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CHALLENGES AND OPPORTUNITIES FOR A JUST GREEN TRANSITION IN NORTH MACEDONIA

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Abstract. In order to limit the increase of temperature to 1.5°C and below 2°C above pre-industrial levels the Western Balkan countries and the European Union, following the Paris Agreement, adopted the 2050 decarbonization goal. The green transition approach in North Macedonia remains a top-down process and poses challenges on implementing a just transition that embeds place-based policies. The communication among central and local government levels and stakeholders remain vague, opening the research question about the proper mix of just transition, participation, legislation adoption and the quality of policy making and governance configuration that should be able to serve spatial and social justice to be able to implement a place-based governance framework. We use targeted survey to assess the green transition policy of the government of North Macedonia if it is just and if it respects the place-based approach. The results suggest that the place-based approach is weakly implemented, decisions remain centralized and following the top-down logic undermining local participation. We recommend further, more detailed analyses of the place-based transition and decentralization efficiency with focus on local government barriers to more just green transition.

Keywords: just transition, place-based approach, spatial/social justice, governance, Green Deal, climate change.

Introduction

In 2015, more than 190 countries set a common target within the Paris Agreement to hold the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C in order to mitigate the worst of the climate change impacts (UNFCCC, 2010, p. 3). Following the Paris Agreement, the European Union (EU), the Western Balkan countries and other countries in the world embraced the 2050 decarbonization goal.

On October 6, 2020, the European Commission adopted the Economic and Investment Plan for the Western Balkan (WB) countries[1] 2021–2027 (EC, 2020a) which, among others, aims to support a green and digital transition. This plan contributes to the European Green Deal document for joint action, which aims to tackle the challenges of green transition and climate change as well as excessive use of resources and pollution. The European Green Deal document aims also for decoupling economic growth from resource use and environmental degradation (EC, 2018). The EU commitment is to reach climate neutrality by 2050. The WB countries, as EU candidate countries, should strengthen their efforts to reach climate neutrality by 2050 with the EU support. Calcu-

[1] The WB comprises 6 countries: Albania, Bosnia and Hercegovina, Kosovo, Montenegro, North Macedonia and Serbia.

lations demonstrate that climate change could raise the WB region temperatures by up to 4°C by the end of the century (EC, 2020a) followed by extreme weather events, increased frequency of natural disasters, decreased energy and water availability (Uvalić & Cvijanović, 2018), as well as biodiversity loss and soil degradation,[2] that could have negative social and economic consequences for communities. These socio-environmental impacts might be a result of the poor institutional and financial capacities in WB to address the problems properly and steer towards green transitions.

The structural weaknesses of the WB's economy to efficiently tackle these challenges remain. In comparison to the Central East European and the Baltic (CEEB) countries, the WB countries are less developed, less competitive and less integrated into the global economy; most countries still have low labor market participation rates (Uvalić & Cvijanović, 2018). WB countries are only growing poorer. 'Worse still, the sharp decline in working-age population, combined with a larger share of Not in Education, Employment, or Training (NEET), as well as regions experiencing the significant departure of young people, puts the 6 countries of WB at risk of becoming caught in a talent development trap' (CEA ,2023a, p. 22).

The use of scientific knowledge in policy is low, and evidence needed to support decision-making is insufficient, leading to a widening gap between the EU and WB countries in terms of policy adaptation, legal framework transposition and implementation in relation to pillars of the WB green agenda (EC, 2020a). In the area of renewable energy, the EU Commission suggests that solar power plant and wind park investments opportunities for North Macedonia (EC, 2020a). For the transition from coal to renewables in electricity production, the Commission suggests Macedonian gas interconnection with Serbia and Kosovo. These suggestions point to retiring the thermal power plants (TPP) in North Macedonia and putting the country on the sustainable development path. Coal-based dependency is gradually decreasing in North Macedonia. In fact, the coal-fueled Thermal Power Plant (TPP), Oslomej, for example, has marked a low point in electricity production, mainly due to its depletion of nearby coal reserves and low efficiency. However, in 2021, North Macedonia declared a one-time 'state of crisis' over energy, and the operations of the Oslomej TPP resumed. The future of the TPP Oslomej, operating in the Southwest region of North Macedonia, and its potential transformation remain uncertain, with limited clarity around the implementation of partial energy substitution through renewable energy sources, such as photovoltaic investments. The uncertainty also affects the citizens in this planning region of North Macedonia, where the TPP Oslomej operates. For these reasons, we use this planning region and TPP Oslomej as a case to implement our place-based research.

There are a lack of research and independent data and discussions in North Macedonia about green transition and the need for considering also the place-based approach. Thus, the goal of this research is to assess if the transition process is well thought out (meaning inclusive and transparent in designing the policies) and how effective the Macedonian government's governance of the just green transition is. Another focus of the study is to research if transition has the potential to be qualified as just and to acquire place-based characteristics. We design and conduct a questionnaire, and we target individuals in North Macedonia who have an established status of expertise, are well informed about the process, academics and decision making in green transition, are part of the central and local government and the Civil Society Organization (CSO) community, In the questionnaire, we make a note to the targeted respondents that we focus on the coal-based electricity generation in North Macedonia and, especially, the TPP Oslomej that is placed in the Southwest region, North Macedonia.

[2] Albania 20-70ha/year; Serbia and Montenegro both: 20% of land affected by erosion, mainly due to deforestation (EC, 2020a).

This paper begins by establishing its conceptual framing around the green transition, spatial justice and the place-based approach. We then continue to explain the green transition governance mechanisms in North Macedonia, its policies and actors and the place-based policy approach in the country. We introduce the techniques that we use in our methodology, present the results, and then we discuss the empirical research findings. We finalize the paper with conclusions.

Transition governance

Loorbach (2010, p. 161) argues that 'governance' is:

> *(…) the current practice of governments in Western European states to develop policies in interaction with a diversity of societal actors. In other words, interaction between all sorts of actors in networks often produces (temporary) societal consensus and support upon which policy decisions are based.*

On the other hand, governance processes based on transition management have been developed in various sectors and regions and produce broad innovation networks, including business, government, science, and civil society. The innovation networks that include wide spectrum of stakeholders from business to government and science including civil society are more and more influencing policies in areas of energy supply (Loorbach, 2007).

Recently, researchers emphasize engaging regional and local governments in the green agenda and highlighting 'the need for tailored approaches in multi-level fiscal governance to effectively achieve environmental goals' (Dougherty & Montes Nebreda, 2023, p. 2). The EU adopted the OECD Framework for Anticipatory Governance of Emerging Technologies (EC, 2024). In this way EU advocates also 'a proactive, multilayered strategic framework for addressing the ethical, social, environmental and economic implications of technological advancement, in the most anticipatory way possible and in line with European values' (EC, 2024, p. 5).

Topaloglou and Ioannidis (2022) argue that while the transition management approach focuses on how well the transition is managed, the concept of just transition as per EC (2020b) is 'mainly based on social and environmental considerations, seeking to ensure the substantial benefits of a green economy transition which contribute to the goals of decent work for all, social inclusion and the eradication of poverty' (Topaloglou & Ioannidis, 2022, p. 42). Thus, the EC governance of transition toolkit is defined as: 'a just transition that captures the opportunities presented by the process of transitioning to sustainable, climate neutral systems, whilst minimizing associated social hardships and costs' (EC, 2020b, p. 31).

The concept of 'just transition' was developed in the 1980s. The US trade unions used it in their movement to protect those workers that were affected by new water and air pollution regulations (Brett, 2023). The concept first appeared in official international policy documents in 2010 at the Conference of the Parties (COP) in Cancun: 'a just transition of the workforce that creates decent work and quality jobs' (UNFCCC, 2010, p. 5). In recent years, just transition concept has become increasingly significant, particularly in relation to achieving climate objectives by ensuring that the transition toward a net-zero future is inclusive of all segments of society, encompassing communities, workers, and diverse social groups (UNDP, 2022). The International Labor Organization (ILO) defines it this way: '[g]reening the economy in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind' (ILO, 2024).

The European framework for governing green transition

The European Green Deal serves as the EU's overarching policy framework, with an aim to facilitate a just transition toward climate neutrality by 2050. As this transition entails profound economic and social changes, governance is widely recognized as a decisive factor shaping its outcomes. Nevertheless, governance arrangements – encompassing legal provisions, formal and informal norms, institutional practices, and power structures – differ substantially across countries, reflecting diverse institutional configurations and political orientations (Topaloglou & Ioannidis, 2022).

Within the EU policy landscape addressing the governance of transition regions, three key policy instruments can be identified. First, the Just Transition Fund Regulation (EC, 2021) establishes a robust governance framework centered on the Territorial Just Transition Plans. It stipulates that these plans must incorporate well-defined governance arrangements, including inclusive partnerships, effective monitoring systems, and a clear delineation of responsibilities among the actors involved.

Second, the Common Provisions Regulation (EC, 2021) provides the overarching governance context for the implementation of the Territorial Just Transition Plans. This regulation introduces a multilevel governance approach as a prerequisite for accessing relevant EU funding. Specifically, Member States are required to set up inclusive partnerships comprising, at a minimum, public authorities, economic and social partners, and organizations representing civil society, with mandatory consultations taking place at least annually.

Third, the Governance of Transitions Toolkit (EC, 2020b) offers guidance on the development of governance frameworks and stakeholder engagement processes, particularly tailored to coal regions undergoing transition. It addresses the design of 'governance models, the part of stakeholder engagement and partnership, the role of social dialogue, and the role of civil society' (EC, 2020b, p.5). The 'good' governance concept is based on 'six core principles: transparency, participation, rule of law, equity and inclusiveness, efficiency, and accountability' (EC, 2020b, p. 22).

The toolkit also highlights the importance of stakeholder engagement and understanding the qualitative difference among cooperation, consultation and information. The risks arising can come from:

> *(…) insufficient stakeholder engagement, such as increased uncertainty, rejection of outcome, loss of confidence – also associated with the inefficient use of resources, as well as the development of resistance related to ethical issues, such as the lack of participation in decision-making* (EC, 2020b, p. 26).

Finally, the toolbox recommends:

> *(…) implementation of the following seven Golden Rules for open and inclusive planning of a just transition at the regional level to enable a rapid and socially just transition of coal-dependent regions: Open invitations, Inclusion, Equality, Access to information, Feedback, Disclosure, and Engagement and participation* (EC, 2020b, p. 27).

Spatial justice and place-based approach

The concept of '"spatial justice" emphasizes the spatial or geographical aspects of justice and injustice. From this point of view, the social and the spatial processes are correlated, since social processes are spatially reflected while spatial processes influence the social processes' (Topaloglou & Ioannidis, 2022, p. 42). Spatial justice focuses on the geographical dimensions of justice, em-

phasizing the fair distribution of resources and opportunities across territory. It is not separate from social or economic justice but offers a critical spatial focus to understand how justice is embedded in regions. Spatial justice refers both to the outcomes (for example, unequal distribution of resources) and the processes that create those outcomes. Spatial justice cannot substitute or act as an alternative to a viable social and economic forms of justice, but is rather a way of looking at justice from a spatial perspective (Soja, 2009). Finally, Topaloglou and Ioannidis, (2022) conclude what is important for spatial justice:

The place-based approach advocated by the Barca Report (Barca, 2009, p. VII), is:

(…) long-term strategy aimed at tackling persistent underutilization of potential and reducing persistent social exclusion in specific places through external interventions and multilevel governance. It promotes the supply of integrated goods and services tailored to contexts, and it triggers institutional changes. Also, it aims at making full use of the potential of a place and reducing inequalities and social exclusion in specific places by providing integrated services thorough multilevel governance.

Therefore, adaptation to the environmental requirements of retiring the coal-based electricity generation TPP Oslomej due to the climate crisis should be followed by employing the place-based fundament. The TPP Oslomej is far from the governance decision-making center of the central Government of North Macedonia, and the quality of governing transition is important for providing social inclusion and care for reducing inequalities in the region where the TPP is placed. In this way, we consider spatial justice and territorial cohesion altogether (Madanipour et al., 2017). In this framework, we critically observe the transition of the coal-based electricity generation in the region where the TPP Oslomej operates to see if it is transparent and inclusive of the process to the local communities.

Green transition in North Macedonia

The Western Balkans Multidimensional Review (MDR) has identified green recovery as a critical policy priority for North Macedonia and the region as a whole (OECD, 2022). The challenges with energy and air pollution are multifaceted and pose significant barriers to North Macedonia's economic development and well-being. The MDR's Initial Assessment identified key constraints such as air pollution, unsustainable environmental practices, and unreliable access to clean energy that exist not only in North Macedonia, but also throughout the WB region. North Macedonia's high carbon intensity, combined with low levels of energy efficiency, results in significant air pollution and greenhouse gas (GHG) emissions. Solar and wind energy continue to play a minor role in the country's energy mix (OECD, 2022).

As noted in the North Macedonia EU progress report on the Cluster 4 on the Green Agenda and sustainable connectivity (EU, 2022, p. 7):

North Macedonia has achieved a good level of preparation in trans-European networks. The country is moderately prepared on transport policy and energy and has achieved some level of preparation on environment and climate change. Some progress was made in the areas of environment and climate change. Substantial efforts are needed in the areas where limited progress was made such as in energy, transport policy and trans-European networks. But North Macedonia needs to accelerate the implementation of the Economic and Investment Plan and of the Green Agenda for the Western Balkans over the upcoming period.

The EU progress report for North Macedonia (EU, 2024, p. 78) reports that:

(…) the government implemented some of the measures set out in the national energy action plan adopted in December 2022, which received relevant contributions from the EU Energy Support Package. The government also adopted the Just Transition roadmap in June 2023, which includes specific actions to be undertaken in the short term (2024-25), medium term (2026-27) and longer term in the areas of Bitola and Kicevo.

The TPP Oslomej is place-based in Kicevo. The EU report from 2024 also states that there is no energy data collection system, neither a proper policy evaluation nor performance assessment in place within the Ministry of Economy.

Green transition governance mechanism

The organizational structure for the green transition in North Macedonia involves a collaborative effort between various stakeholders including the central and local governments, civil society organizations, and the private sector. The structure is quite comprehensive, covering a wide range of government agencies and ministries that are involved in various aspects of green transition and sustainability and organized according to their functions and responsibilities.

At the national level, the central government plays a key role in setting policies and regulations that facilitate the transition towards sustainable and just development. This includes establishing targets for reducing greenhouse gas emissions, promoting renewable energy, and incentivizing sustainable practices across various sectors. The Ministry of Economy, Ministry of Environment and Physical Planning, Ministry for Transport and Communication, Ministry of Agriculture, Forestry and Water Economy, Ministry of Finance, and Ministry of Health are the key institutions and bodies involved in the just development transition in North Macedonia, at the top level being the primary decision-makers and policy shapers. On the second level are the agencies that are responsible for implementing the standards, policies and best practices, and ensuring the efficient use of natural resources. On the third level are the state inspectorates and state advisors that are responsible for ensuring compliance with regulations and standards. On the fourth level are the local governments and the local governmental entities and enterprises which play an important role in contributing to green transition through a variety of initiatives and programs.

While the division of responsibilities and obligations across governmental institutions in North Macedonia is intended to ensure efficient and effective governance of the country's green transition, there are concerns that the current structure may lead to confusion and avoidance of responsibilities. Some responsibilities are split across different ministries, which makes coordination difficult and can cause confusion around who is responsible for what. This can create bureaucratic hurdles that slow down the process of implementing green policies and initiatives (CEA, 2023b).

Furthermore, overlapping responsibilities can lead to a lack of accountability, with different institutions pointing fingers at each other when problems arise. This can make it difficult to identify who is ultimately responsible for addressing what environmental issues and/or can end in failures to implement sustainable practices.

North Macedonia's status as a country in transition has led to a strong reliance on international institutions and funds to achieve a just green transition. The country's efforts to implement EU standards require significant capacity building, knowledge transfer, and funding, which are not always readily available domestically. While the country has made significant progress in implementing various policies and programs, there is still much work to be done to address the challenges of climate change and environmental degradation.

Green transition challenges in implementation

North Macedonia has pledged its commitment to mitigating climate change through the submission of its National Energy and Climate Plan (NECP) in May 2020, as well as improved Nationally Determined Contribution (NDC) that seeks to reduce GHG emissions by 30% by 2030. The country has also adopted energy efficiency legislation aligned with EU standards and provided financial incentives for households to install renewable energy systems. Additionally, North Macedonia provides subsidies to a limited number of households in order to make improvements in their energy efficiency[3].

Decarbonization is the most noteworthy pillar of the green agenda in North Macedonia. The execution of decarbonization policies, however, confronts a number of difficulties, including a lack of resources and technical know-how as well as inadequate coordination and cooperation between stakeholders (Green Force, 2023b):[4]

- **Lack of funding and technical expertise.** While North Macedonia has a strong policy framework related to the Green Agenda, the resources and expertise needed to implement these policies effectively are often lacking. This can hinder progress towards achieving sustainable development goals, as without adequate funding and technical expertise, policies may not be implemented to their full potential.
- **Short-term expiration date of policies.** Some policies related to the Green Agenda in North Macedonia have short-term expiration dates, which can limit their effectiveness in achieving long-term sustainable development goals. This highlights the need for policies that have longer-term validity and continuity, which can provide a stable and consistent framework for achieving sustainable development goals.
- **Need for greater stakeholder engagement and public participation.** Effective stakeholder engagement and participation, including public participation, are critical to ensuring that policies reflect the needs and aspirations of the larger population and are implemented effectively. Without effective engagement and participation, policies may fail to achieve their intended outcomes and may be perceived as unjust by the general public.
- **Coordination and cooperation between stakeholders.** Successful policy implementation requires collaboration and communication among different stakeholders. In many cases, these parties have conflicting interests and goals which can impede policy impact if not addressed. To ensure successfully implemented policies, enhanced dialogue between all stakeholders is essential.
- **Issues with monitoring and evaluation.** Monitoring and evaluation are essential tools for determining whether policies are achieving their desired results. These activities help identify potential areas of improvement and allow policymakers to make adjustments as needed in order to ensure that their initiatives are successful in meeting their objectives. It is therefore imperative for policymaking institutions to invest resources into developing effective monitoring and evaluation schemes. According to the MEPP (2020) although the applicable legislation mandates the implementation of monitoring systems, due to lack of suitable resources, some institutions may have yet to fulfill this obligation. Right now, they comply by generating reports with data that is frequently gathered ad-hoc, or through their legal powers. When no data and information are available, certain reports are crafted using engineering predictions and numerical solutions.

[3] For example, subsidies for high efficiency invertors for households for 2024 as per the Program to encourage energy efficiency in households for 2024 from the Ministry of Economy and Labor (Official Gazette, 2024).

[4] This section is based on the Green Force (2023b) project that provides a comprehensive policy landscape analysis of North Macedonia, comprising primarily of national laws and strategies. A clear focus on environmental issues is evident in the Environment sector with the high number of mapped policies. Decarbonization is the most dominant element of the Green Agenda for North Macedonia.

Green transition actors

The green transition aims to mitigate climate change while ensuring long-term sustainable economic growth. During the desk research and within the European Green force project, we have recognized 36 significant stakeholders in the green transition in North Macedonia. These stakeholders comprise governmental actors, businesses, academic institutions, and research sectors (CEA, 2023b):

Government actors, as key stakeholders, are pivotal in developing policies and regulatory frameworks that support the green transition and decarbonization, requiring coordinated and integrated governance. Civil society organizations, including NGOs and community groups, raise awareness and advocate for sustainable practices, collaborating with government and other stakeholders to ensure that the transition's benefits are broadly shared. Businesses contribute innovative solutions that foster economic growth while reducing environmental impacts through renewable energy deployment, waste reduction, and sustainable agriculture. Academic and research institutions provide essential knowledge on renewable energy, climate change, and sustainable development, guiding and informing the strategies of other actors. Together, these stakeholders form a dynamic and interconnected ecosystem, whose collaboration is critical for achieving an effective, inclusive, and sustainable green transition in North Macedonia.

Green transition governance and place-based approach

Fossil fuels remain a major source of electricity in North Macedonia, making electricity generation the leading contributor to greenhouse gas (GHG) emissions in the country. Recently, the domestic energy production in North Macedonia counts a trend of decreasing domestic production and increasing import dependency (Andonova et al., 2025). Further, even though in the recent years the electricity production from solar power plants is increasing still, coal-fired thermal power plants (TPPs) continue to account for approximately 70% of domestic electricity production in North Macedonia (ERC, 2023). The coal-fired TPP Oslomej, located in North Macedonia's Southwest Planning Region (SWPR), generates less than 5% of the country's total electricity production (ERC, 2023).

While the transition to a renewable-based power sector in North Macedonia might appear relatively straightforward due to the limited number of thermal power plants, decades of underinvestment in the energy sector and delays in phasing out coal have created significant practical challenges. Consequently, coal continues to dominate electricity production, hindering the country's progress toward a greener and more sustainable energy system. With our empirical field research, we are going to focus on the closure of the thermal power plants (TPP) in general and, specifically, the closure of TPP Oslomej, which is placed in the Southwest region of North Macedonia. In Table 1, we present data on installed capacity of power plants (PP) in North Macedonia per type of power plants.

Table 1. Installed power plants capacity in North Macedonia as of 2024

Installed capacity	MW	%
Total power plants (PP)	2,984	100
Hydro	720	24
Photovoltaics	848	28
Thermal	1,034	35
Combined	287	9
Wind	82	3
Biogas	13	1

Source: adopted by the authors from ERC (2024, p. 30).

TPP are covering 35% of the total installed capacity in North Macedonia. The regional distribution of the power plants is presented in Table 2.

Table 2. Installed power plants capacity pre regions in North Macedonia as of 2024

Installed capacity	MW	%
North Macedonia	2,984	100
Vardar region	542	18
East region	26	1
Southwest region	391	13
Southeast region	37	1
Pelagonia region	1,096	37
Polog region	374	13
Northeast region	0	0
Skopje region	518	17

Source: calculation of distribution across regions by the authors based on ERC (2024).

The largest power plant in North Macedonia is TPP Bitola and it is placed in the Pelagonia region (37%). Of the 1,096 installed MW, in the Pelagonia region, 699 MW are coming from the TPP Bitola. This power plant was erected in the 1980s and is thus almost 50 years old now. The second largest is the TPP Oslomej and it is placed in the Southwest region (13% of total installed capacity). Of the 391 installed MW in the Southwest region, 125 MW are coming from the TPP Oslomej, this power plant was also erected in the 1980s and is thus, almost 50 years old now. TPP Bitola and TPP Oslomej are totaling 28% of the total installed capacity in North Macedonia, which is why they are important targets for the just transition governance.

The most vulnerable are people in these particular territories where the TPPs are placed. This is because the green transition is considered a matter of justice and a crucial aspect of achieving the energy transition to an environmentally sustainable energy production is also a matter of justice (Garvanlieva Andonova et al., 2026). Therefore, the way the energy transition is governed matters tremendously especially the importance of engaging local communities that could be central in a just energy transition process, as it is more important how the energy transition is being governed rather than setting administrative and energy production targets that are not

easily to be achieved. The Southwest planning region in North Macedonia where the TPP Oslomej is place-based lags behind other regions in the country in socio-economic terms. The Southwest Planning Region has one of the lowest average GDP per capita (at 78% of the national average) and contributes roughly 8% to the country's total GDP (CEA, 2024).

Methodology

This study aims to examine whether the Macedonian government's transition process is designed with inclusiveness and transparency in mind, and to assess the effectiveness of governance in ensuring that local communities in the Southwest planning region are meaningfully integrated into policy implementation. Another focus of the study is to research if the transition in North Macedonia has the potential to be just and with place-based characteristics. We employ a questionnaire to consider the quantitative aspects of this place-based just transition study. We inform the respondents that this study focuses on coal-based electricity generation in the country, with particular emphasis on TPP Oslomej. We use the questionnaire to get expert opinions independently of the governmental policy and strategies it develops. We believe that with well thought out questions addressed to the expert community in North Macedonia, we can shed light on the quality of the government policies related to the green transition. That is, if the government considers the importance of the justice dimension, transparency and inclusiveness for the communities affected by the transition (e.g., if the government considers place-based policies that will take into consideration the possibilities for rising inequalities and communities being left behind).

Formally, we follow the convenience-sampling-technique by selecting experts not only in the administration (central and local government), but also in the academia and CSO to respond to a designed and prepared questionnaire. We employ the questionnaire in order to be efficient in getting data and information and also to reduce the interview bias. We target individuals who have established status, are well informed about the process and decision-making in green transition and are part of the central and local government, CSOs and/or are experts in the field. We have had a total of 66 responses. The questionnaire was conducted online in February 2023.

The questionnaire is divided in four sections as illustrated in the next table. We assess if the process is guided by the EU principles of just and green transition from coal based to renewable energy source (EC, 2020b). The answer to each question was mandatory.

Following the six principles are important determinants to build effective governance models. Furthermore, the section on the risks arising from insufficient stakeholder engagement is relevant in the case of North Macedonia because lack of engagement among the public and businesses can hinder the transition to a green economy in WB and thus, in North Macedonia (CEA, 2023b). The section of level of place-based approach is important to consider in North Macedonia because the TPP Oslomej is placed locally in the Southwest region of North Macedonia and the uncertainty coming from the green transition also affects the citizens in this planning region of North Macedonia, where the TPP Oslomej operates. Thus, we want to reveal if the policy makers are considering in their green transition policymaking the local context, local exclusion, local inequalities, local process monitoring and if policy makers have a consideration and care for the local socio-economy from the green transition.

Table 3. Sections in the questionnaire and the Likert scale

Section	Likert scale	Dimensions/Principles used
Six core principles of the EU governance of transition toolkit	1 to 5, where: 1 is 'fully agree' 5 is 'not agree at all'	Transparency Participation Rule of law Equity and inclusiveness Efficiency Accountability
Risks arising from insufficient stakeholder engagement	1 to 5, where: 1 is 'highest risk level' 5 is 'lowest risk level'	Uncertainty increased Rejection of outcome Loss of confidence Resistance toward solution by the government Lack of participation in decision making
Level of place-based approach	1 to 5, where: 1 is 'fully agree' 5 is 'not agree'	Local context Local exclusion Local inequalities Local process monitoring Consideration and care for the local socio-economy
Level of engagement	Respondent select from: No information Information Consultation Involvement	Respondent just select from the list of four possibilities

Source: author's own elaboration on the sections in the questionnaire.

The section considering the level of engagement is picking the level of consideration of the central government about the inclusiveness and participation from the expert community e.g., we want to zoom in if the policy makers are really involving the expert community or are just considering the participation as a formal instrument for engagement in the green transition policy making rather than qualitative instrument to make more effective and more just the green transition.

Also, a Pearson correlation analysis (PPMC) was conducted to examine linear relationships among all variables, with values ranging from -1 (perfect negative correlation) to 1 (perfect positive correlation), and 0 indicating no correlation. Correlation strength was interpreted following Evans (1996): 0.00–0.19 'very weak,' 0.20–0.39 'weak,' 0.40–0.59 'moderate,' 0.60–0.79 'strong,' and 0.80–1.00 'very strong.' Statistical significance was evaluated using t-statistics at a 5% significance level with 66 degrees of freedom (t=1.997).

In the next section, we present the results from the empirical research. The analysis begins with a preliminary examination of the data, including descriptive statistics such as the mean, standard deviation, and minimum and maximum values for each variable (question), providing initial insights into the collected information. The results indicate that the standard deviations across all questions are very low, while the confidence levels are correspondingly high.

Empirical results

The first section of the questionnaire is about the six core principles of the EU governance of transition toolkit (EC, 2020a). The analysis assessed the degree to which key governance principles were put into practice. Descriptive statistics are presented in Table 3 and the mean and max values of the results are presented in the spider diagram in Figure 1.

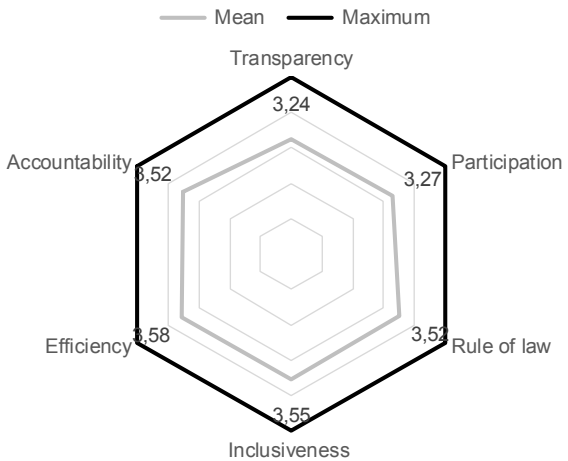

Figure 1. Six Core Principles of the EU Governance of transition toolkit
Source: author's calculations.

Table 4. Six Core Principles of the EU Governance of transition in North Macedonian practice

Descriptive statistics	Transparency	Participation	Rule of law	Equity and inclusiveness	Efficiency	Accountability
Mean	3.24	3.27	3.52	3.55	3.58	3.52
Median	3.00	3.00	4.00	4.00	4.00	3.50
Maximum	5.00	5.00	5.00	5.00	5.00	5.00
Minimum	1.00	1.00	1.00	1.00	1.00	1.00
Std. Dev.	1.04	1.03	1.11	1.10	0.99	1.07
Observations	66	66	66	66	66	66

Source: author's calculations.

The empirical results indicate a below-average level of agreement among respondents, as all mean scores exceed 3, with the lowest values observed for the principles of transparency and participation. In contrast, the principles of rule of law, equity and inclusiveness, efficiency, and accountability received scores well above the average, suggesting greater divergence in respondent perceptions. This pattern reflects procedural governance shortcomings (Madanipour et al., 2003, cited in Topaloglou & Ioannidis, 2022) and diminished societal trust (The Green Tank, 2021, cited in Topaloglou & Ioannidis, 2022).

The next survey section is about the potential risks arising from insufficient stakeholder engagement. This section of the survey was designed to evaluate potential risks arising from the limited involvement of key societal actors in the transition process. The risks considered included heightened uncertainty, resistance to outcomes, and diminished confidence, and resistance toward solution posed by the government. Descriptive statistics are presented in Table 5 and the mean and max values of the results are presented in the spider diagram in Figure 2.

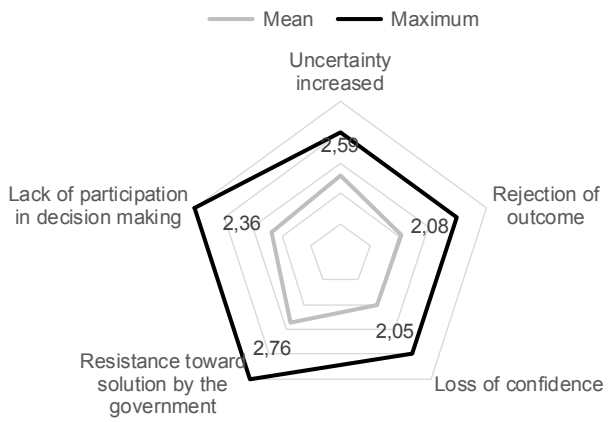

Figure 2. The relevance of the risks arising from insufficient stakeholder engagement
Source: author's calculations.

Table 5. The relevance of the risks arising from insufficient stakeholder engagement

Descriptive statistics	Uncertainty increased	Rejection of outcome	Loss of confidence	Resistance toward solution by the government	Lack of participation in decision making
Mean	2.59	2.08	2.05	2.76	2.36
Median	3.00	2.00	2.00	3.00	2.00
Maximum	4.00	4.00	4.00	5.00	5.00
Minimum	1.00	1.00	1.00	1.00	1.00
Std. Dev.	0.93	0.77	1.07	1.11	1.02
Observations	66	66	66	66	66

Source: author's calculations.

The empirical results in this section of the relevance of the risks arising from insufficient stakeholder engagement and it indicates all risks are assessed higher than the average especially there is a higher than the average likelihood of a resistance toward solution proposed by the government coming most likely from high probability of lack of participation in decision making.

The third section is about the level of implementation of the place-based approach e.g., if the policy makers are considering in their green transition policymaking the local context, local exclusion, local inequalities, local process monitoring and if policy makers have a consideration and care for the local socio-economy from the green transition. Descriptive statistics are presented in Table 6 and the mean and max values of the results are presented in the spider diagram in Figure 3.

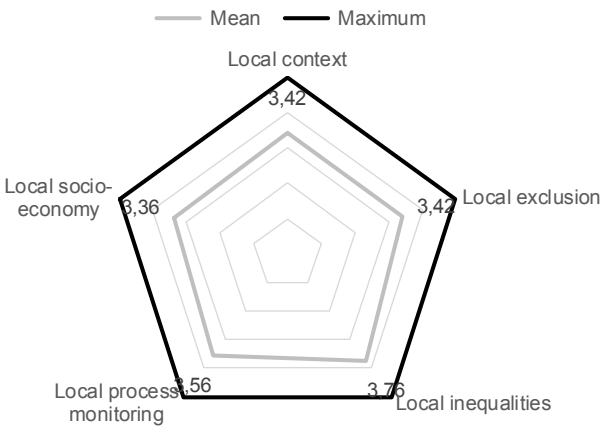

Figure 3. Level of place-based approach in green transition
Source: author's calculations.

Based on the results depicted in Table 6 and Figure 3 on average, respondents believe that the transition governance model does provide a lower-than-average degree of agreement with the place-based approach (scores toward 5 means respondents do not agree) e.g., the process deviates from the place-based approach.

The fourth group of questions aimed at evaluating the extent of participation in the planning process and monitoring of the 'Just Transition for North Macedonia' (note again that we pose the question to emphasize the TPP generating electricity in general and more specifically the TPP Oslomej). Citizen engagement can be incremental, and it can range from one-way interactions to the complementary features of collaboration and communication (E-Guide on Participatory Audit; World Bank, 2025).

Four levels of participation were assessed: No information (no information shared); Information (one way informing the stakeholders), Consultation (collecting feedback from stakeholders), and Collaboration (two-way interaction that involves partnering with stakeholders), to reflect a gradual improvement in the quality of the participation. The results are presented in Figure 4.

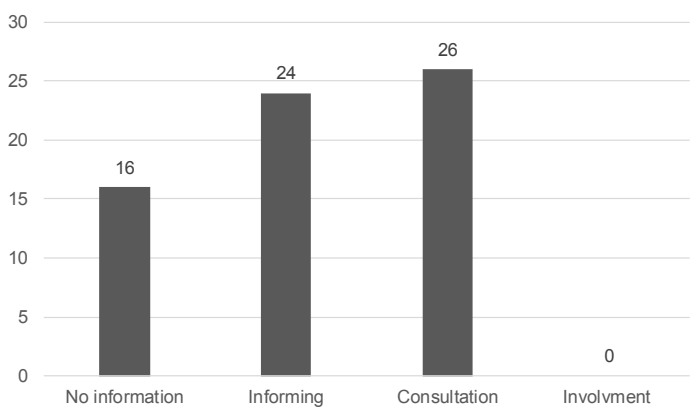

Figure 4. Levels of increasing stakeholder engagement (number of respondents of the questionnaire)
Source: author's calculations.

The results clearly imply that there is no involvement as a level of participation e.g., not one respondent was involved in a two-way interaction that involves partnering with the government on the just transition even though the respondents are experts in the field. On the other hand, 40% of the respondents were involved in a consultation process, meaning the government took stock of feedback from the respondents. The takeaway from this is that gradation of engagement is adequately assured, but only at the level of informing and feedback from stakeholders (experts in the field). The government is reluctant to partner with stakeholders in the just transition.

Table 6 presents the Pearson correlation values for variable pairs exhibiting statistically significant positive or negative correlations, with nonsignificant correlations excluded.

Table 6. Level of place-based approach in green transition

Descriptive statistics	Local context	Local exclusion	Local inequalities	Local process monitoring	Local socio-economy
Mean	3.42	3.42	3.76	3.56	3.36
Median	3.50	3.00	4.00	4.00	3.00
Maximum	5.00	5.00	5.00	5.00	5.00
Minimum	1.00	2.00	2.00	2.00	2.00
Std. Dev.	0.99	1.05	1.02	1.04	1.06
Observations	66	66	66	66	66

Source: author's calculations.

We see significant values of correlation between two variables. In the first column we see 'strong' and positive correlations between 'Transparency with participation' (r=0.7); 'Efficiency' and 'Accountability' (r=0.6). 'Moderate' and negative relationships are recorded between 'Transparency' and 'Loss of confidence' (r=-0.3), 'Level of engagement' (r=-0.3) and 'Risk of lack of participation in decision-making' (r=-0.3), respectively. The findings demonstrate the importance of transparency for the transition policies in inviting and ensuring participation of stakeholders. It also demonstrates that transparency is connected with efficiency and accountability throughout the process in North Macedonia and that the lack of transparency discourages active participation in the decision making. It also reduces the feeling of confidence and challenges the level of engagement.

The next 'strong' and positive relationships between 'Participation', 'Rule of law', and 'Inclusiveness' implies a trivial conclusion that participation process works on inclusion and is an attribute of the rule of law. There are 'strong' and positive relationships between 'Participation', 'Local exclusion', and 'Local process monitoring'. This implies that more participation will work on less exclusion at the local level and will work on more initiatives for monitoring the process at the local level. Furthermore, the 'strong' and positive relationships between 'Rule of law', 'Local inequalities', and 'Local socio-economy' implies that providing for a reliable and confident environment might work decrease the risk of inequalities and for the local socio-economy.

There is a 'strong' and positive correlation between 'Loss of confidence' and 'Resistance toward solution by the government'. The risk of 'Rejection of outcome' seems to exhibit negative and 'weak' correlation with 'Local context' and 'Local inequalities.' Thus, the likelihood of rejecting the transition strategy is considerably lower in cases where the local context and the local inequalities are internalized within the solution.

Table 6. Pearson correlation coefficients *

	Transparency	Participation	Rule of law	Inclusiveness	Efficiency	Accountability	Loss of confidence	Local context	Local inequalities	Local exclusion	Local socio-economy
Participation	0.713										
Rule of law	0.569	0.613									
Inclusiveness	0.584	0.750	0.610								
Efficiency	0.608	0.565	0.660	0.610							
Accountability	0.619	0.596	0.691	0.660	0.643						
Resistance toward solution by the government							0.629				
Local context			0.509								
Local inequalities	0.519	0.588	0.719	0.544	0.608	0.565		0.617			
Local exclusion	0.594	0.713	0.598	0.595	0.660	0.567		0.531	0.725		
Local socio-economy	0.519	0.569	0.633	0.527	0.674			0.639	0.762	0.823	
Local process monitroring	0.556	0.645	0.558	0.510				0.735	0.737	0.622	0.677

0.80-1.00	Positive/Very Strong relationship
0.60-0.79	Positive/Strong relationship
0.40-0.59	Positive/Moderate relationship
0.20-0.39	Positive/Weak relationship
-(0.60-0.79)	Negative/Strong relationship
-(0.40-0.59)	Negative/Moderate relationship
-(0.20-0.39)	Negative/Weak relationship

*only the statistically significant at 5% significance level are presented

Source: author's calculations.

Discussion

Experts on green transition tend not to agree that the Macedonian government is following the six core principles of the EU governance of transition (Transparency; Participation; Rule of law; Equity and inclusiveness; Efficiency; Accountability). One explanation for these results is the pressure to increase the level of harmonization with the EU legislation that the governments in North Macedonia are pursuing as a candidate country for EU membership without considering the administrative preparation and bottlenecks to implement the legislation in Macedonian context. Namely, the target group of the respondents are experts and individuals with well-established status that are well-informed and somehow involved in the administrative and decision-making process. They, thus, likely have informed qualifications and are able to state that the process is well below the average as per the six core principles of the EU governance of transition. It is also about-how the EU accession has been perceived in North Macedonia. Namely, it is mainly considered as legislation harmonization rather than to be effectuated into implementation for an improved quality of life for citizens.

Furthermore, experts believe that the highest risks stemming from insufficient stakeholder engagement are found in the risks of loss of confidence in policy and rejection of outcome posed by the government. This exposes the ambiguity and uncertainty of energy transition occurring in planning regions in North Macedonia where the thermal power plants are based.

The place-based approach extends beyond the traditional subsidiarity principle of fiscal decentralization, which primarily addresses whether a public function should be centralized or decentralized. In this framework, the responsibility for both designing and implementing policy is allocated across different levels of government. Specifically, the central government establishes the priorities, principles, and objectives for the allocation of funding, while lower levels of government are tasked with implementing these principles within the framework provided by the central authority (Barca, 2009). The challenge with North Macedonia specifically, is that there is not really a devolution in the decentralization, thus, the lower government level (i.e., municipalities), do not have experience nor resources in place-based principles set by the central government level (CEA, 2024).

Respondents reveal lowest degree of satisfaction with the inequalities in North Macedonia. This does not come as a surprise because in North Macedonia the top 10% of the population receives almost 100% of their income from dividends and interest and up to 75% of the income from property (Funa, 2021). Furthermore, North Macedonia has both higher top (1%) and bottom (50%) shares of income compared to the same groups in the neighboring countries (Funa, 2021). This definitely poses a risk on the meaningful implementation of just transition policies in North Macedonia that 'should leave no one behind'.

The findings also suggest that governing the transition in North Macedonia does not prioritize multilevel governance or horizontal relationships between various stakeholders. As a result, this exposes the policy of transition in North Macedonia as centralized and up-bottom administratively driven in North Macedonia. Similar results are found in Greece (Topaloglou, 2021 cited after Topaloglou & Ioannidis, 2022).

In addition, according to the findings from the questionnaire, there are risks that the governance model in North Macedonia will not be able to effectively address economic inequalities and social exclusion in the regions where the TPPs are placed because it does not take into consideration local characteristics, nor the local context.

Even though systems with lower government level as per the subsidiarity principle should be able to manage local matters and perform better than the higher government level still, Heinen (2023) suggests that there is a role for higher government level involvement for achieving better perfor-

mance as well, setting an successful example of the state of Baden-Württemberg funding communities to participate in the European Energy Award. Heinen (2023) concludes that central government can motivate actions from the local governments with carefully designed legislation that can be more efficient compared to local efforts from local governments within their boundaries.

Our research demonstrates that transparency seems to be connected with efficiency and accountability of the transition process. Lack of transparency seems to discourage active participation in the decision making, reduce the feeling of confidence and challenge the level of engagement. Enhancing participation should focus on alleviating inclusion at the local level and initiatives for monitoring the process at the local level (certainly something to be improved in North Macedonia). Furthermore, creating a system and process that is confident (it is transparent and it encourages active participation in the decision making as already discussed above) reduces the resistance toward the government solutions for the green transition. Namely, the probability of the transition strategy being rejected is substantially lower in cases where the local context and the local inequalities are internalized within the solution. To facilitate a swift and socially equitable transition in coal-dependent regions, the government of North Macedonia may employ initiatives like open invitations for participation access to information on government sites, and enhancing engagement with workshops, open sessions etc. and increased participation.

Our research is focusing on North Macedonia and, given the level of development and the joined aspiration of the countries of the WB toward the full EU accession, its findings can be indicative for the six WB countries as well. Our previous research finds there is a widespread expectation in the WB countries that EU membership will address structural challenges in the region, including unemployment and public administration issues. Thus, in line with the concept of a 'just transition,' the WB countries should prioritize policies that account for the specific spatial and territorial impacts of transition measures (Green Force, 2023a).

Conclusion

With this paper, we examined to what extent the green transition governance in North Macedonia is just and whether it embeds transition management, spatial justice, and place-based elements. Our hypothesis was that spatial justice and considerations for the local context can make a positive contribution to a just and well-managed transition. Within this hypothesis, we examined the associated risks with the just transition.

Our methodology involved analyzing the concept of green transition as a societal change through the lenses of efficiency and justice. After outlining the just transition process in terms of policies, actors, and practices, we incorporated the concepts of spatial justice and the place-based approach into the governance of just transition initiatives in North Macedonia. The empirical section contains quantitative and qualitative methods, such as the use of questionnaire and desk research. The empirical research focused on the territory of North Macedonia and specifically on the case of electricity generation from thermal power plants, especially the TPP Oslomej in the Southwest region of North Macedonia. The region where TPP Oslomej operates has all the characteristics of a coal-dependent region that is under an urgent need to design and implement a just transition strategy for the post-coal period. For our interviewees, we targeted experts that are well informed about the topics and are engaged not only in the administration (central and local government), but also in the academia and CSO.

Our findings arrived from an understanding that just green transition implies long-run societal, economic, and environmental transformation. As such, it asks for a good governance approach that is necessary to tackle the challenges that arise with this transition. Our findings indicate challenges in terms of inclusiveness, engagement and overall effectiveness that can put at risk the legitimacy of policy actions. Further, our findings reveal a clear top-down model of transition in North Macedonia that is neither just nor it considers place-based approach. One reason why the governance model deviates from the place-based approach in North Macedonia can be that there is not really a transfer of competency in the area of environment and energy in the decentralization system. The eight regions are only for statistical planning purposes (on the competencies for subnational government in North Macedonia; CEA, 2022). This situation does not allow for the local communities/municipalities in turn to activate the place-based decision-making logic simply because 'the decision making is based somewhere distant at the central government'. The implications deriving from these findings, and given the fact that transition is a multi-level process involving different stakeholders, is that a just transition governance should engage different stakeholders in a credible bottom-up way. In this sense, it seems that multi-level governance models for regions in transition could benefit from interactions among different levels and stakeholders.

Furthermore, creating a process that is confident (it is transparent and it encourages active participation in the decision making) reduces the resistance toward the government solutions for the just transition because there is a finding in our research for a 'strong' and positive correlation between 'Loss of confidence' and 'Resistance toward solution by the government'. Thus, the likelihood of rejecting the transition government policy is considerably lower in cases where the local context and the local inequalities are internalized within the solution. 'In a place-based policy, public interventions rely on local knowledge, are verifiable and submitted to scrutiny, while linkages among places are considered. This strategy is superior to alternative strategies that do not make their territorial focus explicit' (Barca, 2009, p. VII).

The contribution of this paper for the policy makers is to understand the importance of good governance rules in green transition. Furthermore, for the policy makers to understand that the government's focus on harmonizing EU legislation without sufficient regard for local administrative capacity or implementation quality can risk the credibility of the process of transition and can even put the process of EU accession at stake. The insufficient stakeholder engagement risks public loss of confidence in policies and potential rejection of outcomes, especially in coal-dependent regions for electricity production, like Pelagonia and Southwest region in North Macedonia.

Our findings also show a lack of multilevel governance or coordination between government levels and stakeholders, reinforcing a centralized, top-down model. Central government should trust local expertise and should share decision-making power by partnering with local experts and not allowing a situation where experts are consulted but do not participate in full partnerships during the planning or monitoring of the green transition. The central government remains reluctant to include experts, even with well-qualified stakeholders.

Our research indicates that North Macedonia's green agenda is primarily driven by central government agencies, such as ministries, rather than through a coordinated approach involving multiple stakeholders. Adopting a more integrated strategy that engages all relevant actors through effective participatory mechanisms could advance the green agenda toward a sustainable low-carbon economy. Consequently, collaboration and coordination among these actors are essential to ensuring a just transition.

Another important aspect that we touched upon but did not research in detail is related to the place-based approach and the decentralization process. Here our results suggest

that the place-based approach is weakly implemented, largely due to limited devolution in decentralization, lack of local government competencies and capacities in energy and environmental matters. Decisions remain centralized and following the top-down logic, undermining local participation. We recommend further, more detailed analyses of the place-based transition and decentralization efficiency with focus on local barriers to more efficient green transition.

Our research was selecting experts from North Macedonia from the administration (central and local government), academia and CSO to respond to a designed and prepared questionnaire. Since we follow a convenience-sampling-technique, the opinions of the selected experts cannot reflect the range of opinions of all stakeholders in the planning region of the TPP Oslomej nor in North Macedonia. Therefore, we recommend a further study involving local communities in the planning region where TPP Oslomej is place-based.

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