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Roadmap to a Just, Green Transition for Europe: Illuminating pathways

Discussion paper

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1.Introduction

The point of departure of this paper was that the future of green transition is at stake. New geopolitical tensions, less multilateral cooperation and new investments into polluting industries and militarisation have marked a significant turn from the initial vision of the European Green Deal. And while the EU is adapting to new circumstances, some of the key although partial achievements of the European Green Deal are threatened and confronted with so called *greenlash* (*green backlash*), or alleged resistance toward green transition policies. Rather than indicating a fundamental rejection of the objectives of the green transition, this greenlash often reflects concerns about how transition policies are designed, governed and implemented, particularly when citizens perceive them as insufficiently participatory, socially equitable or responsive to local realities. In this context a group of authors from the GreenPaths consortium has joined forces with a number of European experts to discuss potential trajectories of the green transition where an aspirational vision was established to reflect identified convergences and dissents. This paper therefore summarises results of a number of policy papers, case studies, participative visioning and mapping exercises and highlights key opportunities, tensions and contradictions of the green transition.

Approach/Methodology

This Work Package, “Co-design of green transition pathways,” aims “to derive transition pathways for desirable changes in European and national policies and instruments, and to formulate corresponding policy recommendations”. It builds on the previous work of the GreenPaths Consortium, notably the Analytical Framework (D.2.4) developed in Work Package 2 and key insights generated by the Case Studies (as documented in D3.4) to derive transition pathways for desirable changes in European and national transition policies and instruments, and to formulate corresponding policy recommendations. While the previous work packages focused on analysing existing transition dynamics and empirical evidence, Work Package 5 advances this work by combining backcasting, participatory visioning and the identification of lighthouse projects to co-create feasible future transition pathways and translate them into actionable policy recommendations. This report consolidates findings from three processes that identified and analysed the feasibility of desirable green transition pathways for Europe, and engaged civil society and policy-makers in dialogue about these pathways:

Multistakeholder Visioning Workshop (T5.1)

GreenPaths partners and more than 30 external experts participated in a 3-day interactive multistakeholder workshop on the island of Cres in Croatia. The group included representation from relevant academic, policy, think-tank and civil society organisations from Croatia, Serbia, UK, Germany, Belgium, the Netherlands, Spain, Slovenia, Hungary, Italy and Portugal. Drawing on core findings from the previous GreenPaths Work Packages, and the initial findings from research on Lighthouse Projects, which were collected in a parallel process (see below), stakeholders developed a common vision as a key reference point for a green transition pathway for 2050. The workshop followed an iterative process. Multiple structured rounds of small-group and collective work were carried out , including multiple rounds of

framing, initialising, analysing and synthesising. The aim was to collectively build consensus for specific sectoral visions, as well as to explore the details of a global, integrated vision at the scale of the individual, community and region. Anchored by three expert facilitators, the process produced convergence around a shared vision, as documented in the Academic Poster: Visioning 2025 (D 5.1) and summarised below (“Greenpaths Vision 2050”). The vision anchors the transition pathways elaborated below, identifying the shared destination for policy change and social transformation. Taken together, these different dimensions of the Vision put flesh on the bones of the concept of “just transition”. They identify what should be, according to this multistakeholder group of experts, the core guiding principles of the EU’s economic and social transformation.

Backcasting of Desirable Policy Changes (T5.2)

Based on the results of the visioning workshop, including initial proposals developed there on key elements of policy transformation needed to reach the Vision 2050, backcasting was undertaken at the sectoral level by small expert groups based on their established expertise. Backcasting is a foresight evaluation technique based on working backward from a desired outcome (in this case elements of the 2050 vision) to identify intermediate changes necessary to bring about this transition. Back-casting teams took part in the workshop and drew inspiration from there. A template was developed by the lead organisations and shared with all backcasting teams, in order to develop robust visions of specific and realistic policy changes needed in order to achieve the shared Vision 2050. The key results of this exercise are presented below, reflecting the diversity of discussions within the small teams.

Identification of Lighthouse Projects (T5.3)

This mapping exercise brought together solid examples of a just green transition at local, national or European level, capable of being replicated or upscaled, which were identified as “Lighthouse Projects”. In total 71 projects were collected across various regions and recommended and proposed by CSOs across Europe. Lighthouse project examples were solicited from a wide variety of stakeholders, and therefore reflect diverse understandings of just transition, not all of which align with the Vision and Backcasting exercises undertaken in parallel with this process. Nonetheless they offer an important catalogue of diverse visions across society of how different initiatives can contribute to a just green transition.

2. GreenPaths Vision 2050

Working at both the sectoral and cross-sectoral level, participants in the multistakeholder workshop developed a comprehensive vision of a just, green Europe in 2050, building on their own expertise, as well as the previous Work Packages of the GreenPaths project.

The key features of the vision were:

- Based on well-being, sufficiency, eco-socialism and solidarity
- Universal basic rights rooted in international human rights law as common EU policy

- Environmental and social wellbeing as core objectives
- Democratic decision-making about economic goals and production to meet human needs
- Fossil fuel phase-out and termination of extractivist projects
- Stronger public provisioning systems ensure access to basic needs and essential services for all, through a public goods approach
- Commons, collectives, co-ops and other social solidarity economy tools flourish
- Agroecological food systems sustain people and nature
- Democratisation of the public finance sector
- Less work, more free time (available for communal or care work)
- Decentralisation and localisation – more power to the local level

Taken together, these different dimensions of the Vision put flesh on the bones of the concept of “just transition”. They identify what should be, according to this multistakeholder group of experts, the core guiding principles of the EU’s economic and social transformation. Across the different sectoral areas, the Vision focuses on centring both people and the planet, seeing economic growth as, at best, a means to an end. Drawing on principles and framings of degrowth, sufficiency and “doughnut” economics, they envision a social and economic system that seeks to serve human needs within planetary boundaries.

In the domain of *Energy and Climate* this means not only unambiguously prioritising a transition to renewable sources of energy but also limiting or terminating other forms of extractivism, including extraction outside the EU. This means that collective social and democratic processes are needed to scrutinise the question of “energy for what and for whom?,” in order to reduce overall energy consumption and material throughput without undermining human rights or quality of life. This can be facilitated by changes across several other sectors that prioritise the quality provision of public goods and services over climbing levels of private consumption.

In relation to *Land and Food* this means recognising the interconnections between human health, a flourishing environment, and healthy rural communities. Keeping in mind social, environmental and agrarian justice points towards policies which prioritise locally based food production, democratisation of decision-making around food and land-use, and the connections between quality food production and decent livelihoods. Participants identified core roles in the transition for public procurement programs, agricultural policies and instruments in support of social and solidarity economy.

In relation to *Transport and Mobility* key foci again included exploring both frameworks to sustainably provide mobility (in ways that positively impact human health) and to critically reduce forms of mobility that do not contribute to well-being. Models of urban design which reduce the need for commuting, especially by car, and a strategic focus on forms of mobility that simultaneously deliver other social benefits, from cycling to accessible public transit, ensure that transit infrastructure makes a positive contribution to peoples’ lives rather than merely meeting a need.

The domain of *social welfare* was addressed across all the other sectors discussed, for example in the inclusion of decent livelihoods in food system design and accessibility in transit systems. However, the group also identified specific paradigm shifts that can lead to more effective delivery of social welfare across all sectors, namely fully recognising and valuing (often invisible, feminised, racialised and undervalued) care work; deepening democratic governance and community engagement with social service design and delivery; and grounding social welfare simultaneously in a “public goods” and “human rights” approach.

Climate Finance is recognised as a key tool for moving towards a just and green Europe, as well as addressing Europe’s historical responsibility for climate change as recognised in the Paris Agreement. Climate finance is therefore viewed more broadly as a set of policies designed to redistribute not only wealth but also decision-making power to historically marginalised communities, within and outside Europe.

Finally, *Industrial Policy* was used to discuss the question of how Europe’s considerable technological and industrial capacity can be placed in service of the above goals. Here the group identified core drivers of positive change including emerging local social and solidarity economy initiatives as “lighthouses” showing how production can be managed in ways which are more democratic and thus deliver more widely and equitably distributed social benefits. In this domain education – both through formal educational institutions and through newly established social practices like repair cafes and community workspaces – was identified as a key lever for change.

The different sectoral visions are closely related and mutually supporting. In this way the complex problem of how to change “everything at once” is partially re-envisioned as a positive opportunity: positive changes in one area, like transportation, can drive positive changes in another, such as reducing reliance on fossil fuels. Numerous synergies were identified, showing that sectoral change pathways can be mutually supporting and allow gradual process towards a transformative final destination.

3. Backcasting policy change by sector

Our approach to green transition in the backcasting exercise reflected an understanding of a web of interrelated and highly interdependent transformations in various sectors that often overlap or collide, depending on the pace, continuity, intensity, depth or geographic scope of a certain transformation. That interlocking nature of transformation in different sectors proved to be an opportunity to understand systemic character of the transition. Yet it also illuminates an increasing number of tensions that originate from the contrast between the vision and the current trajectory of green transition. In this exercise we aim to anticipate how transition rolls back to present moment, without being precise on the rhythm of iterations or speed of incremental change. Therefore we avoid speculative momentum on the pace of change and obstacles that can emerge in two decades.

1. Energy and climate

By 2050

Departing from our vision, in 2050 renewable energy is free for each citizen and it is a public good, not a commodity, which is reflected and supported in legislation that identifies the right to energy as a human right. Likewise, at that point, all fossil fuel extraction has been terminated and its use has been phased out, significantly reducing GHG emissions by the EU and increasing climate resilience. Renewable energy is produced at various scales and different formats across Europe. Public and civic ownership of energy systems is expanded, leading to a less corporate-led energy transition. After a temporary turn toward global unfettered competition in military investments and AI, due to strong public opposition, the EU reoriented investment away from industries with high emissions and low social benefits, and towards sectors which benefit human and ecosystem health and security.

By 2040

Incremental changes in financial/fiscal infrastructure and the banking sector are starting to bear some fruit, becoming more massive but also selective, giving support to projects increasing climate resilience and addressing vulnerable regions, territories and communities. With the increased success of energy communities, more and more of the renewable energy produced is owned and shared widely within and between communities, allowing for cheap and accessible energy, as well as increased capacity to locally produce renewable energy technologies. The transition is financed more and more frequently through various hybrid models of public-civic investments, limiting corporate impact. Energy production through big renewable farms or nuclear power plants is under a moratorium to terminate growth-oriented models aimed at providing energy for military spending, mining and AI data centres. Given the public and civic engagement in renewable energy production, labour relations in industry radically change, allowing a high level of economic democracy in companies.

By 2030

In this short-term framework, further advancements aim to better integrate and develop the EU energy market, grid and infrastructure, through a focus on decarbonisation and electrification. Still, by that moment, big corporations and companies exert influence over EU policy making processes which are blocked or paralysed by colliding interests (electrification, gasification, nuclear). There is a gradual but uneven improvement of the scale of energy communities' involvement in the renewable energy transition, where States allow citizen investments into the renewable energy transition and subsidise their investments. Public investments into the renewable transition are slowly increasing, despite public opposition to some large-scale projects and investments. Meanwhile, energy communities at the local level are becoming more popular and citizens gain more trust in bottom-up examples of decentralised renewable energy transition and local production of energy. There is still strong resistance to the phase-out of car use and fossil fuels, promoted by a mixture of corporate interests. Questions of energy democracy and ownership within the energy transition is becoming more present in public debate, leading to the first examples of governance structure transformation to respond to citizen needs and not

wealth accumulation. Policy makers and citizens within the EU are beginning to realise that a short-sighted focus on economic competitiveness cannot guarantee long-term prosperity, let alone social and environmental justice. Carbon emissions are still relatively high and the EU understands it lost a lot of time hindering decarbonisation or promoting it as merely technological fix. Yet, corporate presence in the renewable energy transition is increasingly attacked due to increasing extractivism-oriented investments, big solar or hydro projects, ISDS disputes and land use conflicts, and support for community energy projects from a variety of different levels is increasing.

Conclusion

The EU is increasingly affected by climate change; from wildfires and heat waves to scarcity of water and vulnerability of energy infrastructure to extreme weather events. Yet, energy infrastructure is still heavily reliant on fossil fuels. While the EU is proposing to direct fewer subsidies fossil fuels (as shown, for example by the most recent EU ETS Directive proposal from the European Commission, which would end direct fossil fuel support by 2031), progress is far slower than the urgency of the situation demands. The slow pace of change is a result of political battles over termination and phase out of fossil fuels, which often manifest in postponement and watering down of measures for real change. At the same time, insufficient public resources are invested in the infrastructure needed to support decentralised and democratically governed production of energy with immediate benefits for local communities and citizens. These tensions remain a battlefield, and these struggles will determine not only the future of climate action in the EU, but also the possibilities for transformed energy production and consumption that meets citizens' needs.

2. Transport and urban infrastructure

By 2050

In 2050, the urban mobility sector is fully transformed and transport-related carbon emissions are extremely low, if not eliminated, depending on the territory. Private car ownership is highly discouraged and unpopular, while there are car sharing schemes to provide service in emergency cases. Otherwise, public transport infrastructure is accessible, affordable and available and aligned with the cyclist and pedestrian infrastructure to allow implementation of the 15 minutes city model. Maritime, aviation and road traffic are also going through deep structural transformation with goal of decreasing emissions and achieving decarbonisation of their energy/fuel supply.

By 2040

Decarbonisation of transport and urban mobility has advanced mainly due to massive public investments into transport infrastructure and using EU mechanisms to measure and monitor carbon footprint in the transport sector. Information gathered and analysed have provided a strong basis for a significant policy U-turn to accelerate the transition to zero-carbon or low-carbon alternatives and adapt climate funding to be aligned with such transport policies. Most of the privatisation arrangements of railway and bus operators which started in late 2020s have been

terminated as the quality of services rapidly dropped and prices rocketed, thus allowing public ownership to take a leading role. EU policies on financing various mobility investments became transparent and fully accessible, allowing for public scrutiny.

By 2030

Gradually there is an increase of public funds used to discourage the individual use of cars and offer easily accessible, attractive and affordable alternatives through public transport and cycling infrastructure. Increases of oil and energy prices due to geopolitical tensions and uncertainties was used to move away from individual car use and ownership, introducing various types of car sharing schemes supported by public funds. As transport and urban infrastructure are becoming increasingly important topics in each city, there is more public participation in improving public infrastructure. The automotive industry and fossil fuel corporations, aiming to survive, are becoming more aggressive in pushing for car use as they are gradually losing ground. Accordingly, an increased number of conflicts emerge around public land use for mobility purposes (such as parking spaces) and car sharing companies aim to increase profits by again promoting car use through their service.

Conclusion

Although the visioning and backcasting exercises focused more on transformations of urban mobility systems and related infrastructure, massive and deep transformations also need to be undertaken in maritime, aviation and road traffic. These sectors must reduce their emissions in a variety of ways, including decarbonisation their energy/fuel supply, if the EU is to have a hope of achieving its net-zero targets by 2050. These ambitious goal in the transport sector – currently the single largest emitting sector -- require acceleration based not only on electrification of cars and use of alternative fuels but also on structural change in patterns of transport use, elimination of individual car-use and massive investments in the electrification of railways. Urban infrastructure transformation further depends on major public investments into climate adaptation, increasing the resilience of both cities and rural areas to the severe public health and security impacts of climate change.

3. Food, land use and agriculture

By 2050

Food systems operate within an integrated governance framework that supports environmental sustainability, social well-being, public health, economic resilience, and democratic participation. Land is recognised not only as a productive asset but also as a social, cultural, and ecological resource. Small and medium-sized producers play a central role in resilient local economies, while food policy becomes a strategic instrument for delivering a just green transition.

The GreenPaths case studies show that many tensions in the green transition stem from the governance of land, agriculture and food systems. While environmental objectives such as decarbonisation, biodiversity protection and renewable energy deployment are increasingly

prioritised, their social and territorial impacts often remain insufficiently addressed. Cases from Slovenia, Croatia, Serbia, Romania, Spain and Portugal reveal challenges such as land concentration, rural depopulation, the exclusion of small producers and conflicts over land use.

By 2040

Food policy is recognised across Europe as a key governance framework for the just green transition. Public procurement systematically supports sustainable production, healthy diets, and territorial development. National and regional food strategies integrate agricultural, health, educational and climate objectives.

Land governance frameworks protect agricultural land, prevent excessive concentration, and improve access for new entrants, women, and young farmers. Multi-stakeholder food governance structures, including food councils and citizen participation mechanisms, are embedded in public decision-making processes. Small and medium-sized producers have stable access to markets and public contracts, strengthening both rural livelihoods and food system resilience.

By 2030

Public authorities incorporate sustainability criteria into public food procurement and set measurable indicators that link environmental, health and social outcomes. Successful models, such as Dordogne, are replicated through local procurement platforms and territorial food strategies.

European and national policies simplify small producers' access to public markets, strengthen short supply chains and support local food infrastructure. Integrated food strategies achieve greater policy coherence across agriculture, biodiversity, climate and public health objectives. Investments in food education and sustainable diets help build the social foundations for deeper transformations by 2040.

Conclusion

GreenPaths highlights successful alternatives. The Dordogne case study in France shows how sustainable public procurement, local supply chains and school meal programs can simultaneously support farmers, improve nutrition, strengthen local economies and reduce environmental impacts. These experiences demonstrate that food policy can link environmental objectives with social and economic development. However, major gaps remain. Food policy is still treated as a secondary sectoral issue, while agricultural, health, climate and territorial policies often operate separately, limiting systemic transformation.

The European Commission, Member State governments, and regional and local authorities are central to creating enabling policy frameworks. Farmers' organisations, cooperatives, and small producer networks are essential to implementing sustainable production models. Public procurement agencies, schools, hospitals, and other public food services can create stable demand for sustainable food. Civil society organisations, food policy councils, research institutions, and citizens play a crucial role in promoting participation, accountability, and innovation. Together, these actors can make food systems a cornerstone of a socially just and environmentally sustainable transition by 2050.

4. Trade and taxation

By 2050

In Europe, the primary purpose of trade and taxation is not economic growth or financial efficiency; rather, policies rather serve mainly social and environmental goals. Production is localised, focusing on goods and services that can be produced domestically, and this reduction of international trade serves to strengthen human, labour, economic, and social rights. Taxation is progressive and directed more towards wealth instead of labour, so that workers are burdened less and society as a whole can receive more benefits. Environmental taxes are in place.

Fair and ethical trade instead of free trade

By 2040

Trade patterns have evolved to serve local social and environmental needs rather than a sole focus on efficiency gains from specialisation. While still harvesting benefits from comparative advantage, especially within Europe, countries produce more goods and services domestically, exporting surplus and importing only what cannot be produced locally or regionally without excessive costs. Trade policies focus on fair exchange, and countries of the Global South are no longer subject to extremely unequal exchange or resource exploitation. Dependence on vulnerable global supply chains has been reduced, communities have grown stronger, and ecosystems are being protected and restored.

By 2030

Local and regional production and consumption are being given precedence over international trade. Countries of the Global South are being extended the same protectionism the industrialised Global North has historically reserved for itself, alongside debt relief and climate reparations. Low-income countries are no longer compelled to export raw materials until their own domestic needs have been fully met, allowing infant industries in the Global South to grow while Northern economies expand domestic production. Fair Trade networks and the Economy for the Common Good movement have demonstrated that trade can be organised around social and environmental criteria rather than solely around profit and efficiency.

Multilateral, rules-based trade

By 2040

A new multilateral, rules-based trade organization, derived from the overhauled World Trade Organisation(WTO), exists that prioritises social and environmental needs over economic growth. It governs the now-reduced flows of trade, investment, and resource extraction on the principle that trade serves to protect human rights, climate and biodiversity, justice and peace. Corporate and Global North dominance over the terms of trade has been dismantled.

By 2030

The WTO is being comprehensively overhauled into a single ethical multilateral framework that does not permit bilateral or regional trade agreements to undermine its authority, and all existing

trade and investment agreements are being reformed to prevent the North from imposing market openness and deregulation on countries in the Global South.

Rebalancing the EU tax mix

By 2040

The EU tax system has been comprehensively overhauled. The working class no longer carries the disproportionate burden of taxation; instead, Europe-wide rules govern the taxation of wealth, assets, and inheritances, keeping them within EU jurisdiction rather than tax havens. Automation is taxed on par with human labour, and environmental taxation has been diversified to include alternative mechanisms which might include carbon pricing, biodiversity-positive fees and resource taxes.

By 2030

Income tax is being rebalanced with wealth and capital taxes, automation taxes are being introduced, asset flight to tax havens is being penalised, tax evasion is being addressed more vigorously, and countries that facilitate this face financial penalties and are added to the Commission's existing list of non-cooperative jurisdictions for tax purposes. Value Added Tax (VAT) on luxury consumption is being raised, and environmental taxes are significantly strengthened to generate revenues for the transition.

Conclusion

The transformation of trade and taxation, at both the global and EU levels, will require deep structural changes and extensive international coordination. Both are difficult to achieve. However, much of the groundwork has already been laid by powerful civil society movements such as the European Trade Justice Coalition, comprising more than 170 organisations including the Transnational Institute and Friends of the Earth International, and the Trade Justice Movement, all of which advocate for alternatives to the current trade system. Therefore, the future envisioned in this exercise may be achievable if the EU, as one of the world's most powerful actors with the world's largest single market, accepts its historic responsibility for climate change and begins to act decisively and in concert with the rest of the world. It must work with these movements to begin rolling back some of its current laws that reinforce unrestrained trade and the concentration of profits among a few. Only then can the EU, and the rest of the world, begin moving towards a trade system designed to serve both the planet and all its people. Civil society organisations must also continue to maintain pressure on the EU and national governments in the current climate of growing political uncertainty and renewed militarisation.

5. Finances

By 2050, sufficient funding is provided by EU institutions to support projects which foster climate neutrality. Funding particularly focuses on supporting vulnerable socio-economic groups and communities, ensuring that no citizen and no region are left behind: a just green transition. Data on green projects funded is open and fully accessible, allowing for independent analysis and research on the destination and the impact of these projects.

To achieve this vision, three core transformations are needed:

Increasing funding available for green finance

By 2040

As the EU green transition deepens, the European Investment Bank (EIB) plays an increasing role as the key financial institution supporting green and just transition in Europe. Investors' priorities and incentives turn from investing a higher amount of funds to investing appropriately in terms of achieving high social returns. This leads to confidence and awareness across the main stakeholders on EU opportunities for funding to green projects through the EIB, including regions and local governments and small and medium enterprises. As a significant transformation, there is sufficient long-term funding to support the green transition in the EU.

By 2030

A key step is made by consolidating the EIB's role as a financial institution supporting green and just transition. The role of the EIB in the European Green Deal Investment Plan (EGDIP) grows: the number of green projects funded increases and the amount of green finance provided at least keeps constant. The share of EIB projects and the share of EIB funding devoted to climate action and environmental sustainability keeps growing from 2019-2024 levels.

Increasing the share of green funding addressed to vulnerable communities and territories

By 2040

EIB green finance fully incorporates a just transition perspective, and major lines of funding prioritise addressing the needs of vulnerable communities and regions. While large urban areas keep receiving funding on strategic green projects, green funding per capita is equitably distributed across EU countries and regions. The regions most exposed to the costs of the green transition receive a higher amount of green funding than the EU average. This results in a commitment to a green transition that is shared across EU countries and regions.

By 2030

A key step is made by prioritising small and innovative green projects within EIB green finance. In parallel, green projects in those regions identified as the most vulnerable to the green transition are prioritised. This encompasses not only the direct impact of the green transition, but also exposure to indirect impacts based on the weight of vulnerable sectors such as agriculture, industry and tourism in the economic structure of each region. Promoting a just green transition is made explicit as one of the major aims of the EIB, which takes on an active role as a promoter of the just green transition.

Making information on EU green finance fully open and transparent

By 2040

Independent analysis and research on EIB green funding is well extended. This encompasses reports by other EU institutions such as the European Parliament and the European Committee of the Regions, as well as consolidated research lines on issues such as the determinants, the

mapping and the impact of EU green funding. All this knowledge shows the potential of the EIB as the first climate bank in the world. The EIB takes up a role as a key instrument in achieving the just green transition, exploring the role that public finance instruments can play in promoting social and environmental justice.

By 2030

A key step is made by making information on EIB green projects open in a comprehensive database which is accessible online. This database is regularly updated and can be directly downloaded by independent researchers and stakeholders. It includes information on all the projects funded by the EIB, on the amount and share of these projects devoted to climate action and environmental sustainability and, importantly, on which regions green finance funds are allocated to. This is achieved after the European Parliament, the European Commission and EU Member States commit to requiring the EIB to publish these data.

Conclusion

We identify several obstacles or challenges that may hinder the implementation of these three desirable transformations. Regarding the first transformation, which concerns the amount of green funding available, the identified challenge is convincing not only citizens but also governments to maintain the impetus of climate finance, which is currently insufficient to meet the needs of the green transition. In this regard, a clearer, public-facing definition of how the EIB measures climate finance would help address this challenge and strengthen support among citizens and governments for increasing green funding. Regarding the second transformation, which concerns the distribution of green funding, the identified challenge is providing capacity building and technical expertise to smaller regions and smaller projects to help facilitate their access to green funding. The EIB Green Checker (<https://greenchecker.eib-group.org/eib-green>) represents a concrete step in this direction. Regarding the third transformation, the identified challenge is convincing all recipients of EIB green funding and borrowers from other development banks of the imperative of allowing the details of lending information to be fully disclosed and open to public scrutiny. Finally, at the same time, there are challenges and questions regarding the pace of change in different sectors of the economy: transformations of finance are necessary to underpin changes in all other domains, yet there are many obstacles to rapid and transformational change in financial architecture at the EU level. This means that issues of financial policy need to be addressed in advocacy across other sectors and domains, not only by specialists in finance.

6. Social welfare, equality, employment, accessibility and inclusion

By 2050

Wealth is not concentrated but shared with everyone, allowing for crucial transformations in how we understand *social welfare, equality, employment, accessibility and inclusion*. New policies supporting shorter working weeks and allowing for decent and dignified livelihoods for all mean more time is available for communal, social and care work. Care work becomes valued and shared amongst all members of the community. In 2050 everyone in Europe has full access

to social services regardless of their citizenship or migration status and regardless if they live in an urban center, small town or in the countryside. Basic needs are met throughout the Union based on a robust infrastructure of public services. Moreover, everyone is able to participate in public decision-making through participatory democratic processes at different levels, especially the local level.

To achieve this vision, there are three core transformations that need to take place:

Equitable transfer of wealth and work in the green transition

By 2040

There is an important transition towards ‘green’ and ‘decent’ employment. Workers gain a larger share of the value that is being created by their work and can fulfil their social potential. Wealth concentration is addressed through progressive taxation structures that allow for a redistribution (globally and locally) of wealth to fund public services and climate change mitigation and reparation.

By 2030

Important first steps towards an equitable transfer of wealth and work are made by supporting (re)skilling for people and by supporting the regions that are reliant on fossil-based employment. The EU will need to invest in strengthening labour movements and just transition mechanisms to make sure that no one is left behind. Incremental gains on the fair distribution of wealth are made through wealth taxes and an EU-wide wealth cap.

Setting up an infrastructure of public services to meet basic needs

In 2040

Public services are well funded and are available to all people who need them. Basic needs provisions are exempt from liberalisation requirements and are recognised throughout the EU as public services. Basic needs provision is done on a public basis, at a high level of quality and for every citizen. These services include at least housing, healthcare, education, energy, water and food provision. Organisation to meet these needs is diverse (e.g. energy communities, public utilities and communal farms) but with the EU and Member States responsible for its provision and security.

By 2030

We have started the process of making essential goods and services public again. Large investments are made in setting up robust public services with ample room for cooperation in Europe and local solutions where possible. A great example for how such public goods can be realised is the [Otvorena Arhitektura project](#) in Croatia, where housing cooperatives are realised by citizens in collaboration with local governments to provide affordable public housing. Priority is given to serving underdeveloped regions and vulnerable EU citizens.

Access and inclusion for marginalised and vulnerable groups of people to decision-making and the green economy

By 2040

The legal and political infrastructures are overhauled to allow for effective representation of all groups, particularly those groups most affected by policymaking. This includes, at the very least, representatives from labour unions, NGOs and representatives from different vulnerable communities.

By 2030

There are widespread experiments with alternative democratic forms. Moreover, specific attention is paid to the representation of marginalised and vulnerable communities, particularly in climate policies – the Aarhus convention is updated to include this perspective.

Conclusion

EU and national policymakers, labour unions, citizens, NGOs, and businesses will all need to play a role in ushering in a green and just transition. The legitimacy and public acceptance of this transition depends critically on the extent to which it delivers genuine improvements in the lives of everyday people in the EU. This can only be achieved by co-constructing transformation with the communities affected by it, through participatory democratic mechanisms that make special efforts to include marginalised people and communities. Prioritising the provision of quality public services, enriching communities, cultivating public goods and strengthening democratic public ownership are critical means towards a society that prioritises wellbeing for all, within planetary boundaries.

4. Lighthouse projects

Research into Lighthouse Projects (Task 5.3) led by UniGießen, with support from IPE, Risteco, UvA and IUC, aimed to identify a set of lighthouse projects for green transitions in Europe, based on inputs from relevant civil society representatives from across the continent. As defined in the project proposal, lighthouse projects are “diverse types of initiatives, such as progressive legislation or other endeavours promoted by a governmental body, civil society actors or business associations, that catalyse green transitions, for instance, by aiming to reduce CO₂ emissions, promote the use of sustainable energy resources and mobility and raise the quality of life for citizens”, while also being established, meaningful, visible, unique, and capable of being scaled up for replication elsewhere.

The project specifies identifying lighthouse projects, “based on inputs from relevant civil society representatives from across the continent”. To achieve this, a two-tiered approach was used. First internal input was gathered through a GreenPaths survey inviting consortium members to suggest relevant projects from their areas of expertise. Additionally, attendees of the visioning workshop in Croatia were also invited to fill out the survey, to suggest lighthouse projects they are familiar with. To complement the survey, desk research was also conducted. A common template was developed to identify lighthouse projects in three categories - governmental bodies, civil society actors, and business associations - with the goal of collecting around 20-25 projects per category, ensuring representation across all EU regions and a broad spread

of sectors such as mobility, care, agriculture, buildings, and textiles. This work was divided among partners, with UniGießen covering governmental bodies, RISTECO civil society actors, and IUC business associations.

Overview of Identified Lighthouse Projects

The final set of lighthouse projects, totaling 71, included 21 projects led by governmental bodies, 20 by civil society actors, and 30 by business associations or cooperatives. Some overlap emerged across these categories, particularly between civil society actors and business associations, reflecting the fact that several projects involved mixed constellations of stakeholders, initiators, or sources of financing. In terms of geographical spread, the projects covered all EU regions, including 12 in Northern Europe, 20 in Western Europe, 8 in Southwestern Europe, 14 in Central Europe, and 14 in Southern Europe. In addition, some projects operated at the EU level or across multiple European countries, and these were therefore counted across all relevant regional classifications. Across the lighthouse projects that have been identified, the three most common sectors were energy, mobility and transport, and agriculture, followed by carbon capture and utilisation, industry and manufacturing, urban planning, mining, and housing. These are sectors that have also been identified within GreenPaths as central to Europe's green transition, especially those linked to decarbonisation, infrastructure, and production systems. Additionally, the presence of projects across all EU regions shows that these transition efforts are not limited to one part of Europe but are emerging in a wide range of regional contexts.

See **Appendix 4** for a full list of the Lighthouse Projects identified.

5. Trans-local approaches, democratisation and subsidiarity

Throughout the visioning, backcasting, and identification of lighthouse projects, researchers and other stakeholders encountered the question of scale. How should the demands of regional-territorial transformation across the EU be balanced with local-level change that supports increased autonomy and engagement at the local level?

The visioning workshop explored this in the framework of “trans-local approaches”: looking for systems of co-ordination that can link together different local-level initiatives and transformations to solve cross-border questions from redesigning energy grids to justly managing the extraction of resources which are needed in one EU member state but present only in another (or in a third country). In this domain existing EU mechanisms like the Council of Regions and experiments like the use of Citizens' Assemblies provide important examples to learn from and replicate, as do civil society initiatives and deliberative formats like citizen juries, citizen panels etc. Yet, this type of cooperation needs to be supported also outside of institutions to allow citizens to engage in collaboration and joint work across various regions in the EU.

At the same time, existing governance commitments of the EU, like the principles of Subsidiarity and Proportionality, which emphasise that the Union should take action only where the objectives of an action cannot be sufficiently achieved by the Member States, but can be better achieved at Union level, provide key guidelines for implementation of all just transition

initiatives. The proximity principle, referred to in Article 10(3) of the TEU, recognises the fundamental importance of grassroots and local initiatives in transformation, both for reasons of effectiveness and democratic legitimacy. This means, a fundamental question for policy-makers at every level to address in envisioning a just transition for Europe, is “what is the lowest level at which a policy can be effectively envisioned, designed and implemented”?

6. Conclusion: Cross-cutting strategies for structural transformation

The work of the GreenPaths project, and the visioning, lighthouse, and backcasting exercises collected in this discussion paper, show that the green transition needs to be orchestrated and synchronised — that is, coordinated across policy sectors, governance levels and societal actors— while remaining sufficiently democratic and accessible to yield tangible advances in both climate protection and social justice. This is dramatically opposed to present trends, where the EU appears to be aiming instead to re-consolidate its economic and industrial capacity in order to be more economically competitive at global level.

A key question therefore remains: given the current momentum, how can further work continue to support the just green transition, while political support for a throughgoing and transformative European Green Deal has apparently eroded? What is revealed about the democratic deficit in the EU, that the EC has taken a direction sharply contrasting with the interests of EU citizens? Do EU citizens really reject the green transition or only the way it was implemented?

For the last section we therefore highlight some central and cross cutting themes around which the just and green transition can continue, gaining strength and legitimacy:

- 1. Transforming work** – recognising and supporting care work at all levels, introducing economic democracy models, shorter working week, structurally allowing more service and communal work;
- 2. Centring sufficiency** - reducing consumption and production levels through changes in cultural and social practices, enabling us to get back within planetary boundaries and ecological limits while ensuring that basic human needs are met;
- 3. Participatory democracy** – engaging in a variety of autonomous deliberative processes around the key issues of green transition and ensuring their impact on various levels of policy making;
- 4. Revaluing nature & care** – allowing sufficient time, resources and attention to care, collaboration and solidarity with non-human species, indigenous traditions and surrounding eco-systems.

Apart from this, we see that future production should be mainly demand driven, with clear carbon impact labelling and increased local production. Essential goods and services should be deprivatised and the reduction material throughput should be a key principle in public policy design.

The interlocking nature of transformation in different sectors proved to be an opportunity to understand the systemic character of the transition, yet it also gives rise to tensions, blind spots and coordination problems, which are exacerbated by the contrast between visions of a just green transition and the current trajectory of the EU's "transition" policies. Yet, as the sections above highlight, this integrated, social- and ecological-justice oriented and participatory democratic approach also offers the opportunity to improve the lives of EU residents in a wide variety of different ways, addressing many of the concerns that have blocked progress on the European Green Deal to date. While the increasing complexity of a holistic, cross-sectoral approach can appear as an obstacle, it also presents an opportunity to develop more persuasive and transformative proposals. Just green transition is capable of leading to an attractive and desirable a common future, based on community flourishing and public goods, while remaining within the planetary boundaries and addressing long-standing social and ecological justice concerns.

Today, this kind of systemic transformation, aligned with planetary boundaries and social well-being, is only nascent. Making it a reality will require dense and orchestrated policy coordination in all sectoral areas, coupled with robust public participation to build acceptance and ensure it truly meets the needs of ordinary people in Europe. Among other challenges, this will require deeper and faster consolidation of financial frameworks and taxation policies, which are needed to support social transformation geared towards public goods and common wealth.

While this discussion paper focuses on transformations needed over the next 25 years, many of which are ambitious and challenging, the backcasting methodology reveals clearly: important change must begin today. Europe cannot afford further delays. Postponing climate action, or pursuing narrow, technocratic or efficiency-based solutions rather than deep social, cultural and economic transformation has already cost us too much.

7. ANNEXES

Annex 1: Policy Brief: Land, agriculture and food systems: Understanding the risks of fragmented transitions

The GreenPaths case studies reveal that many tensions in the green transition stem from how land, agriculture and food systems are governed. While environmental objectives such as decarbonization, biodiversity conservation and renewable energy deployment are increasingly prioritised, the social and territorial implications of these policies often remain insufficiently addressed.

Across several case studies, land emerges not only as a productive resource but also as a social institution, a cultural asset and a political arena where competing visions of development are negotiated. As Pistotnik and Kušej (2025) argue in the CAP case study covering Slovenia, Croatia and Serbia, land simultaneously anchors food systems, ecological cycles, livelihoods, identities and cultural memory. Yet within many contemporary policy frameworks, it is increasingly reduced to a technical variable for carbon sequestration, biodiversity offsets or renewable energy infrastructure.

This reductionist approach contributes to new forms of inequality and exclusion. The CAP case study documents processes of land concentration, rural depopulation and the exclusion of small-scale farmers, driven in part by area-based payments that disproportionately benefit larger landowners. The mechanisms underlying these dynamics reveal deeper structural problems: when policy support is tied to land area rather than production outcomes or sustainability practices, larger holdings automatically receive proportionally greater subsidies. This creates perverse incentives that encourage land consolidation, undermine intergenerational farm transfer, and make it increasingly difficult for new farmers to enter the sector. The study highlights how land governance can become subject to institutional fragmentation and elite capture, reinforcing existing asymmetries rather than supporting a more equitable transition (Pistotnik and Kušej, 2025). Without deliberate policy intervention, these mechanisms perpetuate rural inequality and accelerate the exit of smaller producers from agricultural sectors.

Similar concerns arise in other GreenPaths cases. In Romania, the Yellowstone conservation case raises important questions about who benefits from environmental protection and whose interests are represented in conservation policies. While biodiversity protection itself is not challenged, concerns have been expressed about land acquisition processes, greenwashing practices, and the growing influence of philanthro-capitalist actors in shaping territorial futures. The Yellowstone initiative, despite its environmental objectives, has generated significant tensions around land tenure, decision-making authority, and the distribution of conservation benefits. Local communities fear losing control over landscapes that have been managed collectively for generations, often through informal commons arrangements that have sustained both ecological and socioeconomic stability (Puilet et al., 2025). The case illustrates a broader pattern in which conservation initiatives, even when well-intentioned, can displace local populations or restrict their access to resources without adequate compensation or participation in governance decisions.

The Portuguese Barroso case offers another example of these tensions. Local communities have raised concerns that lithium extraction projects threaten not only environmental resources but also historical agricultural practices, pastoral systems, traditional water management techniques, and cultural heritage that have shaped the territory for centuries (Piccardi et al., 2025). Lithium extraction for green energy transitions—paradoxically essential for decarbonization—comes at a significant cost to local communities who depend on agro-pastoral livelihoods. The displacement effects extend beyond immediate land loss; they threaten to erase centuries of accumulated ecological knowledge and cultural practices that represent irreplaceable dimensions of territorial identity.

Similar dynamics are observed in Serbia, where the proposed Rio Tinto Jadar project threatens fertile agricultural land and biodiversity-rich ecosystems. Avramović et al. (2025) document risks associated with soil degradation, groundwater contamination, and irreversible impacts on agricultural production systems. These potential impacts raise critical questions about the sustainability hierarchy: if achieving green transition objectives through mineral extraction destroys the foundation of regional food security and agricultural viability, has the transition truly been “green” in any meaningful sense?

Together, these cases illustrate how green transition policies can generate what several authors describe as “green sacrifice zones,” where environmental benefits at broader scales are accompanied by localised environmental degradation and social costs. These sacrifice zones reveal systematic patterns of inequality in how transition burdens and benefits are distributed across territories and social groups. Distributional injustices manifest when environmental gains accrue globally while costs concentrate locally; procedural injustices emerge when affected communities lack meaningful voice in decision-making processes; and recognitional injustices occur when the knowledge, identities, and values of marginalised groups are dismissed or delegitimised. These three dimensions of injustice recur across the case studies, affecting rural communities, small-scale farmers, women, young people, and indigenous or minority populations with particular intensity.

Small producers at the centre of a just transition

One of the strongest findings from the GreenPaths research concerns the strategic role of small and medium-sized producers in achieving a just green transition.

Current policy frameworks often assume that sustainability can be achieved primarily through technological innovation, environmental regulation, or financial incentives. This techno-centric approach emphasises replacing carbon-intensive systems with renewable alternatives without fundamentally questioning existing production and consumption patterns or the viability of farming as an economic and social activity. However, the evidence suggests that long-term resilience depends equally on maintaining vibrant rural communities and diversified agricultural systems. Sustainable transitions that fail to support the farmers and rural livelihoods that depend on the land risk creating new forms of abandonment and vulnerability, ultimately undermining both ecological and social sustainability objectives.

The CAP case study shows that small farmers frequently face structural barriers related to land access, market concentration, and administrative complexity. Administrative burden is particularly acute for smaller farms, where the cost of compliance with regulations and reporting requirements consumes a disproportionate share of scarce management capacity and financial resources. Women and young farmers are particularly affected by these structural constraints. Burandt and Mölders (2017) and ECVC (2021) show that women, who are often overrepresented in small-scale and agroecological farming, benefit less from area-based payments and have weaker access to land and productive resources. Young farmers face additional barriers, including limited access to capital for land purchases or equipment, difficulty obtaining agricultural credit, and generational gaps in technical knowledge. These intersecting vulnerabilities create multiple pathways through which small producers—especially women and youth—are systematically excluded from agricultural opportunities.

Yet small producers perform functions that extend far beyond agricultural production. They contribute to biodiversity conservation through diversified farming practices that maintain habitat complexity; landscape management that preserves ecosystem services; food diversity through production of specialised or heritage crops; local employment that sustains rural economies; and social cohesion through community networks and institutions. They also play a crucial role in preserving knowledge systems, cultural traditions, and place-based identities that are increasingly recognised as important components of sustainability transitions. This multifunctional role means that the decline of small farming represents not merely an agricultural problem but a broader territorial development challenge with implications for cultural heritage, social equity, and ecological resilience.

Supporting these actors therefore requires more than agricultural subsidies. It requires creating economic conditions that allow sustainable farming to remain viable over time. This demands policy frameworks that recognise farming as a legitimate livelihood, provide stable market access, reduce administrative burden, facilitate land access for new entrants, and support farmer-led innovation in sustainable practices. Without such comprehensive support, even technically excellent environmental policies will fail to achieve just transitions.

Food Policy as an Integrating Framework

The GreenPaths findings suggest that food policy offers one of the most promising frameworks for addressing the interconnected challenges of land use, agriculture and sustainability.

Food systems occupy a unique position in the transition because they connect environmental objectives, agricultural production, public health, education, local economic development and territorial governance. Unlike sectoral policies that address single objectives in isolation, food policy creates natural entry points for cross-sectoral coordination. Environmental goals connect to health promotion through nutrition; agricultural support links to education through school meal programs; rural development becomes integrated with urban consumption patterns and public procurement decisions. Food policy, therefore, provides an inherently interdisciplinary perspective capable of overcoming the fragmentation that characterises many current policy

Table 1. N° of farmers in the Dordogne Program.

Kind of Supplier /Year	2018	2019	2020	2021	2022	2023	2024
Number of farmers since the launch:	85	129	151	173	209	239	251
Number of farmers who have delivered at least once since the launch:	52	76	88	98	110	122	127
Number of farmers who have been consulted since the launch	82	129	149	169	197	222	232

approaches. This integrative capacity makes food policy particularly valuable for achieving “just transitions” that simultaneously address multiple sustainability dimensions.

The Dordogne case study (Mariani et al, 2025) illustrates this potential particularly well. Through sustainable public procurement, healthy school meal programs, and the Agrilocal platform, local authorities have demonstrated that food policy can simultaneously support farmers, improve nutrition, strengthen local economies, and reduce environmental impacts. The Agrilocal platform particularly exemplifies how technology-enabled food policy can connect regional producers directly with public institutions and consumers, reducing transaction costs while increasing market transparency and predictability.

School meal programs can drive rural development when procurement prioritises local supply chains. Creating predictable demand for agricultural products offers economic stability for farmers, encourages diversification into higher-value, sustainable systems and enhances territorial food sovereignty. These programs also improve meal nutrition and strengthen links between food, territory, and community. The Dordogne experience exemplifies this, showing an increase in the number of local producers involved over time. The following table highlights how public procurement expands local markets and supports agricultural ecological transition.

Unlike traditional agricultural policies that primarily intervene on the supply side, food policies can influence both supply and demand. Public procurement creates stable markets for local producers, reduces uncertainty, and encourages investment in sustainable production practices. This demand-side intervention is particularly powerful because it creates market pull for sustainable products without requiring farmers to navigate volatile commercial markets or bear full price risk. In this way, food policy becomes a practical mechanism for translating environmental objectives into concrete economic opportunities for farmers.

The Dordogne experience demonstrates that the transition toward sustainable agriculture can be accelerated when food systems are actively mobilised as instruments of territorial development. Rather than viewing farmers as passive recipients of support, this approach recognises them as

key actors in broader territorial ecosystems that link land stewardship, food production, public health, and community well-being. This actor-centered approach builds farmer capacity and agency rather than creating dependency on subsidies.

Ultimately, the GreenPaths evidence suggests that food policy should not be understood as a separate sectoral policy confined to agricultural ministries or nutrition professionals. Rather, it should be recognised as an integrating governance framework capable of reconnecting land use, agriculture, and social well-being while addressing the root causes of transition-related inequality. Such an approach provides a pathway toward a transition that is not only greener but also more democratic, more inclusive, and more territorially rooted. By centering food systems and the actors who produce them, policy makers can create transitions that serve multiple sustainability objectives simultaneously while building legitimacy through visible improvements in food sovereignty, rural livelihoods, and community well-being.

Food is one of the few policy domains capable of creating meaningful connections between climate action, health promotion, social inclusion, education, local economic development and territorial governance. For this reason, food policy should be considered not as a sectoral policy, but as an integrating policy framework for the just green transition. When combined with deliberate support for small producers and territorial governance approaches, food policy offers a concrete pathway to achieve sustainability objectives without reproducing or intensifying existing inequalities.

Works Cited:

- Avramović, T., Stefanović, J., Ivančić, A. & Momčilović, P. (2025) Mining Lithium in Serbia. GreenPaths Case Study 12, available at https://greenpaths.info/wp-content/uploads/2026/02/D3.4._Case-Study-12.pdf
- Burandt, A., & Mölders, T. (2017). Nature–gender relations within a social-ecological perspective on European multifunctional agriculture: the case of agrobiodiversity. *Agriculture and Human Values*, 34(4), 955-967.
- ECVC (European Coordination of Via Campesina) (2021) *Embracing Rural Diversity: Genders and sexualities in the peasant movement* Available at: https://www.eurovia.org/wp-content/uploads/2021/06/MEP_ENG_web.pdf
- Mariani M., Falvo C., & Mariani C. M. (2025). Public food procurement as a lever to foster the just and green transition – Dordogne case study. GreenPaths Case Study 15, available at https://greenpaths.info/wp-content/uploads/2026/02/D3.4._Case-Study-15.pdf
- Piccardi G., Riquito M., Erridge M., & Velicu I. (2025). Lithium Mining and the ‘Green Sacrificial Logics’ of the Energy Transition in Barroso, Portugal. GreenPaths Case Study 1, available at https://greenpaths.info/wp-content/uploads/2026/02/D3.4._Case-Study-1.pdf
- Pistotnik A., & Kušej A. (2025). Assessing the Impacts of the Common Agricultural Policy (CAP) in Land Use in Slovenia, Croatia and Serbia. GreenPaths Case Study 4, available at https://greenpaths.info/wp-content/uploads/2026/02/D3.4._Case-Study-4.pdf
- Puilet R., Erridge M., Piccardi G., & Velicu I. (2025). Europe’s Yellowstone? An analysis of the social impacts of forest conservation in Romania. GreenPaths Case Study 2, available at https://greenpaths.info/wp-content/uploads/2026/02/D3.4._Case-Study-2.pdf

Annex 2: Policy Brief: Climate finance for green transitions

Introduction

The European Investment Bank (EIB), re-branded itself as the world's first climate bank, was nominated by the European Commission to help implement its European Green Deal Investment Plan (EGD). This involves mobilising €1 trillion over this decade for sustainable investment towards the green transition. The EIB supports EGD objectives, including, ensuring the transition is “just”—defined as not leaving people and places behind. However, certain regions and areas may be better placed to obtain demand-based climate finance than others, potentially posing a challenge to a just transition.

This policy brief presents the key issues and policy recommendations based on GreenPaths' case study on climate finance and its distribution in the EU. This case study investigates the extent to which the EIB delivers on the promise of a 'just transition' across EU regions, from an analysis of the regional distribution of EIB climate finance between 2021 and 2023. The analysis identified the location of 646 out of the total 1,304 green projects funded by the EIB in the period (mostly investment loans), which amounts to over half of the total of climate finance disbursed by the EIB across the period. On these 646 for which the location could be identified, two main hypotheses are tested: whether larger urban regions attract more finance per capita, and whether vulnerable regions (as measured by the Green Transition Vulnerability Index, GTVI) receive more finance per capita.

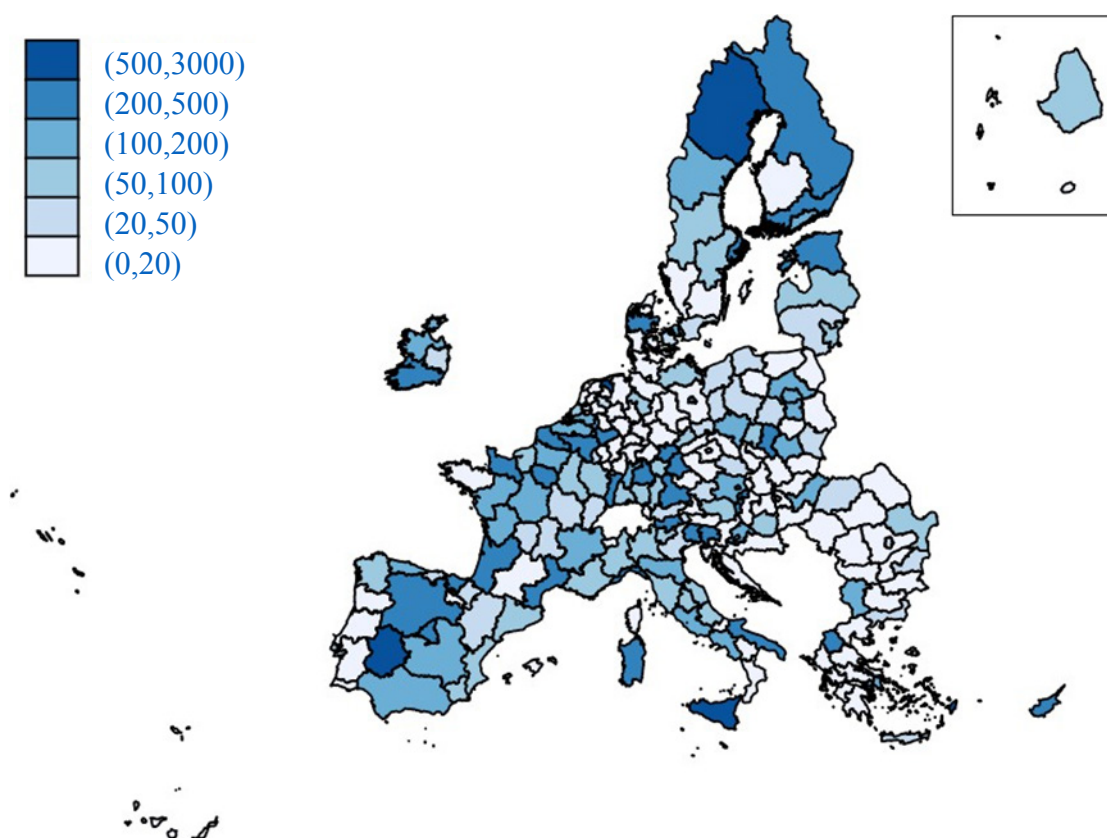
Key issues

1. The distribution of climate finance from EIB green projects across EU regions shows three patterns (Figure 1). First, most regions of seven countries consistently attract either significant (over 200 euros per inhabitant) or reasonable (over 50 euros per inhabitant) climate finance: Belgium, Finland, Italy, Ireland, Spain and Sweden. Second, another seven countries (Austria, Denmark, Germany, Greece, the Netherlands, Slovenia and Poland) reflect a more concentrated distribution of EIB climate finance, with some regions obtaining significant finance and others more modest amounts (under 50 euros per inhabitant). Third, some Eastern European countries (Bulgaria, Croatia, Czechia, Hungary, Romania and Slovakia), in addition to Portugal, mostly have regions that attract no or little EIB climate finance (less than 20 euros per inhabitant).
2. A clear, positive correlation is observed between EIB climate finance per capita and the amount of population living in a functional urban area in each region. Regions with over 1.5 million inhabitants in a functional urban area attracted 154 euros per inhabitant, while the other regions attracted, on average, 82.7 euros per inhabitant (Figure 2). An econometric analysis (which allows for simultaneously controlling for other variables) shows that regions with the largest functional urban areas received 221.5% more EIB climate finance than those with the smallest amount of population in functional urban areas. 15 out of the 25 regions with more than 3 million inhabitants in a functional urban area obtained more climate finance than the EU average: Île de France, Rhône-Alpes and Nord-Pas-de-Calais, in France;

Campania and Lazio, in Italy; Mazowieckie and Slaskie, in Poland; Bruxelles-Capitale, in Belgium; Attiki, in Greece; Comunidad de Madrid and Andalucía, in Spain; and Berlin, Köln, Oberbayern and Stuttgart, in Germany.

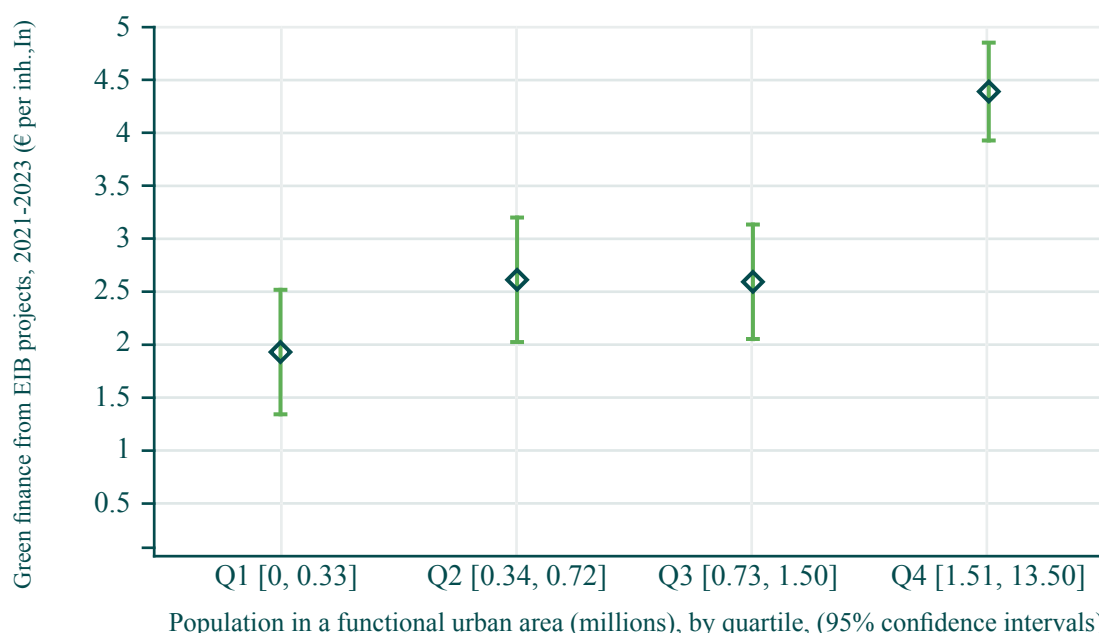
3. There is a negative correlation between EIB climate finance and regions' vulnerability to the green transition. The econometric analysis shows that this effect is non-significant: that is, after controlling for other factors, regions most vulnerable to the transition do not obtain more (nor less) climate finance than other, less vulnerable, regions. Indeed, there is a large heterogeneity in the amount of climate finance obtained from the regions most vulnerable to the transition. Seven vulnerable regions in Southern European countries were successful in attracting a substantial amount of climate finance (over 200 euros per inhabitant): Notio Aigaio and Dytiki Makedonia, in Greece; Extremadura and Castilla y León, in Spain; Slaskie, in Poland; Cyprus; and Sardegna, in Italy. In contrast, 34 out of the 55 most vulnerable regions obtained either no or very low amounts (less than 20 euros per inhabitant). These mostly included regions across South and East Europe: many regions in Greece, Poland, Bulgaria, Romania and Croatia, as well as some regions in Portugal and Italy.

Figure 1. Climate finance distribution from EIB green projects (euros per inhabitant) in 2021-2023, by region



Source: Authors' elaboration based on data from EIB and Eurostat.

Figure 2. Climate finance (euros per inhabitant, in logarithms) from the EIB by quartiles of population living in a functional urban area



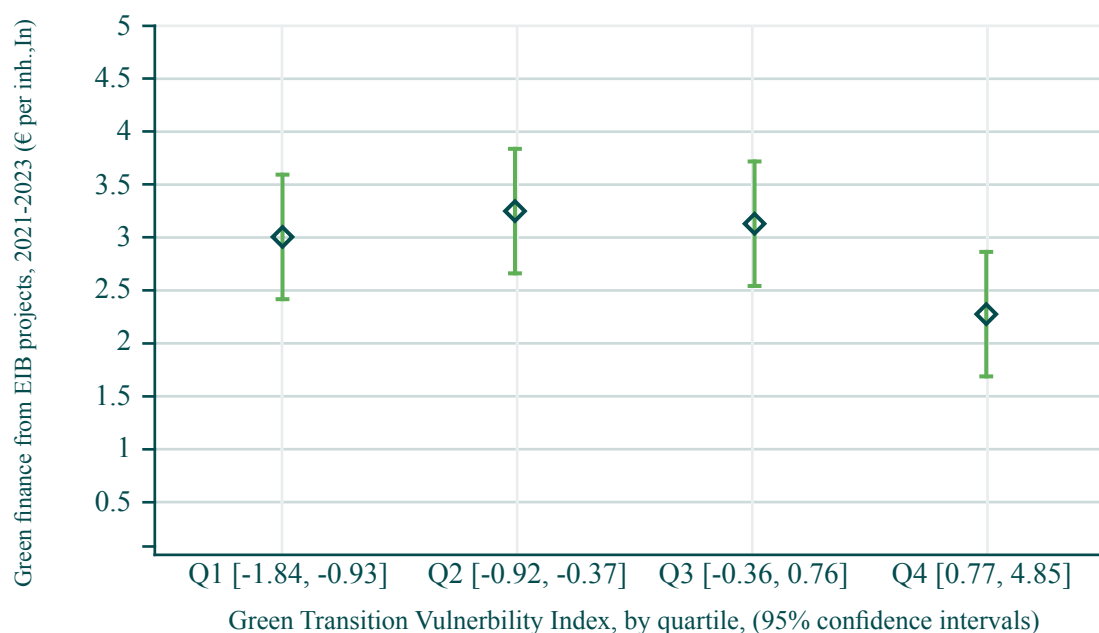
Source: Authors' elaboration based on data from EIB and Eurostat.

- There is a positive correlation between EIB climate finance and EU regions' GDP per capita. This indicates that the wealthiest EU regions tend to obtain more EIB climate finance than the poorest regions: 15 out of the 58 richest regions obtained over 200 euros per inhabitant, while only 5 out of the 62 poorest regions did. The econometric analysis shows that this effect is non-significant after controlling for other variables. That is, the poorest regions obtain less EIB climate finance not because they are the poorest, but because of other independent variables—in particular, because these regions have, on average, smaller functional urban areas.

Policy recommendations

- Increase funding available for green finance. The EIB should consolidate its key role as an EU climate bank during this decade. This entails that the share of EIB projects and funding devoted to climate action and environmental sustainability keep growing from the 2021-2023 observed levels (1,304 green projects in this period, and €97.1 specifically devoted to climate funding). In parallel, investors' priorities and incentives should progressively turn from investing a higher amount of funds to investing appropriately in terms of achieving high social returns.
- Increase the share of green funding addressed to vulnerable regions. As a first step, the EU should prioritize small and innovative green projects in specific lines within EIB green finance. At the same time, projects should focus not only on the direct impact of the green

Figure 3. Climate finance (euros per inhabitant, in logarithms) from EIB projects by quartiles of Green Transition Vulnerability Index



Source: Authors' elaboration based on data from EIB and Eurostat.

transition, but also on exposure to indirect impacts based on the weight of vulnerable sectors such as agriculture, industry and tourism in region's economic structure.

3. Increase openness and transparency of information on EU green finance. Information on EIB green projects should be more easily accessible, in a comprehensive database which is regularly updated and can be directly downloaded. This database should include information on all the projects funded, the amount and share of these projects devoted to climate funding and, importantly, on the territorial distribution of this funding (that is, in which regions the funds are received), for those projects in which such territorialisation is technically feasible.

Conclusion

Findings of this case study confirm that the EU regions with the largest urban population receive significantly more climate finance per capita from the EIB, while vulnerable regions do not. This raises challenges for the equity of the green transition in a territorial perspective and raises questions about the effectiveness of current EU policies on green finance for guaranteeing that the green transition is a just transition too.

Annex 3: Policy Brief: Governing critical minerals & extraction for green transitions

To align the green transition with the principles of justice and social wellbeing, a fundamental shift is urgently needed from technical, top-down ‘green mining’ and other extractivist approaches to policy approaches to decarbonisation that deliberatively centre justice, democratic participation and equity. This brief presents key issues and offers policy recommendations based on GreenPaths case studies on lithium mining in Portugal and Serbia, coal phase-out in Spain, critical minerals in Latin America and Southern Africa and decarbonisation policy stringency in Europe and select countries in Global South. Findings relate to different conceptualisations of fossil fuel phase-out, decarbonisation and renewables linked to the extraction/extractivism of critical raw materials and/or the phase-out of fossil fuel industries.

Key Issues:

- The push for green technology is linked to pollution, water stress and soil contamination from mining for critical minerals alongside threats to biodiversity and the creation of green sacrifice zones.
- Socio-environmental injustices highlight an intersectional and neo-colonial ‘green divide’ that reinforces pre-existing disparities based on gender, ethnicity, urban/rural location and power imbalances between the EU’s core and its periphery, the Global North and South.
- European Green Deal (EGD)-related green transition policies driving renewable energy production and Fit for 55 decarbonisation efforts, while framed as sustainable, often fail to account for local ecological vulnerabilities, democratic participation, and social equity. This includes just transition policies that remain focused on fossil fuel workers and coal regions, excluding rural, Indigenous, and extractive-frontline communities affected by green mining, whether in Europe or the Global South.
- Export-oriented extractivism, green-grabbing of (private and communal) lands and carbon leakage perpetuate global asymmetries and conflict, while precarious employment, displacement and loss of livelihoods, rising costs, and social conflicts deepen injustice and endanger mutual trust.
- Key enabling policies such as the Critical Raw Materials Act (CRMA) (2024) and the EU Batteries Regulation 2023/1542 are driving ‘green sacrifice’ and distributional inequality, where costs are externalised to vulnerable communities, peripheral regions or countries with limited political leverage. Environmental benefits are being offset by localised ecological degradation.
- Critical minerals and extraction policy directs third parties to vague obligations to adhere to guiding principles, non-binding agreements and opaque references to human, labour and indigenous peoples’ rights (e.g. EU principles for sustainable raw materials (2021) and UN Guiding Principles on Business and Human Rights (2011)). These are insufficient and pathways for legislative action should cross-reference substantive and binding legal instruments

under international human rights law and environmental law that protect rights (e.g. to housing, land, water, cultural heritage etc.) and link to tangible mechanisms for public restitution (e.g. Aarhus Convention, UN Human Rights Council mechanisms).

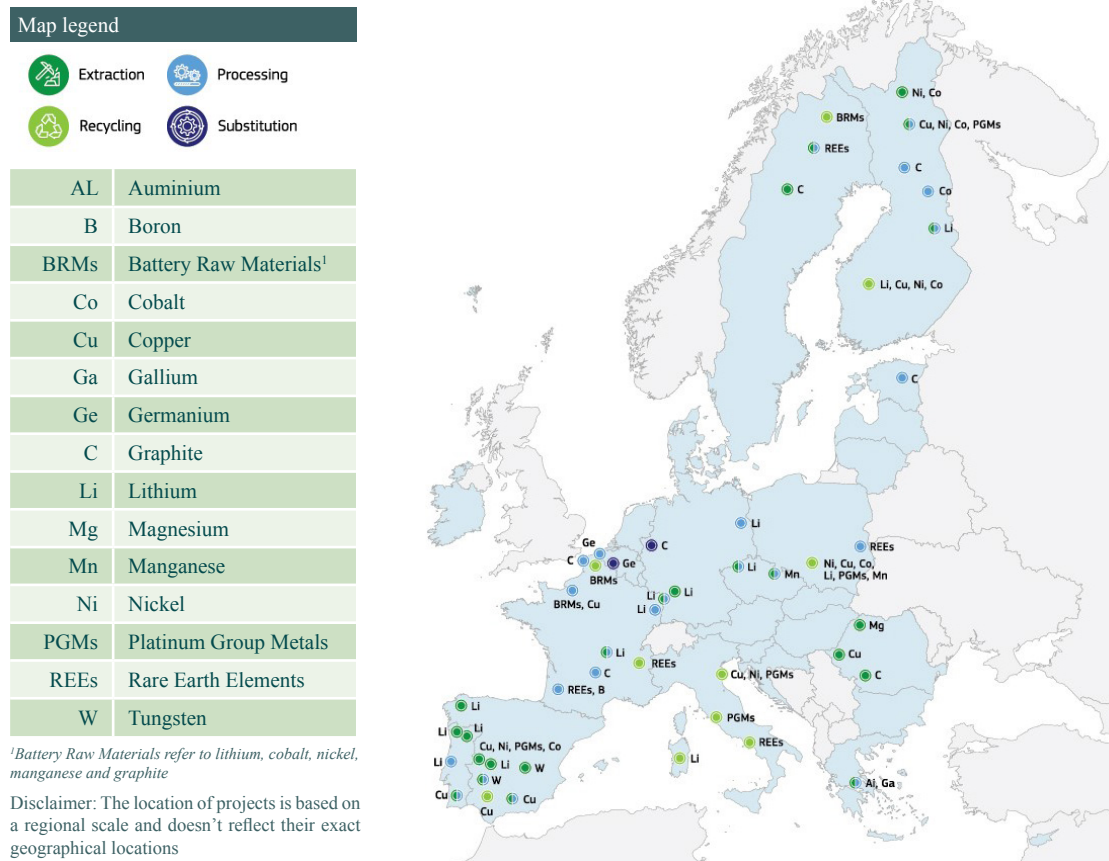
- The use of critical minerals and designation of strategic projects are not exclusively for green purposes, but also includes military use, which raises serious concerns about what proportion of critical raw materials are destined for transition projects versus militarism. In this context, ‘lithium for renewables’ is being replaced with ‘lithium for war’ rhetoric, as the EU’s Green Deal policy drive is being supplanted by calls for defence and remilitarisation.
- The EU’s acceleration of ‘green extractivism’, particularly through the CRMA, deploys a logic of urgency and geopolitical competitiveness to fast-track projects, sidestepping substantive public consultation and dismissing ecological costs as temporary or local. This is reflected in national policy. In recognising Mina do Barroso as a strategic project in March 2025, before the Aarhus Committee had concluded its investigation (they ruled in August 2025 that the Portuguese agencies had breached rules on public consultation in environmental projects), the European Commission sent a clear message: globally recognised biodiversity, ecological, cultural and agro-historical practices are less important than lithium. The ‘dangling carrot’ of EU accession positions Serbia as a strategic partner in EU industrial supply chains, potentially boosting foreign investment in extraction of the country’s lithium.
- A prominent counter-argument from lithium proponents suggests that ecological ‘restoration’ can neutralise these damages, creating a ‘no net harm’ discourse. In this ‘no loss, no damage’ logic, there is no lasting sacrifice to mourn, only a temporary imbalance to be technically managed. International environmental protection frameworks, such as UN FAO, Globally Important Agricultural Heritage Systems (GIAHS) (2018) and Natura 2000 sites of the Habitats Directive (92/43/EEC) and the Birds Directive (2009/147/EC), are used by communities as tools of resistance but are also circumvented by official policies through the strategic promise of technocratic restoration.

Policy Recommendations:

- Radically expand just transition frameworks beyond current narrow definitions

Just transition policies must expand to explicitly include rural, Indigenous, extractive-frontline, and other affected communities, in Europe and internationally. Policymakers must formally recognise the earth-care labour and value of existing rural livelihoods—small-scale agriculture, traditional pastoralism, and other place-based ecological livelihoods—as sustainable models to be protected, not sacrificed for green extractivism. Legal tools must be developed to recognise, anticipate, and mitigate socio-environmental injustices that begin the moment a project is proposed, including intangible loss and damage, environmental distress, social fragmentation, and psychological impacts. Impact assessments must include disaggregated indicators capturing intersectional inequalities based on gender, age, ethnicity, rurality, and livelihood type.

Strategic Projects for the EU



EU Map of Strategic Projects marked under the CRMA. 2023 [Source: Renewables Now, 2025]

- Guarantee substantive democratic participation and the ‘right to say no’

The CRMA must be amended to guarantee a substantive public/community approval process in line with the established principles of Free, Prior and Informed Consent (FPIC) for all strategic projects, including legally binding mechanisms for communities to refuse a project without penalty or subsequent circumvention through administrative easements justified by “overriding public interest.” This requires going beyond superficial consultations to explicitly ensure the participation of affected communities, especially women, youth, people living in rural areas and other marginalised groups. Such a shift would be in line with the EU’s obligations under international human rights instruments such as the Voluntary Guidelines on the Tenure of Land, Fisheries and Forests in the Context of Food Sovereignty and the UN Declaration on the Rights of Peasants and Other People Living in Rural Areas, which entrench substantive rights including a right to land. National laws that render municipal and community opinions “non-binding” must be reformed. The EU must establish a compliance mechanism with significant financial and legal penalties for Member States that breach the Aarhus Convention’s provisions on public participation, access to information, and access to justice.

- Dismantle sacrificial logics embedded in EU policy architecture

The “overriding public interest” clause enabling Strategic Projects to automatically bypass protected area status must be removed or radically circumscribed. Projects located within Natura 2000 sites, GIAHS, UNESCO World Heritage areas, or other internationally recognised protection zones should be presumptively prohibited, with any exemption possible only through an independent, transparent, and appealable judicial process—not administrative decree. Binding “no-go zones” for mining must be established based on ecological sensitivity, agricultural land integrity, cultural heritage, and community land tenure. The logic of manufactured urgency—driven by geopolitical competitiveness, military defence, or climate action—must be replaced with mandatory minimum consultation periods and community appeal rights that cannot be waived for strategic projects.

- Reject techno-solutionist ‘restoration’ as a justification for harm

The prominent counter-argument that ecological restoration can neutralise all damages—creating a ‘no net harm’ discourse—must be rejected. Priority must be given to the avoidance of harm over its future repair. EU environmental law must legally acknowledge that certain losses—cultural identity, ancestral land, unique ecosystems, and place-based ways of life—are irreversible and cannot be compensated by technological fixes or financial payments, a principle that must guide EU action both domestically and internationally. Where such irreversible harm is predicted, the project must be refused. Significant financial and legal penalties must be established for failures to adhere to environmental law. The strategic promise of technocratic restoration must not be used to circumvent international environmental protection frameworks that communities rely on as tools of resistance.

- Rebalance transition policy away from extractive dependency

Guided by principles of degrowth and sufficiency, the CRMA and Batteries Regulation must include binding targets for circularity, mandatory recycling, and product design standards that extend lifespans to lessen absolute dependency on new primary extraction, thereby countering the externalisation of extraction harms to the Global South and the European periphery. EU strategic partnerships on critical raw materials with third countries must include binding human rights, environmental justice, and democratic governance conditionality, cross-referencing substantive legal instruments under international human rights law (including the right to water, UNDRIP, UNDROP, and the Aarhus Convention). EU transition and cohesion funds should be reallocated to support economic diversification and community-led alternatives in regions currently targeted for critical raw material extraction worldwide.

- Embed principles of policy coherence, human rights compliance and international cooperation in EU approaches to Critical Minerals

Development of green technologies in Europe should not come at the expense of other regions, whether in the European neighbourhood or globally. While recognising the significance of European competitiveness, the European Union should ensure that the implementation of all policies related to critical mineral extraction and use is consistent with its commitments

to human rights, democracy and international development. Among others, this implies: supporting countries of the Global South to implement green industrial policies for their own just transitions; respecting the right to resource sovereignty in the Global South by not using international trade instruments to prevent countries from onshoring production or supporting domestic industries; recognising the rights of self-determination and ensuring that trading partners act in compliance with international law; proactively embracing technology transfer as a key component of European climate action, in line with the European continent's historical responsibility for the climate crisis; and ensuring that European corporations operating internationally adhere to the highest standards of human rights and environmental due diligence, and that communities have the opportunity to seek remedy for violations in international or, where appropriate, European courts.

Conclusion

A truly just green transition does not fast-track extraction through protected landscapes or rely on technocratic restoration to neutralise harm. It centres frontline communities, legally protects their right to say no, and builds a low-carbon future on sufficiency, care, and justice—not on new green sacrifice zones in Europe or beyond.

Annex 4: Full list of lighthouse projects

Government Bodies:

Name Lighthouse Project	Country Code	Region	Sector	Website	Timeframe	Funding Source
KOdeCO	HR	SE Europe	Carbon capture	https://www.holcim.com/what-we-do/green-operations/ccus/kodeco	Operational by 2028	EU + Holcim
First hydrogen valley to be established in Cyprus	CY	S Europe	Energy	https://balkangreene-energynews.com/first-hydrogen-valley-to-be-established-in-cyprus/	2023- today	EU
Local Action Group Sdruzeni Ruze	CZ	C Europe	NA	https://www.smarta-net.eu/lighthouse-lag-sdruzeni-ruze-2/	2021-today	EC
VARGA – From traditional wastewater treatment plant to resource plant	DK	N Europe	Waste	https://stateofgreen.com/en/solutions/from-traditional-wastewater-treatment-plant-to-resource-plant/ ; https://www.envidan.com/project/varga/	2017-2023	BIOFOS, Envidan, ARC, Unisense Environment, and DTU Sustain
Smart Building	EE	E Europe	construction/energy	https://www.ebrdgreencities.com/policy-tool/smart-building-tartu-estonia/	2019-	70% from European Union and national government, rest from property owners
P2X Solutions	FI	N Europe	Energy	https://p2x.fi/en/p2x-solutions-green-hydrogen-electrolysis-equipment-supply-agreement-signed/	2022-2024	Finnish government: Ministry of Employment and Economy and Finnish Climate Fund
DALIA - Danube Region Water Lighthouse Action	HU	C Europe	NA	https://dalia-danube.eu/	2023-2026	EU
Hydrogen Valley South Tyrol	IT	S Europe	NA	https://fuelcellsworks.com/news/south-tyrol-hydrogen-valley-south-tyrol-selected-as-a-lighthouse-project	2020-	
Lighthouse Remedies	IT	S Europe	Environmental Protection	https://remedies-for-ocean.eu/lighthouse-venice-italy/	2022-2026	EU
Smarta-Net - Vidzeme	LV	E Europe	Mobility	https://www.smarta-net.eu/lighthouse-vidzeme/	2023 - ?	EU
Luxembourg Hydrogen Valley (LuxHyVal)	LU	C Europe	Energy	https://www.uni.lu/fstm-en/research-projects/luxhyval/	2023-2028	
CCU unites waste and food	NL	W Europe			2022-	NL gvmt.

PowerMatching City: Lighthouse project	NL	W Europe	Energy	https://powermatchingcity.nl/	2009-2015	EU + private, mixed
GO4ECOPlanet	PL	C Europe	Carbon capture	https://www.go4ecoplanet.com/en/home	Operational by 2027	EU and Holcim
New European Bauhaus (NEB): Portugal	PT	SW Europe		https://bauhaus-seas.eu/	2023- to date	New European Bauhaus, European Commission
Green Fashion Map	SK	C Europe	Fashion	https://slovakfashioncouncil.sk/en/mapping/the-new-green-fashion-map-focuses-on-sustainability		public funding from the Arts Council and Bratislava self-governing region
APPLAUSE (Alien PLAnt SpEcies)	SI	C Europe		https://uia.urban-initiative.eu/en/uia-cities/ljubljana	2017-2020	co-financed by the European Regional Development Fund through the Urban Innovative Actions (UIA) initiative
H2DECARBANOL	ES	S Europe	Carbon Utilization	https://decarbconnect.com/project/lighthouse-project/	2028-2029	Carbon Clean, Holcim, Sistemas de Calor
“Tre-Rör-Ut” - sustainable city development project	SE	N Europe		https://nsva.se/mitt-vatten/avlopp/tre-ror-ut/three-pipes-out/	2020-present	Municipal funds; national and international research funds were additionally acquired; Eawag (Swiss Federal Institute of Aquatic Science and Technology)
IGNITION	UK	W Europe		https://www.greatermanchester-ca.gov.uk/what-we-do/environment/natural-environment/ignition/		EU's Urban Innovation Actions (UIA)

Civil Society Actors:

Name Lighthouse Project	Country Code	Region	Sector	Website	Timeframe	Funding Source
CEES – Community Energy for Energy Solidarity	HR, FR, PT, UK	W, SW, SE Europe	Energy	https://www.energysolidarity.eu/	2021-2024	EU Horizon 2020

Every1	multiple	All except E Europe	Energy	https://every1.energy/	2022-2026	EU Horizon 2020
Matskogen på Landås	NO	N Europe	Agriculture	https://prepsoil.eu/communities-of-practice/matskogen-pa-landas	2022-2025	EU Horizon-CSA (Prepsoil)
Buğday Association for Supporting Ecological Living	TR	S Europe	Agriculture	https://prepsoil.eu/communities-of-practice/bugday-association-supporting-ecological-living	2022-2025	EU Horizon-CSA (Prepsoil)
Bosco di Olgia	IT	S Europe	Agriculture / Land preservation	https://prepsoil.eu/communities-of-practice/bosco-di-olgia	2022-2025	EU Horizon-CSA (Prepsoil)
Les Hortillonnages d'Amiens	FR	W Europe	Agriculture	https://www.leshortillonnages-amiens.com/decouvrir-les-hortillonnages/lassociation/	2022-2025	EU Horizon-CSA (Prepsoil)
Afval naar Oogst - I can change the world with my two hands	NL	W Europe	Agriculture	https://prepsoil.eu/communities-of-practice/afval-naar-oogst-i-can-change-world-my-two-hands	2022-2025	EU Horizon-CSA (Prepsoil)
ZUG Community Gardens Association	HU	C Europe	Agriculture	https://prepsoil.eu/communities-of-practice/zug-community-gardens-association	2022-2025	EU Horizon-CSA (Prepsoil)
Gestione Olistica Italia ETS	IT	S Europe	Agriculture / Land preservation	https://prepsoil.eu/communities-of-practice/gestione-olistica-italia-ets	2022-2025	EU Horizon-CSA (Prepsoil)
Parco Ort9-Sergio Albani	IT	S Europe	Agriculture / Land preservation	https://www.viverein.org/sezioni/parco-ort9/	2022-2025	EU Horizon-CSA (Prepsoil)
Terranima	IT	S Europe	Nutrition / Agriculture	https://prepsoil.eu/communities-of-practice/terranima	2022-2025	EU Horizon-CSA (Prepsoil)
Agroforestry Sweden	SE	N Europe	Agriculture / Land preservation	https://prepsoil.eu/communities-of-practice/agroforestry-sweden	2022-2025	EU Horizon-CSA (Prepsoil)

Incredible Edible Network	UK	W Europe	Nutrition / Agriculture	https://www.incredibleedible.org.uk/	2022-2025	EU Horizon-CSA (Prepsoil)
Super Terram (towards a multispecific urbanism)	BE	W Europe	Urban Planning	https://prepsoil.eu/communities-of-practice/super-terram-towards-multispecific-urbanism	2021-2023	Innoviris (Brussels Regional Institute for Research and Innovation) Co-create 2021-2023 program
Sunseed Desert Technology	ES	SW Europe	Agriculture	https://www.sunseed.org.uk/	2022-2025	EU Horizon-CSA (Prepsoil)
Huertos Urbanos Suerte de Saavedra (Urban Vegetable Gardens)	ES	SW Europe	Nutrition / Agriculture	https://prepsoil.eu/communities-of-practice/huertos-urbanos-suerte-de-saavedra-urban-vegetable-gardens	2022-2025	EU Horizon-CSA (Prepsoil)
ECHO - Energy Communities excellence Hubs: catalyzing energy innOvation ecosystems	PT, EL & TU	SW Europe	Energy	https://echo-hubs.eu/	2024-2028	EU Horizon 2020
GoNP - GoNaturePositive!	multiple	Western, Central, and Southern Europe	Agri-Food, Forestry, Blue Economy, Tourism, Built Environment	https://www.gonaturepositive.eu/	2024-2027	EU Horizon 2020
Cargonomia	HU	C Europe	Food / Urban Transport / Nutrition	https://cargonomia.hu/	2025-ongoing	Self-funded
CLTB - Community Land Trust Brussels	BE	W Europe	Housing / Green Finance	https://cltb.be/en/	2012-ongoing	Brussels Capital Region, EU (Interreg projects like Upcycling Trust and Cohousilience), private buyer mortgages, and its own revenue from membership fees

Guimarães RRRC	PT	SW Europe	Waste Management	https://rrrciclo.pt/en/home/	2021-ongoing	EU funding: Horizon Europe (CircularPSP), URBACT (Let's Go Circular!), PO SEUR - Operational Programme for Sustainability and Efficient Use of Resources. Interreg POCTEP (Circular Ecosystems; Circular Challenge).
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Business Associations:

Name Lighthouse Project	Country Code	Region	Sector	Website	Timeframe	Funding Source
EIT RawMaterials - Responsible Sourcing Lighthouses	Multiple	All EU	Mining/Energy	https://eitrawmaterials.eu/	2015-ongoing	Co-funded by EU
A4M - Additive for Mobility	AT	C Europe	Mobility/Transport	https://www.eitmanufacturing.eu/news-events/news/a4m-austrian-lighthouse-project-for-the-mobility-sector/	2024-2028	Austrian Research Promotion Agency (FFG)
EuProGigant	AT & DE	C Europe	Industry / Manufacturing	https://www.eitmanufacturing.eu/news-events/activities/euprogigant-a-gaia-x-lighthouse-project-in-manufacturing/	2021-2025	Austrian Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK); German Federal Ministry for Economic Affairs and Energy (BMWE)
ProLight	Multiple	SW Europe	Housing	https://www.prolight-project.eu/demo-case/gernika-lumo-spain/	2022-2026	EU Horizon 2020
CIRPASS-2	Multiple	All EU	Industry	https://cirpass2.eu/	2024-2027	European Commission's Digital Europe Programme

This project has received funding from the European Union's Horizon Europe research and innovation programme under the grant agreement No 101112305.

MUSE DHC - coMmUnity-led actionS for Efficient District Heating & Cooling	Multiple	W, SE, S Europe	Energy	https://musedhc.ambienteitalia.it/about/	2021-2025	EU LIFE
LIFE_LETsGO4Climate	FR	W Europe	Energy	https://www.life-letsgo4climate.eu/en/	2021-2025	Région Centre-Val de Loire; EU LIFE
RES4LIVE	Multiple	N, W, C and S Europe	Agriculture	https://res4live.eu/	2020-2024	EU Horizon 2020
AgroFossilFree	Multiple	N, W, C and S Europe	Agriculture	https://www.agrofossilfree.eu/	2020-2023	EU Horizon 2020
AgroBioHeat	Multiple	W, SW, SE, S, E Europe	Agriculture/ Energy	https://agrobioheat.eu/	2019-2021	EU Horizon 2020
LivingSoiLL - Healthy Soil to Permanent Crops Living Labs	Multiple	W, SW, SE, C Europe	Agriculture	https://livingsoill.eu/	2024-2028	EU Horizon Europe program under the “A Soil Deal for Europe” Mission.
AquaCOM	IE, FR, NL, BE	W Europe	Energy	https://aquacom.nweurope.eu/about	2023-2027	EU & Provincie Vlaams-Brabant
Den magiske fabrikken og Vestfold biogjødselforum	NO	N Europe	Agriculture	https://prepsoil.eu/communities-of-practice/den-magiske-fabrikken-og-vestfold-biogjodselforum	2022-2025	EU Horizon-CSA (Prepsoil)
Karbon Agro	NO	N Europe	Agriculture / Land preservation	https://prepsoil.eu/communities-of-practice/karbon-agro	2022-2025	EU Horizon-CSA (Prepsoil)
Agricultural cooperative Krakovany – Stráže	SK	C Europe	Agriculture	https://prepsoil.eu/communities-of-practice/pd-krakovany-straze-agricultural-cooperative-krakovany-straze	2022-2025	EU Horizon-CSA (Prepsoil)
ECHO - Efficient Compact Modular Thermal Energy Storage System	Multiple	W, SW, S, SE Europe	Energy/ Housing	https://echo-euproject.eu/	2023-2026	EU Horizon 2020
AUTOSUP – Preparing the ground for AUTOnomous multimodal SUPply chains	BE, IT, DE, TU	S, W, C Europe	Mobility / Transport	https://www.autosup-project.eu/	2024-2027	EU Horizon 2020
Every1	Multiple	All EU except E Europe	Energy	https://every1.energy/	2022-2026	EU Horizon 2020
CRISTAL – Climate resilient and environmentally sustainable transport infrastructure, with a focus on inland waterways	FR, IT, PL	W, S, C Europe	Mobility / Transport	https://www.cristal-project.eu/	2022-2025	EU Horizon 2020

DISCO - Data-driven, Integrated, Synchromodal, Collaborative and Optimised urban freight meta model for a new generation of urban logistics and planning with data sharing at European Living Labs	Multiple	All except SE Europe	Transport / Logistics	https://discoproject.eu.com/	2023-2026	EU Horizon 2020
FOREMAST – pioneering Small, Flexible, Automated Zero-Emission Vessels	FR, BE, RO	W & SE Europe	Mobility / Transport	https://foremast.eu/	2024-2026	EU Horizon 2020
GOLIA - Governing, Optimising and Leveraging Innovations proActively for shaping future-proof holistic mobility system through data-driven and social optimum-led model	Multiple	W, C, S, E Europe	Mobility / Transport	https://www.golia-project.eu/	2025-2028	EU Horizon 2020
LogE-Hubs: advancing urban logistics through smart digital solutions	ES & PT	SW Europe	Transport / Logistics	https://www.eiturbanmobility.eu/projects/log-e-hubs/	2025	EU Horizon 2020
MultiRELOAD – Port solutions for efficient, effective and sustainable multimodality	Multiple	C & SE Europe	Transport / Logistics	https://multireload.eu/	2022-2026	EU Horizon 2020
URBANE – Upscaling Innovative Green Urban Logistics Solutions Through Multi-Actor Collaboration and PI-Inspired Last Mile Deliveries	Multiple		Transport / Logistics	https://urbane-horizoneurope.eu/	2022-2026	EU Horizon 2020
ISAAP - Innovative Strategies to Accelerate Adoption and Consumption of Plant-Based Food	PT		Food / Agriculture	https://www.eitfood.eu/projects/isaap	2025-2027	EU Horizon 2020
AgriLink – Agricultural Knowledge: Linking farmers, advisors and researchers to boost innovation	Multiple	SW, W, S, SE & E Europe	Agriculture	https://old.agrilink2020.eu/	2017-2021	EU Horizon 2020

I4-GREEN - Interregional investment for the sustainable supply of raw materials in the EU Green Energy Transition	ES	SW Europe	Mining	https://i3-i4green.eu/	2022-2025	Interregional Innovation Investments (I3) Instrument, under the European Regional and Development Fund (ERDF)
Earth Markets	Multiple	SW, W, S, C, & E Europe	Food / Nutrition	https://www.fondazioneSlowFood.com/en/what-we-do/earth-markets/	2014 - ongoing	EU funding: Horizon Europe, the Innovation Fund (from ETS revenues), LIFE Programme, InvestEU, EAFRD, EAGF. Stallholder fees, local governments support (tax breaks, services), fundraising, donations.
Minoan Energy Community	EL	S Europe	Energy	https://minoanenergy.com/en/		Through member investments (buying shares), supplemented by EU Horizon 2020 (NESOI project), and support from local government (Region of Crete, municipalities)
Greenport Scandinavia	DE	N Europe	Energy	https://greenportscandinavia.com/	2022-ongoing	EU Just Transition Fund (JTF); EU Innovation Fund; Danish Government
Just Go Zero Tilos	EL	S Europe	Waste management	https://www.justgozero.com/en/tilos/	2021-ongoing	EU Horizon 2020
PRecycling	Multiple	SW, S & W Europe	Waste management	https://www.precycling-project.eu/	2022-2026	EU Horizon 2020