

Place-based just transitions: exploring the links between policies and practices in Southern Europe

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Abstract

This special issue explores the concept of “place-based just transitions” and its implications for both research and practice. Energy and environmental transitions are understood as complex and multi-dimensional processes, embedded in material, social, spatial, and political factors. It is crucial to consider how transition processes affect cities and regions differently, including distribution of costs and benefits, acknowledging the diversity of actors and interests at play, and the relations with environmental, spatial, and social justice. A place-based perspective is particularly relevant, as initial conditions vary greatly across territories and the mechanisms triggered by transition policies can differ significantly can lead to different outcomes. Given this context, several questions arise: what approaches enable just transitions in policies and practices? How can social and energy justice be operationalised? And how it can be spatialised and adapted to existing systems and infrastructures? And crucially, to what extent do local dynamics shape the social and political outcomes of transitions? This special issue of the European Journal of Spatial Development addresses these questions by shedding light on the spatial and socio-political dimensions of transitions in Southern Europe (including Greece, Italy, Portugal, Spain, among others), namely a region that remains underexplored in international research, despite its wealth of socially rooted practices, hybrid governance models, and complex institutional geographies.

Keywords

place-based, just transitions, urban and territorial governance, Southern Europe

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Why places matter in just transitions?

The urgent global challenge of climate change and the need to reduce carbon emissions in energy systems have prompted various policies, investments, measures, and experiments to support an “energy transition.” Academic interest in “transition(s)” partly stems from broader discussions on sustainable development, which gained momentum in the late 1980s and 1990s (Waas et al., 2011). Initially, energy system change was thought to occur mainly through the diffusion of new renewable energy technologies. However, it became rapidly evident that energy transition necessitates an integrated approach, able to take into account technical, economic, spatial and social factors (Geels, 2002; Sovacool, 2016). In other words, this entails a rethinking of how energy is produced, distributed and used, with implications for energy systems, environmental outcomes (direct and indirect emissions), economic elements (such as energy costs and technology), spatial settings (e.g., the location of infrastructure and the complexity of authorization procedures) and also social impacts (such as behavioural changes, greater user involvement, and the inclusion of marginalized groups). Such changes aim at mitigating climate problems, ensuring energy security, and promoting inclusivity, while emphasizing the goals set out in the 2015 Paris Agreement (UNFCCC, 2015).

In response to these challenges, the concept of a “just transition” has gained importance in both academic and policy circles. Originating in the late 20th century from labor and environmental movements in North America (Eisenberg, 2019), it initially addressed workers’ concerns about the advantages and disadvantages of the shift to a low-carbon economy. Over time, the concept has expanded encompassing issues of equity, process, and recognition (McCauley et al., 2013; Lee and Byrne, 2019), together with social innovation to meet unmet needs (Moulaert et al., 2010; Bragaglia, 2021) often from a place-based perspective. At the EU level, it has become an integral part of the regulations and policies guiding the European Commission's agenda (European Commission, 2020). These policies include social justice objectives in the energy transition through the introduction of measures such as retraining programs, social inclusion strategies, and redistributive approaches (Newell & Mulvaney, 2013). The implementation of these measures differs depending on national decarbonization plans. While EU and national policies show broad consensus on technical, economic, and environmental aspects, there is growing recognition that transition is not socially neutral. The distribution of the costs and benefits of decarbonization is uneven and may affect certain regions and communities particularly hard. Specific groups, such as those living in energy poverty or workers in carbon-intensive industries, are at risk of facing disproportionate costs. These communities could lose the benefits of the transition and find themselves in economic hardship, often due to increased energy costs for households that cannot afford the necessary adjustments (Smiech et al., 2025) or face job losses (Jenkins et al., 2016; Heffron & McCauley, 2018).

To make these inclusive and redistributive policies work, the local socio-spatial and political aspects of the transition need to be considered. This has led to growing interest among scholars in a “place-based perspective” of energy transition, which emphasizes understanding the economic, political, cultural, and social characteristics of specific areas (Bridge et al., 2013; Coenen, Benneworth & Truffer, 2012). This approach recognizes the diversity of regional contexts and aims to adapt regional policies and local practices to available resources, institutional contexts, and social dynamics (Valkenburg and Cotella, 2016). It also encourages the active participation of local stakeholders, as described in detail in a multilevel governance framework (Hansen & Coenen, 2015; Kivimaa et al., 2019; Tricarico, 2018). This conceptual shift pushes the focus back to critical issues such as the distribution of costs and benefits throughout transitions, the actors and forms involved in decision-making, and how governance arrangements take into account multiple needs and rights.

Building on this new research agenda, we argue that the energy transition should primarily be seen as a matter of socio-spatial justice. This requires careful examination of solidarity, equity, and inclusion in the transformative processes (Luque-Ayala et al., 2018; Sareen and Haarstad, 2018; Heffron, 2022). This special issue explores how a place-based just transition can be defined, implemented in practice, and situated within specific energy systems. By focusing on Southern Europe—a region rich in innovative practices and diverse governance models—this issue looks at how local factors shape the social and territorial effects of transitions, especially regarding environmental and social justice.

Between policies and practices in Southern Europe

Over the past decades, the *just transition* slowly become part of European policy agenda. This change has been supported by regulatory frameworks to deal with the social and economic impacts of climate neutrality goals (Bergamaschi, 2020). At the European level, the adoption of the Clean Energy for All Europeans package in 2019, followed by the European Green Deal, marked a coordinated path towards decarbonisation (Pianta & Lucchese, 2020).

In this framework, the Just Transition Mechanism (JTM), as part of the European Green Deal, aims to address risks of uneven development, social exclusion, and labour market disruption that might arise from decarbonisation within the EU’s climate and territorial agendas (European Commission, 2019; European Parliament, 2021). The JTM comprises a tripartite structure—including the Just Transition Fund, InvestEU support, and a public loan facility—designed to mobilise both financial and technical support in regions “*most affected by the transition*”, with a particular emphasis on territories with high carbon dependency or structural vulnerabilities. In parallel, the Social Climate Fund aims to counteract the effects of the EU Emission Trading System ETS2, which is expected to drive up energy prices and could unevenly affect the most vulnerable households. Yet, as stated by Sabato and Vanhille (2024), the just transition dimension in the European Green Deal implementation remains uneven

and insufficient, with a number of gaps and limitations, referring, for example, to its scope, funding and level of coherence and comprehensiveness.

While these instruments reveal a normative shift toward greater equity in transition strategies, their operationalisation often remains bound within a compensatory rationale focused on mitigating the costs of industrial conversion. This approach tends to equate territorial justice with redistribution, thereby privileging macro-regional indicators of disadvantage and offering technocratic responses to socially embedded challenges (Rodríguez-Pose & Bartalucci, 2023). A growing body of critical scholarship has pointed out that such an approach risks reinforcing existing power asymmetries by prioritising already-institutionalised actors and regions capable of absorbing and deploying policy instruments effectively (e.g. Bouzarovski & Simcock, 2017; Barca & McCann, 2020). The prevailing emphasis on compensatory funding may obscure the broader systemic tensions underlying the transition, limiting the scope for more transformative and anticipatory policies.

Against this backdrop, recent research and practice show that the value of just transition lies beyond mitigation, in creating different development models through local and socially innovative strategies (Boeri et al., 2024). This broader interpretation calls for a reorientation of the just transition agenda—from an ex-post mechanism of redistribution to an ex-ante framework for guiding inclusive and participatory transformation (Filipovic et al., 2022). Rather than limiting justice to distributive metrics or macroeconomic targets only, this perspective also foregrounds procedural and recognitional dimensions, highlighting the role of community agency, democratic governance, and context-sensitive forms of action (Escario-Chust et al., 2023).

Such an orientation is particularly relevant in the Southern European context, where spatial fragmentation, institutional asymmetries, and persistent socio-economic vulnerabilities intersect with dense urban fabrics, ageing infrastructures, and hybrid governance arrangements. Within these settings, the implementation of transition policies frequently collides with material and cultural legacies, which in turn generate specific modalities of adaptation, resistance, and experimentation.

For instance, the experience of regeneration programmes in existing urban contexts—such as the cases of Rome and Bologna—demonstrates how environmental goals, when reframed through inclusive governance, can catalyse broader social transformations (Calzado 2024, D’Angelo 2025, Massari et al. 2024, and Rotondo 2024a). Rather than seeing large-scale interventions solely as tools for reducing emissions, these cases suggest that a just transition may operate as a vector for redistributing voice and capacity, particularly in marginalised neighbourhoods. Similarly, design-led approaches attentive to bioclimatic conditions, embedded energy, and community resilience point to the possibility of an expanded understanding of transition—one that considers energy not merely as a commodity, but as a socio-spatial relation mediated through forms of care, sufficiency, and commoning.

Moreover, collective energy actions, such as energy communities in Greece or citizen-led cooperatives in Italy, Portugal and Spain, are fostering decentralised models of production and governance, while also challenging technocratic narratives of transition (Massari et al. 2024, Margosi and Koukoufikis 2024, Pioletti et al. 2025, and Rotondo 2024b). These practices are not always recognised or supported by mainstream policy instruments, yet they reveal the importance of embedding transition pathways within everyday life, institutional cultures, and socio-spatial configurations.

Taken together, these trajectories invite a rethinking of the place of just transition within the European policy architecture. If seen through a local lens, just transition becomes more than just compensation for disadvantaged regions. It implies the creation of diversified and context-sensitive strategies that recognize territorial differences and promote systemic change from below. In this regard, the contributions collected in this special issue offer both empirical insight and conceptual tools for advancing a more relational and grounded understanding of just transitions—one that is attentive to the interplay between local dynamics, spatial configurations and broader institutional frameworks, and capable of informing a next generation of policies that are socially embedded, spatially aware, and democratically negotiated.

Mapping them, approaches and case studies

As previously mentioned, the papers included in this Special Issue foster further reflections on a context-sensitive and relational understanding of just transitions in Southern Europe. On one hand, there is a focus on the energy rethinking of existing urban contexts (including heat networks, energy renovation of buildings, etc) at the intersection of transition policies, inclusive governance and urban regeneration programs, highlighting the importance of political, social, and spatial dimensions. On the other hand, attention is drawn to collective energy initiatives (such as energy communities, energy cooperatives, etc.) situated at the crossroads of territorial cohesion policies, grass-roots and collective practices, and transition policies, which raise questions of governance, economics, and politics. Finally, as a cross-cutting issue, there is a growing concern with political discourses and public perceptions surrounding just transition-related concepts.

From a methodological point of view, the approaches adopted range from single case studies to comparative analyses of multiple cases in Southern European contexts. In more than one contribution, a direct engagement approach by researchers within the case studies investigated emerges. In other words, analysing energy transitions from a spatial perspective often involves a research-action approach, which allows the author or authors to be directly involved in on-site activities and exchanges with residents, organisations, and institutions. As will emerge from the contributions, the research-action approach can be applied in various ways. For example, the special issue will present experiences of university public engagement

and living labs. This highlights the need to bring together multiple actors and encourage the emergence of community needs, as well as the collection of multiple sources of knowledge to support the co-construction of local action and the implementation of social innovations (Bragaglia et al. 2023, 2024).

Massari et al. explore the relationship between just transition and citizen action toward energy transition, particularly within the context of three collective energy initiatives in three Southern European countries. It offers meaningful insights about barriers and enablers that emerge in the promotion and implementation of energy communities in Bilbao and Bologna, and an energy cooperative in Lisbon. The authors offer an original perspective by focusing on communities and their interactions with institutions regarding involvement in decision-making processes, access to information and resources, and the interpretation of energy-related data and evidence.

Both the contributions of D'Angelo and Calzado offer insights and reflections about the energy rethinking of consolidated urban context and large housing estate, and adopting a single-case study approach. More specifically, Calzado's contribution unravels the dynamic interplay between new environmental considerations and the lifespan of housing estates within urban regeneration programs in the Corviale neighbourhood, Rome. To achieve this, it proposes a sociotechnical approach to study the interplay between the physical features of the housing estate and socio-political factors at the crossroads between architecture and political science.

From another point of view, D'Angelo's contribution lies in exploring context-sensitive tools and approaches in the case of the Ostiense neighbourhood, Rome, which enable the spatial design of place-based energy transitions. To this aim, three main research actions are proposed: the care of the existing, focusing on the existing spatial conditions and infrastructure, the spatialisation of energy behaviours and practice; and bioclimatic design, including an on-site training program for the transformation of public spaces

The contributions by Margosi and Koukoufikis, and Pioletti et al. offer complementary perspectives on the development of energy communities and their potential to contribute to energy justice and just transitions in Southern European countries. Margosi and Koukoufikis focus on the Greek context and present the findings of a survey aimed at investigating households' perceptions of energy justice, their awareness of and attitudes towards energy communities, and their willingness to participate in and invest in them. The discussion of the results brings into focus the complex interplay between structural factors, institutional enablers, and the discursive practices that shape these interactions.

Pioletti et al. examine the activation processes of energy communities through a comparative policy analysis at the regional level in Italy, Spain, and Switzerland. Their contribution places particular emphasis on spatial governance and planning, and on the role of regional and local authorities in supporting local activation processes. The approach offers

insights into the multi-level relationships between national regulations and instruments, the efforts and challenges of regional implementation and coordination, and the specificities and dynamics at the local level.

The contribution by Shaker and Persico presents a multidisciplinary exploratory study investigating just green transitions on social media. It offers a social network–based analysis, highlighting of dominant discourses and narratives, and framing the virtual space as a political arena. In doing so, it constitutes a meta-reflection that helps contextualize the broader debate on energy transition.

Conclusive remarks and perspectives

This special issue attempts to highlight a common issue: just transitions cannot be limited to compensatory measures or forms of distributive justice, but must also be the result of processes shaped by local histories, institutional cultures, and socio-spatial conditions. It also seeks to shed light on the links between socially innovative energy transition policies and practices. Communities and governance systems interact in ways that create both challenges and opportunities. Grassroots initiatives, energy communities, and locally-based energy regeneration projects illustrate how just energy transitions should involve community empowerment and the co-construction of a collective vision, drawing on everyday practices and experiments already implemented in local governance. At the same time, the context of Southern Europe reveals clear vulnerabilities—such as economic uncertainty, weak public institutions, and regional inequalities—that should be addressed systemically. These issues test EU and national policy instruments, but they can also foster experimentation and new forms of governance with a strong socially innovative character.

The cases from Southern Europe presented here can offer a broad overview of experiences that can provide fertile ground for debate. Looking ahead, three directions for research and practice appear urgent. First, broadening comparative perspectives across Southern Europe and beyond can reveal how different institutional and cultural contexts influence justice in transitions. Second, new methods such as action research, living labs, and participatory approaches can help co-producing shared knowledge towards a just energy transition. Third, further reflections warrant how transitions unfold over time, following different trajectories and how they intersect with policies on closely related issues such as housing, transportation, and welfare.

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References

- Barca, F., & McCann, P. (2020). Place-based policy and regional development. In G. Capello & P. Nijkamp (Eds.), *Handbook of Regional Growth and Development Theories* (2nd ed., pp. 252–265). Edward Elgar Publishing.
- Bergamaschi, L. (2020). There is no Green deal without a just transition. *IAI Commentaries*, 20(1), 1-5.
- Boeri, A., Longo, D., Boulanger, S. O. M., & Massari, M. (2024). Energy Citizenship Contract and European cities transition. *Agathón| International Journal of Architecture, Art and Design*, 15, 170-179. DOI: 10.19229/2464-9309/15132024.
- Bragaglia, F. (2021). Social innovation as a ‘magic concept’ for policy-makers and its implications for urban governance. *Planning Theory*, 20(2), 102–120. DOI: 10.1177/1473095220934832.
- Bragaglia, F., Caldarice, O., & Janin Rivolin, U. (2024). Outside-in: Co-production and the spatial planning systems in Italy and England. *Planning Theory*, 23(2), 157-179. DOI: 10.1177/14730952231203516.
- Bragaglia, F., Janin Rivolin, U., Berisha, E., & Cotella, G. (2024). How is urban co-production conveyed in European cities?. *European Planning Studies*, 32(7), 1613-1631. DOI: 10.1080/09654313.2024.2339933.
- Bouzarovski, S., & Simcock, N. (2017). Spatializing energy justice. *Energy Policy*, 107, 640–648. DOI: 10.1016/j.enpol.2017.03.064.
- Calzado, R. (2024). Funding the social transformation of housing estates: Environmental ambitions as catalysers of the regeneration of Corviale. *European Journal of Spatial Development*, 21(1), 83–102. <https://doi.org/10.5281/zenodo.13861967>
- Coenen, L., Benneworth, P., Bernhard, T. (2012). Toward a spatial perspective on sustainability transitions. *Research Policy*. Volume 41, Issue 6, July 2012, 968-979. DOI: 10.1016/j.respol.2012.02.014.
- D'Angelo, F. (2025). SPATIAL DESIGN FOR THE ENERGY TRANSITION: Exploring Tools and Approaches in Consolidated Urban Contexts. *European Journal of Spatial Development*, 21(1), 103–121. <https://doi.org/10.5281/zenodo.15332497>
- Escario-Chust, A., Vogelzang, F., Peris-Blanes, J., Palau-Salvador, G., & Segura-Calero, S. (2023). Can southern Europe lead an urban energy transition? Insights from the Energy Transition Roundtable in Valencia, Spain. *Energy Research & Social Science*, 100, 103047. DOI: 10.1016/j.erss.2023.103047.
- European Commission. (2019). *The Just Transition Mechanism: making sure no one is left behind*. Brussels: European Commission. Available at: https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/finance-and-green-deal/just-transition-mechanism_en
- European Commission (2020). *The Just Transition Mechanism: Making Sure No One Is Left Behind*. Brussels.
- European Parliament. (2021). Regulation (EU) 2021/1056 of the European Parliament and of the Council of 24 June 2021 establishing the Just Transition Fund. *Official Journal of*

- the European Union, L 231, 1–20.
<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R1056>
- Filipović, S., Lior, N., & Radovanović, M. (2022). The green deal—just transition and sustainable development goals Nexus. *Renewable and Sustainable Energy Reviews*, 168, 112759. DOI: 10.1016/j.rser.2022.112759.
- Geels, F. W., & Schot, J. (2007). Typology of sociotechnical transition pathways. *Research Policy*, 36(3), 399–417. DOI:10.1016/j.respol.2007.01.003.
- Hansen, T., Coenen, L. (2015). The geography of sustainability transitions: Review, synthesis and reflections on an emergent research field. *Environmental Innovation and Societal Transitions* 17, Pages 92-109, DOI:10.1016/j.eist.2014.11.001.
- Heffron, R. J. (2022). Applying energy justice into the energy transition. *Renewable and Sustainable Energy Reviews*, 156, 111936. DOI: 10.1016/j.rser.2021.111936.
- Jenkins, K., McCauley, D., Heffron, R., Stephan, H., & Rehner, R. (2016). Energy Justice: A Conceptual Review. *Energy Research & Social Science*, 11, 174–182. DOI: 10.1016/j.erss.2015.10.004.
- Kivimaa, P., Hyysalo, S., Boon, W., Klerkx, L., Martiskainen, M. & Schot, J. (2019). Passing the baton: How intermediaries advance sustainability transitions in different phases. *Environmental Innovation and Societal Transitions* 31, 110–125. DOI: 10.1016/j.eist.2019.01.001. DOI: 10.1016/j.eist.2019.01.001.
- Lee, J., & Byrne, J. (2019). Expanding the conceptual and analytical basis of energy justice: Beyond the three-tenet framework. *Frontiers in Energy Research*, 7, Article 99. DOI: 10.3389/fenrg.2019.00099.
- Luque-Ayala, A., Marvin, S., Bulkeley, H. (2018). *Rethinking Urban Transitions: Politics in the Energy City*; Routledge: Abingdon, UK.
- Margosi, M., & Koukoufikis, G. (2024). Fostering Energy Justice through Decentralised Transition: The Case of Energy Communities in Greece. *European Journal of Spatial Development*, 21(1), 33–60. Retrieved from <https://journals.polito.it/index.php/EJSD/article/view/420>
- Massari, M., Boulanger, S. O. M., & Longo, D. (2024). Collective energy actions to pursue a just transition. : A Southern European observation. *European Journal of Spatial Development*, 21(1), 1–32. <https://doi.org/10.5281/zenodo.10889481>
- McCauley, D., Heffron, R., Stephan, H. & Jenkins, K. (2013). Advancing Energy Justice: The triumvirate of tenets. *International Energy Law Review*, 32, 107–110.
- Moulaert, F., Martinelli, F., Swyngedouw, E., & Gonzalez, S. (2009). *Can neighbourhoods save the city?*. Abingdon and New York, NY: Routledge.
- Newell, P., & Mulvaney, D. (2013). The political economy of the ‘just transition’. *The Geographical Journal*, 179(2), 132–140. DOI: 10.1111/geoj.12008
- Pianta, M., & Lucchese, M. (2020). Rethinking the European Green Deal: An industrial policy for a just transition in Europe. *Review of Radical Political Economics*, 52(4), 633–641. DOI: 10.1177/0486613420938207.

- Pioletti, M., Blanc, F., & Desthieux, G. (2025). Exploring the local and regional dimensions of the Renewable Energy Communities' activation in diverse European institutional contexts. *European Journal of Spatial Development*, 21(1), 122–155. <https://doi.org/10.5281/zenodo.16092245>
- Rodríguez-Pose, A., & Bartalucci, F. (2023). Regional vulnerability to the green transition (No. WP2023/16). Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (European Commission), Chief Economist Team. DOI: 10.2873/739058.
- Rotondo, F. (2024a) Renovating public housing neighbourhoods: between public-led and third sector-led initiatives. Insights from two Italian case studies, in Drewello H., Pellegrino M., Vilmin T. (edited by), *Local energy transitions in Europe: from practice to theory*. Springer. DOI: 10.1007/978-3-031-67766-3_2
- Rotondo, F. (2024b) Comunità energetiche di quartiere. Riflessioni e prospettive a partire da un caso studio a Bologna, in Gerli F., Tricarico L. (edited by), *Energie di comunità: le comunità energetiche rinnovabili per un futuro sostenibile*. Fondazione Giangiacomo Feltrinelli, Milano.
- Sabato S., Vanhille, J. (2024), The European Green Deal and the 'Leave No One Behind' principle: state of the art, gaps and ways forward, Study commissioned by the Belgian Federal Minister for Climate, Environment, Sustainable Development and Green Deal in the framework of the 2024 Belgian Presidency of the Council of the EU, OSE Paper Series, Research Paper No. 63, Brussels: European Social Observatory.
- Sareen, S. & Haarstad, H. (2018). Bridging socio-technical and justice aspects of sustainable energy transitions. *Applied energy*, 228, 624–632. DOI: 10.1016/j.apenergy.2018.06.104.
- Shaker, Y., & Persico, S. (2024). Mapping the Just Green Transitions in the Socio-political Virtual Space. *European Journal of Spatial Development*, 21(1), 61–82. <https://doi.org/10.5281/zenodo.13817780>
- Sovacool, B. K. (2016). How long will it take? Conceptualizing the temporal dynamics of energy transitions. *Energy research & social science*, 13, 202–215. DOI: 10.1016/j.erss.2015.12.020.
- Śmiech, S., Karpinska, L., & Bouzarovski, S. (2025). Impact of energy transitions on energy poverty in the European Union. *Renewable and Sustainable Energy Reviews*, 211, 115311. DOI: 10.1016/j.rser.2024.115311.
- Tricarico, L. (2018). Community energy enterprises in the distributed energy geography: A review of issues and potential approaches. *International Journal of Sustainable Energy Planning and Management*, 18, 81–94. DOI: [10.5278/ijsepm.2018.18.6](https://doi.org/10.5278/ijsepm.2018.18.6).
- Valkenburg, G. & Cotella, G. (2016). Governance of energy transitions: About inclusion and closure in complex sociotechnical problems. *Energ Sustain. Soc.*, 6, 20. DOI: 10.1186/s13705-016-0086-8.
- United Nations Framework Convention on Climate Change UNFCCC (2015). Paris Agreement. https://unfccc.int/sites/default/files/english_paris_agreement.pdf
- Waas, T., Hugé, J., Verbruggen, A., & Wright, T. (2011). Sustainable Development: A Bird's Eye View. *Sustainability* 3, 1637–1661. DOI: 10.3390/su3101637.