UNIVERZITA KOMENSKÉHO V BRATISLAVE

The role of paradiplomacy in achieving climate neutrality: insights from Central Europe

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PLÁN OBNOVY

This policy paper was prepared as part of the LOTREC project (*Lost in Transition: Regions Aiming for Clean Energy*), implemented between August 2024 and July 2026 at the Department of Political Science, Faculty of Arts, Comenius University Bratislava. The project examines the role of regions in the energy transition and in achieving climate objectives. It is based on the understanding that the transition towards a cleaner, more secure and sustainable energy system cannot take place solely at the national or European Union level. A substantial share of concrete solutions is developed and implemented in cities, municipalities and regions, which possess the most detailed knowledge of their territories, the needs of their inhabitants, local opportunities and practical barriers.

Regions therefore play an important role in improving energy efficiency, supporting the development of renewable energy sources, adapting to climate change, promoting sustainable mobility, protecting the environment and involving local stakeholders in public policymaking. Their responsibilities and capacities make them an essential link between national and European objectives and their practical implementation at the territorial level.

LOTREC focuses primarily on the Central European countries of Slovakia, Czechia, Poland, Hungary and Austria and examines how their regions approach climate and energy policy. The project compares regional strategies, institutional capacities, forms of cooperation and the involvement of civil society. Its objective is not only to improve understanding of developments taking place at the regional level, but also to identify solutions that may be practically applicable to Slovak self-governing regions. An important element of the project is therefore the connection between academic research and practice, together with an effort to formulate recommendations that are accessible and useful for policymakers, regional governments and the wider public.

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1. Introduction

As climate change intensifies, the need for a fair and effective green transition is becoming increasingly urgent.[1] While international agreements such as the Paris Agreement, initiatives such as the European Green Deal[2] and national strategies establish overarching goals, it has become increasingly evident that local and regional actors are essential to climate action.[3] Subnational levels of government are closest to where climate impacts are experienced, including heatwaves in cities and floods or droughts in rural areas. Municipalities and regions are not only places where emissions are generated and climate impacts are strongly felt, but they also provide arenas in which public authorities, businesses, civil society and other actors develop innovations and practical climate-policy solutions.[4]

Previous research has shown that when local and regional action is supported by well-designed multilevel governance frameworks, communities are more likely to implement effective climate and sustainability measures.[5] The EU's emphasis on a 'shared leadership' approach highlights the importance of multilevel governance in climate action. Local and regional actors contribute significantly to both structural and operational adaptation measures, demonstrating their central role in achieving climate neutrality. The proximity of subnational governments to citizens and businesses places them in a strong position to design context-specific solutions, while their participation in EU-funded cooperation programmes enables them to act beyond their territorial and national borders.

Paradiplomatic activities, understood as international engagements undertaken by subnational actors, are therefore emerging as an important component of the European green transition. Paradiplomatic activities are not limited to Europe. Research shows that cities and regions in Japan[6] Australia[7] and South Africa[8] also use international cooperation to advance climate goals. Europe is, however, distinctive in providing dedicated financial instruments, including cohesion-policy funds and programmes, which institutionalise and incentivise cooperation in climate and energy policy.

[1] Magazzino, C., Toma, P., Fusco, G., Valente, D., & Petrosillo, I. (2022). Renewable energy consumption, environmental degradation and economic growth: the greener the richer? Ecological Indicators, 139, 108912. https://doi.org/10.1016/j.ecolind.2022.108912
[2] European Commission. (2019). The European Green Deal. https://ec.europa.eu/commission/presscorner/detail/en/ip_19_6691
[3] Roversi, R., Boeri, A., Pagliula, S., & Turci, G. (2022). Energy Community in Action—Energy Citizenship Contract as Tool for Climate Neutrality. Smart Cities, 5(1), 294–317. https://doi.org/10.3390/smartcities5010018
[4] Mi, Z., Guan, D., Liu, Z., Liu, J., Viguié, V., Fromer, N., & Wang, Y. (2019). Cities: The core of climate change mitigation. Journal of Cleaner Production, 207, 582–589. https://doi.org/10.1016/j.jclepro.2018.10.034
[5] Homsy, G. C., & Warner, M. E. (2015). Cities and Sustainability. Urban Affairs Review, 51(1), 46–73. https://doi.org/10.1177/1078087414530545
[6] Nakamura, H., & Kato, T. (2011). Climate change mitigation in developing countries through interregional collaboration by local governments: Japanese citizens' preference. Energy Policy, 39(7), 4337–4348. https://doi.org/10.1016/j.enpol.2011.04.051
[7] Steele, W., Sporne, I., Dale, P., Shearer, S., Singh-Peterson, L., Serrao-Neumann, S., Crick, F., Choy, D. L., & Eslami-Andargoli, L. (2014). Learning from cross-border arrangements to support climate change adaptation in Australia. Journal of Environmental Planning and Management, 57(5), 682–703. https://doi.org/10.1080/09640568.2013.763771
[8] Leck, H., & Simon, D. (2018). Local Authority Responses to Climate Change in South Africa: The Challenges of Transboundary Governance. Sustainability, 10(7), 2542. https://doi.org/10.3390/su10072542

Many municipalities and regions face limited financial, administrative and technical capacities, making transformative change difficult to achieve independently. Building and maintaining networks of stakeholders committed to implementing climate policies remains a significant challenge as well.[9] European instruments are particularly important in this context. The Interreg programmes, financed primarily through the European Regional Development Fund (ERDF), provide targeted funding, knowledge-sharing platforms and opportunities to establish international partnerships. Cooperation programmes can help bridge the gap between EU-level objectives and local needs, ensuring that the green transition is both coordinated and territorially inclusive.

Policy planning at the subnational level is an important element of international cooperation.[10] When municipalities and regions integrate climate objectives into their development plans, they create an institutional foundation for engaging in paradiplomatic activities, collaborating across borders, securing external resources and potentially influencing the European climate agenda. Effective local and regional planning has therefore become an important component of the global response to climate change, as subnational actors are well positioned to adapt climate strategies to the specific needs, risks and capacities of their territories. Moreover, local and regional planning enables stronger community engagement, helping to align climate policies with public priorities and increasing the likelihood of their long-term success.[11]

Local participation and social mobilisation can further strengthen paradiplomatic initiatives. Community leaders and grassroots actors play an important role in disseminating knowledge and building support for climate policies.[12] Successful Interreg initiatives often combine formal institutional partnerships with civil-society engagement, making them both technically ambitious and socially grounded.[13] Municipalities and regions with strong grassroots movements and multilevel networks also tend to achieve deeper emissions reductions, underlining the transformative potential of combining citizen-led initiatives with international cooperation.[14]

In Central Europe, national legislation and climate strategies provide the framework for local and regional engagement, but significant differences remain in institutional capacity, political culture and traditions of local and regional self-government. Despite these differences, subnational actors across

[9] Sillak, S., & Vasser, M. (2023). How might we co-design energy transition policy in old industrial regions? Environmental Policy and Governance, 33(2), 139–152. https://doi.org/10.1002/eet.2007
[10] Kelsey, N. (2021). Cities, commons, and the unilateral provision of public goods. International Relations, 35(3), 489–509. https://doi.org/10.1177/00471178211037089
[11] Amorim-Maia, A. T., Anguelovski, I., Chu, E., & Connolly, J. (2022). Intersectional climate justice: A conceptual pathway for bridging adaptation planning, transformative action, and social equity. Urban Climate, 41, 101053. https://doi.org/10.1016/j.uclim.2021.101053
[12] Cunningham, R., Cvitanovic, C., Measham, T., Jacobs, B., Dowd, A.-M., & Harman, B. (2016). Engaging communities in climate adaptation: the potential of social networks. Climate Policy, 16(7), 894–908. https://doi.org/10.1080/14693062.2015.1052955
[13] Brownlee, T. D., Camaioni, C., Magaudda, S., Mugnoz, S., & Pellegrino, P. (2021). The INTERREG Italy-Croatia Joint_SECAP Project: A Collaborative Approach for Adaptation Planning. Sustainability, 14(1), 404. https://doi.org/10.3390/su14010404
[14] Fraser, T., & Temocin, P. (2021). Grassroots vs. greenhouse: the role of environmental organizations in reducing carbon emissions. Climatic Change, 169(3–4), 22. https://doi.org/10.1007/s10584-021-03260-4

Central Europe can engage in paradiplomacy, particularly through EU-funded cooperation programmes. The EU cohesion policy for 2021-2027 strengthens this connection through five main policy objectives, two of which (a greener, low-carbon Europe and a Europe closer to citizens) are particularly relevant to regional climate action. The application of the "do no significant harm" principle, derived from the EU Taxonomy Regulation, further requires supported investments to remain consistent with broader environmental objectives, reinforcing coherence between EU priorities and their territorial implementation.

This policy paper examines how local and regional actors from five Central European countries (Austria, Czechia, Hungary, Poland and Slovakia) use paradiplomatic instruments, particularly Interreg projects, to support the energy transition and progress towards climate neutrality. The empirical analysis covers projects financed during the 2021-2027 programming period through cross-border, transnational and interregional Interreg programmes associated with these countries. The policy paper addresses the following research question: To what extent do Interreg projects involving Central European countries align with the priorities of the European Green Deal? It therefore focuses on international cooperation as a mechanism for supporting climate and energy-related innovation, policy learning and implementation at the local and regional levels.

The policy paper is structured as follows. The next section presents the methodology and explains the selection and classification of Interreg projects. This is followed by the empirical analysis of green and other projects, including their thematic orientation, financial characteristics and distribution across countries and programmes. The final section summarises the findings and considers their implications for future regional cooperation in climate and energy policy.

2. Methodology

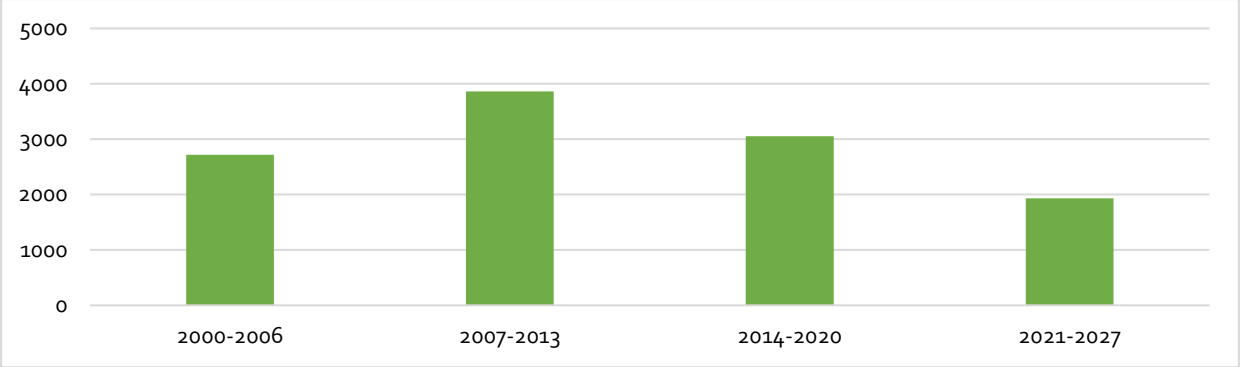
This policy paper examines the extent to which Interreg projects involving Central European countries align with the priorities of the European Green Deal.

The first step consisted of constructing a comprehensive database of Interreg projects. Interreg provides a particularly suitable framework for examining how regional paradiplomatic activities correspond with EU climate and energy priorities, as it supports cooperation between local and regional actors across national borders. The analysis focused on five Central European countries (Austria, Czechia, Hungary, Poland and Slovakia). By extending the geographical scope beyond the traditional Visegrad Group, the study captures a broader spectrum of regional cooperation in Central Europe. The data were retrieved from the official Interreg project database in January 2026. The complete dataset contained 11,693 projects and provided the empirical basis for assessing the climate-relevant dimensions of Interreg cooperation.

The second step involved examining the distribution of projects across the Interreg programming periods. The 2000-2006 programming period contained 2,717 projects. For four of the five countries included in the study, this period partly coincided with the pre-accession phase preceding their entry into

the EU. The largest number of projects, almost 4,000, was recorded during the 2007-2013 programming period. The number subsequently decreased by approximately 1,000 projects in the 2014-2020 period. The database contains 1,932 projects for the current 2021-2027 programming period. However, projects financed under this period may continue to be implemented until 2030 and the number recorded in the database will therefore increase. The programming period could not be identified for 129 projects.

Figure 1. Distribution of Interreg projects by programming period



Data source: Interreg projects

The third step focused on the detailed analysis of projects from the 2021-2027 programming period. This period was selected because it is the first EU programming cycle to explicitly incorporate the objectives of the European Green Deal into its policy framework. The 1,932 projects were assessed to determine whether their objectives and activities were related to the European Green Deal. A project was classified as green when it addressed at least one of the following areas: clean energy, circular economy, building and renovation, sustainable mobility, biodiversity and ecosystems, sustainable food systems, zero pollution or climate mitigation and adaptation.[15] Projects that did not substantively relate to any of these areas were classified as other.

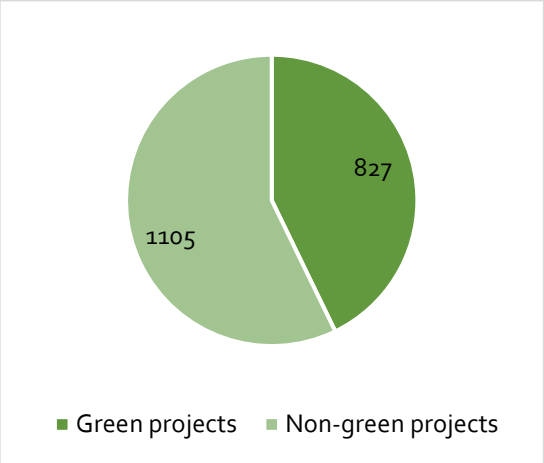
Although Interreg projects are formally assigned to specific policy objectives and thematic categories, these classifications are selected by the project partners themselves and do not always fully reflect the climate or energy-related content of the activities. For example, the LifeLongWood project, implemented under the Austria-Slovenia programme, was formally classified under the policy objective **A more social and inclusive Europe** and the theme **Education and training**. However, its activities focused on the sustainable use of wood and lifelong learning in resource management, establishing a clear connection with Green Deal priorities. The project was therefore classified as climate-relevant during the coding process. Such classification was necessary to capture the substantive contribution of Interreg projects to climate and energy objectives beyond their self-reported programme categories.

[15] European Commission. (2019). The European Green Deal. https://ec.europa.eu/commission/presscorner/detail/en/ip_19_6691

3. Analysis

This section presents the findings from the analysis of paradiplomatic activities undertaken by local and regional actors from Central European countries. As shown in Figure 2, a substantial share of the analysed projects addressed climate, energy and environment-related priorities associated with the European Green Deal policies. Of the 1,932 projects included in the dataset, 827 were classified as green, while 1,105 were classified as other (non-green).

Figure 2. Green and other Interreg projects in the 2021-2027 programming period



Data source: Interreg projects

The green projects covered a broad range of activities. Climate governance initiatives supported policy planning, institutional coordination, adaptation measures, climate education and biodiversity protection, including the protection of forests, ecosystems and water resources. Waste management related projects promoted circular economy practices in industry, the establishment of reuse centres, waste prevention and recycling. Mobility projects included the development of e-mobility, cycling infrastructure, integrated transport systems, coordinated timetables and smart transport-management solutions.

Energy projects focused on the deployment of renewable energy, improvements in energy efficiency, low-carbon district heating systems and the development of community energy initiatives. Agricultural projects promoted sustainable farming practices, resource efficiency, biodiversity protection and the reduction of emissions from agricultural activities. Such initiatives are particularly significant because agricultural decarbonisation is often less developed in national climate policies and can be difficult to implement in practice. Green tourism projects combined local and regional development with environmental protection, sustainable mobility, cultural heritage and the responsible use of natural resources. Other initiatives addressed the renovation and energy upgrading of older buildings, improvements in air and soil quality, water management, adaptation to climate-related risks and the development of green technologies.

In the Interreg database, each project could be assigned up to three thematic categories by the project lead and its partners. These categories were therefore self-assigned. Theme 1 generally represented the project's principal or most important focus, while Themes 2 and 3, where included, captured supplementary dimensions. This reflects the fact that many projects addressed several interconnected policy areas. To provide an overview the thematic analysis presented in this policy paper is based exclusively on Theme 1, as shown in Table 1.

Table 1. Distribution of green and other projects by primary thematic category

Priority theme of the project	Green projects	Other projects	Total projects	Green projects share (in %)
Agriculture and fisheries and forestry	40	15	55	72,7
Climate change and biodiversity	26	0	26	100
Clustering and economic cooperation	15	11	26	57,7
Coastal management and maritime issues	2	4	6	33,3
Community integration and common identity	11	44	55	20
Construction and renovation	14	6	20	70
Cooperation between emergency services	39	25	64	60,9
Cultural heritage and arts	5	124	129	3,9
Demographic change and immigration	1	20	21	4,8
Education and training	18	26	44	40,9
Energy efficiency	21	0	21	100
Evaluation systems and results	10	4	14	71,4
Governance, partnership	55	71	126	43,7
Green technologies	22	0	22	100
Health and social services	2	38	40	5
ICT and digital society	14	41	55	25,5
Improving transport connections	0	7	7	0
Infrastructure	19	20	39	48,7
Innovation capacity and awareness-raising	18	10	28	64,3
Institutional cooperation and cooperation networks	25	83	108	23,1
Knowledge and technology transfer	88	142	230	38,3
Labour market and employment	8	75	83	9,6
Logistics and freight transport	8	4	12	66,7
Managing natural and man-made threats, risk management	21	1	22	95,5
New products and services	2	1	3	66,7
Regional planning and development	4	8	12	33,3
Renewable energy	33	0	33	100
Rural and peripheral development	5	23	28	17,9
SME and entrepreneurship	6	5	11	54,5
Safety	4	10	14	28,6
Scientific cooperation	2	5	7	28,6
Social inclusion and equal opportunities	6	54	60	10
Soil and air quality	11	1	12	91,7
Sustainable management of natural resources	13	0	13	100
Tourism	79	208	287	27,5
Transport and mobility	14	11	25	56
Urban development	11	3	14	78,6
Waste and pollution	124	3	127	97,6
Water management	29	2	31	93,5
Waterways, lakes and rivers	2	0	2	100

Data source: Interreg projects

As shown in Table 1, the largest number of projects was classified under **Tourism**, with 287 projects, followed by **Knowledge and technology transfer**, with 230 projects. The remaining themes among the most frequently selected categories were **Cultural heritage and arts** (129 projects), **Waste and pollution** (127), **Governance and partnership** (126), **Institutional cooperation and cooperation networks** (108), **Labour market and employment** (83), **Cooperation between emergency services** (64) and **Social inclusion and equal opportunities** (60). **Agriculture, fisheries and forestry** and **Community integration and common identity** each included 55 projects. At the opposite side, the least frequently represented theme was **Waterways, lakes and rivers**, with only two projects, followed by **New products and services**, with three projects and **Coastal management and maritime issues**, with six.

When only green projects are taken into account, the thematic distribution differs considerably. The largest number of green projects was classified under **Waste and pollution**, with 124 projects, most of which focused on circular-economy solutions. This was followed by **Knowledge and technology transfer**, with 88 green projects, many of which supported the exchange of good practices, capacity-building and policy learning. Several themes were almost entirely or exclusively associated with green projects. All projects whose primary theme was **Renewable energy**, **Climate change and biodiversity**, **Green technologies** (22), **Energy efficiency**, **Sustainable management of natural resources** and **Waterways, lakes and rivers**.

On the other hand, none of the seven projects classified under **Improving transport connections** was identified as green. These projects focused primarily on road construction or maintenance rather than on sustainable transport development. Only one green project appeared under **Demographic change and immigration**. This project involved 17 partners and brought together public authorities, local organisations, businesses, older people and persons with disabilities to support the development of more inclusive communities prepared for the green and digital transitions.[16]

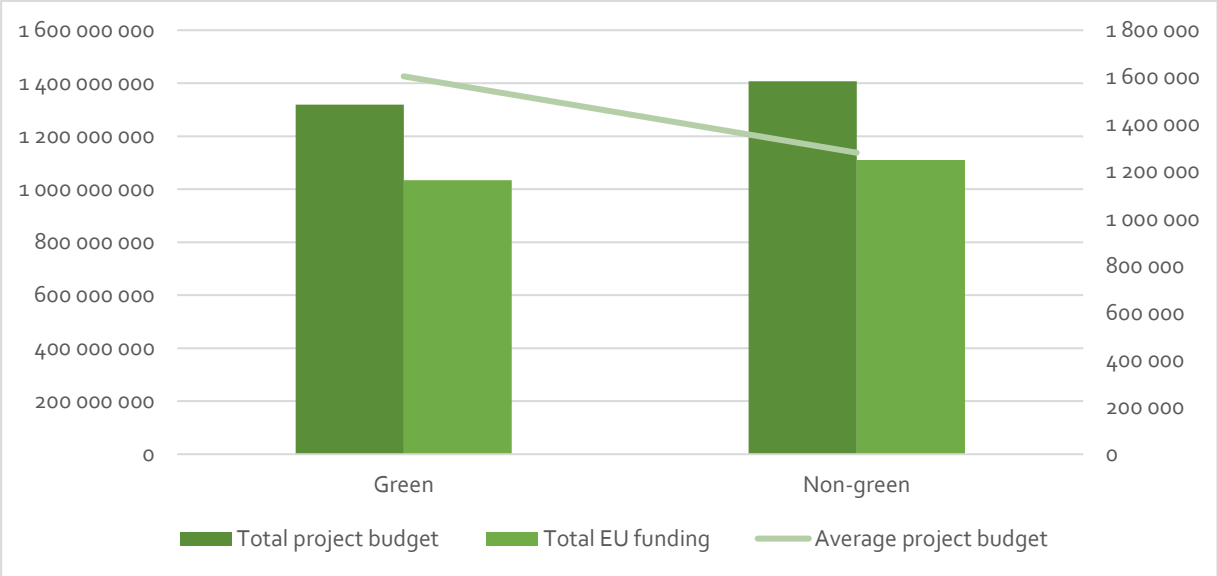
Funding information on the total project budget was available for 1,922 of the 1,932 projects included in the dataset, while budget data were missing for ten projects. Of the projects with available financial information, 822 were classified as **green** and 1,100 as **other**. The overall budget of all projects amounted to approximately EUR 2.73 billion, of which around EUR 2.15 billion was provided through EU funding, as illustrated in Figure 3. EU contributions therefore represented approximately 78.7% of the project budgets recorded in the dataset. Green projects accounted for approximately EUR 1.32 billion in total project budgets and received around EUR 1.03 billion in EU funding. Other projects had a slightly higher combined budget of approximately EUR 1.41 billion, of which around EUR 1.11 billion came from EU funding.

The difference is particularly visible in the average project size. The average budget of a green project was approximately EUR 1.6 million, compared with approximately EUR 1.28 million for a other project. The average green project was therefore around 25% larger than the average other project, indicating that green projects tend to be more financially intensive. Although other projects were more numerous

[16] Interreg. (2026). Elevate multi-level governance for inclusive communities. https://interreg-danube.eu/projects/elevate

and consequently had a slightly larger combined budget, green projects attracted a high share of funding. This reflects the greater investment requirements associated with energy infrastructure, building renovation, sustainable mobility, waste management and the circular economy, biodiversity and nature protection and emergency preparedness for climate change events and capacity-building.

Figure 3. Total and average budgets of green and other projects



Data source: Interreg projects

The most financially intensive green project had a budget exceeding EUR 10 million and brought together Romanian and Hungarian emergency services to improve preparedness for climate-related disasters. Its activities included joint training, improved equipment and more coordinated cross-border responses aimed at increasing the safety and resilience of local communities.[17] At the other end of the spectrum, the green project with the smallest budget, approximately EUR 2,000, brought together beekeepers from Tyrol and Bavaria to protect bee diversity, support disease-resistant breeding and establish Europe's first officially recognised cross-border bee-breeding station.[18]

The analysis further examines the participation of individual Central European countries. The country-level comparison focuses exclusively on cross-border cooperation programmes, primarily Interreg VI-A programmes. It excludes the broader transnational and interregional programmes Interreg VI-B Alpine Space, Interreg VI-B Baltic Sea Region, Interreg VI-B Central Europe, Interreg VI-B Danube, Interreg VI-

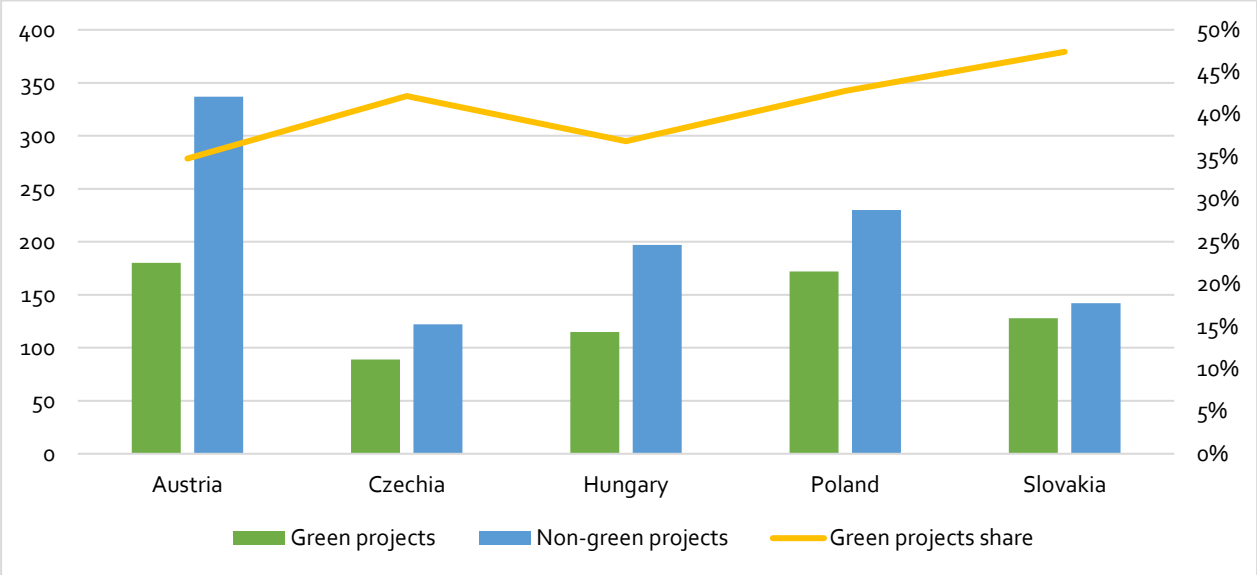
[17] Interreg. (2026). Timely and efficient response in case of emergency situations in cross border area. https://interreg-rohu.eu/en/project_library/test-teres-rohu00623-timely-and-efficient-response-in-case-of-emergency-situations-in-the-cross-border-area/

[18] Interreg. (2026). Grenzüberschreitende Erweiterung und gemeinsamer Betrieb der Belegstelle „An den drei Wassern". https://www.euregio-zwk.org/projekte/ezwk-belegstelle

C Interreg Europe, and Interreg VI-C URBACT IV, whose geographical coverage extends across larger groups of regions and countries.

The cross-border dataset contains 1,360 projects implemented through 22 programmes. A project was attributed to a country when that country appeared in the name of the relevant cross-border programme. Since these programmes generally involve at least two countries, the same project may be counted for each participating country included in the analysis. Austria participated in by far the largest number of cross-border projects but recorded the lowest proportion of green projects, at 34.8%. Slovakia, despite participating in considerably fewer projects, had the highest green-project share, at 47.4%. Poland and Czechia followed, with green-project shares of 42.8% and 42.2%, respectively, while Hungary recorded 36.9%. These differences appear to be shaped primarily by the composition and thematic orientation of the bilateral and multilateral cooperation programmes in which each country participated.

Figure 4. Green and other cross-border projects by country



Data source: Interreg projects

Among the five countries, Austria participated in the highest number of cross-border projects, with 517 projects in total (Table 2). Of these, 180 were classified as green and 337 as other projects. Austria's comparatively high level of projects participation was driven mainly by the Austria–Germany/Bavaria programme. Although only 27.8% of projects under this programme were classified as green, it nevertheless recorded the highest absolute number of green projects, with 81. Almost half of the other projects involving Austria focused on tourism or cultural heritage and the arts, without a clear connection to sustainable development. The most financially intensive project, with a budget of almost EUR 10

million, brought together Austrian and Slovak schools to help people develop practical green and digital skills aligned with labour-market needs.[19]

Table 2. Projects in cross-border cooperation in Austria

Programme	Green projects	Other projects	Total projects	Green share
2021 - 2027 Interreg VI-A Austria-Czechia	22	29	51	43,1%
2021 - 2027 Interreg VI-A Austria-Germany/Bavaria	81	210	291	27,8%
2021 - 2027 Interreg VI-A Austria-Hungary	15	17	32	46,9%
2021 - 2027 Interreg VI-A Germany-Austria-Switzerland-Liechtenstein (Alpenrhein-Bodensee-Hochrhein)	12	17	29	41,4%
2021 - 2027 Interreg VI-A Slovakia-Austria	12	13	25	48,0%
2021 - 2027 Interreg VI-A Slovenia-Austria	38	51	89	42,7%

Data source: Interreg projects

Table 3. Projects in cross-border cooperation in Poland

Programme	Green projects	Other projects	Total projects	Green share
2021 - 2027 Interreg VI-A Germany/Brandenburg-Poland	19	20	39	48,7%
2021 - 2027 Interreg VI-A Germany/Mecklenburg-Western Pomerania/Brandenburg-Poland	8	22	30	26,7%
2021 - 2027 Interreg VI-A Lithuania-Poland	25	75	100	25,0%
2021 - 2027 Interreg VI-A NEXT Poland - Ukraine	44	34	78	56,4%
2021 - 2027 Interreg VI-A Poland-Denmark-Germany-Lithuania-Sweden (South Baltic)	32	22	54	59,3%
2021 - 2027 Interreg VI-A Poland-Germany/Saxony	9	20	29	31,0%
2021 - 2027 Interreg VI-A Poland-Slovakia	35	37	72	48,6%

Data source: Interreg projects

Poland had the second-highest number of projects, participating in 402 cross-border projects (Table 3). Of these, 172 were classified as green and 230 as other projects. The Lithuania-Poland programme was the largest Polish programme in the dataset, with 100 projects, although only one quarter of them were classified as green. Green projects constituted a majority in the Poland-Ukraine programme, accounting for 44 of its 78 projects. The most financially intensive project under this programme, with a budget exceeding EUR 7 million, brought together Polish and Ukrainian regions to improve drinking-water quality, expand water-supply and sewerage systems and protect shared rivers, lakes and groundwater

[19] Interreg. (2026). IFIT NEXT – Competence development and awareness-raising in the fields of Industry 4.0, green energy, and digital citizenship.https://projects.sk-at.eu/de/ifit-next-kompetenzenentwicklung-und-bewusstseinsforderung-der-themenbereiche-industrie-4-0-green-energy-und-digitale-burgerschaft/

from pollution.[20] Green projects also represented a majority in the South Baltic programme, with 32 green projects out of 54. Its most financially demanding project, with a budget of almost EUR 4 million, brought together countries around the Baltic Sea to assess and address pollution caused by shipwrecks, hazardous fuels and dumped munitions, while also improving joint wreck management and raising public awareness.[21]

Hungary was associated with 312 cross-border projects, of which 115 were classified as green and 197 as other projects (Table 4). The largest number of projects was implemented through the Romania–Hungary programme, although only 27 of its 91 projects were classified as green. Nevertheless, several of these green projects had particularly large budgets. The two most financially intensive green projects involving Hungary were the second and third largest green projects in the overall dataset, each with a budget of approximately EUR 9 million and a focus on renewable energy development.[22] One of these projects aims to improve the use of locally available renewable energy, establish energy communities, and help public institutions reduce and better balance their energy consumption. The second supports the introduction of energy-efficiency measures, solar energy and geothermal heating in public buildings, thereby contributing to a greener, more energy-efficient and more self-reliant cross-border region. [23]

Table 4. Projects in cross-border cooperation in Hungary

Programme	Green projects	Other projects	Total projects	Green share
2021 - 2027 Interreg VI-A Hungary-Slovakia	27	23	50	54,0%
2021 - 2027 Interreg VI-A IPA Hungary Serbia	22	38	60	36,7%
2021 - 2027 Interreg VI-A NEXT Hungary - Slovakia - Romania - Ukraine	10	29	39	25,6%
2021 - 2027 Interreg VI-A Romania-Hungary	27	64	91	29,7%
2021 - 2027 Interreg VI-A Slovenia-Hungary	14	26	40	35,0%

Data source: Interreg projects

Czechia had the smallest number of projects in absolute terms, with 211 cross-border projects (Table 5). Of these, 89 were classified as green and 122 as other projects. The Slovakia-Czechia programme was Czechia's largest cross-border programme and, among the larger programmes, one of the most strongly oriented towards green activities, with 44 green and 40 other projects. Its most financially intensive green project, with a total budget exceeding EUR 2 million, aimed to improve water quality and protect

[20] Interreg. (2026). Sustainable water management: a way to revitalize western Ukraine and eastern Poland. https://pl-ua.eu/pl/projekty-i-historie/water/

[21] Interreg. (2026). BALTWRECK – Preventing massive marine waters chemical pollution from the leaking wrecks and munition/weapon dumps in the South Baltic.https://southbaltic.eu/projects-and-success-stories/baltwreck-preventing-massive-marine-waters-chemical-pollution-from-the-leaking-wrecks-and-munition-weapon-dumps-in-the-south-baltic/

[22] Interreg. (2026). Green Cross-Border Region. https://interreg-rohu.eu/en/project_library/gcbr-green-cross-border-region-rohu-633/

[23] Interreg. (2026). Renewable Energy Works Well. https://interreg-rohu.eu/en/project_library/renew-renewable-energy-works-well-rohu-617/

biodiversity in cross-border rivers by reducing sewage pollution and using advanced modelling to manage wastewater discharges more effectively.[24]

Table 5. Projects in cross-border cooperation in Czechia

Programme	Green projects	Other projects	Total projects	Green share
2021 - 2027 Interreg VI-A Austria-Czechia	22	29	51	43,1%
2021 - 2027 Interreg VI-A Germany/Bavaria-Czechia	21	52	73	28,8%
2021 - 2027 Interreg VI-A Germany/Saxony-Czechia	2	1	3	66,7%
2021 - 2027 Interreg VI-A Slovakia-Czechia	44	40	84	52,4%

Data source: Interreg projects

Slovakia participated in 270 cross-border projects, of which 128 were classified as green and 142 as other projects (Table 6). With a green-project share of 47.4%, Slovakia recorded the highest proportion among the five countries. Green projects constituted a majority in both the Slovakia-Czechia programme and the Hungary-Slovakia programme. One notable project brought together Slovak and Hungarian municipalities to revitalise urban green spaces, adapt them to climate change and exchange practical solutions for creating greener and more resilient towns.[25] Within the Hungary-Slovakia-Romania-Ukraine NEXT programme, where only around one quarter of projects were classified as green, one project connected Hungarian, Slovak and Ukrainian partners to strengthen local climate resilience through water-retention measures, green roofs, rain gardens and flood-prevention interventions.[26]

Table 6. Projects in cross-border cooperation in Slovakia

Programme	Green projects	Other projects	Total projects	Green share
2021 - 2027 Interreg VI-A Hungary-Slovakia	27	23	50	54,0%
2021 - 2027 Interreg VI-A NEXT Hungary - Slovakia - Romania - Ukraine	10	29	39	25,6%
2021 - 2027 Interreg VI-A Poland-Slovakia	35	37	72	48,6%
2021 - 2027 Interreg VI-A Slovakia-Austria	12	13	25	48,0%
2021 - 2027 Interreg VI-A Slovakia-Czechia	44	40	84	52,4%

Data source: Interreg projects

[24] Interreg. (2026). Improving conditions for the development of biodiversity and reducing the impacts of climate change in catchment areas of urbanised drainage systems in border regions. https://www.sevak.sk/eu-fondy/zlepsenie-podmienok-pre-rozvoj-biodiverzity-a-znizovanie-dopadov-klimatickej-zmeny-v-povodiach-urbanizovanych-kanalizacnych-systemov-v-prihranicnych-regionoch/

[25] Interreg. (2026). Green cities in the area of Danube Region. https://interreghusk.eu/projects/greencities-2/

[26] Interreg. (2026). We Catch and Retain: rainwater collection, anti-flood and greening measures in border municipalities of HU-SK-UA region. https://www.michalovce.sk/sk/clanok/nazov-projektu-cezhranicna-spolupraca-zamerana-na-zber-dazdovej-vody-protipovodnove-a-zelene-opatrenia-v-pohranicnych-mestach-regionu-madarsko-slovensko-ukrajina

In addition to the cross-border cooperation programmes (Interreg A), the dataset includes six transnational and interregional programmes. Together, these programmes accounted for 572 projects, with green projects represented 53.8% of all projects implemented through this group of programmes (Table 7). Unlike cross-border programmes, which generally connect neighbouring regions from two or several countries, transnational programmes (Interreg B) cover larger geographical areas formed around shared territorial characteristics or challenges. Interregional programmes (Interreg C) have an even broader geographical scope and facilitate cooperation, policy learning and knowledge exchange across Europe.

Table 7. Other Interreg programmes

Programme	Green projects	Other projects	Total projects	Green share
2021 - 2027 Interreg VI-B Alpine Space	37	7	44	84,1%
2021 - 2027 Interreg VI-B Baltic Sea Region	54	35	89	60,7%
2021 - 2027 Interreg VI-B Central Europe	73	50	123	59,3%
2021 - 2027 Interreg VI-B Danube	59	62	121	48,8%
2021 - 2027 Interreg VI-C Interreg Europe	83	109	192	43,2%
2021 - 2027 Interreg VI-C URBACT IV	2	1	3	66,7%

Data source: Interreg projects

The Interreg VI-B Alpine Space programme connects regions in seven Alpine countries: Austria, France, Germany, Italy, Liechtenstein, Slovenia and Switzerland. Of the five Central European countries examined in this policy paper, only Austria is part of the Alpine Space programme area. The particularly high proportion of green projects reflects the environmental and territorial challenges facing the Alpine region, including climate adaptation, biodiversity protection, energy transition, sustainable mobility, resource management and the resilience of mountain communities. In the area of climate adaptation, for example, one project helps Alpine regions prepare more effectively for extreme weather by improving how they understand and manage cascading climate risks, such as heatwaves, storms and floods, as well as their combined impacts.[27]

The Interreg VI-B Baltic Sea Region programme covers nine countries: Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Sweden and Norway. Among the five Central European countries analysed, Poland is the only country included in the programme area. The predominance of green projects is consistent with the programme's strong orientation towards creating a greener Baltic Sea region. Its priorities explicitly address water-smart societies, climate-neutral societies, the circular economy, energy transition and smart green mobility. In the field of the circular economy, one project helps the Baltic Sea region recycle nutrients from agricultural, municipal and industrial waste into safe

[27] Interreg. (2026). How to adapt to changing weather eXtremes and associated compound RISKs in the context of Climate Change. https://www.alpine-space.eu/project/x-risk-cc/

fertilisers, thereby supporting more circular farming practices and reducing reliance on imported mineral fertilisers.[28]

The Interreg VI-B Central Europe programme covers regions in nine countries: Austria, Croatia, Czechia, Germany, Hungary, Italy, Poland, Slovakia and Slovenia. The relatively high share of green projects demonstrates the importance of climate, energy and environmental cooperation within Central Europe. Projects under this programme address challenges that cross administrative and national borders, including climate resilience, renewable energy, sustainable mobility, environmental governance and the protection of natural resources. In the field of water management, for example, one project helps Central European cities and regions manage groundwater, droughts and floods more effectively by developing practical, climate-resilient solutions for urban water management and spatial planning.[29]

The Interreg VI-B Danube programme covers 14 countries. Its participating EU Member States are Austria, Bulgaria, Croatia, Czechia, Germany, Hungary, Romania, Slovakia and Slovenia. The programme also includes five non-EU countries: Bosnia and Herzegovina, Moldova, Montenegro, Serbia and Ukraine. Environmental projects address climate adaptation, biodiversity, water and river-basin management, disaster-risk management, renewable energy and the transition towards a greener Danube region. One project, for example, helps countries along the middle and lower Danube restore habitats and ecological corridors through shared scientific tools and practical cooperation at the local level. [30]

The Interreg VI-C Interreg Europe programme is the largest of the six programmes in the dataset, comprising 192 projects. Interreg Europe originally covered the entire territory of the 27 EU Member States, together with Norway and Switzerland. Its scope was extended to seven EU candidate countries: Albania, Bosnia and Herzegovina, Moldova, Montenegro, North Macedonia, Serbia and Ukraine. Unlike programmes organised around a specific geographical area, Interreg C programme facilitates policy learning among public authorities and other relevant organisations across Europe. Its projects can address all dimensions of regional development, including innovation, competitiveness, employment, social inclusion, governance and institutional capacity. One project, for example, brings together public authorities, businesses and local communities to improve the restoration and long-term management of rivers and wetlands. By strengthening these partnerships and involving local residents, it contributes to greater biodiversity.[31]

Only three projects in the dataset were associated with the Interreg VI-C URBACT IV programme, which primarily supports cities and other urban actors. URBACT differs from the other programmes because it focuses specifically on sustainable and integrated urban development. It supports city networks, mutual

[28] Interreg. (2026). Circular nutrients for a sustainable Baltic Sea Region. https://interreg-baltic.eu/project/cinurgi/
[29] Interreg. (2026). Management of urban water resources in Central Europe facing climate change. https://www.interreg-central.eu/projects/maurice/
[30] Interreg. (2026). Climate-proofing ecological restoration plans in the middle and lower Danube Region. https://interreg-danube.eu/projects/climanatres
[31] Interreg. (2026). Public-private governance of rivers and wetlands restoration and conservation as blue-green infrastructure. https://www.interregeurope.eu/riwet

learning, capacity-building, and the preparation or transfer of integrated local policies. The two green projects identified in the dataset focused on biodiversity and urban green spaces. One helps ten European cities work with local communities to better understand, measure and protect urban biodiversity and ecosystem services.[32] The other supports the transformation of unused urban areas through community participation and locally adapted greening solutions.[33]

4. Conclusion

The analysis of paradiplomatic activities in Central Europe illustrates how EU instruments, particularly the Interreg programme, enable local and regional actors to compensate for limited domestic capacities through international cooperation and translate shared priorities into concrete climate policies. Of the 1,932 projects examined in the 2021-2027 programming period, 827 were classified as green, demonstrating the significant role of subnational actors in implementing the priorities of the European Green Deal.

Cross-border cooperation programmes (Interreg A), accounted for the largest share of projects. The Austria-Germany/Bavaria programme was the most active in absolute terms, while programmes such as Poland-Ukraine and Slovakia-Czechia also showed a strong orientation towards green cooperation. Among the transnational programmes, cooperation was particularly intensive in the Danube region, while the Alpine Space, Baltic Sea Region and Central Europe programmes recorded comparatively high shares of green projects. Interregional cooperation under Interreg C was more limited in the dataset, which may indicate that broader European networking remains less accessible.

The findings confirm that paradiplomatic activities are not peripheral to the European green transition but form an important part of its implementation. If cities and regions are to contribute effectively to climate and energy policy, domestic and international legal and institutional frameworks must continue to support their engagement across borders.[34] By enabling subnational governments to exchange knowledge, build partnerships and mobilise external resources, the EU strengthens its multilevel governance system and contributes to a green transition.

At the same time, the analysis has several limitations. It identifies the thematic and financial characteristics of Interreg projects but does not assess their implementation quality, long-term outcomes or actual contribution to emissions reductions and climate resilience. These limitations point to several directions for future research. More detailed case studies of individual regions and

[32] Interreg. (2026). Community-based approaches to foster urban biodiversity. https://urbact.eu/news/biodivercity-community-based-approaches-foster-urban-biodiversity
[33] Interreg. (2026). Restoring "forgotten" urban areas into valuable places FOR and WITH residents. https://urbact.eu/whats-new/stories/european-cities-driving-change-through-urbact-action-planning-networks
[34] Setzer, J. (2015). Testing the Boundaries of Subnational Diplomacy: The International Climate Action of Local and Regional Governments. Transnational Environmental Law, 4(2), 319–337. https://doi.org/10.1017/S2047102515000126

municipalities could examine how institutional capacity, political leadership and administrative traditions shape participation in cross-border climate initiatives. Further research should also address the quality and durability of partnerships. Beyond mapping project numbers and partner structures, it could explore which forms of cooperation continue after funding ends, how trust and previous collaboration affect the development of new initiatives and whether networks established through climate related projects generate cooperation in other policy areas. Such research would provide a deeper understanding of the conditions under which paradiplomacy produces lasting institutional and environmental effects.