have prevented sewer overload and the discharge of wastewater onto the streets.

The ecosystem services of urban nature are so omnipresent—though in ways that are difficult to quantify—that they become dulled to perception. They range from the provision of goods and services (water, clean air, food, timber, etc.) to climate, water, and soil nutrient regulation services (for example, trees filtering air pollution), as well as cultural services (recreation in nature, biodiversity supporting ecotourism, etc.) (Brears, 2022).

¹⁶ “The financial, social, and political elite of the city, which is constructed through a continuous process of extractivism à la ‘after me, the flood,’ reinvents itself as the source of alternative solutions and resilience. On the one hand, the new ‘green’ vocabulary, ‘sustainable development,’ etc., has become a new illusion through which major speculators, financiers, and developers accelerate environmental exploitation and trigger new waves of mega-investments. On the other hand, Nature-Based Solutions, in the case of our city, also refer to the way in which ‘nature’ is mobilized to ‘resolve’ the crisis of legitimacy of capitalism,” Rozalinda Borcilă, independent artist (personal interview, Dohotaru 2023).

Approaches to ecosystem services are ambivalent, but, broadly speaking, two responses can be identified: one emerging from political ecology, a minority position in Romania, and another from technocratic ecology, dominant in the local context, which does not question the neoliberal premises of the system. In conventional left-right terms, the first, more political current, situates itself on the left, while the dominant administrative current aligns with the right of the political spectrum. Likely at the centre, there is general awareness of the limitations of the concepts of natural capital and ecosystem services, yet acceptance of this convention as a pragmatic means to mitigate the impact of environmentally destructive projects, by quantifying in counterbalance the services provided by nature, not only those generated by industry, commerce, or agriculture.

“I understand the idea, but I do not like the term services. It sounds overly economic and suggests that nature and humans are in a business relationship. Which is nonsense,” states political scientist and environmental activist Hans Hedrich. “NBS and ecosystem services are two highly politicised concepts and are, by their nature, also very anthropocentric,” notes architect Iulia Hurducaș, who mobilised to limit construction in the southern area of Făget Forest at Ciurila, proposing, together with residents and biologists, the extension of the natural area southward.

What we breathe, hear, and smell depends on nature, and in this sense, ecosystem services are immeasurable, non-transactional, and impossible to quantify. Ecosystem services represent a neoliberal *reductio ad absurdum*, and, in a certain sense, so do Nature-Based Solutions, because in a productivist and consumerist universe of commodified values, the basic elements that sustain life must be “scientifically” demonstrated through quantification and, eventually, reduced to a single monetary value.

If we approach NBS from a depoliticised perspective, without attentiveness to issues of social justice, segregation, or gentrification—as they initially appeared in European Commission documents—such techniques become a sustainability fix, that is, a technocratic formula for promoting urban growth wrapped in green rhetoric. Another risk is that NBS may provide the epistemic foundation for a greening of capitalism (Haase, 2017), without greenhouse gas emissions being reduced at a sufficiently accelerated pace. “Hybrid labour”¹⁷ is a more appropriate term than “ecosystem services” or “natural capital,” as it intertwines ecological feminism with historical materialism and reframes, in a more progressive manner, terms that have become technocratic but originate in neoclassical political economy (Battistoni, 2016).

Good Practices of NBS in Romanian Cities

There are a few good practices in Nature-Based Solutions, particularly given that official regulations—at least concerning the management of flood-prone areas—were adopted in Romania only in 2023, while in other areas they are absent.

¹⁷ The limits of the concept of hybrid labor are acknowledged, yet neither socialists nor feminists sought, through their claims, to reduce life to labor. However, the recognition of properly valued labor is a precondition for combating exploitation arising from other economic paradigms that reduce nature either to extraction or to an economism that merely adjusts the dominant paradigm, albeit with a certain degree of inclusiveness. The emphasis on hybrid labor is also a reivindicative gesture on behalf of non-proprietary custodians of nature, often in precarious positions, as well as for the reproductive labor of nature and of non-human animals.

The most frequently cited example is Văcărești Natural Park as an urban natural area, and, as an extra-urban solution, the ecoduct on the Sebeș–Lugoj motorway designed for large carnivores. Both infrastructures were achieved after several years of civic activism and in tension with the dominant “development” paradigm—whether in relation to road infrastructure expansion, which such investments were said to delay, or to real estate development, which would be constrained in areas designated as protected natural zones. A more recent case is the Morii Canal in Reghin¹⁸.

Incorrect examples abound among the specialists and activists consulted: the planting of alien, invasive tree species; the insistence on maintaining lawn monocultures instead of meadows or community gardens; parks with sealed surfaces; rivers embanked with high walls, without access to the water or the riverbank; populating parks with imported, genetically modified flower species lacking pollen and producing no seeds; the subsequent application of chemical substances that kill local insect, bird, and amphibian fauna; the mineralization of former grassed roadside ditches; excessive and improper pruning of trees leading to their desiccation; the removal of dead wood from parks and peri-urban forests; leaves bagged and removed in autumn—and the list remains open.

What is particularly lacking in the Romanian context are good practices related to deliberative processes that would encourage renaturalization, as well as other large-scale examples of Nature-Based Solutions.

An exception is the ongoing project for the renaturalization and development of Parcul Est, estimated at 150 million euros¹⁹ Through which Cluj City Hall organised an international design competition based on a design brief, with civil society contributing a minimally invasive planning solution. The proposal advanced by civic activists, specialists, and residents—through petitions and protests preceding the competition, ten years after the launch of the SOS Parcul Est campaign—was subsequently confirmed by other Cluj residents in a digital questionnaire answered by several hundred participants, with earlier options for real estate development or the construction of an aqua park becoming marginal.

To understand the importance of deliberative processes in the Romanian context, where in-depth participatory methods are largely absent, it is worth recalling Tempelhofer Park. Tempelhofer Park in Berlin, located on the site of the former airport, is a paradigmatic example of participation and deliberation for Nature-Based Solutions, conceived as a democratic process rather than merely as ecological engineering. The site became one of the most popular public green spaces in Berlin, rather than undergoing planned real estate development, following a citizen referendum in 2014, combined with public meetings, forums, presentations, and consultations conducted both in person and through a digital platform accessed by 68,000 users, 2,500 of whom provided input. Additionally, 7,000 questionnaires were distributed, and moderated focus groups were organised to ensure participation from disadvantaged groups.

¹⁸ “We outlined three alcoves on the left bank using stakes and fascines made of willow branches. Their role is to vary the water flow velocity and thus wash away any deposits carried by the water. These are temporary structures, intended to function until tree roots develop. In addition, variations in water speed and the resulting eddies create preferred habitats for aquatic organisms. In this way, we facilitate the growth of biodiversity, which also contributes to and serves as an indicator of water quality. We are to complete the left bank and construct similar alcoves on the right bank, which is steeper. Thus, we stabilize the slope, which has partially slipped,” stated architect Klaus Birthler, representative of the unDAverde Association; see <https://www.zi-de-zi.ro/2023/03/15/lucrari-de-renaturare-la-canalul-morii/>.

¹⁹ More than one third of the total amount consists of expropriations.

After the airport closed in 2008, 3,500 citizens responded to a questionnaire in 2009 regarding the future of the site, and 2,000 visited the area during an Open House-type event, indicating their preferences for its use as a leisure space. Citizens chose to transform the former runway into cycling and running paths. Some lawns were converted into meadows, while others were converted into community gardens or biodiversity conservation areas. Imaginative urban furniture made from natural materials was installed. Citizen engagement in urban planning and ecosystem management is more costly than a technocratic-administrative approach, requires greater trust, and entails greater planning flexibility (Ham & Klimmek, 2017, pp. 282–283). Although the airport building itself remains unused and disputes have arisen regarding its potential functions, the newly created outdoor public space is extensively utilised.

The Relevance of Environmental and Biodiversity Studies Included in Infrastructure Projects

Respondents' experience indicates that environmental studies are rarely relevant²⁰ in large-scale infrastructure projects. The impact of such studies depends more on the ethics of specialists than on systemic conditions ensuring compliance with their conclusions. Since environmental impact assessments are financed by the beneficiary—whether private or public—the results tend to align with the developer's intentions. Very often, if no protected natural area exists within the studied perimeter, the summary conclusions simply state that there is no impact on biodiversity²¹. Environmental studies are frequently drafted in a bureaucratic, formulaic language that relies on copy-paste from other documents, conveying neither substantive knowledge nor persuasive force²².

Another major issue concerns the professionalisation, autonomy, and politicisation of approval-granting institutions, which rarely verify the legality of environmental permits or other authorisations required for infrastructure projects. In this context, a possible solution to enhance the impact of environmental studies would be to ensure they are financed independently of the beneficiary of the investment. In several Western European states, urban planning instruments are developed within a public planning system rather than merely regulated, and zoning plans are not outsourced to private investors, as is often the case in Romania.

"According to European—and therefore domestic—legislation, environmental and biodiversity studies should play a significant role in the opportunity analysis of urban infrastructure projects. Unfortunately, classical cost-benefit analysis (CBA) methods exhibit a substantial bias against quantifying biodiversity benefits, ecosystem services, and other

²⁰ "What, should we make a detour for a little frog?" was the reaction of political decision-makers to the proposal of UBB entomologist László Rákossy, who recommended in an environmental impact study that a section of motorway bypass a pond (personal interview 2023).

²¹ This is the case of the Carbochim Zonal Urban Plan (PUZ), along the Someş River, where 13 hectares of buildings are being demolished for the construction of a mall, hundreds of trees are being cut down, and the riverbanks are being modified through the PUZ to accommodate a 4,000-space parking lot, while independent studies not commissioned by the developer highlight the importance of preserving riparian habitats along the course of the Someşul Mic in the industrial area of Cluj.

²² Eleonora Mircescu, Ecotop Oradea (personal interview 2023).

natural elements. As a result, and due to the inertia of previous experience, grey solutions almost invariably emerge as the preferred options for implementation.

In urban areas, which are under considerable pressure due to population migration from rural zones and the challenges posed by climate change, the transition toward methods that balance blue-green solutions with grey ones—while clearly favouring Nature-Based Solutions—is the only sustainable way to address the multiplicity of challenges. International examples already exist, such as the ‘Room for the River’ program in the Netherlands, sponge cities in China, and engineering with nature in the United States, demonstrating the feasibility of transitioning toward a new paradigm. Unlimited concreting, asphaltting, and surface impermeabilization are no longer acceptable forms of urban development, both from an economic standpoint and in terms of biodiversity, health, and quality of life.” – Dan Rădulescu, Independent Consultant / Hydraulic Engineering, Water Quality Protection, Sewerage / United Waters of Romania.

What Does a Protected Natural Area Look Like in a City?

Three main characteristics define a protected natural area in an urban context:

1. Easy access, due to proximity to the city or location within it, facilitated by pedestrian pathways leading to the protected area—preferably made of permeable materials in its vicinity—and by public transport connections. The importance of “access for multiple social categories,” as emphasised by RNU vice-president Nicoleta Marin²³, must also be considered from the perspective of income disparities. A one-day school excursion into nature, in the absence of public transport, may cost several hundred lei per student, which poses difficulties for a family with two adults and two children earning below the minimum decent living threshold (approximately three-quarters of Romania’s population), estimated in 2023 at 10,000 lei per month.

2. Biodiversity derived from minimally invasive, reversible planning; from ecological corridors that are, as far as possible, continuous; and from the preservation of certain areas without pathways, with perennial meadows or retractable bridges during nesting periods, alongside the creation of wetlands and floodable zones that naturally limit access. Biodiversity can also be enhanced through renaturalization projects and the creation of green corridors²⁴, as well as by maintaining and strengthening the greening of major grey infrastructure projects that have evolved into green-blue systems over several decades and should be conserved as

²³ Personal interview, 2023.

²⁴ Renaturalization proposals have most frequently emerged in Bucharest, concerning the Dâmbovița River, Lake Morii, or the chain of lakes in the northern part of the capital: “The canalization of the Dâmbovița through concreting is one of the historical mistakes that Bucharest must correct in order to become a city fit for living. I believe that Băneasa Forest and the chain of lakes in the north of the capital must be enhanced and integrated into the public circuit as quickly as possible in order to save them from real estate pressure” – Alex Oprița, Bucharest Community Foundation, coordinator of the Environmental Platform for Bucharest (personal interview 2023).

such, abandoning practices of dredging and vegetation removal in riverbeds or artificial lakes where small “deltas” have formed²⁵.

3. Non-formal education conducted within the urban natural area, which depends not only on a sound management plan but also on committed funding from local authorities, ensuring custodianship through a dedicated structure at the municipal or metropolitan level. This should function in partnership with other public and associative institutions, including universities, schools, the National Agency for Environment and Protected Areas, research institutes, Romsilva, water companies, Romanian Waters, and relevant NGOs²⁶.

Despite offering greater protection than conventional green spaces, the characteristics of an urban natural area imply a significantly higher degree of human–nature cohabitation than classical protected areas. For this reason, “(1) a natural area must not become a burden for the city (people must be able to move normally and coherently within the urban fabric); (2) biodiversity protection is not synonymous with the total removal of people; (3) natural areas are protected together with residents, not against them,” emphasizes landscape architect Diana Culescu (personal interview 2023).

“Access to water is not easy in certain neighbourhoods, except for a few designated bathing spots,” states Andrei Acs (CAPDD Bihor), due to embankments and fences along riverbanks. Nevertheless, the Crișul Repede in Oradea is one of the few rivers in a large city that has not been entirely concreted, with Silvaș among the limited areas arranged in a minimally invasive manner, allowing access to the water. Human access to natural riverbanks does not preclude the proposal for a protected natural area along the Crișul Repede in Oradea, nor the cohabitation of people with other species, particularly given the return of beavers and otters to rivers in several Romanian cities—along the Someș in Satu Mare, the Mureș in Arad, and the Someșul Mic in Cluj, among others.

Several Provisional Conclusions: Obstacles and Opportunities in Creating Natural Areas in Metropolitan Areas

The absence of ecological public policies grounded in a coherent legislative framework and subsequent budget allocations, the lack of ecological education, in some cases the scarcity of highly biodiverse land in polluted cities, and the absence of dedicated funding for conservation and renaturalization constitute significant obstacles to the creation and

²⁵ As in the case of the “Delta” near the island on the Jiu River in Târgu Jiu, time has renaturalized dozens of similar sites in Romanian cities; see Alin Ion, “The Delta on the Jiu, Formed Naturally on the Reservoir in Târgu Jiu. It Has Become a Nesting Site for Rare Species,” *adevărul.ro*, 17 September 2023, <https://adevarul.ro/stiri-locale/targu-jiu/delta-de-pe-jiu-formata-natural-pe-lacul-de-2300625.html>, or <https://www.facebook.com/NaturaTarguJiu/photos>.

²⁶ A successful example is Văcărești Natural Park, initially an NGO-led initiative, later taken into custodianship by the municipal administration. The anticipated legislative amendments to the Government Emergency Ordinance on protected natural areas signal a return to shared custodianship, aimed at involving civic partners.

management of urban natural areas as ambassadors of Nature-Based Solutions, where, beyond the protected area itself, a full spectrum of NBS could be implemented.

Private real estate plans often conflict with the protection of the commons. Even General Urban Plans (PUGs) are not consistently respected in proposals advanced by specialists or activists for green rings, while private investors frequently develop detailed zoning plans. There are no functional metropolitan structures capable of managing peri-urban natural areas. Many plots are not cadastrally registered, others lack clarified legal status. Numerous lands suitable for designation as natural areas or green-blue corridors are not publicly owned by local administrative units, but belong to other institutions reluctant to support ecological protection and access (e.g., Romanian Waters, Hidroelectrica, Romsilva, water companies managing sanitary protection zones, the State Domains Agency, the National Land Improvement Company, etc)²⁷.

Nevertheless, several positive examples may inspire the creation of urban natural areas. The Tâmpa Nature Reserve in Braşov has been protected since the communist period and attracts tens of thousands of tourists annually. Văcăreşti Natural Park has gained substantial media visibility over the past decade and may inspire similar initiatives, offering educational and nature observation activities organised by both the Park Administration and the Văcăreşti Natural Park Association. Parcul Est in Cluj represents the first major urban renaturalization project valued at tens of millions of euros. These examples, however, have not yet generated the critical mass needed to drive a sustainable green shift in public policy.

Opportunities to encourage quality urban planning and to rethink public space are also emerging through international design competitions—at Lake Morii, in Mamaia within the Constanţa metropolitan area, and along the Someş in the initial design phase, with an emphasis on renaturalization at least in certain segments of the projects, integrating Nature-Based Solutions with hybrid approaches. The most recent example of renaturalization incorporated into a broader urban planning project concerns Mamaia, where dunes are being recreated and revegetated with native tree species. The “dominant wind direction from the beach dictates the geometry of the landscape interventions and the fact that vegetation will grow 75% smaller than normal from the outset due to harsher climatic conditions, particularly wind exposure,” explains designer Vlad Sebastian Rusu, winner of the Mamaia beach renaturalization competition²⁸ (personal interview 2023).

For Nature-Based Solutions to be effective, they must not be confined to urban natural areas or ecological corridors, even if these are, for the moment, the primary sites of implementation. Due to monocultures in rural areas and the chemicalization of agriculture, certain urban zones may now host greater biodiversity than rural areas that have become industrialised (Schilthuizen, 2018; Gandy, 2022). Medium- and long-term institutional, legislative, and systemic transformations are therefore necessary: “Small-scale, time-limited, pilot-based interventions often fail to address the full complexity of societal challenges and

²⁷ “The creation of protected natural areas would generate numerous opportunities, especially across large surfaces or extended corridors, through interconnection, providing in or near the city opportunities for which residents currently travel tens of kilometers in order to enjoy a few hours in nature” – Radu Mititean, Executive Director of the Napoca Cycling Tourism Club, member organization of the Urban Nature Network (personal interview 2023).

²⁸ Lead author: Studio 82 SRL and Vlad Sebastian Rusu Individual Architecture Office. Co-authors: architect Vlad Sebastian Rusu, architect Octav Silviu Olănescu, architect Andra Vlădoiu, architect Andrada Pinte, and architect Petrică Maier-Drăgan. Specialty collaborator: landscape architect Alexandru Mexi. See <https://oar.archi/concursuri/oar/litoral-mamaia-constanta/galerie-proiecte/100-md1958-studio-82>.

rarely deliver the biodiversity and human well-being outcomes expected from NBS” (Meyer & Hessenberger, 2022, p. 25).

For scaling²⁹ to function effectively, an eco-developmental state is required, alongside major public investments (Dohotaru, 2024), not merely improved market regulation. A generic solution would be to finance NBS through environmental taxes, restructure programs of the Environmental Fund Administration, and redirect substantial funding toward such techniques, to be implemented by both public and private operators, complemented by grants and micro-grants for associations and civic initiative groups.

Last but not least, in order for social change to occur to mitigate climate change, glocal, necessarily interdisciplinary groups engaged in applied research and advocacy for urban natural areas and Nature-Based Solutions must articulate more compelling and less niche narratives, extending beyond traditional conservationist frames: “One of the key communication challenges, beyond disciplinary divides, is that within disciplines we tend to construct our messages as collections of facts and methods that make sense to our colleagues, but have little meaning for others. That is, they are ineffective stories. Creating momentum for NBS requires effective communication well beyond disciplinary boundaries. For this, we must tell better stories” (Lydon et al., 2017, pp. 357–358).

A more compelling narrative may indeed be the umbrella concept of Nature-Based Solutions itself—as a laboratory for experimenting with sensations and observations in open air, as a school of democracy involving multiple specialisations and civic passions, which in turn generates new narratives through which we can imagine cities that are less polluted, less congested, and less stress-inducing than at present.

Bibliography

- Braubach, Matthias, Andrey Egorov, Pierpaolo Mudu, Tanja Wolf, Catharine Ward Thompson, Marco Martuzzi. 2017. „Effects of Urban Green Space on Environmental Health, Equity and Resilience”. In Nadja Kabisch, Horst Korn, Jutta Stadler, Aletta Bonn (coord.), *Nature-based Solutions to Climate Change Adaptation in Urban Areas. Linkages between Science, Policy and Practice*. Cham: Springer Open. https://doi.org/10.1007/978-3-319-56091-5_11.
- Brears, Robert C. 2020. *Nature-Based Solutions to 21st Century Challenges*. New York: Routledge. <https://doi.org/10.4324/9780429294600>.
- Brears, Robert C. 2022. *Financing Nature-Based Solutions. Exploring Public, Private, and Blended Finance Models and Case Studies*. Londra: Palgrave Macmillan. https://doi.org/10.1007/978-3-030-93325-8_1.
- Corvellec, Hervé, Alison Stowell, Nils Johansson. 2021. „Critiques of the circular economy”. *Journal of Industrial Ecology*, 26: 421–432. <https://doi.org/10.1111/jiec.13187>.
- Direcția Generală Mediu (Comisia Europeană). 2012. *Orientări privind cele mai bune practici în vederea limitării, atenuării sau compensării impermeabilizării solurilor*. Luxemburg: Oficiul pentru Publicații al Uniunii Europene.

²⁹ One of the challenges in making such an eco-developmental current mainstream is that “data, measurements, and standards are lacking for NBS” (Brears 2022, 42).

- Dohotaru, Adi. 2024. „Ecologie politică în spațiul românesc: în ce măsură e conștientizată urgența climatică?”. In Sorin Gog, Victoria Stoiciu (coord.), *Ce urmează după neoliberalism? Pentru un imaginar politic alternativ*. Cluj-Napoca: Presa Universitară Clujeană. <http://www.editura.ubbcluj.ro/bd/ebooks/pdf/-3800.pdf>.
- Gandy, Matthew. 2022. *Natura Urbana: Ecological Constellations in Urban Space*. Cambridge: The MIT Press. 10.7551/mitpress/10658.001.0001.
- Haase, Annegret. 2017. „The Contribution of Nature-Based Solutions to Socially Inclusive Urban Development – Some Reflections from a Social-Environmental Perspective”. In Nadja Kabisch, Horst Korn, Jutta Stadler, Aletta Bonn (coord.), *Nature-based Solutions to Climate Change Adaptation in Urban Areas. Linkages between Science, Policy and Practice*. Cham: Springer Open. https://doi.org/10.1007/978-3-319-56091-5_13.
- Ham, Chantal, Helen Klimmek. 2017. „Partnerships for Nature-Based Solutions in Urban Areas – Showcasing Successful Examples”. In Nadja Kabisch, Horst Korn, Jutta Stadler, Aletta Bonn (coord.), *Nature-based Solutions to Climate Change Adaptation in Urban Areas. Linkages between Science, Policy and Practice*. Cham: Springer Open. https://doi.org/10.1007/978-3-319-56091-5_16.
- Iojă, Cristian. 2022. *Starea mediului în București. Raport de cercetare*, <https://platformademediu.ro/cercetare/1>.
- Iojă, Cristian, Mihai-Răzvan Niță, Diana-Andreea Onose, Constantina-Alina Hossu, Denisa-Lavinia Badiu, Sorin Cheval, Ana-Maria Popa, Cristina Gabriela Mitincu. 2019. *Soluții verzi pentru orașele din România*. București: Ars docendi.
- Kabisch, Nadja, Horst Korn, Jutta Stadler, Aletta Bonn. 2017. „Nature-Based Solutions to Climate Change Adaptation in Urban Areas – Linkages Between Science, Policy and Practice”. In Nadja Kabisch, Horst Korn, Jutta Stadler, Aletta Bonn (coord.), *Nature-based Solutions to Climate Change Adaptation in Urban Areas. Linkages between Science, Policy and Practice*. Cham: Springer Open. https://doi.org/10.1007/978-3-319-56091-5_1.
- Kronenberg, Jakub, Tomasz Bergier, Karolina Maliszewska. 2017. „The Challenge of Innovation Diffusion: Nature-Based Solutions in Poland”. In Nadja Kabisch, Horst Korn, Jutta Stadler, Aletta Bonn (coord.), *Nature-based Solutions to Climate Change Adaptation in Urban Areas. Linkages between Science, Policy and Practice*. Cham: Springer Open. https://doi.org/10.1007/978-3-319-56091-5_17.
- Krystin Arneson, „Tempelhof: The single site that embodies Berlin”. <https://www.bbc.com/travel/article/20221031-tempelhof-the-single-site-that-embodies-berlin>. Retrieved 15.11.2023.
- Lydon, Patrick M., David Maddox, Robin Lasser, Baixo Ribeiro, Carla Vitantonio. 2023. „1+1=3: stories of imagination and the art of nature-based solutions”. *Elgar online*. <https://doi.org/10.4337/9781800376762.00027>.
- OECD. 2021. *Scaling up Nature-based Solutions to Tackle Water-related Climate Risks: Insights from Mexico and the United Kingdom*. Paris: OECD Publishing. <https://doi.org/10.1787/736638c8-en>.
- Pan, Haozhi, Jessica Page, Rui Shi, R. et al. 2023. „Contribution of prioritized urban nature-based solutions allocation to carbon neutrality”. *Nature Climate Change* 13: 862-870. <https://doi.org/10.1038/s41558-023-01737-x>.
- Planul de Acțiune Climatică Cluj-Napoca 2030. 2023. <https://files.primariaclujnapoca.ro/2023/07/26/Prezentare-Banca-Mondiala-Cluj-Climate-Action-Plan-CIIC-26-iulie-23-vf.pdf>.
- Schilthuizen, Menno. 2018. *Darwin Comes to Town: How the Urban Jungle Drives Evolution*. New York: Picador.

- Ministerul Dezvoltării, Lucrărilor Publice și Locuințelor. 2023. *Ghid de bune practici privind măsuri de adaptare aplicabile clădirilor existente și clădirilor noi, situate în zone inundabile, indicativ RTC 11-2022*. <https://legislatie.just.ro/Public/DetaliiDocumentAfis/275559>.
- Meyer, Kristin, Daisy Hessenberger. 2022. *Prototype database of international Nature-based Solutions case studies: supplementary report to the CCICED special policy study on value assessment of Nature-based Solutions*. Gland: IUCN.

NEGOTIATION AND COMMUNICATION – A THEORETICAL PERSPECTIVE ON NEGOTIATION AND COMMUNICATION REGARDING GREEN INDUSTRIAL POLICY IN THE CONTEXT OF THE EUROPEAN GREEN DEAL

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Abstract: *Green industrial policy is a central pillar of the European Green Deal, aiming to steer the European Union's economy toward sustainability, climate neutrality, and long-term competitiveness. In this context, negotiation and communication play an essential role in the formulation, implementation, and acceptance of green public policies, involving a diverse range of institutional, economic, and social actors. This study provides an analytical perspective on the negotiation and communication processes associated with green industrial policy, examining how divergent interests, power asymmetries, and economic constraints shape political decision-making at the European level. Employing a qualitative research strategy, using specific methods such as document analysis, the paper explores relevant conceptual frameworks from negotiation theory and strategic communication, highlighting the importance of multilateral dialogue, transparency, and consensus-building in advancing the green transition. It also analyzes the challenges of communicating green policies to the public and industry, as well as the role of strategic narratives in legitimizing the European Green Deal. The conclusions emphasize that the success of green industrial policy depends not only on economic and regulatory instruments, but also on the effectiveness of negotiation and communication processes among the actors involved.*

Keywords: *European Green Deal, green industry, negotiation, communication, governance, actors.*

Introduction

Over the past decades, the European Union (EU) has faced profound structural challenges generated by climate change, accelerated technological transformations, the globalization of value chains, and increasing geopolitical competition (European Commission, 2019). These dynamics have required a reconsideration of the economic development model and of the role of public policies in ensuring a sustainable, competitive, and inclusive transition.

The European Green Deal (EGD) does not constitute merely an environmental policy, but rather an integrative framework that redefines the Union's economic, industrial, and social priorities and capacities. It seeks to decouple economic growth from the use of natural resources, reduce greenhouse gas emissions, protect biodiversity, and promote a circular economy, without compromising industrial competitiveness and social cohesion (European Commission, 2020a). Consequently, the EGD has direct and indirect implications for all industrial sectors, influencing investment, innovation, the structure of supply chains, and relationships among economic actors.

EU industrial policy has undergone a significant revitalization in recent years, driven by a growing awareness of the importance of industry as a engine of economic growth, employment, and strategic autonomy. Within the framework of the EGD, industrial policy acquires a new dimension, being oriented toward supporting the green and digital transitions while simultaneously maintaining the global competitiveness of European industry (Aghion et al., 2021). The new European green industrial policy promotes investment in clean technologies, renewable energy, energy efficiency, green hydrogen, and digitalization, with the aim of achieving the structural transformation of industry.

Nevertheless, the implementation of EGD measures in the industrial sector generates major tensions and dilemmas. On the one hand, industry is a key actor in achieving climate objectives; on the other hand, it faces high compliance costs, carbon leakage, and uncertainties regarding competitiveness in international markets (Tagliapietra & Veugelers, 2020a). These challenges highlight the need for effective governance, based on dialogue, negotiation, and strategic communication among European institutions, national governments, the business community, and civil society. As in any major transformation, there will be winners and losers, particularly in the short term. A strategy based solely on climate objectives and instruments could miss the aims of the EGD when the economic sector and citizens fail—or simply refuse—to adapt. The need to meet climate and environmental objectives while ensuring economic and social sustainability requires a transformation that generates sufficient benefits to compensate the losers (Tagliapietra & Veugelers, 2020a). This places industrial policy at the center of the EGD.

Negotiation and communication play a central role in the process of designing and implementing the industrial policy associated with the EGD. The complexity of the green transition requires the coordination of the divergent interests of the actors involved—European institutions, Member States, energy-intensive industries, SMEs, trade unions, environmental organizations, and even consumers (Sabel & Zeitlin, 2021). Thus, negotiation becomes essential in setting intermediate objectives, financial support mechanisms, implementation timelines, and regulatory standards. The absence of an inclusive negotiation process can lead to resistance from industry, a loss of public policy legitimacy, and difficulties in implementation at national and sectoral levels. In this regard, social dialogue and stakeholder consultation are regarded as fundamental instruments for ensuring a just transition (ILO, 2015).

Communication, in turn, represents a determining factor in the perception and acceptance of the EGD by industrial actors. Effective strategic communication contributes to clarifying objectives, reducing uncertainty, and building a framework of trust between policymakers and industry. Recent studies show that the lack of coherent communication can amplify fears related to job losses, rising production costs, and declining competitiveness (Lockwood, 2021). Thus, negotiation and communication are not merely auxiliary

instruments, but essential components of EGD governance, directly influencing the success or failure of the associated industrial policy.

Negotiation and dialogue are not simple administrative procedures; they reflect deep normative and political tensions within modern societies. Green industrial policy entails trade-offs between economic efficiency and ecological sustainability, between market pressures and the global climate imperative. In this equation, negotiation becomes a means of translating divergent values into concrete policy outcomes. The literature considers that the success of complex policies depends on the ability of actors to engage in genuine dialogue that ensures transparency, accountability, and coherence across decision-making levels. Dialogue must be not only consultative but also deliberative, providing a framework in which arguments are articulated, tested, and integrated into a broad consensus (Sabel & Zeitlin, 2021; Skovgaard, 2021a; Ciot, 2021).

In the case of Member States, the implementation of the EGD generates a complex mix of opportunities and challenges, with a structural need for profound economic transformation, particularly in regions and sectors with high carbon emissions, such as industry, transport, or energy (Ciot & Butișca, 2025). Negotiation thus becomes an indispensable instrument—both in aligning national policies with European objectives and in mediating interests among governmental institutions, private-sector stakeholders, and local communities. Building on these considerations, the paper examines how green industrial policy can be effectively negotiated and implemented at different levels—European, national, regional, and local—starting from the central premise that the success of the EGD depends to a large extent on dialogue, cooperation, and adaptation to the specificities of each context.

Given the complexity of the relationship between the EGD, industrial policy, and processes of negotiation and dialogue, the present study seeks to address the following research questions:

1. What role does negotiation among European institutions, Member States, and other relevant stakeholders play in the process of formulating and implementing the new green industrial policy associated with the EGD?
2. To what extent do current mechanisms of dialogue and communication contribute to an equitable and efficient industrial transition?

In order to address the formulated research questions, the paper employs a qualitative research strategy based on methods such as document analysis (official EU documents, including the European Commission Communication on the European Green Deal, the EU Industrial Strategy, documents related to just transition mechanisms, as well as studies and reports produced by relevant institutions). The choice of qualitative research is justified by the specific nature of policy analysis and supports the objectivity, validity, and consistency of the research. The study integrates a conceptual analysis of the notions of green industrial policy, negotiation, and communication within the context of European governance. This approach allows for the identification of the main theoretical frameworks and the relationships among the actors involved in the decision-making process. In addition, academic studies and reports by international organizations are used to contextualize the debate and to highlight best practices and limitations. The period of analysis covers December 2019 to January 2026.

The chapter is structured into seven main sections. The first, introductory section outlines the framework of the discussion and the motivation for the research. The following section provides an overview of the relevant literature, addressing the theoretical and contextual frameworks of negotiation and dialogue in the evolution of green industrial policy at the EU level. The third section is dedicated to the role of negotiation and communication in

the formulation and implementation of industrial policies associated with the green transition. The fourth section offers an analysis of the negotiation process preceding the adoption of legislative initiatives for the industrial sector. The fifth section focuses on Romania and its positioning within negotiations concerning the transition of the industrial sector. The sixth section examines the limits and challenges of the negotiation process. Finally, the last section presents the conclusions and implications for future public policies.

Literature Review

The EGD, launched by the European Commission in December 2019, represents the EU's central strategic framework for achieving the transition to climate neutrality by 2050 (European Commission, 2019). The initiative emerged in a context marked by the intensification of climate change impacts, increasing pressure from environmental organizations, and the need to adapt European economies to new global technological and geopolitical dynamics. The EGD is conceived as a transformative project that goes beyond the scope of environmental policy and redefines the Union's economic development paradigm (Bongardt & Torres, 2020). In this context, the implementation of this complex strategic framework requires not only economic and regulatory instruments, but also intensive processes of negotiation, political communication, and dialogue among a multitude of involved actors.

The academic literature on the EGD and green industrial policy is continuously expanding and can be structured along several main lines. A first strand of studies analyzes the EGD as a growth strategy and an instrument of economic transformation (Bongardt & Torres, 2020; Aghion et al., 2021). These works highlight the Pact's potential to stimulate innovation and to position the EU as a global leader in green technologies.

A second strand focuses on implementation challenges, including the risks of competitiveness loss and carbon leakage. Authors emphasize the importance of instruments such as the Carbon Border Adjustment Mechanism (CBAM) and targeted state aid (Tagliapietra & Veugelers, 2020a). These analyses underscore the role of international negotiation and trade dialogue in supporting green industrial policies.

A third research strand explores the governance and participation dimension, emphasizing the importance of actor dialogue and deliberative processes (Sabel & Zeitlin, 2021; Skovgaard, 2021a). These studies argue that the success of the EGD largely depends on the ability of European institutions to build consensus and to communicate effectively with industrial and social actors.

Negotiation, in theoretical terms, is defined as a process through which two or more parties with partially divergent interests seek to reach a mutually acceptable agreement (Fisher, Ury & Patton, 2011). At the EU level, negotiation acquires a multilateral and institutionalized dimension, involving Member States, European institutions, industry, trade unions, and civil society (Sabel & Zeitlin, 2012; Hooghe & Marks, 2001). Green industrial policy, promoted through the EGD, entails trade-offs between environmental objectives and economic considerations such as industrial competitiveness, employment, and energy security (European Commission, 2019; Aiginger & Rodrik, 2020). In this context, political negotiations become essential for building legitimate consensus and for establishing green industrial policies that are both politically acceptable and sustainable in the long term (Meunier & Nicolaïdis, 2019; Rodrik, 2014).

Political communication plays a fundamental role in supporting these negotiation processes. According to McNair (2018), political communication encompasses the set of strategies through which political actors convey messages intended to shape public perceptions and secure support for political decisions. In the case of the EGD, political communication is used to justify the necessity of the green transition, to reduce social resistance, and to construct a positive narrative around the structural transformation of the economy (European Commission, 2019; Lockwood, 2018). The literature shows that public acceptance of climate policies is closely linked to the way these policies are communicated, particularly with regard to the distribution of the costs and benefits of the transition (Stokes & Warshaw, 2017). The absence of effective communication can lead to distrust, polarization, and political opposition, as observed in debates over the costs of the energy transition (Gough, 2017; Lockwood, 2018).

Social and institutional dialogue represents an essential component of EGD governance. Habermas (1984) emphasizes the importance of rational dialogue and consensus-oriented communication in democratic societies. Applied to green industrial policy, this theoretical framework highlights the need to involve actors affected by the green transition in the decision-making process. Dialogue between European institutions and industry is crucial for adapting policies to economic realities, while dialogue with civil society contributes to strengthening the democratic legitimacy of adopted decisions (Sabel & Zeitlin, 2012; European Commission, 2023a).

Green industrial policy also entails continuous negotiation between the European and national levels. According to Scharpf (1999), multi-level governance generates structural constraints that may limit the capacity of political actors to act. In the context of the EGD, Member States negotiate implementation flexibility, the protection of strategic industries, and the distribution of transition costs, using experimentalist governance mechanisms and multilateral consultation procedures (Aiginger & Rodrik, 2020; Meunier & Nicolaïdis, 2019). These negotiations are accompanied by communication strategies aimed at justifying national positions both at the European level and before domestic audiences, thereby increasing policy acceptability and reducing the risks of social opposition (Lockwood, 2018; Stokes & Warshaw, 2017).

Another important aspect concerns the role of political narratives in promoting green industrial policy. According to Hajer (1995), environmental policies are supported and contested through discourses and symbolic constructions. The EGD is presented not only as an ecological necessity, but also as an economic and industrial opportunity. This discursive strategy facilitates political negotiation and increases public acceptance of structural reforms (Skovgaard, 2021a).

In public policy, negotiation goes beyond the technical dimension of compromise, becoming a governance mechanism through which preferences are articulated, interests reconciled, and collective solutions constructed. Dialogue represents a broader and more continuous form of interaction, encompassing consultations, debates, and institutionalized participation mechanisms. Its role is to reduce informational asymmetries, facilitate mutual learning, and create the conditions for effective negotiation (Sabel & Zeitlin, 2021). In the context of green industrial policy, dialogue is therefore essential for integrating economic, social, and environmental dimensions into a coherent framework for action.

A central aspect in the conceptualization of the EGD concerns its mode of governance. The implementation of green industrial policies requires multi-level coordination, involving European institutions, national governments, regional authorities, economic actors, and civil

society. The literature on European governance emphasizes the importance of participatory approaches and processes of “experimentalist governance,” which allow for the continuous adjustment of policies based on feedback from the actors involved (Sabel & Zeitlin, 2021). Negotiation plays an essential role in this process, serving as the mechanism through which the divergent interests of industrial actors, Member States, and European institutions are reconciled. For example, the setting of emission reduction targets, implementation timelines, and financial support mechanisms involves intense negotiations at both the European and national levels (Skovgaard, 2021a). Energy-intensive industries, such as steel or chemicals, often call for longer transition periods and compensatory instruments in order to maintain their competitiveness (ibid.).

Social dialogue and stakeholder dialogue are also regarded as key elements in ensuring the legitimacy of the EGD. The concept of a “just transition” emphasizes the need to involve trade unions, employers, and local communities in decision-making processes in order to mitigate the social impact of industrial restructuring (ILO, 2015). Thus, green industrial policy is not merely a technocratic exercise, but also a deeply political and social one.

Overall, the specialized literature converges on the idea that the EGD represents an unprecedented shift in the field of green industrial policy, in which negotiation, dialogue, and multi-level coordination are necessary conditions for achieving the ambitious objectives undertaken.

The Architecture of Governance and Negotiation Mechanisms in the European Union’s Green Industrial Policy

Beyond its normative dimension, the EGD entails complex processes of political, economic, and social coordination. In this context, negotiation and dialogue become central governance mechanisms, indispensable for harmonizing the divergent interests of the actors involved and for ensuring the legitimacy of public decisions (European Commission, 2019). Green industrial policy, as a pillar of the EGD, affects strategic sectors and generates costs and benefits that are unevenly distributed among Member States, industries, and social groups. Consequently, its formulation and implementation cannot be carried out unilaterally, but rather require a continuous process of multi-level and multi-actor negotiation and dialogue.

Conceptual framework: negotiation and dialogue in public policies

Negotiation and dialogue constitute fundamental elements in the formulation and implementation of complex public policies, particularly in large-scale multilateral and political contexts such as the EU. Within the framework of the EGD, these mechanisms are essential for reconciling the divergent interests of state and non-state actors, for aligning economic objectives with environmental goals, and for ensuring the legitimacy of decision-making processes. As the changes involved—from decarbonization to digitalization—entail resource redistribution, regulatory adjustments, and new strategic competences, negotiation and dialogue become indispensable instruments of governance. Negotiation can be defined as an interactive process of deliberate communication among parties with both shared and conflicting interests, aimed at achieving mutually acceptable compromises (Ciot, 2021). In a European context, it unfolds at multiple levels: between the European Commission and the

Member States, among EU institutions, between public authorities and industry, and between social and civil actors.

Modern negotiations in international relations involve, beyond persuasive techniques, an in-depth understanding of multilateral mechanisms and actor interdependencies (Ciot, 2021). Dialogue, by contrast, refers to the ongoing process of communication and consultation between political and societal actors for the purpose of consensus-building and reducing informational asymmetries. Dialogue may be informal or structured—for example, through consultative forums, sectoral committees, or specific institutional mechanisms—and is often a precondition for effective negotiations (Sabel & Zeitlin, 2021). In the context of the EGD, dialogues on the green transition and with specific industrial sectors (e.g., hydrogen, green technologies, heavy industry) exemplify the central role of continuous consultation in policy calibration (European Commission, 2024a).

The specialized literature distinguishes several theoretical models of negotiation that are relevant for analyzing the EGD. Distributive negotiation is based on the assumption of limited resources, where one party's gain implies another's loss (Ivey Business School, 2019; PubAdmin Institute, 2025). This approach is frequently encountered in debates concerning the allocation of funds or the establishment of implementation timelines for environmental measures. In contrast, integrative negotiation seeks to identify solutions that maximize benefits for all parties involved by focusing on underlying interests rather than stated positions (Ivey Business School, 2019; PubAdmin Institute, 2025). This model, promoted by the Harvard School through the concept of "principled negotiation," is particularly relevant to the EGD, where environmental and economic interests can be complementary if addressed strategically and creatively (Aghion et al., 2021).

The "win-win" or mutual gains approach emphasizes the importance of negotiation preparation, the definition of alternatives (BATNA), and the use of objective criteria to evaluate options (Lewicki et al., 2024; Consensus Building Institute, 2019). Applying this model in the context of the EGD enables the construction of durable compromises among Member States, European institutions, and industrial actors, particularly with regard to transition periods, fund allocations, or exemptions from state aid regulations (Trehu, 2025).

Another essential technique proposed by scholars is the use of the "Single Negotiating Text" (SNT) (Chasek et al., 2012; Ciot, 2024c). SNT is a procedural instrument used in multilateral negotiations to consolidate the divergent positions of the actors involved into a single, coherent document that reflects the options under discussion. The primary purpose of SNT is to facilitate consensus by reducing textual fragmentation and creating a common basis for negotiation (Fisher & Ury, 2011). Instead of each delegation working on its own version of the text, the chair or co-chairs of the session assume responsibility for drafting a synthetic document that incorporates points of convergence and signals areas of feasible compromise (Allan & Chasek, 2012; Chasek et al., 2012). This method prevents the negotiation from turning into a zero-sum game, in which any amendment to one party's text is perceived as a loss, and focuses attention on a single logical structure (Chasek et al., 2012).

In the context of the EGD, SNT plays a key role in harmonizing the interests of Member States, European institutions, and economic actors in areas such as climate neutrality, the energy transition, and the circular economy. The application of SNT enables the integration of ambitious environmental objectives with the specific economic and social constraints of each Member State, reducing the risk of decision-making deadlock (European Commission, 2019). By using a single negotiating text, the decision-making process becomes more transparent and efficient, facilitating the progressive adaptation of climate policies. Thus, SNT contributes to

transforming the EGD into a coherent operational framework capable of supporting the sustainable transition at the EU level, while maintaining a balance between economic competitiveness and environmental protection (Jordan & Adelle, 2012). The application of an SNT in this framework supports the integration of the interests of Member States, industry, and civil society into a coherent normative architecture, and the use of SNT principles contributes to the formulation of predictable green industrial policies, reducing the risks of legislative fragmentation and facilitating the transition toward a sustainable and climate-neutral economy.

Modern technology has introduced a new dynamic into negotiation settings, described as a “double-edged sword” (Ciot, 2024c). *On-screen negotiations* refer to negotiation processes conducted through digital platforms, in which interaction among actors takes place in real time but is technologically mediated. This type of negotiation has become increasingly relevant in EU governance, including in the formulation and implementation of the EGD, where the complexity of policy files and the large number of institutional and industrial actors require efficient coordination mechanisms (European Commission, 2020). In the industrial domain, on-screen negotiations facilitate dialogue among European institutions, Member States, and economic actors on the decarbonization of energy-intensive sectors, the digitalization of production, and the transition toward a circular economy. Through these digital negotiations, data exchange, impact simulations, and the alignment of positions on green industrial policies—such as the EU Industrial Strategy or the Fit for 55 package—are accelerated (Mendez & Triga, 2021). At the same time, they contribute to transparency and inclusiveness by enabling the participation of actors whose involvement would be more limited in traditional face-to-face negotiations. On-screen negotiations, in which amendments are added in real time in front of participants, enhance transparency but can also paralyze the process. When a country’s name is attached to a proposal displayed on screen, withdrawing that proposal becomes a visibly political act, reducing diplomats’ room for maneuver (Ciot, 2024c). This over-transparency can force negotiations to move behind closed doors, into small, selected groups (“Green Rooms”), in order to produce “take-it-or-leave-it” texts in the final stages of conferences (Ciot, 2024c; Wagner, 2012).

The principle “nothing is agreed until everything is agreed” is another negotiation principle frequently used in multilateral decision-making processes, particularly at the EU level. It implies that no element of a policy package is considered definitively accepted until an overall agreement is reached on all components, thereby ensuring coherence, balance, and compromise among divergent interests (Baldwin & Wyplosz, 2020). In the context of the EGD, this principle is essential for harmonizing environmental objectives with economic and social ones. Its application in relation to industry allows decarbonization measures to be linked to support mechanisms, such as the Just Transition Fund (JTF) or compensation schemes for energy-intensive industries. Thus, acceptance of ambitious climate targets is conditional upon agreement on instruments that protect industrial competitiveness, preventing carbon leakage and major economic losses (European Commission, 2019). However, this approach can make the achievement of a universal agreement almost impossible. An alternative is strategic fragmentation—the division of the broader climate or industrial challenge into smaller legislative packages that can be adopted incrementally, thereby creating positive momentum (Chasek et al., 2012; Ciot, 2024c).

Negotiation and dialogue contribute to enhancing democratic legitimacy, improving policy effectiveness, and coordinating across levels of governance. By integrating diverse perspectives, green industrial policies become more realistic and better adapted to the

economic and social context. In the absence of robust institutional mechanisms and adequate administrative capacity, however, negotiation risks becoming a merely formal process, without substantial influence on policy outcomes (Mazzucato, 2021).

Experimentalist governance in the institutional architecture of the European Union

An essential theoretical perspective for understanding how the EU manages the implementation of the EGD is that of *experimentalist governance*, theorized by Charles Sabel and Jonathan Zeitlin (2021). This model describes a recursive process of setting framework rules and revising them on the basis of implementation experience across diverse local contexts (Sabel & Zeitlin, 2021). Unlike traditional “command-and-control” regulation, experimentalism is suited to policy areas characterized by high uncertainty and by the need to reconcile regulatory unity with the diversity of national conditions (Sabel & Zeitlin, 2010). Experimentalist governance is an emerging conceptual framework in the study of complex public policies, characterized by an iterative process of negotiation, learning, and adaptation (Sabel & Zeitlin, 2012). This form of governance is particularly relevant for policies facing high levels of uncertainty, contextual variability, and the involvement of multiple actors with divergent interests, as is the case with the EGD and the associated green industrial policy.

Experimentalist governance differs from traditional hierarchical models through its emphasis on collective learning, collaboration, and continuous negotiation across multiple levels of governance and between public and private actors (Sabel & Zeitlin, 2012). This approach allows for a high degree of flexibility and adaptability in addressing public policy problems that cannot be effectively resolved through rigid and uniform rules, an essential feature in complex and dynamic domains such as the green industrial transition (Jordan & Moore, 2020).

The EU, by virtue of its nature as a multilevel governance system and its extensive negotiation processes among European institutions, Member States, and other stakeholders, has frequently been described in the literature as an example of experimentalist governance (Sabel & Zeitlin, 2012; Zeitlin, 2015). This model becomes particularly visible in policy areas where competences are not clearly delineated and where there is a fragile balance between national autonomy and coordination at the European level. In the context of the EGD, experimentalist governance is manifested through continuous negotiation among EU institutions (the European Commission, the European Parliament, and the Council of the EU), Member States, regional and local authorities, as well as economic actors and civil society (European Commission, 2019; Sabel & Zeitlin, 2021).

The architecture of experimentalist governance comprises four cyclical elements (Sabel & Zeitlin, 2010): the establishment of framework objectives and performance metrics through joint action by EU institutions and Member States; the granting of broad autonomy to lower-level units (Member States, agencies) to pursue these objectives in ways adapted to local contexts; regular performance reporting and participation in peer-review processes to compare results and methods; and the periodic revision of framework objectives and decision-making procedures on the basis of the feedback collected.

This mode of governance is evident in various environmental directives, such as the Water Framework Directive, and is increasingly present in the implementation of green industrial policies (Skovgaard, 2021b). More recently, research by Zeitlin and Rangoni (2024)

points to an evolution toward a “tighter” experimentalist architecture, combining synchronic uniformity (the same rules for all at a given moment) with diachronic revision (the rapid updating of rules as new data emerge). This approach enables the EU to manage the dilemma between the need for uniform rules for the single market and the need to accommodate the legitimate socio-economic diversity of the Member States (ibid.).

Another central aspect concerns the involvement of regional and local actors in the negotiation and implementation of green industrial policy. The European Committee of the Regions has repeatedly emphasized that the success of the green transition depends on the capacity of local and regional authorities to contribute actively to innovation and implementation, given the profoundly territorial nature of decarbonization processes and industrial development (European Committee of the Regions, 2020).

Experimentalist governance provides a robust theoretical framework for understanding how green industrial policy within the EGD is negotiated and implemented in a complex and dynamic environment. Through continuous negotiation, recursive learning, and adaptation, this model facilitates multilevel cooperation and policy innovation, provided that a balance is maintained between flexibility, coherence, and democratic legitimacy.

Inter-institutional and multi-level negotiation in the EU decision-making process

Through its institutional architecture, the EU provides multiple arenas and procedures for negotiation and dialogue. Initiatives such as the EGD or industrial plans are subject to a deliberative process at the level of the Council of the European Union, the European Parliament, and the European Commission, involving inter-institutional negotiations known as trilogues (Sabel & Zeitlin, 2021). Inter-institutional negotiations reflect differing visions regarding the level of climate ambition, instruments to support industry, and the pace of the transition (Skovgaard, 2021a). This mode of governance co-produces policies through deliberative construction and continuous adjustment (ibid.). In particular, the European Parliament functions as a negotiation forum grounded both in the direct representation of citizens and in its legislative competences, requiring compromises among political groups and specialized committees (ibid.).

At the same time, negotiations between Member States and EU institutions reflect diverse national and industrial priorities, generating significant compromises related to fund allocation, implementation timelines, and sectoral standards. Although EGD objectives are set at the European level, competences in areas such as industrial policy largely remain national. This distribution generates negotiations over the adaptation of measures to national contexts (Tagliapietra & Veugelers, 2020b). A critical aspect of these negotiations is the unequal fiscal capacity of Member States; for example, France and Germany have advocated for the relaxation of state aid rules to subsidize domestic production of green technologies, raising concerns about fragmentation of the single market (Trehu, 2025). Negotiation between the EU and Member States serves to ensure coherence between common objectives and national diversity. States with energy-intensive industries or high dependence on fossil fuels tend to request longer transition periods and compensatory mechanisms (Tagliapietra & Veugelers, 2020a). These negotiations are reflected in instruments such as the Just Transition Fund, designed to support regions most affected by industrial restructuring (ibid.).

Thus, the EGD is not the result of a simple unilateral decision, but of a negotiated and deliberative process in which European industrial strategy is calibrated to respond to the economic and social specificities of the Member States. The success of climate negotiations, including those concerning the industrial sector, often depends on the procedural techniques employed to overcome the inherent deadlocks of consensus-based decision-making.

Social dialogue and communication for a just industrial transition

The industrial transition promoted through the EGD is not only a technological challenge, but also a profoundly social one. Its success depends on mechanisms of dialogue and communication that ensure social acceptance and political legitimacy. Beyond institutional actors, green industrial policy involves extensive dialogue with non-state actors, including industry, social partners, and civil society organizations. Their involvement is essential for increasing social acceptability and for improving the quality of public policies. Social dialogue plays a central role in addressing the social dimension of the industrial transition by negotiating measures for workforce protection, professional reskilling, and support for affected regions (ILO, 2015).

The concept of a “just transition” underscores the need for the benefits and costs of the transition to be distributed fairly, avoiding the marginalization of certain regions or social groups. The specialized literature defines the “just transition” as a “triple transition”: green, digital, and skills-based (Bianchi, Propriis & Labory, 2024). This requires citizen-centered policies that integrate education and social protection into regional industrial strategies (ibid.). The European Commission has established platforms such as the “Just Transition Platform” to facilitate the exchange of best practices among European regions (Life After Coal, 2024). Nevertheless, there is a risk that dialogue remains predominantly consultative, without substantial influence on final decisions, which can limit perceptions of inclusiveness (Skovgaard, 2021b). Moreover, institutional communication is sometimes perceived as overly abstract, making it necessary to adapt messages to local socio-economic realities in order to counter political resistance (Lockwood, 2013).

Negotiation and Coordination in the European Decision-Making Process: Outcomes and Implications

In order to translate the objectives of the EGD into a new industrial reality, the EU has proposed several flagship legislative initiatives, two of which reached political agreement in the first half of 2024 (FSR, 2024). These initiatives are fundamental to the reconfiguration of the European industrial base and to the reduction of strategic dependencies. The adoption of the Net-Zero Industry Act (NZIA) and the Critical Raw Materials Act (CRMA) marks a decisive stage in the consolidation of the EU’s green industrial policy, reflecting a paradigm shift from predominantly regulatory governance toward a more strategic and negotiated approach. These legislative instruments are complemented by the “Clean Transition Dialogues (2023–2024),” designed as deliberative communication mechanisms between European institutions and industrial actors, aimed at facilitating the implementation of the EGD in a tense economic and geopolitical context (European Commission, 2023a). The year 2025 completes this triad

with a new strategy intended to strengthen the resilience of European industry – the Clean Industrial Deal (CID).

The NZIA aims to accelerate the EU's production capacity for “net-zero” technologies by establishing flexible quantitative targets and simplified administrative procedures. From a negotiation perspective, the act reflects a compromise between Member States with advanced industrial capacities and those requesting support and flexibility for economic convergence. The literature on industrial policy highlights that such legislative frameworks are the result of iterative negotiations among divergent national interests, in which strategic communication plays a crucial role in achieving consensus (FSR, 2024). The NZIA illustrates a form of institutionalized negotiation in which the European Commission employs shared objectives and the language of economic security to legitimize industrial intervention (FSR, 2024), thereby reducing the traditional opposition to active industrial policies within the EU (Aiginger & Rodrik, 2020).

The CRMA addresses risks related to the supply of critical raw materials essential for the green and digital transition (FSR, 2024). The act establishes diversification thresholds and monitoring mechanisms, reflecting a logic of de-risking negotiated at both European and international levels. From a theoretical standpoint, the CRMA fits within an approach of strategic governance of interdependencies, in which negotiations do not aim to eliminate dependencies but to manage them. Political communication associated with the CRMA was essential in avoiding perceptions of protectionism and in anchoring the act within a discourse of international cooperation and strategic partnerships (FSR, 2024), thereby confirming the role of communication as an instrument for legitimizing green industrial policies (Meunier & Nicolaïdis, 2019).

A major innovation in EGD governance was the launch in 2023 of the “Clean Transition Dialogues (2023–2024),” chaired by Vice-President Maroš Šefčovič. The Clean Transition Dialogues represent an innovative mechanism of participatory governance, focused on structured dialogue between the European Commission, industry, trade unions, and other stakeholders. These dialogues function as spaces for informal negotiation, in which actors can influence the adjustment of legislative instruments and implementation measures. From the perspective of experimentalist governance, these dialogues facilitate mutual learning and reduce informational asymmetries between policymakers and industry. Communication within the Clean Transition Dialogues is not purely informative, but strategic and deliberative, serving to build trust and to manage potential conflicts generated by the costs of the green transition. Thus, the dialogues contribute to transforming green industrial policy into a continuous negotiated process rather than a rigid set of regulations (European Commission, 2023b).

Analyzed through the lens of negotiation and communication, the NZIA and the CRMA can be interpreted as products of strategic industrial governance, in which consensus is built through institutional compromises and through a discourse oriented toward economic security and competitiveness. The Clean Transition Dialogues complement these legislative instruments by providing a framework for deliberative communication that enhances the legitimacy and adaptability of the EU's green industrial policy.

On 26 February 2025, the European Commission published the strategic document *Clean Industrial Deal*, marking a new stage in the implementation of the EGD by prioritizing

the competitiveness and resilience of European industry (Rener et al., 2025). The CID is designed as an instrument for implementing the EU's "Competitiveness Compass," aiming to transform the decarbonization process into a driver of economic growth (de Macedo et al., 2025). The CID is the result of a negotiation process through which sustainability is framed as a "growth engine" in order to alleviate concerns related to deindustrialization (European Commission, 2024a). The communication of the CID is built on direct negotiations with social partners (trade unions and industrial associations). For the transition to be accepted, the Commission negotiates the concept of a "just transition," ensuring investments in workforce reskilling. In this way, competitiveness becomes a collective project rather than a purely top-down directive. At the international level, the CID functions as a negotiation instrument vis-à-vis partners such as the United States (in the context of the IRA) or China. Through mechanisms such as the CBAM, the EU negotiates global standards, compelling trading partners to adopt greener practices in order to maintain access to the European market.

Negotiating green industrial policy in the global arena: de-risking and diplomacy

The EU does not operate in a vacuum, and the success of green industrial policy depends on its capacity to navigate a global environment marked by massive subsidies from China and the United States. The "Brussels Effect"—the EU's ability to set global standards through access to its internal market—now faces limits imposed by economic security concerns and the need to avoid overt protectionism (McWilliams & Tagliapietra, 2025).

In a context characterized by economic interdependencies, technological competition, and geopolitical uncertainty, the negotiation of green industrial policies goes beyond the strictly climatic dimension, integrating objectives related to economic security, investment de-risking, and climate diplomacy (Maltais, 2025). The European strategy of "de-risking" (risk reduction rather than decoupling) entails complex negotiations with trade partners. For example, the EU launched negotiations for its first CTIP with South Africa in March 2025, seeking to align partners' development objectives with its own strategic supply interests (Trehu, 2025). Likewise, the implementation of the CBAM requires active climate diplomacy in order to ensure a level playing field without triggering trade wars (European Commission, 2024b).

In the global arena, green industrial policies—including subsidies for clean technologies, production standards, or trade measures associated with the energy transition—generate significant cross-border effects. States use these instruments not only to achieve climate objectives, but also to strengthen their competitive position within global green value chains. This dual logic explains the tensions that have emerged in multilateral and bilateral trade negotiations, where green measures may be perceived as indirect forms of protectionism (Big Europe Initiative, 2025). In this context, initiatives such as "climate clubs" have been proposed as mechanisms of voluntary coordination among states, aimed at reducing the risk of fragmentation of climate policies and at harmonizing industrial and environmental standards. These formats reflect a negotiated approach, in which cooperation is conditional upon reciprocal commitments, and collective discipline replaces strict legal constraint.

A central element of global negotiations on green industrial policy is the de-risking of investments, understood as the reduction of financial, technological, and regulatory risks associated with green projects. The specialized literature emphasizes that the high level of perceived risk constitutes a major obstacle to mobilizing private capital for green infrastructure, particularly in emerging economies (OECD, 2020).

De-risking instruments—such as public guarantees, risk-sharing arrangements between the public and private sectors, or regulatory stability—are often negotiated within international forums and multilateral financial institutions. In this way, de-risking becomes not merely a technical instrument, but also a strategic component of green industrial policy, influencing investment flows, economic relations, and the geopolitical positioning of states (OECD, 2020).

Climate diplomacy plays an essential role in facilitating negotiations on green industrial policy. It encompasses negotiations on technology transfer, industrial cooperation, transition finance, and the establishment of common standards for green production. The EU, for example, explicitly promotes the integration of green industrial policy into its foreign policy agenda, emphasizing the need for cooperation with global partners to achieve a just and inclusive green transition (CUE, 2024). Green diplomacy thus expands the scope of climate negotiations beyond commitments to emission reductions, incorporating economic and industrial dimensions that reflect states' strategic interests. This evolution confirms the transformation of green industrial policy into a domain of structured geopolitical negotiation.

Negotiating green industrial policy at the global level is confronted with risks of fragmentation and power asymmetries between developed and developing economies. Aggressive green industrial policies may restrict equitable access to green markets and exacerbate structural inequalities, raising concerns of legitimacy and equity in the global governance of the green transition (Maltais, 2025).

In this context, combining multilateral diplomacy with credible de-risking mechanisms can contribute to strengthening international cooperation and reducing tensions between climate objectives and economic competitiveness.

Romania – Negotiations and Positions in the Context of a Green Industrial Policy

The industrial plan associated with the EGD—including the Clean Industrial Deal—aims to support European industry in becoming more competitive by reducing energy costs, facilitating access to finance, and promoting sustainable production (European Parliament, 2025; European Commission, 2025). Within this framework, Member States must not only adopt compliant national policies, but also engage in continuous negotiation with EU institutions in order to adapt the implementation of the EGD to their specific economic and social conditions.

The implementation of the EGD in Central and Eastern Europe, and particularly in Romania, presents a series of structural particularities. Administrative capacity to manage recovery funds and to develop coherent territorial plans is the primary predictive factor of success (Ciot, 2021, 2022). Research indicates that cultural, political, and social factors directly influence the speed of adoption of green policies (Ciot, 2022).

Romania, as a Member State with a diverse industrial base and structural vulnerabilities in transition, has found itself at the center of negotiations concerning certain aspects of industrial and energy transformation. These negotiations, and the way in which the country communicates its positions, reflect both the limits and the possibilities of national–European dialogue in the current period. A concrete example of Romania’s negotiations with the EU in the context of the EGD is the discussion regarding the extension of coal-fired power generation. In 2025, Romania engaged in intense negotiations with the European Commission to postpone until 2031 the closure of certain coal-based energy production capacities, arguing the negative socio-economic impact of rapid closure—particularly on energy security and local economies—as well as delays in renewable projects intended to replace them (Reuters, 2025a). This position reflects a recurrent tension between the EU’s climate ambitions and national industrial realities, where Romania still relies significantly on fossil resources in its energy mix. A focal point of tension concerns the just transition in mining regions such as the Jiu Valley (Ciot, 2021). Negotiations surrounding the Just Transition Mechanism aimed to secure compensation for affected workers and funding for economic diversification. The Just Transition Fund is conditional on the state’s commitment to achieving climate neutrality, which has generated intense political debates in Bucharest between the imperative of modernization and fears of social collapse (Ciot, 2021).

In Romania, the government and economic actors have begun to respond to these external pressures by developing their own “Green Deal Industrial Plan,” as part of the commitment to align national industry with EU objectives (Spătaru, 2025). According to the authorities, the national plan aims to identify pathways for reducing greenhouse gas emissions and to stimulate investment in high value-added sectors such as renewable energy, the circular economy, and carbon storage technologies (Spătaru, 2025).

However, the adaptation process is not free of internal tensions. Decision-makers have expressed criticism regarding the pace and costs imposed by the EU’s “greening” policies, arguing that they may affect economic competitiveness and energy security if applied without planning tailored to national specificities (Burduja, 2025). As a result, Romania is engaged in a negotiation effort to balance green transition commitments with the competitiveness needs of its industry, highlighting the importance of ensuring a “smart transition” that does not compromise short-term economic prosperity (Burduja, 2025).

Another key element of Romania’s negotiations concerns access to financing and state aid for decarbonization and energy efficiency. National authorities have approved state aid schemes for the modernization of industrial installations eligible under the EU ETS, providing non-reimbursable funding for decarbonization investments (Stamate, 2025). Such measures are essential both for facilitating the transition and for aligning Romania with the new European rules on industrial support in the context of the EGD.

Romania’s negotiations within the EU also reflect the challenges of coordinating public policies between the European and national levels, especially in situations where administrative and financial resources are limited (OECD, 2024). In this framework, the role of the Romanian state is to design coherent green industrial policies that respond to environmental objectives without undermining the competitiveness of the industrial sector.

Romania’s negotiations also include informal dialogues on energy market reforms, pricing policies, and the timeline for the deployment of clean technologies. For example, in the past, the European Commission warned Romania regarding gas price caps, considering that they interfered with the functioning of the internal market in a manner incompatible with EU

rules, which placed pressure on Romania to adjust its policies through dialogue with European institutions (Reuters, 2025b).

At the broader industrial level, Romania is involved in negotiations related to the implementation of the Clean Industrial Deal, where Member States seek to adapt requirements concerning financial support and production competitiveness to the specificities of their industries. Critics of this Pact have pointed out that EU-level funding offers remain insufficient for deep industrial transformation and that negotiations over the redistribution of funds within the future Multiannual Financial Framework will be crucial for countries with less developed economic environments (The Diplomat Bucharest, 2025).

Romania's communication regarding the EGD and the associated industrial policies constitutes another essential element in the negotiation process. At the official level, national strategies, energy plans, and communication documents emphasize the country's commitment to the green transition and decarbonization, while also stressing the need for a just transition that does not undermine economic competitiveness and employment (Europarl Research, 2025).

The government and public authorities use both diplomatic channels and domestic public debates to communicate their positions and to mediate dialogue between national industries and EU institutions. For example, high-level meetings—such as those between the President of Romania and EU officials on environmental issues and the Green Deal—are used to reaffirm national commitments, while also highlighting the specific constraints of the Romanian economy (G4Media, 2023). At the same time, public communication reflects internal tensions: economic actors, trade unions, and civil society entities participate in debates on the impact of the EGD on traditional industries and competitiveness, which in turn influences how the Romanian government negotiates in Brussels. This dialogue is not always harmonized—social and economic divergences can complicate coherent communication and limit Romania's ability to sustain unified positions in negotiations with the EU.

From a theoretical perspective, national negotiations within a multilateral framework such as the EU are shaped by power asymmetries and structural differences among Member States. Countries with emerging economies or less competitive industrial sectors risk having a weaker bargaining position when pressures are strongly oriented toward ambitious decarbonization standards promoted by states with high-tech industries or more advanced domestic pacts. This asymmetry is reflected in Romania's negotiations over energy transition timelines or financial support measures, where national authorities seek more flexible terms and economic compensation instruments for vulnerable industries.

An analysis of electoral discourse in Romania reveals pronounced polarization. While green themes are present in the platforms of center-right and ecological parties, far-right rhetoric exploits anxieties related to energy prices, portraying the EGD as a burden imposed by Brussels (Ciot, Vănoagă & Butișca, 2024). This dynamic underscores the need for an internal negotiation strategy based on a "new social contract" that actively includes citizens in the decision-making process (Ciot, 2021, 2024c). In this context, political communication plays a dual role: on the one hand, it must ensure domestic legitimacy and public support for decisions related to adaptation to the Green Deal; on the other hand, it must convey a coherent and convincing message to EU institutions regarding the need for adjustments or exemptions. The absence of a well-articulated communication strategy can weaken Romania's negotiating position, while fragmented internal dialogues may create perceptions of incoherence in the eyes of European partners.

Limits and Challenges of Negotiation and Dialogue Mechanisms

Social dialogue and collective bargaining represent key EU instruments for managing economic and social transformations. They allow social partners—trade unions, employers’ organizations, and public institutions—to participate in shaping policies that affect their interests, particularly during periods of major structural change such as the green transition (European Commission, 2025). Negotiation and dialogue are not merely a “nice to have,” but a democratic mechanism designed to enhance the relevance and effectiveness of norms, contributing to social and economic cohesion. In theory, these mechanisms facilitate consensus, manage conflicts, and reduce policy costs by adapting them to industrial realities. The implementation of negotiation and dialogue practices among political, economic, and social actors is essential for the coherence and acceptance of this green industrial revolution. Nevertheless, current mechanisms face significant limitations and challenges that may diminish the effectiveness and legitimacy of the decision-making process.

The EGD includes numerous regulations and directives (for example, the NZIA and the CRMA) aimed at industrial transition and economic competitiveness. However, these come with a high degree of complexity, overlapping rules, and bureaucratic procedures that hinder effective dialogue between authorities and stakeholders. This complex environment places pressure on actors—particularly SMEs—to navigate a labyrinth of consultations, public consultations, negotiations, and implementation processes, increasing both costs and the time required for compliance.

Another factor that negatively affects dialogue is the tension between ambitious climate objectives and competitive industrial needs. Critics within the European Parliament argue that the burden of green regulation may undermine the competitiveness of European industry, especially in the context of high energy costs and global competition (Europarl, 2025). Negotiations in such circumstances tend to become confrontations between economic and environmental priorities, complicating consensus in industrial policy.

Moreover, ensuring inclusive dialogue requires balancing significant differences in resources and influence between large corporations, SMEs, and non-governmental organizations. There is a risk that consultation processes may be captured by interest groups with superior lobbying capacities, which would undermine the objective of a fair transition (Trehu, 2025).

Multi-level negotiations can also become highly bureaucratic and time-consuming. The complexity of EU decision-making procedures can lead to delays in the implementation of strategic projects, precisely at a time when speed of execution is critical to keeping pace with the United States or China (Trehu, 2025). Regulatory simplification, promised through the CID, must be achieved without undermining core environmental protection objectives and social standards (Korinek & Hafele, 2024).

The tension between regulatory uniformity at the EU level and the need to provide tailored support to Member States remains a persistent source of conflict (McWilliams & Tagliapietra, 2025). The relaxation of state aid rules has disproportionately benefited large economies, creating the risk of fragmentation of the Single Market if more robust common financing mechanisms are not developed at the Union level (Trehu, 2025).

Although dialogue and negotiation are fundamental elements of the decision-making architecture of European industrial policy, current challenges—including imbalanced participation, lack of transparency, regulatory complexity, and tensions between objectives—limit their impact. For the EGD to become not only a set of ambitious objectives but an effective and just transformation, dialogue mechanisms must be reconfigured to be more open, balanced, and oriented toward concrete outcomes. A positive example is the use of structured dialogues conducted in multiple phases with clear benchmarks, resulting in reports with broad consensus. Such models can serve as good practices in the design of future negotiation mechanisms.

Conclusions

The paper demonstrates that negotiation and dialogue are not merely administrative procedures, but an integral part of the evolution of industrial policy in the context of the EGD. The structural transformation of the European economy and the transition toward climate neutrality require unprecedented coordination between public and private actors, carried out within a framework of experimentalist governance that enables continuous learning and adaptation to geopolitical and technological changes.

Negotiation plays a central and structuring role in the formulation and implementation of the new green industrial policy associated with the EGD, as this policy is constructed at the intersection of divergent economic, social, and political interests, both at the European and national levels. First, negotiation among European institutions (the European Commission, the Council of the EU, and the European Parliament) is essential for defining the legislative and financial framework of green industrial policy. The Commission proposes initiatives such as the Green Deal Industrial Plan or the Clean Industrial Deal, but their final form results from interinstitutional negotiations, in which the Parliament seeks to strengthen climate ambition and the social dimension, while the Council reflects the positions and sensitivities of the Member States. Second, negotiation between the EU and the Member States is crucial during the implementation phase. Although climate objectives are set at the European level, Member States differ significantly in terms of industrial structure, fiscal capacity, and dependence on carbon-intensive industries. Consequently, policies must be applied through a negotiated process that allows for national adaptations. This dynamic reflects a logic of experimentalist governance, based on mutual learning and the continuous revision of objectives. Third, negotiation with stakeholders—industry, social partners, trade unions, NGOs, and experts—plays a key role in ensuring the legitimacy and effectiveness of policy. Initiatives such as the Clean Transition Dialogues institutionalize social and economic dialogue, enabling the identification of real industrial constraints, the assessment of the social impact of the transition, and the adjustment of policy instruments in order to avoid losses in competitiveness or excessive social costs. These negotiations tend to be integrative in nature, aiming to reconcile climate objectives with those of competitiveness and social cohesion. Negotiation is not a secondary element, but the key mechanism through which the EU's green industrial policy becomes possible and operational. It enables the transformation of ambitious climate objectives into a policy framework that is politically acceptable, economically adaptable, and

socially legitimate, while simultaneously strengthening the multi-level cooperation that characterizes EU governance.

Current mechanisms of dialogue and communication contribute to a significant, though uneven, extent to achieving an industrial transition that is both equitable and effective. They represent an important advance beyond traditional top-down approaches; however, their effectiveness depends on the degree of inclusiveness, the capacity of actors to influence decision-making, and the existence of a genuine link between dialogue and concrete policy instruments. First, institutionalized dialogue at the European level—through mechanisms such as the Clean Transition Dialogues, the Commission’s public consultations, or social dialogue platforms—contributes to enhancing the fairness of the transition by including social partners, local authorities, and representatives of affected industries. These forums allow for the articulation of concerns related to job losses, professional reconversion, and the distribution of transition costs, thereby reducing the risk that green policies may exacerbate regional or social inequalities. In this sense, dialogue functions as a mechanism of democratic legitimation for green industrial policy. Second, from an efficiency perspective, these mechanisms facilitate the collection of relevant information from the ground and the adjustment of policies in line with economic and technological realities. Ongoing communication with industry and experts enables the identification of implementation bottlenecks, investment needs, and risks of competitiveness loss. This logic aligns with a model of experimentalist governance, in which policies are tested, evaluated, and progressively adapted on the basis of feedback from the actors involved.

Nevertheless, the contribution of these mechanisms remains constrained by several factors. In some cases, dialogue is consultative in nature, without guaranteeing real influence over final decisions, which can generate perceptions of “symbolic dialogue.” Moreover, power and resource asymmetries persist among actors: large companies and Member States with high administrative capacity are better positioned to influence the process than SMEs, trade unions, or more vulnerable regions. In addition, coordination between the European and national levels is not always coherent, which diminishes the impact of dialogue on effective implementation. Current mechanisms of dialogue and communication do make a tangible contribution to a fairer and more efficient industrial transition, but they are not sufficient in themselves. To fully realize their potential, they must be strengthened through a clearer linkage between dialogue and political decision-making, the reduction of participation imbalances, and the systematic integration of feedback into public policy instruments.

The success of implementing the NZIA and CRMA legislation, as well as the new CID, depends on the ability of European institutions to maintain a balance among three imperatives: economic efficiency (competitiveness), social equity (a just transition), and strategic security (autonomy). Sectoral dialogue mechanisms, such as the CID, have demonstrated their usefulness in identifying practical obstacles; however, they must be institutionalized and made more inclusive in order to avoid political fragmentation.

The integrated analysis of the documents highlights that the EGD has evolved from a purely ecological strategy into a complex doctrine of economic and geopolitical security. The success of this transformation depends critically on the refinement of negotiation techniques, both internally and globally.

At the international level, the shift from inclusive but slow multilateralism toward minilateralism and climate clubs appears to be a viable solution for achieving the objectives of the Paris Agreement. The Single Text technique and the prudent management of digital transparency are procedural instruments that can unlock decision-making processes.

At the internal level, the paramount challenge remains preserving the integrity of the single market in the face of massive national subsidies. The EU must negotiate a balance between the flexibility required to compete with the United States and China and the solidarity needed to ensure that regions such as those in Romania are not left behind.

European leadership will be defined by the capacity to transform the green transition from a management of scarcity and costs into a race for innovation and new jobs. Within this vision, climate diplomacy becomes an advanced form of political economy, in which sovereignty is secured through mastery of net-zero technologies and the resilience of supply chains.

Negotiation plays a structural role in the formulation and implementation of the new green industrial policy, acting as the binding agent between ambitious climate objectives and the economic and political realities of the Member States. The future of European industry will be determined by the ability of this governance model to produce not only regulations, but also tangible outcomes in a global economy undergoing rapid transformation toward the net-zero era. The theoretical approach to these processes underscores that the green transition is, equally, a political, economic, and communicational project.

Bibliography

- Aghion, P., Antonin, C., & Bunel, S. (2021). *The power of creative destruction: Economic upheaval and the wealth of nations*. Harvard University Press.
- Aiginger, K., & Rodrik, D. (2020). Rebirth of industrial policy and an agenda for the twenty-first century. *Journal of Industry, Competition and Trade*, 20(2), 189–207. <https://doi.org/10.1007/s10842-019-00322-3>
- Allan, J. I., & Chasek, P. (2012). *Texts in multilateral environmental negotiations*. CIGI Policy Brief.
- Baldwin, R., & Wyplosz, C. (2020). *The economics of European integration* (6th ed.). McGraw-Hill Education.
- Big Europe Initiative. (2025). *Green realpolitik: Recasting Europe's climate and energy diplomacy*.
- Bongardt, A., & Torres, F. (2020). The European Green Deal: More than climate neutrality. *Intereconomics*, 55(6), 365–371.
- Burduja, S. (2025). Critici privind politicile de înverzire ale UE. Digi24. <https://www.digi24.ro/digieconomic/energie/ministrul-energiei-politicile-de-inverzire-ale-europei-nu-au-fost-bine-gandite-o-ideologie-urmata-orbeste-44161>. Accesat în 05.01.2026.
- Chasek, P., Wagner, L., & Zartman, I. W. (2012). Six ways to make climate negotiations more effective. CIGI, Fixing Climate Governance Series, No. 3.
- Ciot, M.G. (2021). "On European Green Deal and Sustainable Development Policy (the Case of Romania)", *Sustainability*.
- Ciot, M.G. (2021). *Negocieri internaționale*. Presa Universitară Clujeană.

- Ciot, M.G. (2022). "Implementation Perspectives for the European Green Deal in Central and Eastern Europe", Sustainability.
- Ciot, M.G. (2024a). Aspecte culturale ale negocierilor climatice - managementul diversității. Curs 9, Universitatea Babeș-Bolyai.
- Ciot, M.G. (2024b). Procesele și fazele negocierilor Pactului Verde European. Curs 3, Universitatea Babeș-Bolyai.
- Ciot, M.G. (2024c). Strategii și tactici în negocierile climatice. Curs 10, Universitatea Babeș-Bolyai.
- Ciot, M.G., & Butișca, L.M. (2025). Challenges to energy policy in the context of the Russian-Ukrainian conflict. An overview of the case of Romania, Bulgaria and Turkey. Journal of Contemporary European Studies DOI: 10.1080/14782804.2025.2472637.
- Ciot, M.G., Vănoagă, C.M., & Butișca, L.M. (2024). Green Deal in Focus: Regional Perspectives and Their Influence on Electoral Income. Analele Universității din Oradea. Relații Internaționale și Studii Europene, (16), 7–16. <https://doi.org/10.58603/zolw2426>
- Comitetul European al Regiunilor. (2025). Un Pact pentru o industrie curată [Comunicat de presă].
- Consensus Building Institute. (2019). Mutual gains approach to negotiation. <https://www.cbi.org/article/mutual-gains-approach/>
- Consiliul Uniunii Europene. (2024). Green diplomacy: Council conclusions.
- Consiliul Uniunii Europene. (2025). Politica industrială a UE. <https://www.consilium.europa.eu/ro/policies/eu-industrial-policy/>. Accesat în 05.01.2026.
- de Macedo, P.M. (2025). Case study: New industrial policy in the EU. <https://www.iddri.org/sites/default/files/PDF/Publications/Catalogue%20Iddri/Etude/202511-NT0525-European%20union.pdf>
- European Commission. (2019). The European Green Deal. Bruxelles.
- European Commission. (2020a). A new Circular Economy Action Plan for a cleaner and more competitive Europe. Brussels.
- European Commission. (2020b). A new industrial strategy for Europe. Brussels.
- European Commission. (2023a). A Green Deal Industrial Plan for the Net-Zero Age. COM(2023) 62 final.
- European Commission. (2023b). Clean Transition Dialogues: Bringing industry closer to the Green Deal.
- European Commission. (2024). Colaborarea cu industria și partenerii sociali din UE în vederea unei tranziții curate.
- European Commission. (2025). Pactul pentru o industrie curată.
- European Parliament. (2025a). Impact of the Green Deal on European competitiveness and industry.
- European Parliament. (2025b). Romania's climate action strategy.
- Fisher, R., Ury, W., & Patton, B. (2011). Getting to yes: Negotiating agreement without giving in (3rd ed.). Penguin Books.
- Fisher, R., Ury, W., & Patton, B. (1981). Getting to Yes: Negotiating Agreement Without Giving In. Houghton Mifflin.
- FSR. (2024). The Green Deal Industrial Plan.
- G4Media. (2023). Președintele Iohannis a discutat cu Frans Timmermans despre implementarea Pactului Verde. <https://www.g4media.ro/presedintele-iohannis-a-discutat-cu-frans-timmer>

- mans-despre-implementarea-pactului-verde-si-aderarea-romaniei-la-schengen.html . Accesat în 22.12.2025.
- Gough, I. (2017). *Heat, greed and human need: Climate change, capitalism and sustainable wellbeing*. Edward Elgar Publishing. <https://doi.org/10.4337/9781786431952>
- GreenDeal-NET. (2026). The EU's strategic dialogues — are they just 'participation washing'?
- Habermas, J. (1984). *The theory of communicative action* (Vol. 1). Beacon Press.
- Hajer, M. A. (1995). *The politics of environmental discourse: Ecological modernization and the policy process*. Oxford University Press.
- Hooghe, L., & Marks, G. (2001). *Multi-level governance and European integration*. Rowman & Littlefield.
- ICOMOS. (2019). *The future of our pasts: Engaging cultural heritage in climate action*. Paris: ICOMOS.
- IDDRI. (2025). The next generation of EU partnerships: Making Clean Trade and Investment Partnerships (CTIPs) work for climate, industry and development. <https://www.iddri.org/en/publications-and-events/report/next-generation-eu-partnerships-making-clean-trade-and-investment>
- ILO. (2015). *Guidelines for a just transition towards environmentally sustainable economies and societies for all*. Geneva.
- Ivey Business School. (2019). Four business negotiation techniques: Distributive or zero-sum negotiation. <https://www.ivey.uwo.ca/academy/insights/2019/07/four-business-negotiation-techniques/>.
- Jordan, A., & Adelle, C. (2012). *Environmental policy in the EU: Actors, institutions and processes*. Routledge.
- Korinek, L. & Hafele, J. (2024). EU clean transition dialogues: Sectoral approach needs to harness regional strengths. <https://zoe-institut.de/en/news/eu-clean-transition-dialogues/>
- Lewicki, R. J., Barry, B., & Saunders, D. M. (2024). *Negotiation: Readings, exercises, and cases* (latest ed.). McGraw-Hill Education.
- Life After Coal. (2024). Clean transition – European Commission summarises Clean Transition dialogues with industry and EU social partners. <https://lifeaftercoal.pl/en/clean-transition-european-commission-summarises-clean-transition-dialogues-with-industry-and-eu-social-partners/>
- Lockwood, M. (2018). Right-wing populism and the climate change agenda: Exploring the linkages. *Environmental Politics*, 27(4), 712–732. <https://doi.org/10.1080/09644016.2018.1458411>
- Lockwood, M. (2021). The politics of climate change policy. *Wiley Interdisciplinary Reviews: Climate Change*, 12(1), 1–15.
- Maltais, A. (2025). *Green industrial policy: Challenges and opportunities for a fair energy transition*. Stockholm Environment Institute.
- Mazzucato, M. (2021). *Mission economy: A moonshot guide to changing capitalism*. Penguin.
- McNair, B. (2018). *An introduction to political communication* (6th ed.). Routledge.
- McWilliams, B. & Tagliapietra, S. (2025). Europe's Clean Industrial Deal: Four priorities to fulfil its promise. <https://www.bruegel.org/first-glance/europes-clean-industrial-deal-four-priorities-fulfil-its-promise>

- Mendez, C., & Triga, V. (2021). Digital governance and policy coordination in the EU. *Journal of European Public Policy*, 28(9), 1357–1374.
- Meunier, S., & Nicolaïdis, K. (2019). The geopoliticization of European trade and investment policy. *Journal of Common Market Studies*, 57(S1), 103–113. <https://doi.org/10.1111/jcms.12970>
- Morgan, L. (2025). EU Clean Industrial Deal: A new plan to bring together climate action and competitiveness. <https://www.morganlewis.com/pubs/2025/07/eu-clean-industrial-deal-a-new-plan-to-bring-together-climate-action-and-competitiveness>
- OECD. (2020). De-risking institutional investment in green infrastructure. Organisation for Economic Co-operation and Development.
- OECD. (2024). Co-ordination of green policies at the centre of government in Romania. https://www.oecd.org/content/dam/oecd/en/publications/reports/2024/02/co-ordination-of-green-policies-at-the-centre-of-government-in-romania_10b1a355/86439554-en.pdf. Accesat în 05.01.2026.
- PubAdmin Institute. (2025). Distributive vs. integrative negotiation: Understanding the win-lose approach. <https://pubadmin.institute/organisational-behaviour/distributive-vs-integrative-negotiation-approaches>
- Reuters. (2025a). Romania is negotiating with EU to extend coal-fired plants' operation. <https://www.reuters.com/business/energy/romania-is-negotiating-with-eu-extend-coal-fired-plants-operation-minister-says-2025-09-02/>. Accesat în 22.12.2025.
- Reuters. (2025b). EU warns Romania to remove gas price cap. <https://www.reuters.com/sustainability/boards-policy-regulation/eu-warns-romania-remove-gas-price-cap-or-face-legal-action-2025-05-07/>. Accesat în 22.12.2025.
- Rodrik, D. (2014). Green industrial policy. *Oxford Review of Economic Policy*, 30(3), 469–491.
- Sabel, C. F., & Zeitlin, J. (2008). Learning from difference: The new architecture of experimentalist governance in the EU. *European Law Journal*, 14(3), 271–327.
- Sabel, C. F., & Zeitlin, J. (2010). Experimentalist governance in the European Union: Towards a new architecture. Columbia University Press. <https://scholarship.law.columbia.edu/books/173/>
- Sabel, C. F., & Zeitlin, J. (2012). Experimentalist governance. In D. Levi-Faur (Ed.), *The Oxford handbook of governance* (pp. 169–183). Oxford University Press.
- Sabel, C. F., & Zeitlin, J. (2021). *Experimentalist governance in the European Union*. Oxford University Press.
- Scharpf, F. W. (1999). *Governing in Europe: Effective and democratic?* Oxford University Press.
- Skovgaard, J. (2021a). The political economy of European climate policy. *Cambridge Review of International Affairs*, 34(1), 1–20.
- Skovgaard, J. (2021b). The politics of green transition: The European Green Deal and the framing of economic opportunity. *Politics and Governance*, 9(3), 8–17. <https://doi.org/10.17645/pag.v9i3.4367>
- Spătaru, F. (2025). Romania remains committed to the Green Deal. *Energynomics*. <https://www.energynomics.ro/en/florin-spataru-romania-remains-committed-to-the-green-deal/>
- Stamate, E.V. (2025). Romania approves state aid schemes aligned with EU decarbonisation goals. LinkedIn.
- Stokes, L. C., & Warshaw, C. (2017). Renewable energy policy design and framing influence public support in the United States. *Nature Energy*, 2(1), 1–6. <https://doi.org/10.1038/nenergy.2016.207>

Tagliapietra, S., & Veugelers, R. (2020). A green industrial policy for Europe. Bruegel Blueprint Series.

Tagliapietra, S., & Veugelers, R. (2020). The EU Green Deal: From growth strategy to climate action. Bruegel Policy Contribution, 13.

The Diplomat Bucharest. (2025). Analysis: The Clean Industrial Deal and Central and Eastern Europe. <https://www.thediplomat.ro/2025/02/27/epg-says-the-clean-industrial-deal-includes-almost-no-new-public-funding-for-industrial-transformation/>.

Trehu, J. (2025). A green industrial policy for an era of economic security. <https://www.gmfus.org/news/green-industrial-policy-era-economic-security>

IMPLEMENTING THE GREEN DEAL IN ROMANIA. CLIMATE AND ENERGY STRATEGIES, ECONOMIC AND POLITICAL IMPLICATIONS AND THE GEOPOLITICAL DIMENSION Case study: Black Sea Energy Projects

Mariana Svetlana MUREȘAN

Abstract: *The European Green Deal represents one of the most ambitious political initiatives of the European Union in recent decades, redefining the economic, energetic and security priorities of the Member States by integrating the objective of climate neutrality at the heart of the European agenda. The transformations generated by climate change have determined the emergence of new economic and political paradigms at a global level. The European Union adopted the European Green Deal as the main instrument for reforming the economy and reducing the impact on the environment. The paper analyzes the impact of Green Deal strategies on Romania, assessing the economic and political implications of the green transition in the context of international geopolitical transformations. The research uses the analysis of European Commission documents, reports of international institutions and literature in the field, as well as national legislation, followed by a case study on energy projects in the Black Sea. The exploitation of natural gas resources in the Black Sea is examined as a central element of the intersection between decarbonization and regional energy security. The results highlight the complexity of the energy transition process and reveal the need to adapt national policies to new economic and geopolitical realities. In this context, the adoption and amendment of the Law on Offshore Oil Operations is a central element of the national debate, being supported by the authorities as a strategic instrument for strengthening energy security and regional autonomy. At the same time, certain non-governmental organizations and civil society actors have criticized the development of projects in the Black Sea, arguing that investments in natural gas infrastructure may contravene climate neutrality objectives and prolong dependence on fossil fuels. The analysis is carried out from the point of view of the Europeanization process and the geopolitical dimension of the energy transition, highlighting the way in which European climate norms are internalized and reinterpreted according to national strategic interests.*

Therefore, the research contributes to understanding how European climate policies influence the dynamics of international relations and the energy strategies of the Member States.

Keywords: *Green Deal, Case Study, Black Sea, Policies, Analysis.*

1. Introduction

The acceleration of extreme weather events and the increasing pressure on natural resources have led to important changes in economic and energy policies at the global level. In the last two decades, climate change has become a central element of the international agenda, leading states to adopt strategies to reduce greenhouse gas emissions and adapt to new environmental conditions. The energy transition has become one of the main dimensions of the transformation of the contemporary international system. Within the European Union, the adoption of the European Green Deal marks a defining stage in the integration of climate objectives into the economic, institutional and strategic architecture of the Union.¹

Climate change represents one of the most important systemic challenges of the contemporary international order, affecting the natural environment, economic dynamics and global geopolitical balance. As a result, the European Union has adopted the European Green Deal, which represents a central strategy for economic and political transformation, through which it assumes the objective of achieving climate neutrality by 2050.²

The Green Deal is not just an environmental policy, but a structural strategy through which the European Union repositions itself in the international system. By integrating climate objectives into trade, energy and industrial policy, the EU strengthens its role as a "normative power" in the field of global climate governance.³

For Romania, the implementation of the European Green Deal implies major transformations in the energy, industrial and social sectors. The Romanian economy faces significant challenges, including dependence on fossil fuels and the need to modernize the energy infrastructure. Analyzing the impact of these policies is essential for understanding the economic and political evolution of the Romanian state in the context of the transition to a green economy.

The motivation for choosing this topic comes from the desire to analyze how European climate policies are internalized at the national level, taking into account that Romania is a country with administrative vulnerabilities and limited institutional capacity. Another interesting aspect that I wanted to analyze is the situation of the Black Sea, because Romania's geopolitical position in this region brings an additional dimension to analyze, namely the interaction between the green transition and regional energy security, aspects that we will analyze in the case study. Thus, this paper analyzes the political, economic and geopolitical implications of the Green Deal implementation in Romania, especially through the lens of offshore energy projects in the Black Sea, which we will analyze in the case study.

The main objective of this article is to analyze how Romania implements the Green Deal strategies, observing the political and economic implications of the green transition and examining Romania's geopolitical role in the context of regional energy security. The paper aims to highlight the compatibility between European climate norms and national interests in

¹ European Commission, *The European Green Deal*, COM(2019) , accessed 12.01.2026

² European Commission, *The European Green Deal*, accessed 02.02.2026.

³ Ian Manners, "Normative Power Europe: A Contradiction in Terms?" *Journal of Common Market Studies* 40, no. 2 (2002): 235–258, accessed 09.02.2026.

terms of economic development and energy autonomy, trying to analyze to what extent Romania actively or less actively adopts the implementation of the Green Deal.

The research questions on which I will base my work are the following:

- How has Romania implemented the Green Deal objectives in its energy and climate policies?
- What are the political and economic implications of the green transition in Romania?
- How does Romania's geopolitical role influence energy projects in the Black Sea and are they compatible with the Green Deal objectives?

The research methodology is qualitative and is based on the analysis of official documents of the European Union, reports of international institutions and academic literature relevant to the field of climate and energy policies. Documentary analysis is the main method used in the research. This method involves the examination of strategies and policies adopted at European and national level, including the European Green Deal, the “Fit for 55” legislative package and the Romanian National Integrated Energy and Climate Change Plan,³ to assess how European climate norms are internalized at national level and reinterpreted according to domestic political and economic constraints.

The paper is structured in six chapters. After the introductory chapter in which I recall some general information about the Green Deal, I motivate the choice of the theme and present the research questions on which the article will be based, the Literature review chapter follows, which includes an analysis of the specialized literature on the Green Deal, European climate leadership and energy security. The research methodology represents the next chapter, in which I argue the choice of the qualitative method, which involves document analysis and recall these documents, as well as the case study, which I discuss in detail in the next chapter. The analysis of the energy and climate strategies adopted by Romania, the political and financial implications on the implementation of the Green Deal as well as the case study of the energy projects in the Black Sea are part of the fourth chapter. The discussion chapter examines the political and economic implications of the green transition, the geopolitical dimension of the Green Deal and interprets the results from a theoretical perspective, and the conclusions chapter summarizes the implications for research in the field of international relations and makes a brief synthesis of the main topics in this article.

2. Literature Review

The specialized literature has extensively analyzed the role of the European Union as a normative actor in the field of climate policies. After reviewing several articles, journals and relevant documents in this field, we came to the conclusion that these can be structured around two major areas: the process of Europeanization and the geopolitics of the energy transition.

Frank Schimmelfennig and Ulrich Sedelmeier have shown that in Central and Eastern Europe, the Europeanization process is often influenced by external coercive mechanisms and

economic incentives.⁴ In the context of the Green Deal, European funds for the green transition function as instruments requiring compliance, which may lead to a reactive rather than strategic implementation.

Ian Manners introduces the concept of "Normative Power Europe", arguing that the EU exerts influence by promoting norms and values in the international system.⁵ In the context of climate change, this normative role is reflected in the EU's ability to set global standards in the field of emission reduction and sustainability policies.

Heather Grabbe argues that Eastern European states tend to adopt European policies in a logic of formal conformity, without always integrating them into a coherent national vision.⁶ This statement is also valid for Romania, because the implementation of climate objectives is linked to European financial constraints and conditions. Romania is frequently mentioned as a state with significant energy potential, but with challenges in implementing structural reforms. In a regional context, Dimitar Bechev highlights the importance of the Black Sea as a space of geopolitical competition and energy interdependence.⁷ Romania, through its strategic position and membership in the EU and NATO, plays a central role in this configuration.

Marco Siddi analyzes the Green Deal as an instrument for consolidating European strategic autonomy, arguing that the energy transition reduces dependence on energy imports and strengthens the geopolitical position of the European Union, which proves that it is not just an environmental initiative, but has the power to reshape alliances and competitiveness in the Union's foreign policy.⁸

In the context of Central and Eastern Europe, studies highlight structural vulnerabilities related to energy dependence and limited administrative capacity, the authors being of the opinion that energy should be reintegrated into international political economy discussions, taking into account the interdependence between energy, environment and security, in the context of global changes.⁹ Romania is frequently mentioned as a state with significant energy potential, but with challenges in implementing structural reforms. In a regional context, Dimitar Bechev highlights the importance of the Black Sea as a space of geopolitical competition and energy interdependence, analyzing this aspect especially after the annexation of Crimea, when Romania also had to rethink its security strategy in the maritime area.¹⁰ Romania, through its strategic position and membership in the EU and NATO, plays a central role in this configuration.

⁴ Frank Schimmelfennig and Ulrich Sedelmeier, *The Europeanization of Eastern Europe: the external incentives model revisited*, (Journal of European Policy. 27.2:1-20, 2019), accessed 05.02.2026.

⁵ Ian Manners, "Normative Power Europe: A Contradiction in Terms?" *Journal of Common Market Studies* 40, no. 2 (2002): 235–258, accessed 09.02.2026.

⁶ Heather Grabbe, *The EU's Transformative Power: Europeanization through Conditionality in Central and Eastern Europe* (Basingstoke: Palgrave Macmillan, 2006), accessed 11.02.2026

⁷ Dimitar Bechev, *Rival Power: Russia's Influence in Southeast Europe* (Journal of Balkan and Black Sea Studies, 2020), accessed 27.01.2026.

⁸ Marco Siddi, "The European Green Deal: Assessing its current state and future implementation, 2020, accessed 12.01.2026

⁹ Michael Keating, Andreas Goldthau, "Bringing energy into International Political Economy", *Dynamics of Energy Governance in Europe and Russia*, 2012, accessed 12.01.2026.

¹⁰ Dimitar Bechev, *Rival Power: Russia's Influence in Southeast Europe*, idem.

Regarding the literature from Romania, it is more limited, but there are relevant studies. Davidescu and his collaborators analyze the impact of European funds on emission reduction in Romania¹¹, claiming that they have a positive effect because they support investments in green infrastructure and in environmental protection policies, but these are limited by administrative capacity and the quality of project implementation.

Regarding the Black Sea, the analyses in Energy Strategy Reviews¹² discusses the role of offshore gas in regional energy security and its compatibility with decarbonization objectives, as its exploitation can temporarily increase energy security and reduce import dependence but must be integrated into a decarbonization strategy so that investments in the Black Sea do not conflict with EU climate objectives. Simone Tagliapietra argues that European energy security must be understood in the context of the green transition, as reducing fossil fuel imports becomes part of the European Union's strategic autonomy strategy, affecting diplomatic relations with the world's great powers.¹³ Thus, the EU must protect its interests and remain influential in the new global context, and energy projects in the Black Sea can be considered instruments for strengthening regional security.

Therefore, the analyzed literature suggests that the implementation of the Green Deal in Romania cannot ignore the geopolitical dimension of regional energy security. Offshore projects in the Black Sea represent the intersection point between decarbonization, energy autonomy and regional competition.

3. Research Methodology

This study uses a qualitative, content-based approach, appropriate for the analysis of institutional transformation processes and geopolitical dynamics associated with the energy transition.

The paper is based on the content analysis of official European and national documents, as well as on the interpretation of relevant academic literature in the field of international relations, public policies and energy geopolitics. The content analysis allowed us to identify convergences and divergences between EU objectives and strategies adopted at national level. The documents analyzed include European Commission communications, climate policy regulations, the Romanian Integrated National Energy and Climate Change Plan, as well as national energy and climate change strategies.¹⁴

The research questions that guided the the current scientific paper are:

- How has Romania implemented the Green Deal objectives in its energy and climate policies?

¹¹ Adriana Davidescu et al., "The Impact of EU Funds on Environmental Sustainability in Romania," Sustainability 14, accessed on 11.02.2026, 22:53.

¹² Arvydas Galinis, Linas Martisauskas, Jaakko Jaaskelainen, Ville Olkkonen, Sanna Syri, Georgios Avgerinopoulos, Vidas Lekavicius, "Implications of carbon price paths on energy security in four baltic region countries", (2020), accessed 12.02.2026

¹³ Mark Leonard, Jean Pisani-Ferry, Jeremy Shapiro, Simone Tagliapietra, Guntram Wolff, "The Geopolitics of the European Green Deal, (2021), accessed 12.02.2026

¹⁴ European Commission, Integrated National Energy Climate Plan of Romania 2025-2030 Update (2024)

- What are the political and economic implications of the green transition in Romania?
- How does Romania's geopolitical role influence energy projects in the Black Sea and their compatibility with the Green Deal objectives?

Regarding the period analyzed, the research focuses on the period 2019–2024, an interval that corresponds to the adoption and initial implementation of the European Green Deal and the update of national energy strategies.

As part of the work, I also conducted a case study on energy projects in the Black Sea, through which I specifically analyze the tension between decarbonization objectives and energy security needs. The study includes an analysis of the legislative framework, in particular the adoption of Law 256/2018 on offshore operations, the economic effects and the strategy for offshore gas exploitation, in relation to the objectives of the European Green Deal. The Neptun Deep project, developed in partnership with major economic actors, is presented by the authorities as a pillar of regional energy security and the consolidation of Romania's strategic autonomy within the European Union, but we will also analyze the risks associated with long-term investments in fossil fuel infrastructure.

By cross referencing document analysis with the theoretical framework of Europeanization and energy geopolitics, the methodology we adopted aims to provide a comprehensive assessment of how Romania oscillates between European regulatory pressure and regional strategic constraints.

The development of the article consisted of several stages. The first stage involved identifying the appropriate theoretical framework, by analyzing the literature on Europeanization and the geopolitics of the energy transition, we selected several authors who wrote in these fields to study their work and articles. The second stage involved analyzing relevant official documents, both at European and national level. We analyzed the European Commission communications on the European Green Deal, European climate legislation, the Romanian National Integrated Energy and Climate Change Plan and other relevant strategies. In the third stage, we analyzed the offshore energy projects in the Black Sea, observing their implications on energy security and compatibility with European climate objectives, we studied the arguments for and against this project with an enormous impact both for the economy and strategically. We concluded with the idea that the implementation of climate norms is not achieved in the absence of political negotiation, but through a continuous process of adjustment between European objectives and national priorities.

4. Data Analysis

It is essential to start by analyzing **the internalization of the Green Deal objectives in Romanian energy policies, since the implementation of the Green Deal in Romania** can be observed primarily through the transformations introduced in the National Integrated Energy and Climate Change Plan (PNIESC). The document reflects the formal alignment with

European objectives regarding the reduction of emissions, the increase in the share of renewable energy and the improvement of energy efficiency.¹⁵

Analysis of the content of the PNIESC indicates a gradual adaptation, rather than an accelerated structural transformation. The assumed targets are calibrated in such a way as to maintain a balance between climate commitments and domestic economic constraints. Romania aims to increase the share of renewable energy in gross final energy consumption, while simultaneously maintaining a significant role for natural gas in the national energy mix.¹⁶ European norms are selectively internalized, by integrating climate objectives into the strategic discourse and by maintaining priorities related to energy security. However, the European energy transition, although oriented towards decarbonization, must take into account geopolitical realities and existing external dependencies, including with regard to natural gas supply. The analysis of a relevant article shows that the argument of security of supply is frequently invoked to justify maintaining the natural gas infrastructure, functional in the medium term, remaining an essential link for energy stability and system flexibility in the transition to renewable sources.¹⁷

The coal phase-out process provides another relevant example. Romania has undertaken to progressively close down coal-fired power plants, benefiting from support through the Just Transition Mechanism, in order to ensure that workers and communities dependent on carbon-intensive industries are not left behind, while also representing an attempt to prevent political and social fragmentation. This plan is possible because special financial resources are allocated, territorial transition plans have been made, and the mechanism supports economic diversification, retraining of the workforce and the creation of new opportunities in territories affected by the transition from fossil fuels such as coal.¹⁸ The implementation schedule is influenced by economic and social factors, especially in mining regions, where the transition involves significant social costs.

Regarding the **political implications of the Green Deal implementation**, these are visible in the reconfiguration of the institutional framework and in the debates on energy autonomy. The adoption of the new climate objectives has led to legislative and administrative changes, including the updating of energy strategies and the regulatory framework for green investments.¹⁹ The document highlights the need to strengthen the climate governance framework, improve inter-institutional coordination and increase administrative capacity at central and local level, in order to effectively implement European legislation. It also recommends simplifying and accelerating authorization procedures for renewable energy projects, as well as strengthening the absorption and management mechanisms of European funds for the green transition.

¹⁵ European Commission, *National Energy and Climate Plan of Romania 2021–2030* (Brussels: European Commission, 2023), accessed 13.02.2026

¹⁶ European Commission, *The European Green Deal*, COM(2019) 640 final (Brussels, 2019), idem

¹⁷ Mark Leonard, Jean Pisani-Ferry, Jeremy Shapiro, Simone Tagliapietra and Guntram Wolff, "The geopolitics of the European Green Deal," *Policy Contribution Issue*, n.4/2021, (2021)

¹⁸ European Commission, *The Just Transition Mechanism: Making Sure No One Is Left Behind* (Brussels, 2020).

¹⁹ OECD, "Decarbonising Romania's economy", (2024)

However, the analysis of the political discourse reveals an oscillation between pro-European commitment and concerns about economic competitiveness. Public debates in recent years have highlighted concerns about rising energy costs and the impact on energy-intensive industry. Climate policy can no longer be treated as a long-term issue, but must be integrated into macroeconomic policy because the transition to carbon neutrality involves significant short-term costs, equipment becoming obsolete, jobs being redistributed and investments having to increase, and these effects need to be systematically managed by decision-makers.²⁰

The economic implications and financing of the green transition are a very important topic to consider in this study, as the energy transition involves the mobilization of considerable financial resources. Romania benefits from substantial European funds through the National Recovery and Resilience Plan (PNRR), the Modernization Fund and the Just Transition Fund.²¹ With the help of these funds, various reforms have been approved, such as: legislative reform that creates a legal framework for the use of unproductive or degraded land, for projects that produce renewable energy, the acceleration of renewable energy and energy efficiency, the efficient renovation of buildings called "Renovation Wave" for the energy renovation of residential buildings, environmental and biodiversity projects for afforestation and replanting, sustainable transport for green infrastructure that supports efficient transport solutions. All these investments are essential for Romania to comply with both the commitments assumed through the European Green Deal and the national objectives for reducing emissions and adapting to climate change.²²

The analysis of the financial programming shows that investments are concentrated in energy infrastructure, energy efficiency and the development of production capacities from renewable sources.²³ These investments create economic opportunities, especially in the field of green technologies and energy infrastructure. The World Bank report highlights that decarbonizing the Romanian economy requires significant investments in the key sectors of energy, energy efficiency and electrification, in particular to support the development of an economy based on low-emission energy sources, but also requires investments in renewable sources, modernization of energy infrastructure and improvement of energy efficiency in sectors such as buildings and transport. This investment-oriented approach was defined as essential for Romania to advance towards the decarbonization goals set for 2030 and towards climate neutrality by 2050.

4.1. Case Study: Black Sea Energy Projects

The exploitation of offshore natural gas in the Black Sea represents one of Romania's most important energy projects in recent decades.

²⁰ Jean Pisani-Ferry, "Climate Policy Is Macroeconomic Policy and the Implications will be Significant" *Peterson Institute for the International Economics*, (2021),

²¹ European Commission, *Romania's Recovery and Resilience Plan* (Brussels, 2021)

²² https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI%282022%29733641, accessed 11.01.2026

²³ World Bank, *Romania Climate and Development Report* (Washington, DC: World Bank, 2023).

The development targets two commercial fields, "Domino" and "Pelican Sud", with complex infrastructure including drilling, subsea production systems, an offshore platform and a gas pipeline to land, taking place on an offshore block located about 160 km from shore in deep waters, carried out in a 50% partnership between Romgaz and 50% OMV Petrom, the project operator, and is considered one of the most important energy initiatives in recent years for Romania. Christina Verchere, CEO of OMV Petrom, stated that "With the final investment decision in the Neptun Deep project, we are opening a new chapter in the Romanian energy sector. Together with our partner, Romgaz, we are entering the development phase of the first deep offshore project in Romania, which will contribute to economic growth and strengthen the country's energy security,"²⁴ which highlights the importance of this project for these companies as well.

The adoption of **offshore legislation** and the involvement of OMV Petrom and Romgaz mark a decisive stage in the exploitation of maritime energy resources.²⁵ The legal regime of natural gas exploitation in the Black Sea is regulated by Law no. 256/2018 on some measures necessary for the implementation of offshore oil operations, a normative act that establishes the fiscal framework, the obligations of investors and the conditions for the marketing of natural gas extracted from maritime perimeters. An essential element of the law is the emphasis on fiscal stability during the duration of the oil agreements, in order to provide predictability to investors. According to official information published by Romgaz, total investments are estimated at approximately 4 billion euros, and the estimated annual production could reach approximately 8–10 billion cubic meters of natural gas per year.²⁶ These figures indicate a significant impact on the national economy, both through budgetary revenues generated from royalties and taxes, and through indirect effects on energy infrastructure and supply chains.

In parliamentary debates and official statements, the exploitation of offshore resources was presented as a national strategic project, with direct implications for Romania's energy independence. **Politically**, the project has been supported by Romanian authorities as a key element in ensuring energy independence, stating that Neptun Deep can significantly reduce dependence on external energy sources and strengthen Romania's role in the region and on the European gas market. Energy Minister Sebastian Burduja stated that "starting in 2027, Romania will be the first gas producer in Europe thanks to the Neptun Deep project", underlining the strategic and energy independence nature of the investment.²⁷ In addition to the economic benefits, the project is part of the debates related to the energy transition and environmental impact, with some critics and environmental organizations drawing attention to the total carbon emissions and long-term effects on biodiversity, the analyses included in the report suggest that the total emissions generated by the project could lead to significant climate change, increasing the frequency and intensity of extreme weather events.²⁸

²⁴ <https://www.omvpetrom.com/en/media/latest-news/2023/omv-petrom-and-romgaz-announce-the-decision-to-develop-neptun-deep-the-largest-natural-gas-project-in-the-romanian-black-sea>, accessed 12.01.2026

²⁵ Legea nr. 256/2018 privind operațiunile petroliere offshore

²⁶ <https://www.romgaz.ro/en/about-neptun-deep-project>

²⁷ <https://www.economica.net>

²⁸ <https://www.greenpeace.org>, accessed 23.01.2026

The compatibility of Black Sea gas exploitation with the Green Deal objectives is one of the most sensitive issues in the energy debate in Romania. From a Europeanization perspective, the offshore law represents an example of regulatory adaptation that aims to integrate energy projects within the framework of European regulations on the internal energy market and competition, without contravening the climate obligations assumed at European level.

The Neptun Deep project is considered strategic for both Romania and the European Union, in the context of diversifying natural gas supply sources. Offshore gas exploitation can reduce regional dependence on imports and strengthen Romania's position within the European energy market. Official estimates indicate investments of billions of euros and potential significant budget revenues in the medium and long term, and the project also contributes to technological development and job creation in related sectors.²⁹

On the one hand, natural gas is often described as a “transition fuel”. Compared to coal, the use of natural gas for electricity generation generates significantly lower CO₂ emissions. In this sense, replacing coal-fired power plants with gas-fired units can contribute to achieving the interim emission reduction targets set for 2030.³⁰ On the other hand, the energy transition literature draws attention to the risk of “carbon lock-in”, i.e. the situation where investments in fossil fuel infrastructure create long-term structural dependencies that can delay the transition to renewables. From this perspective, the compatibility of the Neptun Deep project with the Green Deal depends on how natural gas is integrated into a time-limited energy transition strategy and correlated with accelerated investments in renewable energy and storage technologies. In this regard, the Greenpeace project disputes the argument that the project would increase “EU energy security”, arguing that such gas projects will keep Europe dependent on fossil fuels instead of accelerating the transition to renewables.³¹

In conclusion, offshore projects in the Black Sea can only be compatible with the Green Deal to the extent that they are integrated into a coherent transition strategy, which provides for the progressive reduction of dependence on fossil fuels and the acceleration of investments in renewable sources.

5. Discussions

The results presented above indicate that Romania does not reject European climate norms, but neither does it internalize them in a completely autonomous manner. The process seems to be one of pragmatic adaptation, influenced simultaneously by external constraints and national interests. Romania does not contest climate objectives, but integrates them into a framework that maintains strategic flexibility in the energy field.

The geopolitical dimension adds an additional layer of complexity. The exploitation of Black Sea gas introduces a structural tension between two apparently divergent logics: the logic of decarbonization and the logic of energy security. While the former is based on the

²⁹ Romgaz, *Neptun Deep Project Overview*, www.romgaz.ro.

³⁰ European Commission, *The European Green Deal*, COM(2019) 640 final (Brussels, 2019).

³¹ <https://www.greenpeace.org>

objective of climate neutrality by 2050, the latter is driven by the imperative of reducing import dependence and strengthening regional resilience.

In this context, the Neptun Deep project becomes more than an economic investment. It functions as a strategic positioning tool. Romania is consolidating its role in the Black Sea region, but simultaneously assumes the risk of prolonging the use of fossil fuels at a time when the European Union is promoting the acceleration of the transition to renewable energy.

From a political point of view, the green transition in Romania seems to be accepted as inevitable, but it is not without internal negotiation. The implementation of the Green Deal is conditioned by access to European funding and the institutional capacity to manage structural reforms. At the same time, the internal debate reflects the tension between the use of natural gas as a “transition fuel” and the objective of achieving climate neutrality by 2050, enshrined in the European Green Deal. Criticisms formulated by environmental organizations and some political actors highlight the risk of a prolonged dependence on fossil infrastructure, while supporters of the project argue for the need for a phased approach to the energy transition.

Another element worth highlighting is Romania's regional positioning, which should be analyzed beyond the strictly economic dimension of offshore gas exploitation. In the context of European energy security, the development of Black Sea resources can strengthen Romania's role as a regional supplier, including for the states of South-Eastern Europe. This strategic dimension can amplify Romania's relevance within the European Union, but also its responsibility in achieving common climate objectives.

Overall, the analysis suggests that the implementation of the Green Deal in Romania should be understood as a dynamic process, characterized by successive adjustments and negotiations between the European and national levels. Romania's regional positioning, consolidated through the Black Sea projects, denoted an attempt to integrate energy security objectives into the broader architecture of the European climate transition.

6. Conclusions

The article analyzed the implementation of the European Green Deal in Romania through the two main theoretical frameworks: Europeanization and the geopolitics of the energy transition. Starting from the research questions proposed at the beginning of the study, we aimed to identify the mechanisms of internalization of European climate norms, assess the political and economic implications of this process and examine how the energy transition influences Romania's geopolitical positioning in the Black Sea region.

We can observe that Romania has integrated the objectives of the European Green Deal into its energy and climate strategies in an ever-improving manner, confirming the theoretical perspective that Europeanization is a process of incremental adaptation, not sudden transformation.³²

³² Claudio M. Radaelli, “The Europeanization of Public Policy,” in *The Politics of Europeanization*, ed. Kevin Featherstone and Claudio Radaelli (Oxford: Oxford University Press, 2003), 27–56.???

In terms of political implications, we can see that the green transition is mediated by administrative capacity and the need to manage the social costs of decarbonization, and European financial support mechanisms, including those dedicated to just transition, facilitate this process, but do not completely eliminate the internal tensions associated with economic restructuring.

Regarding the geopolitical dimension, the case study on the exploitation of gas in the Black Sea highlighted the existence of an interdependence between climate objectives and energy security considerations. Recent literature emphasizes that the energy transition reconfigures power relations and regional interdependencies, and the case of Romania confirms this dynamic.³³ Thus, Romania gains increased relevance in the Black Sea region, through the potential to contribute to diversifying the European Union's supply sources and reducing the energy vulnerabilities of South-Eastern Europe.

The European Union's objective of achieving climate neutrality by 2050 represents the regulatory framework against which these developments must be assessed.³³ In this context, natural gas may play a transitory role, but the literature warns of the risk of consolidating structural dependencies that may delay the transformation of the energy system.³⁴

Given that the European Union aims to strengthen energy autonomy and reduce external dependencies, the development of domestic resources can be interpreted as part of this broader strategy.³⁵ However, long-term compatibility with the climate neutrality objective remains conditional on the integration of gas investments into a clear decarbonization trajectory, in line with the commitments undertaken through the European Green Deal. Overall, the implementation of the Green Deal in Romania reflects a strategic adaptation process at the intersection of European regulatory convergence and regional energy security considerations.

From the perspective of international relations research, this analysis highlights the need to integrate climate policies into the study of contemporary geopolitics. The energy transition can no longer be approached exclusively as a technical or economic issue, but must be analyzed as a process of transformation of power relations, regional interdependencies and security strategies.

Bibliography

European Commission, *The European Green Deal*, COM(2019) 640 final (Brussels: European Commission, 2019), https://www.consilium.europa.eu/media/47573/st_15051_2019_init_en.pdf, accessed 02.02.2026

Ian Manners, "Normative Power Europe: A Contradiction in Terms?" *Journal of Common Market Studies* 40, <https://www.princeton.edu/~amoravcs/library/mannersnormativepower.pdf>, accessed 09.02.2026, 13:35

³³ European Commission, *The European Green Deal*, COM, (Brussels, 2019)

³⁴ Matthew Lockwood, "The Political Dynamics of Green Transformations," *Environmental Politics* 22, no. 4 (2013): 561–581.

³⁵ European Commission, *REPowerEU Plan*, COM(2022) , accessed 10.02.2026

- Marco Siddi, "The European Green Deal: Assessing its current state and future implementation, 2020, https://www.researchgate.net/publication/341701815_The_European_Green_Deal_Assessing_its_current_state_and_future_implementation#fullTextFileContent, accessed 12.01.2026, 13:28.
- Adriana Davidescu et al., "The Impact of EU Funds on Environmental Sustainability in Romania," *Sustainability* 14, no. 5 (2022), <https://www.researchgate.net/search.Search.html?query=Adriana+Davidescu+et+al.%2C+The+Impact+of+EU+Funds+on+Environmental+Sustainability+in+Romania%2C+Sustainability+14%2C+no.+5+%282022%29%3A+2748.&type=publication>, accessed 11.02.2026, 22:53
- Daniel Scholten and Rick Bosman, "The Geopolitics of Renewables: Exploring the Political Implications of Renewable Energy Systems," *Energy Policy* 138 (2020): 111275.
- Frank Schimmelfennig and Ulrich Sedelmeier, *The Europeanization of Eastern Europe: the external incentives model revisited*, (Journal of European Policy. 27.2:1-20, 2019), https://www.researchgate.net/publication/333182853_The_Europeanization_of_Eastern_Europe_the_external_incentives_model_revisited, accessed 05.02.2026,
- Heather Grabbe, *The EU's Transformative Power: Europeanization through Conditionality in Central and Eastern Europe* (Basingstoke: Palgrave Macmillan, 2006, https://www.researchgate.net/publication/346088201_The_EU's_Transformative_Power_Europeanization_Through_Conditionality_in_Central_and_Eastern_Europe, accessed 11.02.2026, 23:35
- Dimitar Bechev, *Rival Power: Russia's Influence in Southeast Europe* (Journal of Balkan and Black Sea Studies, 2020), https://www.academia.edu/44780260/Dimitar_Bechev_Rival_Power_Russia_s_Influence_in_Southeast_Europe, accessed , 27.01.2027, 12:27.
- Mark Leonard, Jean Pisani-Ferry, Jeremy Shapiro, Simone Tagliapietra, Guntram Wolff, "The Geopolitics of the European Green Deal, (2021), <https://ecfr.eu/wp-content/uploads/The-geopolitics-of-the-European-Green-Deal.pdf>, accessed 12.02.2026, 15:35
- Michael Keating, Andreas Goldthau, "Bringing energy into International Political Economy", *Dynamics of Energy Governance in Europe and Russia*, 2012, https://www.researchgate.net/publication/280609549_Bringing_energy_into_International_Political_Economy, accessed 12.01.2026, 13:45.
- Arvydas Galinis, Linas Martisauskas, Jaakko Jaaskelainen, Ville Olkkonen, Sanna Syri, Georgios Avgerinopoulos, Vidas Lekavicius, "Implications of carbon price paths on energy security in four baltic region countries", (2020), https://www.researchgate.net/publication/342051144_Implications_of_carbon_price_paths_on_energy_security_in_four_Baltic_region_countries#fullTextFileContent, accessed 12.02.2026, 12:07.
- European Commission, *Integrated National Energy Climate Plan of Romania 2025-2030 Update* (2024), https://commission.europa.eu/publications/romania-final-updated-necp-2021-2030-submitted-2024_en, accessed 14.01.2026, 20:30
- European Commission, *National Energy and Climate Plan of Romania 2021–2030* (Brussels: European Commission, 2024), https://commission.europa.eu/publications/romania-final-updated-necp-2021-2030-submitted-2024_en, accessed 13.02.2026, 11:32
- Mark Leonard, Jean Pisani-Ferry, Jeremy Shapiro, Simone Tagliapietra and Guntram Wolff, "The geopolitics of the European Green Deal," *Policy Contribution Issue*, n.4/2021, (2021), https://www.bruegel.org/system/files/wp_attachments/PC-04-GrenDeal-2021-1.pdf, accessed 13.02.2026, 14:33
- European Commission, "The Just Transition Mechanism: Making Sure No One Is Left Behind,, (Brussels, 2020), https://ec.europa.eu/commission/presscorner/api/files/attachment/860386/just_transition_mechanism_en.pdf, accessed 13.02.2026, 16:43.

- OECD, "Decarbonising Romania's economy", (2024) https://www.oecd-ilibrary.org/content/dam/oecd/en/publications/reports/2024/07/decarbonising-romania-s-economy_b8e53c5f/256205df-en.pdf, accessed 13.02.2026, 18:30
- Jean Pisani-Ferry, "Climate Policy Is Macroeconomic Policy and the Implications will be Significant" *Peterson Institute for the International Economics*, (2021), [https://www.piie.com/sites/default/files/documents/pb2120.pdf#:~:text=Jean%20Pisani%2DFerry%20is%20nonresident%20senior%20fellow%20at,the%20BIS%20Green%20Swan%20conference%20\(June%203](https://www.piie.com/sites/default/files/documents/pb2120.pdf#:~:text=Jean%20Pisani%2DFerry%20is%20nonresident%20senior%20fellow%20at,the%20BIS%20Green%20Swan%20conference%20(June%203), accessed 17.01.2026.
- European Commission, *Romania's Recovery and Resilience Plan* (Brussels, 2021), https://reforms-investments.ec.europa.eu/romania-s-recovery-and-resilience-plan_en, accessed 27.01.2026, 17:36.
- World Bank, *Romania Climate and Development Report* (Washington, DC: World Bank, 2023), <https://openknowledge.worldbank.org/server/api/core/bitstreams/9693d7f2-e4b9-45c9-ac1c-ca28146e0248/content>, accessed 19.01.2026, 20:10.
- <https://legislatie.just.ro/Public/DetaliuDocument/206913>, 19.01.2026, 21:10.
- <https://www.romgaz.ro/en/about-neptun-deep-project>, accessed 22.01.2026, 14:35.
- <https://www.greenpeace.org/static/planet4-eu-unit-stateless/2025/01/7073a9c5-briefing-neptun-deep-gas-project-romania-jan2025.pdf>, accessed 23.01.2026.
- Kevin Featherstone, Claudio M. Radaelli, "The Politics of Europeanization: Theory and Analysis (2003), https://www.researchgate.net/publication/30523529_The_Politics_of_Europeanization_Theory_and_Analysis, accessed 06.02.2026
- <https://www.omvpetrom.com/en/media/latest-news/2023/omv-petrom-and-romgaz-announce-the-decision-to-develop-neptun-deep-the-largest-natural-gas-project-in-the-romanian-black-sea>, accessed 12.01.2026
- https://www.economica.net/burduja-din-2027-romania-va-fi-cel-mai-mare-producator-de-gaze-din-europa-datorita-neptun-deep_748906.html, accessed 24.01.2026

POLAND AND THE EUROPEAN GREEN DEAL: POLICY AND GOVERNANCE FOR A GREENER EUROPE

Valeriu ȘARGAROVSKI

Abstract: *This paper examines the implementation of the European Green Deal in Poland, focusing on how national institutions align with EU sustainability frameworks. Through a qualitative analysis of strategic documents, policies, and governance mechanisms, the study evaluates the effectiveness of Poland's transition in areas such as renewable energy and circular economy. Key challenges identified include institutional fragmentation, administrative capacity, and public engagement. The research highlights opportunities in economic modernization, regional development, and EU integration. Recommendations are proposed to strengthen intergovernmental coordination and promote inclusive green policies.*

Keywords: *European Green Deal, Poland, sustainability governance, renewable energy, policy coordination*

Introduction

Poland finds itself at a strategic turning point in its energy and climate transition, within the context of the ambitious European Green Deal (EGD) — the European Union's flagship initiative for socio-economic transformation toward climate neutrality by 2050.¹ Today, the Green Deal represents not only a normative framework for reducing greenhouse gas emissions, but also a complex strategic architecture of multilevel governance that integrates policies on energy, the economy, innovation, social justice, and industrial competitiveness at the European level, under a robust legislative framework that includes the Climate Law, Fit for 55, and the Just Transition Mechanism.²

Poland faces exceptional structural challenges within this context: its historical dependence on coal, an energy sector dominated by fossil fuels, and the economic and social

¹ European Green Deal – concept and main objectives of the EGD; the official source of the European Commission on global climate transition policy. [EU Green Deal overview – European Commission](#)

² Just Transition Mechanism and the EGD structure as a governance architecture. ([Wikipedia](#))

constraints stemming from this dependency.³ Despite formal commitments, Poland's climate-transition trajectory has at times been perceived as ambiguous or insufficiently ambitious, generating domestic debates and negotiations with European institutions over the pace, costs, and modalities of implementing green measures.⁴ Poland's energy transformation cannot be viewed in isolation from recent geopolitical developments, particularly the energy crisis triggered by the 2022 war in Ukraine, which underscored both the vulnerabilities associated with reliance on fossil-fuel imports and the imperative of energy security as an integral component of climate and economic strategy.⁵ In this sense, the 2023 change of government—through the political vote that brought Donald Tusk to the head of the Polish executive—opens a new potential stage of strategic repositioning in dialogue with EU partners and in aligning with European climate objectives.

Although the EU's official objective is climate neutrality by 2050 and a net reduction of emissions by at least 55% by 2030, in line with the European Climate Law and the EGD framework, for Poland these targets function more as reference points than as realities already embedded in national energy policy.⁶ According to several official European assessments, for Poland to contribute to the EU's objectives, final energy consumption from renewable sources should reach at least 25% by 2030, and energy efficiency should increase significantly over the same period.⁷

On the other hand, domestic strategic documents such as the *Energy Policy of Poland until 2040* (EPP2040) emphasize a "responsible" transition aimed at minimizing social and economic shocks, while simultaneously acknowledging the need to reduce coal use and diversify the energy mix through renewables and nuclear power.⁸ This approach highlights the managerial tension between the imperative of climate transformation and local socio-economic constraints, particularly in regions dependent on the coal industry, such as Silesia. Contemporary academic and political discourse frames this tension as a "paradox of environmental policy": although Poland has made progress in diversifying its energy sources and increasing the share of renewables, emission reductions remain below the EU average, and its political negotiation stance tends to advocate for flexibility in European targets rather than for a radical acceleration of the transition.⁹

³ *Energy Policy of Poland until 2040* – government document on Poland's internal energy transition; EPP2040 defines the energy mix and the pillars of the transformation. ([Gov.pl](https://gov.pl))

⁴ *Poland and the European Green Deal* – European Commission report on climate and energy targets for Poland in the context of the EGD. ([Publications Office of the EU](https://publications-office.eu))

⁵ The geopolitical impact of the Ukrainian crisis on European and Polish energy strategy (e.g. discussions related to energy security and independence from external sources).(cor.europa.eu)

⁶ *European Climate Law* – setting EU targets for climate neutrality by 2050 and reducing emissions by 2030. ([Wikipedia](https://en.wikipedia.org))

⁷ Assessments on the need to increase the share of renewable sources and energy efficiency to achieve Polish/EU targets. ([Publications Office of the EU](https://publications-office.eu))

⁸ Details from EPP2040 regarding the energy mix, nuclear development and the use of renewables as elements of the energy strategy. ([Gov.pl](https://gov.pl))

⁹ *Poland's climate action strategy* – policy briefing on commitments and emission reductions compared to the EU average. (europarl.europa.eu)

Chapter 1 – The Strategic Architecture of the European Green Deal for Climate Neutrality

The European Green Deal (EGD) represents the most ambitious public policy initiative of the European Union for combating climate change and driving the systemic transformation of member states' economies toward climate neutrality by 2050.¹⁰ This strategic architecture constitutes an integrated framework of energy, economic, social, and institutional policies designed to ensure coherence between climate objectives and economic practices, through legislative, financial, and multi-level governance instruments.¹¹

The strategic structure of the EGD is built on three fundamental pillars: (1) a binding legal framework (the European Climate Law), which establishes climate neutrality as a legal objective of the EU; (2) the Fit for 55 policy package, designed to reduce emissions by at least 55% by 2030 compared to 1990 levels; and (3) financial support and redistribution mechanisms, such as the Just Transition Fund and the instruments provided under the Recovery and Resilience Facility (RRF).¹²

1.1. European Climate Law and the Binding Objectives

An The European Climate Law has transformed the objective of climate neutrality from a political pledge into a legally binding commitment for all EU member states. It introduces the 2030 intermediate targets and periodic monitoring and reporting mechanisms as part of a system of shared responsibility. Through this law, the European Commission and the member states are required to develop coherent climate-mitigation strategies aligned with the European Green Deal.¹³ The 2030 objective of reducing net emissions by at least 55% requires Member States to adapt their domestic policies in energy, industry, and transport to meet EU standards, which turns the European Climate Law into a governance instrument that goes beyond traditional voluntary guidelines.

1.2. The Fit for 55 Package

The Fit for 55 package brings together a series of directives and regulations that, taken collectively, reshape the European political and economic architecture oriented toward decarbonization. Among its most important components are the reform of the Emissions

¹⁰ Comisia Europeană, „The European Green Deal”, COM(2019) 640 final. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52019DC0640>

¹¹ EGD as a strategic architecture and the role of the policy package: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

¹² Comisia Europeană, „Fit for 55: delivering the EU's 2030 Climate Target on the way to climate neutrality”, COM(2021) 550 final. Link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021DC0550>

¹³ European Commission, “Regulation (EU) 2021/1119 establishing the framework for achieving climate neutrality (European Climate Law)”, OJ L 243, 9.7.2021. Link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32021R1119>

Trading System (EU ETS), the increase of the share of renewable energy in the energy mix, and the revision of energy-efficiency standards for buildings and industry.¹⁴

These reglementations is not merely a set of regulations, but a coherent mechanism for reallocating responsibilities between EU authorities and national governments. The reform of the EU ETS, for instance, not only sets prices for carbon emissions but also incentivizes investment in clean technologies through the introduction of a carbon border adjustment mechanism for certain vulnerable industrial sectors.¹⁵

Another essential element is the policy for promoting renewable energy, which sets binding targets for member states regarding the share of renewables in final energy consumption. This reinforces the role of renewable energy as a central pillar of the strategic decarbonization architecture.¹⁶

1.3. Financial and Socio-Economic Mechanisms: The Just Transition Fund and RRF Instruments

One of the elements that distinguishes the European Green Deal from previous climate initiatives is the inclusion of a financial mechanism specifically designed to mitigate the social effects of the transition: the Just Transition Mechanism (JTM). It was created to support the regions most affected by the gradual phase-out of fossil fuels, particularly those dependent on coal and related industries. The Just Transition Fund operates as a financing platform that mobilizes both public and private resources, offering grants and preferential loans for projects that support the creation of green jobs, the reskilling of the workforce, and the regeneration of affected communities.¹⁷

Complementarily, the Recovery and Resilience Facility (RRF) has provided an additional financial framework for member states affected by the COVID-19 pandemic, which—under the conditions permitted by the European Commission—can be channelled toward investments that accelerate the green transition. This interdependence between the RRF and the EGD underscores the holistic nature of the strategic architecture, in which financial instruments are not merely optional tools but an integral component of achieving climate objectives.¹⁸

¹⁴ European Commission, "Fit for 55: delivering the EU's 2030 Climate Target on the way to climate neutrality", COM(2021) 550 final. Link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021DC0550>

¹⁵ European Commission, "Proposal for a Carbon Border Adjustment Mechanism (CBAM)", COM(2021) 564 final. Link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021PC0564>

¹⁶ European Commission & European Parliament, "Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources (RED II)", OJ L 328, 21.12.2018. Link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32018L2001>

¹⁷ European Parliament and Council of the EU, "Regulation (EU) 2021/1056 establishing the Just Transition Fund (JTF)", OJ L 231, 30.6.2021. Link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32021R1056>

¹⁸ European Parliament and Council of the EU, "Regulation (EU) 2021/241 establishing the Recovery and Resilience Facility (RRF)", OJ L 57, 18.2.2021. Link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32021R0241>

1.4. Multi-level Governance and Shared Responsibility

The strategic architecture of the EGD operates on the principle of multi-level governance, in which EU authorities, national governments, and local actors collaborate in implementing climate objectives. A pertinent example is the process of drafting and updating the National Energy and Climate Plans (NECPs), which require member states to present detailed decarbonization trajectories and to revise them periodically.¹⁹ Multi-level governance reflects both the complexity of the transition and the necessity for climate-policy decisions to be coordinated across institutional levels in order to avoid incoherence and fragmentation that would undermine the objectives of the EGD.

Chapter 2 – The Political Economy and Energy Structure of Poland (2019–2025)

2.1 Structural Dependence on Coal and Industrial Legacy

Poland represents one of the most distinctive cases within the European Union in terms of energy structure, due to its historical dependence on coal. Unlike most member states, which have significantly reduced the use of this fuel over the past two decades, Poland has maintained coal—both hard coal and lignite—as a central pillar of its energy security and industrial identity.²⁰ In 2019, approximately 70–75% of electricity production came from coal, placing Poland far above the EU average. This reality is not merely technical but deeply political and social. Regions such as Upper Silesia concentrate traditional mining activities, powerful trade unions, and communities dependent on the coal sector. In these areas, the energy transition is not perceived solely as a climate objective but as a threat to economic and identity-based stability.²¹

Poland's historical dependence on coal explains Warsaw's longstanding reluctance toward certain components of European climate policies, particularly during the governance of the Law and Justice Party (PiS). The dominant argument was that of "energy sovereignty" and the state's right to determine its own energy mix according to domestic conditions.

¹⁹ European Parliament and EU Council, "Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action (NECP Regulation)", OJ L 328, 21.12.2018. Link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32018R1999>

²⁰ European Parliament & Council of the EU, "Energy Policy of Poland in the Context of the European Union – Country Profile: Poland (EU Energy in Figures)", publication of the European Commission, Directorate-General for Energy. Link: https://energy.ec.europa.eu/system/files/2020-09/country_profiles_poland_2020.pdf

²¹ European Council on Foreign Relations (ECFR), "From coal to consensus: Poland's energy transition and its European future", 27 September 2023. <https://ecfr.eu/publication/from-coal-to-consensus-polands-energy-transition-and-its-european-future/>

2.2. National Energy Policy: Between Sovereignty and European Convergence

Poland's central strategic document in the field of energy is the Energy Policy of Poland until 2040 (PEP2040), adopted in 2021. It marks a formal acknowledgment of the need for transition, but within a gradual and phased framework. PEP2040 proposes:

- Reducing the share of coal in electricity production by 2040;
- Accelerated development of offshore wind energy in the Baltic Sea;
- Establishing a civilian nuclear program as an alternative to fossil fuels;
- Increasing the share of renewable energy in gross final consumption.²²

However, the document reflects a cautious approach in which decarbonization is subordinated to the stability of the energy system and the preservation of industrial competitiveness. Unlike some Western European states that have adopted clear coal-phase-out schedules, Poland has maintained a flexible position, linking the closure of mines to economic conditions and social negotiations. This stance has generated tensions with European institutions, especially in the context of the increased ambition of the *Fit for 55 package*. Nevertheless, Poland has not fundamentally rejected the Green Deal; rather, it has sought to negotiate the conditions and pace of its implementation.

2.3. The impact of the war in Ukraine and strategic recalibration (2022–2023)

The Russian invasion of Ukraine in 2022 produced a major recalibration of the energy discourse in Central and Eastern Europe. For Poland, which had held a critical position toward Europe's dependence on Russian gas, the conflict partially validated its strategy of diversifying energy sources. Poland had already accelerated investments in strategic infrastructure, such as the LNG terminal in Świnoujście and the Baltic Pipe pipeline, which enables the import of gas from Norway. After 2022, the focus shifted from the climate debate to that of energy security. This shift produced a paradoxical effect: on the one hand, it temporarily justified maintaining coal as a safety solution; on the other hand, it stimulated investments in renewables and nuclear energy as structural alternatives to external dependencies.²³

The European energy crisis demonstrated that climate neutrality and energy security are not antagonistic objectives, but interdependent ones. In Poland's case, the argument of energy sovereignty was reinterpreted in a European strategic key, particularly through participation in regional projects and through support for sanctions against Russian energy imports.

²² Ministry of Climate and Environment of Poland, „Energy Policy of Poland until 2040 (EPP2040)”, adopted 2 February 2021. <https://www.gov.pl/web/climate/energy-policy-of-poland-until-2040-epp2040>

²³ Agnieszka Konopelko, Luiza Kostecka-Tomaszewska, Katarzyna Czerewacz-Filipowicz, „Rethinking EU Countries' Energy Security Policy Resulting from the Ongoing Energy Crisis: Polish and German Standpoints”, *Energies*, vol. 16, nr. 13, 2023. <https://www.mdpi.com/1996-1073/16/13/5132>

2.4. The impact of the war in Ukraine and strategic recalibration (2022–2023)

The 2023 parliamentary elections and the return of Donald Tusk to the head of the executive opened a new stage in Poland's relationship with EU institutions. In the previous period, disputes over the rule of law had led to the blocking of certain European funds, including components of the National Recovery and Resilience Plan.

The new administration signaled its intention to restore dialogue with Brussels and to accelerate access to European funds dedicated to the green transition. This shift has direct implications for the strategic architecture of climate neutrality in Poland: access to European financial resources may lead to a real acceleration of investments in green infrastructure, energy efficiency, and industrial modernization.²⁴

The change of government does not, however, instantly alter structural realities: dependence on coal, social pressures in mining regions, and budgetary constraints remain constant. In this sense, the Polish transformation is not a rupture but rather a strategic adjustment within a more cooperative European framework.

2.5. A political economy of transition: constraints and opportunities

The political economy analysis of Poland's climate transition reveals a complex interaction between:

- traditional industrial interests,
- trade-union pressures,
- European requirements,
- geopolitical dynamics,
- energy-security imperatives.

Poland is not a passive actor within the Green Deal, but an active negotiator seeking to balance energy sovereignty with European integration. This positioning produces a national architecture of transition characterized by gradualism, pragmatism, and financial conditionality.²⁵ The central question for the 2019–2025 period is not whether Poland will participate in the European climate transition, but at what pace and through what combination of instruments—coal in controlled decline, emerging nuclear energy, and expanding renewables—it will reconfigure its energy system.

²⁴ Arthur D. Little, „Poland energy outlook, 2026 & beyond: Securing stability as the green transition accelerates”, 2024. <https://www.adlittle.com/en/insights/report/poland-energy-outlook-2026-beyond>

²⁵ Sylwia Mrozowska, Jan A. Wendt, Krzysztof Tomaszewski, „The Challenges of Poland's Energy Transition”, *Energies*, vol. 14, nr. 23, 2021. <https://www.mdpi.com/1996-1073/14/23/8165>

Chapter 3 – Decarbonization Pathways: Coal Transition, Nuclear Energy and the Expansion of Renewables

If in Chapter 2 we analyzed the structural constraints of Poland's political economy, the present chapter examines the concrete instruments through which Poland is attempting to reconfigure its energy architecture in the context of the European climate-neutrality objectives. Polish decarbonization does not follow a single model but is built on three interdependent strategic pillars: (1) the transition of coal regions, (2) the development of nuclear energy as an instrument of systemic stability, and (3) the acceleration of renewable energies, especially offshore wind in the Baltic Sea.

3.1. Coal transition and Just Transition in Silesia

The region of Upper Silesia represents the historical center of the Polish mining industry and the social nucleus of resistance to accelerated decarbonization. If these mechanisms fail, the transition risks becoming a factor of political polarization decades, in Poland the mining sector has continued to play a strategic and political role until recently. The agreements negotiated between the government and the mining unions established a gradual timetable for mine closures, with a horizon extending to around the year 2049. This timetable reflects a cautious approach aimed at avoiding severe social and economic shocks in regions dependent on coal.

External pressures — both from the emissions trading market (EU ETS) and from European climate obligations — have increased the costs of using coal, inevitably accelerating the restructuring process.

In this context, the Just Transition mechanism becomes essential. For Poland, it is not only a financial instrument but also a mechanism of political stabilization.

The coal regions must be transformed through:

- industrial reconversion,
- investments in green infrastructure,
- professional retraining,
- attracting investments in clean technologies.

If these mechanisms fail, the transition risks becoming a factor of political polarization and Euroscepticism.

3.2. Nuclear energy as a tool for strategic autonomy

Poland, unlike many EU member states that have reduced or eliminated nuclear energy, sees the development of a civilian nuclear program as a central pillar of its energy transition. The absence of nuclear power plants at present creates a structural dependence on fossil fuels. In this sense, the Polish nuclear program has a dual function:

- reducing emissions in the medium and long term;
- strengthening energy security by reducing dependence on imports.

The projects under development foresee the construction of several reactors starting in the 2030s, in partnership with Western companies. Nuclear energy is presented in the Polish strategic discourse not only as a climate solution, but as sovereignty enhancing infrastructure.

The option has important geopolitical implications. It aligns Poland with a group of European states that consider nuclear energy compatible with climate neutrality objectives, strengthening a “nuclear coalition” within the EU.

However, nuclear development is capital intensive, involves long timelines, and is exposed to cost overrun risks. Consequently, it cannot fully substitute immediate investments in renewable sources.

3.3. The expansion of renewable energy and offshore wind in the Baltic Sea

If renewable energy is a long-term solution, renewables represent the vector of accelerated transformation. In recent years, Poland has recorded a rapid increase in photovoltaic capacity, especially through residential investments and support schemes for prosumers. Solar energy has experienced one of the fastest percentage growth rates in Central Europe.

However, the true strategic stake is offshore wind energy in the Baltic Sea. Poland has considerable potential in this area, and the planned projects could transform the country into a major actor in the offshore wind sector of Central Europe. Offshore wind has the advantage of relative stability compared to solar and can provide significant production capacity without generating the kind of social opposition encountered in the case of mines.

The development of renewables is, however, conditioned by:

- the modernization of tramodernizationworks,
- investments in storage capacities,
- the reform of regulations regarding the placement of onshore wind turbines,
- the flexibilization of the energy market.

Without infrastructure modernization, the growth of renewable capacities risks being limited by technical bottlenecks.

3.4. Synergies and tensions between the three pillars

The architecture of Polish decarbonization is characterized by a strategic triad:

- coal in controlled withdrawal,
- nuclear as a systemic stabilizer,
- renewables as a growth engine.

The central issue is not choosing one of these instruments, but synchronizing them. If coal withdrawal is too slow, Poland risks economic penalties and loss of competitiveness.²⁶ Basically, Polish decarbonization is less a technical process and more a strategic engineering exercise.

Chapter 4 – Geopolitics and Energy Security after 2022: Poland Between Decarbonization and Strategic Autonomy

The Russian invasion of Ukraine in February 2022 represented a turning point for European energy policy. If until then the green transition had been perceived mainly as a climate and economic project, after 2022 it became explicitly a project of strategic security. For Poland, this conceptual transformation was particularly relevant.

Unlike some Western European states, Poland had consistently warned about the risks of dependence on Russian gas. Thus, the energy crisis generated by the conflict did not represent a strategic surprise for Warsaw, but rather a confirmation of its previous position.

4.1. Energy independence and strategic infrastructure

In the years preceding the conflict, Poland had already invested in diversifying its energy supply. The LNG terminal in Świnoujście, progressively expanded, enabled the import of liquefied natural gas from multiple global sources. In parallel, the Baltic Pipe pipeline, which connects Poland to the Norwegian fields via Denmark, became operational at a strategic moment, dramatically reducing dependence on imports from Russia.

After 2022, these investments acquired additional strategic value. Poland halted imports of Russian gas and accelerated its integration into regional energy networks. Thus, energy security became a central component of foreign and security policy. This repositioning generated an indirect effect on the Green Deal: the energy transition was no longer perceived exclusively as a European obligation, but as a means of strengthening strategic autonomy.

4.2. The coal paradox in a crisis context

The European energy crisis, however, also produced a paradox. Faced with uncertainty regarding gas supply, several member states temporarily reactivated coal-fired power plants to ensure system stability. In Poland's case, this situation provided a temporary argument for maintaining a domestic coal-based capacity. Although the strategic objective remains the reduction of its use, the crisis demonstrated that accelerated elimination without solid

²⁶ Kacper Szulecki, Tomas Maltby, Julia Szulecka, „Climate Obstruction in Poland: A Governmental–Industrial Complex”, in* Climate Obstruction across Europe, Oxford University Press, 2024. Disponibil la: '<https://doi.org/10.1093/oso/9780197762042.003.0008>'

alternatives can create systemic vulnerabilities.²⁷ Thus, for Poland, climate neutrality must be synchronized with energy resilience. This geopolitical lesson has reinforced the government's argument that the transition must be phased and calibrated to security realities.

4.3. Poland as a regional actor in Central and Eastern Europe

Poland's geographical and political positioning gives it a strategic role in the regional energy architecture. After 2022, Poland emerged as an active supporter of the energy integration of Central and Eastern Europe, supporting Ukraine and participating in regional interconnection initiatives.

Through its gas and electricity infrastructure, Poland contributes to stabilizing the regional energy market. In this sense, European climate neutrality acquires a regional dimension: the states of Central Europe must advance at a pace compatible with the infrastructural and economic capacity of the region.²⁸ This position transforms Poland from a "reluctant state" into a potential regional pivot of transition, provided it manages to harmonize investments in renewables, nuclear, and energy transport infrastructure.

4.4. The relationship between energy security and climate neutrality

The 2022 crisis demonstrated that energy security and climate neutrality are not antagonistic objectives. On the contrary, investments in domestic renewable sources and in nuclear energy can reduce exposure to the volatility of external markets. For Poland, this convergence is essential. The argument of energy sovereignty, dominant in the previous period, is reinterpreted within a cooperative European framework. Instead of being used to contest climate policies, it can become a driver of investment in green infrastructure.²⁹

Investments in short-term energy security can favor transitional fuels (gas), while climate objectives require accelerated decarbonization. Balancing these two dimensions represents the major strategic challenge for the 2022–2025 period.

Chapter 5 – Governance, European Conditionality and Institutional Capacity (2019-2025)

If decarbonization represents the technological dimension of climate neutrality, and energy security constitutes the geopolitical dimension, governance is the invisible

²⁷ Szymon Kardaś, "From Coal to Consensus: Poland's Energy Transition and Its European Future," European Council on Foreign Relations, September 27, 2023. <https://ecfr.eu/publication/from-coal-to-consensus-polands-energy-transition-and-its-european-future/>

²⁸ European Commission, Country Report – Poland 2024 (Brussels: European Commission, 2024). https://economy-finance.ec.europa.eu/publications/2024-european-semester-country-reports_en

²⁹ European Commission, REPowerEU: A Plan to Rapidly Reduce Dependence on Russian Fossil Fuels and Fast Forward the Green Transition (Brussels: European Commission, 2022). https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/repower-eu-affordable-secure-and-sustainable-energy-europe_en

infrastructure that determines the viability of the entire strategic architecture. In Poland's case, the period 2019–2025 is marked by a structural tension between green investment ambitions and institutional conflicts with the European Union. Climate neutrality is not only a matter of industrial capacity, but also one of administrative capacity, regulatory coherence, and legal stability. Within this framework, the relationship between Poland and the European institutions becomes decisive for the effective implementation of the transition.

5.1. Recovery and Resilience Mechanism (RRF) and conditionality

The central post-pandemic instrument was the Recovery and Resilience Facility, part of the NextGenerationEU program. For Poland, the allocated funds represent one of the most important opportunities to finance the energy transition, digitalization, and infrastructure modernization. However, full access to these funds was conditioned on meeting milestones related to the rule of law and the independence of the judiciary. The dispute between the previous conservative government (2015–2023) and the European Commission led to temporary blockages in the approval and release of payments.³⁰

This situation created a strategic paradox: while Poland needed European funding to accelerate the energy transition, the institutional conflict limited the financial flow. Thus, the architecture of climate neutrality was indirectly influenced by domestic political dynamics and by the relationship with Brussels.

5.2. The 2023 change of government and European recalibration

The 2023 autumn parliamentary elections produced a significant change in the political configuration. The new government, led by a pro-European coalition, announced its intention to normalize relations with EU institutions and to accelerate the implementation of the reforms required to unlock European funds.

This change has direct implications for the strategic architecture of climate neutrality:

- it increases the predictability of the relationship with the European Commission;
- it facilitates access to funding for green infrastructure;
- it reduces the risk of political isolation in European climate negotiations.³¹

5.3. Administrative Capacity and Implementation of Projects

An often underestimated element in the analysis of climate neutrality is the effective administrative capacity for implementation. Major projects – nuclear power plants, offshore - wind farms, grid modernization, storage infrastructure – require:

- efficient public procurement procedures,

³⁰ European Commission, „Questions and Answers on Poland's Recovery and Resilience Plan,” Press Corner, 31 mai 2022, https://ec.europa.eu/commission/presscorner/detail/en/qanda_22_3376.

³¹ European Commission, Poland's Recovery and Resilience Plan: Council Implementing Decision and Assessment, IP/24/1222 (Brussels: February 29, 2024), https://ec.europa.eu/commission/presscorner/api/files/document/print/en/ip_24_1222/IP_24_1222_EN.pdf.

- legislative stability,
- coordination between ministries,
- cooperation between the central level and regional authorities,
- transparency and predictability for investors.

In Poland, administrative bottlenecks and frequent legislative changes have in the past affected the pace of investment, especially in the onshore wind sector. Recent reforms are trying to simplify the regulatory framework, but results depend on coherence in the medium term.³² Climate neutrality by 2050 requires not just one-off projects, but a systemic reform of energy governance.

5.4. Conditionality as a tool for strategic convergence

The European conditionality of the 2019–2025 period became an instrument of strategic convergence. Initially perceived as external pressure, the conditionality related to the rule of law and structural reforms can function, in the current context, as a mechanism of institutional consolidation. Access to European funding for green projects creates an incentive for regulatory stability and administrative transparency.³³ In this sense, the strategic architecture of European climate neutrality is not only technical or financial, but also normative. It requires political and institutional convergence.

Conclusions – Poland in the Strategic Architecture of European Climate Neutrality (2019–2025)

The analysis of the 2019–2025 period shows that Poland's positioning toward European climate neutrality cannot be reduced to opposition or compliance. The Polish case reveals a process of strategic recalibration in which decarbonization is gradually integrated into a broader matrix of energy security, socio-economic stability, and geopolitical repositioning.

Climate neutrality, as defined at the level of the European Union for the 2050 horizon, represents a systemic transformation of national economies. For Poland, this transformation begins from an energy structure historically dependent on coal, with profound economic and social implications. Therefore, the transition cannot be interpreted solely in technical or regulatory terms; it must be analyzed as a process of structural reconfiguration.

³² European Commission, Commission Staff Working Document: 2024 Country Report – Poland, SWD(2024) 621 final (Brussels: June 19, 2024), 12-15, https://commission.europa.eu/document/download/cc8db0cb-8fa3-4dfb-98d5-7751a0f6f5c8_en?filename=com_2024_621_1_en.pdf.

³³ Peter Becker, "Conditionality as an Instrument of European Governance – Cases, Characteristics and Types," *JCMS: Journal of Common Market Studies* 63, no. 2 (2024): 402-419, https://www.econstor.eu/bitstream/10419/319332/1/JCMS_JCMS13580.pdf.

1. The energy dimension: between historical constraint and accelerated diversification

The first defining element of Poland's strategic architecture is the management of its coal legacy. The gradual withdrawal from coal is inevitable in the context of rising emission-certificate costs and European objectives, but the pace is calibrated to avoid the socio-economic destabilization of dependent regions.

The model adopted is based on three complementary pillars:

- the gradual phase-out of coal,
- the development of nuclear energy as a systemic stabilizer,
- the accelerated expansion of renewable energy, especially offshore wind in the Baltic Sea.

The essential element of this triad is balance. Nuclear energy provides baseload capacity and long-term predictability; renewables enable rapid emissions reduction; and the phased withdrawal from coal mitigates social risks. However, synchronizing these pillars is the main vulnerability. Delays in nuclear implementation or infrastructural limitations can create additional pressure on the energy system. In this sense, success depends on long-term strategic coordination capacity.

2. The geopolitical dimension: energy security as a driver of transition

The Russian invasion of Ukraine in 2022 accelerated the conceptual transformation of European energy policy. For Poland, energy security became the central argument for investments in diversification and infrastructure.

Through the development of the LNG terminal, the operationalization of the Baltic Pipe, and regional integration, Poland reduced its dependence on Russian gas and strengthened its energy resilience. This repositioning made it possible to reinterpret the climate transition not as an external imposition but as an instrument of strategic autonomy. Thus, security and decarbonization are no longer presented as antagonistic objectives. On the contrary, investments in renewables and nuclear energy are also justified through the lens of reducing geopolitical vulnerabilities. The remaining structural tension lies in the fact that using gas as a transition fuel may conflict with the objectives of rapidly reducing emissions. Poland's strategic architecture seeks to manage this tension through a phased approach, but the balance remains fragile.

3. Institutional dimension: governance, conditionality and policy change

The analysis of climate neutrality is not only a technological process but an institutional one. The tense relationship between the previous government and the European institutions showed that political blockages can directly affect the capacity to finance and implement green projects. The change of government in 2023 opened a window of opportunity for normalizing relations with Brussels and accelerating access to European funds. This development has the potential to strengthen the strategic architecture of the transition. However, the main challenge remains administrative capacity: implementing major projects requires legislative stability, interinstitutional coordination, and predictability for investors. Without effective governance, climate neutrality risks remaining at a declarative level.

4. Critical assessment: between strategic pragmatism and limited ambition

The analysis indicates that Poland does not reject the objective of climate neutrality, but operationalizes it through pronounced strategic pragmatism. The emphasis on energy security, social protection, and sovereignty reflects a realistic approach adapted to national specificities. However, this approach may generate delays in achieving climate objectives if investments in alternatives are not accelerated sufficiently. In addition, reliance on long-term nuclear projects involves significant financial and technological risks.

The success of Poland within the European architecture for climate neutrality depends on:

- accelerating the implementation of renewables,
- modernizing the energy infrastructure,
- maintaining institutional stability,
- using European funds efficiently,
- ensuring strategic coherence between climate objectives and security objectives.

The general conclusion

Poland illustrates the complexity of integrating a state with a traditional energy structure into a European architecture oriented toward climate neutrality.

The 2019–2025 period highlights a transition from defensive reluctance to strategic recalibration. Climate neutrality becomes, in both discourse and practice, part of a broader strategy of energy autonomy and regional consolidation.

Thus, the Polish case shows that strategic architectures for Europe's climate neutrality cannot be uniform. They must be flexible, differentiated, and integrated into a coherent geopolitical and institutional framework.

Bibliography

European Green Deal – concept and main objectives of the EGD; the official source of the European Commission on global climate transition policy. [EU Green Deal overview – European Commission](#)

Just Transition Mechanism and the EGD structure as a governance architecture. ([Wikipedia](#))

Energy Policy of Poland until 2040 – government document on Poland's internal energy transition; EPP2040 defines the energy mix and the pillars of the transformation. ([Gov.pl](#))

Poland and the European Green Deal – European Commission report on climate and energy targets for Poland in the context of the EGD. ([Publications Office of the EU](#))

The geopolitical impact of the Ukrainian crisis on European and Polish energy strategy (e.g. discussions related to energy security and independence from external sources).([cor.europa.eu](#))

European Climate Law – setting EU targets for climate neutrality by 2050 and reducing emissions by 2030. ([Wikipedia](#))

- Assessments on the need to increase the share of renewable sources and energy efficiency to achieve Polish/EU targets. ([Publications Office of the EU](#))
- Details from EPP2040 regarding the energy mix, nuclear development and the use of renewables as elements of the energy strategy. ([Gov.pl](#))
- Poland's climate action strategy – policy briefing on commitments and emission reductions compared to the EU average. ([europarl.europa.eu](#))
- Comisia Europeană, „The European Green Deal”, COM(2019) 640 final. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52019DC0640>
- EGD as a strategic architecture and the role of the policy package: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en
- Comisia Europeană, „Fit for 55: delivering the EU's 2030 Climate Target on the way to climate neutrality”, COM(2021) 550 final. Link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021DC0550>
- European Commission, "Regulation (EU) 2021/1119 establishing the framework for achieving climate neutrality (European Climate Law)", OJ L 243, 9.7.2021. Link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32021R1119>
- European Commission, "Fit for 55: delivering the EU's 2030 Climate Target on the way to climate neutrality", COM(2021) 550 final. Link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021DC0550>
- European Commission, "Proposal for a Carbon Border Adjustment Mechanism (CBAM)", COM(2021) 564 final. Link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021PC0564>
- European Commission & European Parliament, "Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources (RED II)", OJ L 328, 21.12.2018. Link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32018L2001>
- European Parliament and Council of the EU, "Regulation (EU) 2021/1056 establishing the Just Transition Fund (JTF)", OJ L 231, 30.6.2021. Link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32021R1056>
- European Parliament and Council of the EU, "Regulation (EU) 2021/241 establishing the Recovery and Resilience Facility (RRF)", OJ L 57, 18.2.2021. Link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32021R0241>
- European Parliament and EU Council, "Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action (NECP Regulation)", OJ L 328, 21.12.2018. Link: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32018R1999>
- European Parliament & Council of the EU, "Energy Policy of Poland in the Context of the European Union – Country Profile: Poland (EU Energy in Figures)", publication of the European Commission, Directorate-General for Energy. Link: https://energy.ec.europa.eu/system/files/2020-09/country_profiles_poland_2020.pdf
- European Council on Foreign Relations (ECFR), "From coal to consensus: Poland's energy transition and its European future", 27 September 2023. <https://ecfr.eu/publication/from-coal-to-consensus-polands-energy-transition-and-its-european-future/>
- Ministry of Climate and Environment of Poland, „Energy Policy of Poland until 2040 (EPP2040)”, adopted 2 February 2021. <https://www.gov.pl/web/climate/energy-policy-of-poland-until-2040-epp2040>

- Agnieszka Konopelko, Luiza Kostecka-Tomaszewska, Katarzyna Czerewacz-Filipowicz, „Rethinking EU Countries’ Energy Security Policy Resulting from the Ongoing Energy Crisis: Polish and German Standpoints”, *Energies*, vol. 16, nr. 13, 2023. <https://www.mdpi.com/1996-1073/16/13/5132>
- Arthur D. Little, „Poland energy outlook, 2026 & beyond: Securing stability as the green transition accelerates”, 2024. <https://www.adlittle.com/en/insights/report/poland-energy-outlook-2026-beyond>
- Sylwia Mrozowska, Jan A. Wendt, Krzysztof Tomaszewski, „The Challenges of Poland’s Energy Transition”, *Energies*, vol. 14, nr. 23, 2021. <https://www.mdpi.com/1996-1073/14/23/8165>
- Kasia Strek, „Painful transition? Poland agrees to phase out coal mines by 2049”, *Euronews*, 5 octombrie 2020. <https://www.euronews.com/2020/10/05/painful-transition-poland-agrees-to-phase-out-coal-mines-by-2049>
- International Energy Agency (IEA), “Poland 2022 Energy Policy Review”, 2022. <https://www.iea.org/reports/poland-2022>
- Kacper Szulecki, Tomas Maltby, Julia Szulecka, „Climate Obstruction in Poland: A Governmental–Industrial Complex”, în* *Climate Obstruction across Europe*, Oxford University Press, 2024. Disponibil la: <https://doi.org/10.1093/oso/9780197762042.003.0008>
- European Commission, Country Report – Poland 2023 (Brussels: European Commission, 2023). https://economy-finance.ec.europa.eu/publications/2023-european-semester-country-reports_en
- Szymon Kardaś, “From Coal to Consensus: Poland’s Energy Transition and Its European Future,” *European Council on Foreign Relations*, September 27, 2023. <https://ecfr.eu/publication/from-coal-to-consensus-polands-energy-transition-and-its-european-future/>
- European Commission, Country Report – Poland 2024 (Brussels: European Commission, 2024). https://economy-finance.ec.europa.eu/publications/2024-european-semester-country-reports_en
- European Commission, REPowerEU: A Plan to Rapidly Reduce Dependence on Russian Fossil Fuels and Fast Forward the Green Transition (Brussels: European Commission, 2022). https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/repowereu-affordable-secure-and-sustainable-energy-europe_en
- European Commission, „Questions and Answers on Poland’s Recovery and Resilience Plan,” *Press Corner*, 31 mai 2022, https://ec.europa.eu/commission/presscorner/detail/en/qanda_22_3376.
- European Commission, Poland’s Recovery and Resilience Plan: Council Implementing Decision and Assessment, IP/24/1222 (Brussels: February 29, 2024), https://ec.europa.eu/commission/presscorner/api/files/document/print/en/ip_24_1222/IP_24_1222_EN.pdf.
- European Commission, Commission Staff Working Document: 2024 Country Report – Poland, SWD(2024) 621 final (Brussels: June 19, 2024), 12-15, https://commission.europa.eu/document/download/cc8db0cb-8fa3-4dfb-98d5-7751a0f6f5c8_en?filename=com_2024_621_1_en.pdf.
- Peter Becker, "Conditionality as an Instrument of European Governance – Cases, Characteristics and Types," *JCMS: Journal of Common Market Studies* 63, no. 2 (2024): 402-419, https://www.econstor.eu/bitstream/10419/319332/1/JCMS_JCMS13580.pdf.

GREEN DEAL POLICIES IN THE NETHERLANDS

Laszlo BOCSKAI

The term "Green Deal" is used in the Netherlands with at least two different meanings: there is a local Green Deal approach (voluntary public-private agreements) and a proper European Green Deal (EU-level legislation, including "Fit for 55").

This creates some confusion at both- the political and administrative levels. It is the same label, the same name, in theory, but in practice, we are talking about a completely different governance, a completely different way of managing, way of being, on the one hand, voluntary agreements in a public-private regime, and on the other hand, the EU acquis, that legislative and political policy that must be accepted by each state that wishes to adhere to the common values of the European Union.

The submission of new initiatives aligned with the Green Deal policies was completed on January 1, 2025, and the final agreements in various areas will be signed by the end of 2026.

From the point of view of Dutch domestic policy, the major emphasis is on treating the various "Green Deal" initiatives as a separate, well-defined, well-structured but also constantly adjustable file to the agreed policies of the European Union.

The areas included in the Green Deal package concern: reducing emissions, energy market, industrial policy, agriculture and mobility/transportation.

These essential branches of the economy are directly and constantly affected by national and European Union legislation, respectively by sectoral regulations stemming from EU obligations and from the national implementation of climate change law packages.

At this point, there is only one main indicator (KPI) at the center of the government's attention: the feasibility of the 2030 goal.

According to the Climate and Energy Report (KEV- Klimaat- en Energieverkenning), it is unlikely that the Netherlands will achieve the previously set target of a -55% reduction in greenhouse gas emissions by 2030 (compared to 1990);

The National Statistical Center of the Netherlands (CBS/PBL- Centraal Bureau voor de Statistiek) reports that the current policy will be able to implement around 45-53% in 2030. The emission reduction achieved by 2024 was approximately 36% compared to the reference year 1990.

From a political point of view, the context is extremely dynamic for the current year (2026), the cabinet led by Dick Schoof resigning in 2025.

The Schoof cabinet fell on 3 June 2025, after only 337 days, following the departure of the PVV (Party for Freedom) from the coalition over a dispute over asylum measures. Geert Wilders withdrew his support, after which Prime Minister Dick Schoof submitted his resignation to the King.

As a result of this forced resignation, a new coalition agreement is taking shape (D66–VVD–CDA) that adjusts the course of the Green Deal policy in the Netherlands in several points - in particular by:

(a) massive investments in energy infrastructure, nuclear energy and offshore wind energy (offshore wind farms)

(b) elimination of the national carbon dioxide (CO₂) tax for industry and residential areas

(c) introducing a 20-billion-euro package for agriculture (nitrogen fertilizer production) until 2035.

At the same time, the law urges, even obliges, Dutch politicians to be more grounded in the daily reality and to put into practice the protocols and provisions related to environmental policies as quickly as possible.

An emblematic example of the maximum involvement of political decision-makers and other actors in the legislative and decision-making field is the climate case in Bonaire - the Dutch Caribbean Islands.

The Bonaire climate case concerns a legal action taken by the island's residents against the Dutch government, seeking protection from the effects of climate change that threatens the island. This action has been supported by environmental groups such as Greenpeace, which have repeatedly warned that parts of Bonaire could become permanently submerged and thus permanently lost due to rising sea levels.

Bonaire residents have consistently expressed concern about the impact of climate change on their lives and community, and the case has come before the court to present their arguments and request the intervention of the central government.

This situation, in fact, highlights the challenges that small islands face in front of the climate change and the importance of protecting these particularly vulnerable communities.

In January 2026, the court in the Climatic Bonaire case ruled that the state must include binding interim targets in national regulations within 18 months and an adaptation plan (including Bonaire) must be developed and implemented by 2030 at the latest.

This increases the pressure on leaders and political coalitions not only to develop the Green Deal Policy agenda as soon as possible, but also to translate it into practice - in a context of gridlock, generalized economic congestion, high energy prices, an altered social environment in which social support for those suffering from climate change is more than necessary.

The Dutch Green Deal was initiated as an instrument through which stakeholders (government, companies, research institutions, civil society organizations) entered into voluntary agreements to accelerate the implementation of viable initiatives by removing bottlenecks in regulations, collaboration or financing. The submission of new initiatives closed on January 1, 2025. The policies of the Dutch government are in full accordance with the policies agreed at the European Union level.

The European Green Deal is a systemic approach that has a direct impact on the objectives, instruments and implementation of national policies through EU regulations and directives.

Its essence, its predefined goal of the European Green Deal is:

- achieving climate neutrality and structural emission reduction, implemented through measures such as "Fit for 55"
- ETS reforms
- renewable energy, energy efficiency objectives
- industry (including CBAM)
- water quality in its natural cycle

"Fit for 55" is a legislative package proposed by the European Commission, designed to help the European Union to reduce greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels. This package is part of the EU's broader agenda to achieve carbon neutrality by 2050.

The far-reaching reforms of the EU Emissions Trading System (ETS), part of the "Fit for 55" initiative, aim to reduce emissions by 61% by 2030 (compared to 2005) for sectors such as industry and energy. Key changes include a faster annual reduction (4.2%), the phasing out of free allowances, the inclusion of maritime transport and a separate system (ETS2) for buildings and road transport in the period 2026-2030.

Carbon Border Adjustment Mechanism (CBAM) is a key instrument of the European Union, also part of the "Fit for 55" package, designed to prevent "carbon leakage". It imposes a tax on the import of certain carbon-intensive products from outside the EU, aligning the cost of imported carbon with that borne by domestic producers in the EU through the ETS (Emissions Trading System).

This package aims to put the EU on the right track towards its climate goals, stimulate innovation and promote sustainable, generational savings.

The European Union's environmental policy consequently has a defining implication and influence on the policy guidelines of the Dutch government.

Even if some parties in the ruling coalition want "less Green Deal", a large part of the package's provisions remains "blocked" (i.e. has a must-carry character from a legal and economic point of view, thus, the established measures must be implemented at national level) by EU legislation, adopted and accepted in advance.

The architecture of Dutch national policies related to the Green Deal is developing around the Climate Act (with a target of -55% in 2030, climate neutrality in 2050, the previous target of 49% being increased).

In practice, the feasibility of pro-Green Deal policies is mainly determined by a combination of factors such as:

- subsidies supported by government policies
- standards and legislative norms adapted to today's realities
- massive and constant investments in infrastructure
- and, last but not least, prices (determined costs, set by the EU)

The table below summarizes, by sector, the objectives and instruments with the highest "political load", based on official legislation/policy documents and the new coalition agreement.

Section	Main objectives	Main instruments / sectoral policy mix	Main bottlenecks (political environment/implementation measures)
Climate	-55% in 2030; climate neutrality 2050 (objective set out in the law)	Green Deal Law -annual monitoring of electricity (price/sustainable sources-of production) -sectoral support packages (support also supported by EU policies)	Objective "on paper" vs. chance of achievement, of actual implementation of Green Deal policies
Energy from 100% green sources	Acceleration of generation and increase in volume -development of transport infrastructure - 40 GW of offshore wind energy by 2040	-offshore wind energy with contract for difference (CfD) - financial model used to support investments in renewable energy projects, including offshore wind energy -capacity market (sufficient availability of energy resources) - exploitation of hydrogen sources (green) and nuclear energy (construction of at least 4 new power plants)	Congestion, various blockages in the production and distribution network; Architecture, respectively spatial integration for production sites but also for distribution sites; -ensuring the security of public and private investments; -cultivating and increasing public acceptance; -moment T0 of the use of nuclear energy (collective fears)
Industry	Sustainability through electrification/CCS (Carbon Capture and Storage)/hydrogen; emphasis on a level playing field	Personalized agreements; the (proposed) elimination of the national CO ₂ tax; compensation for electricity costs;	Competitiveness vs emission reduction. -state aid rules -infrastructure (electricity/hydrogen/CO ₂ transport)
Residential construction	Increasing the sustainability of 2.5 million homes by 2030	National Housing Insulation Program (project value EUR 4 billion); Heating networks through the District Heating Law;	Accessibility, -implementation capacity, -shared incentives (rent)
Mobility and transportation	-management and optimization of the charging infrastructure for electric vehicles; -discussions about fuel taxes and pay-per-use	Expansion of electric vehicle charging infrastructure; -excise tax policy; the government coalition aims to extend the excise tax reduction policy and prioritize electric driving/transportation through appropriate tax incentives	Support (variable costs, extrabudgetary) -major differences between urban and rural areas
Agriculture	New sectoral objectives by 2035 replacement of KDW (KDW- a standard used in environmental legislation to protect ecosystems against nitrogen pollution) with an alternative; area-based approach	Restoration of the Nitrogen Fund + EUR 20 billion package; monitoring network;	Residential construction/industrial development permits

If we were to define as concisely as possible the Stage of Implementation of the Green Deal in the Netherlands, we could say that emissions harmful to the environment are in a progressive decrease, but in a too slow phase-in, the pace being insufficient to reach the -55% limit by 2030;

The blockage is caused less by the lack of a well-defined and correctly applied policy but more by objective reasons, such as insufficiently developed infrastructure (production and transport), sometimes outdated legislation, and the cumbersome applicability of rules and norms already in force.

However, the Green Deal agreement applied to the specifics of the Netherlands has several essential points that are and will be taken into account by all future governments and political coalitions:

1. Energy security is of strategic importance, also, decongesting the (distribution) network is a priority, plus, emphasis is placed on the capacity market (for taking over and storing the energy produced), to which is added the increase in offshore wind energy production and, last but not least, the development of nuclear power plants.

2. Industrial sectors will be adapted to new climate requirements, the national carbon tax will be eliminated "for a level playing field at European level" and (temporary) packages will be introduced to reduce electricity costs.

3. Nitrogen – as an enabling constraint: nitrogen is explicitly seen as a prerequisite for increased housing construction and economic development, with a focus on clear sectoral objectives, on redesigning the permit system for exploitation.

Although there is a limit imposed on nitrogen emissions, it can stimulate innovation and the development of sustainable solutions. Instead of being seen only as a restriction, nitrogen emissions can become a driver for change.

The implementation of the provisions of the environmental pact is delegated to various implementation organizations and other authorities, but the political and ultimately decisive responsibility lies with the ministries that keep the process of implementing the Green Deal policies under constant observation:

Field	Politically responsible	Observations
Climate and Energy	Ministry of Climate and Green Development	Including funds granted for energy transition
Agriculture	Ministry of Agriculture, Fisheries, Food Security	Budgetary commitment explicitly mentioned in the 20 billion euro package
Mobility and Infrastructure	Ministry of Infrastructure and Water Management	Responsible for infrastructure and public transport
Residential construction / Urban planning	Ministry of Housing and Spatial Planning	Ministry restructured upon appointment of Schoof cabinet
Economics/Industrial policy	Ministry of Economy and Industry	Structural resources for innovation centres provided for in the annual budget annex

Also extremely important are the sources of financing, namely the budget lines related to each stage of implementation of Green Deal policies and programs.

The table below presents the political direction and vision, respectively the explicit budgets, extracted from the budget annex and the Climate Fund.

Measure / Tool	Timeline	Budget	Explanations
Climate Fund (areas: nuclear energy, industry)	Multiannual budget until 2030	Initial balance 35 billion euros	The budget has been modified: investments to increase nuclear energy production (+9.5 billion euros) and cuts to hydrogen/battery production
Expanding offshore wind energy to 40 GW	by 2040; -financial resources allocated for investments until 2050	-including 139 million euros for the series of investments and exploration missions in the North Sea	Establishing the connection to the national distribution network is of critical importance
(De-)Congestion on the network (green energy reception and distribution network)	(2026→)	no total amount agreed; but political priority	Focus on incentives/flexible contracts/energy centers
€20 billion package for agriculture/nature/nitrogen projects	until 2035	20 billion euros, including 9.0 billion euros for the expansion of ongoing projects	Restoration of the "Nitrogen Fund" and correlation with alternative projects
Industry: elimination of national CO ₂ tax + reduction of electricity costs	2026→2035	505 million euros/year) + financial package to mitigate the social costs of electricity prices (~495 million euros/year)	Major policy option: lower national prices, a level playing field at EU level and higher compensation
Implementation of climate and energy policies by government organizations and administrative units	2031–2040	800 million euros/year	Implementation for municipalities/provinces

The impact of the costs of implementing Green Deal policies and projects on both the Dutch economy and especially the population is overwhelming, which is why any wrong step at the decision-making level can have unpredictable or even irreversible repercussions.

For example, households could be required to implement new standards within a defined timeframe, which would entail substantial investment costs, while various branches of industry are given a grace period and freedom of movement regarding the energy transition. This would certainly lead to obvious dissatisfaction from the population and tensions, namely social unrest.

Membership in the European Union, however, makes it possible for the Netherlands to access EU instruments, financial and legislative instruments that facilitate the country's economic and social transition towards operating parameters based on the rules and provisions of the Green Deal.

In this regard, we can recall the Just Transition Fund, from which the Netherlands can invest approximately 623 million euros in the period 2021-2027 for the development of various regions and for job creation.

In addition, there is the (EU) Social Climate Fund, which should support vulnerable households and micro-enterprises in the implementation of ETS2 (buildings/road transport).

A very important aspect of the implementation of ETS2 (European Emissions Trading System) is how it will affect vulnerable households.

There are concerns about the additional costs generated by this system, through increased energy prices, which could disproportionately affect people on low incomes. Compensatory measures are being considered to protect these social groups.

In addition to significant economic and social challenges, there are also legal and even administrative challenges regarding the legalization and implementation of the provisions of the Climate Law or the European Green Deal.

In relation to the specificities of the legal and administrative framework of the Green Deal in the Netherlands, three guidelines stand out:

1) Regulation and legalization of climate change measures:

The Bonaire climate case obliges the Dutch state to include binding interim targets in national legislation and to implement an adaptation plan by 2030, based in part on human rights arguments.

2) Nitrogen as an "operational green project permitting system": The new coalition agreement tries to address this by wanting to replace the KDW (critical deposition value - a term used in the context of environmental regulations, especially regarding nitrogen emissions and their impact on nature) with a legally sound alternative, legally setting sectoral reduction targets and also introducing tools such as lower limits/threshold values.

3) (De)Congestion of the network (production and especially distribution) and implementation capacity: the agreement explicitly places network congestion at the top of the agenda, including possible accelerated procedures through the energy crisis law.

This measure also involves a pronounced legal and administrative implication (without a network there is no electrification, without electrification there is no industry, respectively residential/commercial construction), but places the discussion - from a political perspective - towards the need to deliver conclusive, tangible results, respectively towards the fastest possible resolution of inherent stage problems, such as:

- takeover/storage and distribution capacity at network operators
- production and distribution authorizations, spatial/urban planning and project approval/acceptance.

Conclusions and Perspectives

The Dutch political decision-making space (like the others that are part of the common European space) is forced to align with European Union legislation, namely the rules and norms that are under continuous adjustment and improvement.

The agreement in the governing coalition treats with utmost interest the implementation of both large-scale and regional/local projects, aiming to:

- key performance indicators (KPI)
- strict delivery times
- prioritizing projects with the greatest impact on the climate and residential areas, often overpopulated in parts of the Netherlands.

Bibliography

The Green Deal Approach | Sustainable Economy <https://www.rijksoverheid.nl/onderwerpen/duurzame-economie/green-deal>

Regulation - Climate Law - BWBR0042394 - Government Laws <https://wetten.overheid.nl/BWBR0042394>

<https://klimaatweb.nl/rubrieken/klimaatverandering>

<https://www.rijksoverheid.nl/regering>

https://commission.europa.eu/publications/factsheets-european-green-deal_en

<https://eur-lex.europa.eu/legal-content/RO/TXT/PDF/?uri=CELEX%3A32023R0857>

<https://www.leefbaarenveilig.nl/rijksregelingen/nationaal-isolatieprogramma>

<https://www.cbs.nl/nl-nl/publicatie/2025/38/klimaat-en-energieverkenning-2025>

<https://natuurenmilieu.nl/nieuws-artikel/kabinet-realiseert-zich-wat-haar-te-doen-staat-maar-maatregelen-niet-toereikend/>

<https://www.vno-ncw.nl/artikelen/gezamenlijke-afspraken-over-snelle-oplossingen-netcongestie>

<https://www.raadvanstate.nl/%40115651/pas-mag/>

<https://www.energie-nederland.nl/reactie-energienederland-op-coalitieakkoord/>

https://cdn.climatepolicyradar.org/navigator/NLD/2024/netherlands-updated-final-national-energy-and-climate-plan-necp-2021-2030_3144ee52a800cc44e50ce8923afb1da4.pdf

<https://www.nvde.nl/nvde-over-klimaatzaak-bonaire-oranje-groene-energie-maakt-nederland-klimaatbestendig-en-onafhankelijk/>

<https://www.uitvoeringvanbeleidszw.nl/subsidies-en-regelingen/algemene-informatie/just-transition-fund-jtf>

https://employment-social-affairs.ec.europa.eu/policies-and-activities/funding/social-climate-fund_



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