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# Research and innovation in the just transition

A case study highlighting  
good practices

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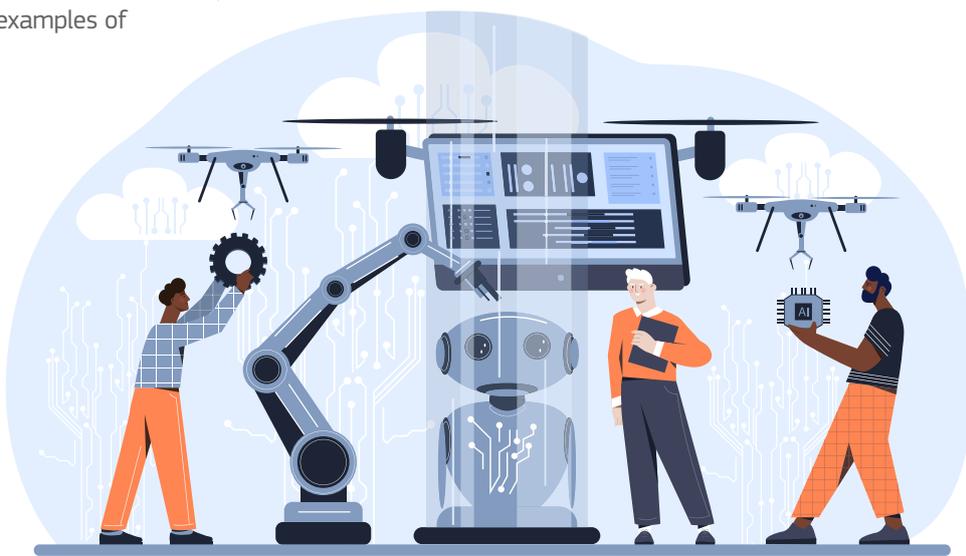
## Key messages

- Research and innovation (R&I) entities – such as universities and research centres – can support Just Transition Fund (JTF) territories in their transition efforts.
- R&I entities play three main roles in JTF territories: facilitating collaboration and partnerships, promoting economic diversification, and advancing workforce development.
- Effective R&I initiatives require collaboration among local, regional, national, and international stakeholders to address the unique territorial needs.
- JTF territories differ in innovation performance. High-performing territories can build on existing R&I strengths, while emerging territories should focus on developing foundational R&I capacities.

## 1. Introduction

The EU aims to be climate neutral by 2050. Territories that are currently dependent on carbon-intensive industries face challenges in managing the socio-economic impacts of phasing out these industries. R&I entities play a key role in helping these territories shift away from carbon-intensive industries by introducing new technologies, supporting worker reskilling, and fostering collaboration across sectors<sup>1</sup>. To address these challenges, targeted R&I activities can support just transitions.

There is no explicit and uniform definition of R&I entities. The [Horizon Europe Programme Guide](#) outlines various R&I entities, summarised in Table 1, along with illustrative examples of the R&I activities that they perform.



**Table 1: Types of R&I entities and illustrative examples of activities.**

	<b>Research organisations</b>	Conducting fundamental and applied research, fostering collaboration across disciplines, and contributing to knowledge creation and dissemination.
	<b>Higher education institutions</b>	Providing education and training, advancing research, and facilitating knowledge exchange through academic and applied research programmes.
	<b>Public bodies</b>	Funding and coordinating R&I projects, and promoting sustainable development initiatives, such as piloting smart city technologies.
	<b>Private sector entities</b>	Driving innovation through product development, supporting technology transfer, and participating in collaborative R&I projects.
	<b>Civil society organisations</b>	Advocating for societal needs, raising awareness, engaging in co-creation processes, and ensuring inclusivity in R&I initiatives.

Source: European Commission (2024), [Horizon Europe Programme Guide](#).

## 2. EU support and R&I performance in JTF territories

The [Just Transition Fund \(JTF\)](#) recognises the central role of R&I entities by enabling investments in universities and public research institutions and technology transfer<sup>2</sup>. The JTF Regulation also sets out that Territorial Just Transition Plans should ensure consistency with [Smart Specialisation Strategies \(S3\)](#)<sup>3</sup>. S3 guide regions in identifying and developing their unique strengths, ensuring that R&I efforts align with local capabilities and opportunities.

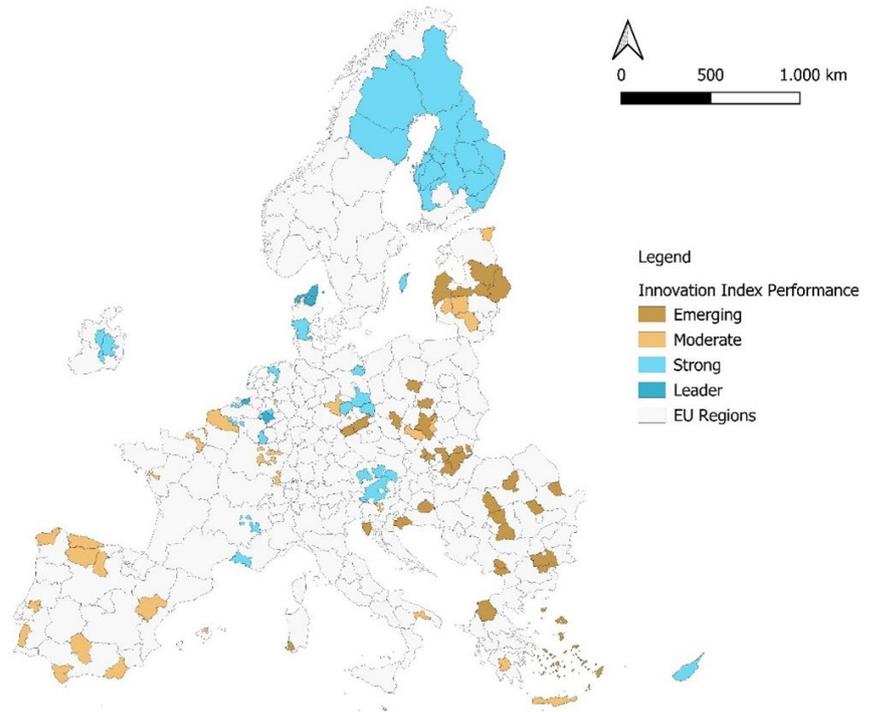
Beyond the JTF, territories can benefit from other EU funds and strategic frameworks to enhance their R&I activities. The [European Green Deal](#) emphasises the role of R&I in advancing sustainable practices across energy, transport, agriculture, and industry. Additionally, National Energy and Climate Plans (NECPs) integrate R&I strategies, ensuring a fair and inclusive

transition towards a climate-neutral economy across the EU. [Horizon Europe](#), the primary funding programme for R&I, has a budget of over EUR 95 billion for 2021–2027, which can be leveraged in JTF territories<sup>4</sup>. The [European Regional Development Fund](#), alongside the [European Investment Bank](#) and [European Investment Fund](#), further support these efforts by financing R&I initiatives and infrastructure projects that align with EU climate goals<sup>5</sup>.

The [European Regional Innovation Scoreboard](#) compares R&I performance across EU Member States and regions<sup>6</sup>. For JTF territories, this assessment helps identify strengths and areas for improvement. Figure 1 shows the scoreboard at NUTS 2 level, applied to JTF territories. The innovation performance reflects that of the broader region where each JTF territory is located.

**Figure 1: Regional Innovation Index for the JTF territories.**

Figure 1 highlights JTF territories with high innovation performance, where there is potential to **strengthen existing R&I activities**, as well as territories with lower innovation performance, where the focus may be on **developing new R&I activities**. Leading territories are primarily concentrated in Northern Denmark and Germany. JTF territories in Sweden and Finland show strong innovation performance, while territories in Northern France, Spain, and Portugal exhibit moderate innovation performance. Emerging innovators are mostly found in Eastern Europe.



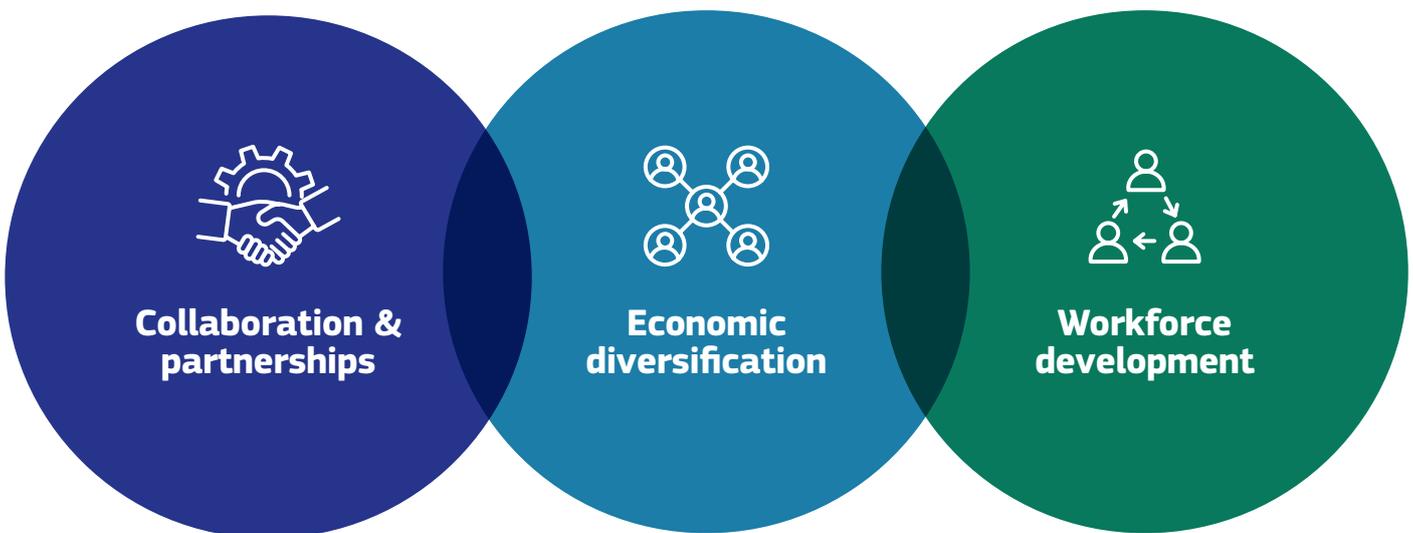
Source: European Commission (2023), Regional Innovation Scoreboard.

**3. The role of R&I in JTF territories**

R&I entities are central to advancing the just transition. Their contributions can be organised around three key focus areas: **(1) collaboration and partnerships** to ensure coordinated and effective solutions for a just transition, **(2) economic diversification to promote resilience**, and **(3) workforce development to reduce unemployment risks**,

as illustrated in Figure 2<sup>7</sup>. The following three sections explore each area in detail, showcasing mechanisms and successful examples from JTF territories. Although each section focuses on a particular area, they often overlap and strengthen each other. Figure 2: Key focus areas of R&I impact for a just transition.

**Figure 2: Key focus areas of R&I impact for a just transition.**



Source: Own elaboration.

### 3.1 Collaboration and partnerships: Driving connections and cooperation

R&I entities play a crucial role in fostering the collaboration and partnerships needed to drive just transitions, not only between various actors, but also across borders<sup>8</sup>. Key mechanisms through which R&I entities can support collaboration and partnerships include:



**Leveraging networks and co-creating knowledge:** Through their networks, R&I entities share valuable knowledge and technologies. R&I entities can connect local, regional, national, and international stakeholders, bringing together industry, government, and civil society. Creating a neutral space allows for diverse perspectives to be heard and ensures that solutions address the needs of the groups involved.



**Turning research into action:** R&I entities help move ideas from the lab into real-world use. By working with industries, they speed up the adoption of new technologies and bridge the gap between research discoveries and their practical application.



**Linking different sectors:** R&I entities can link traditionally separate sectors, such as energy, transport, and manufacturing. Progress in one area can spark advancements in others, driving innovation across industries.



#### **Energy Innovation Centre (EIZ), Lusatia, Germany<sup>9</sup>**

Lusatia's Energy Innovation Centre (EIZ) is an independent research hub designed to foster collaboration between industry and academia to drive advancements in sustainable energy solutions. Working closely with the Brandenburg University of Technology and over 40 industry partners, including energy companies and technology providers, the centre ensures that research is directly applicable to real-world energy challenges. Organised into six interconnected laboratories with specific thematic areas, EIZ addresses both global and regional energy transformation issues by strengthening Lusatia's technological leadership

and nurturing its start-up ecosystem. This collaboration harnesses academic and engineering expertise to accelerate the practical adoption of climate-neutral technologies.

*The EIZ is funded by the German Federal Ministry of Education and Research, which has committed up to EUR 84 million over 10 years, and by the Investment and State Bank (ILB), which is providing an additional EUR 18.5 million for new laboratory infrastructure.*



#### **Just Transition Institute Greece (JTIG), Western Macedonia and Megalopolis, Greece<sup>10</sup>**

Founded in 2020 in Kozani, the Just Transition Institute Greece (JTIG) is a non-profit civil partnership that engages with institutions, companies, employees, and citizens to shape the future of the lignite territories of Western Macedonia and Megalopolis. The JTIG promotes collaboration and networking to support sustainable development. The JTIG advances projects in green energy, smart agriculture, sustainable tourism, and the digital economy. It also provides education and training for displaced workers and the unemployed, empowering local communities for a resilient transition. Additionally, the JTIG is part of the Just Transition Living Lab, alongside the University of Western Macedonia, businesses, local government, academic researchers, and

civil society. The lab organises co-creation workshops, joint research initiatives, and public-private partnerships to bring together diverse stakeholders around the just transition. This approach facilitates the development of region-specific solutions in areas such as green energy, social innovation, and entrepreneurship, ensuring active involvement and shared ownership. Through these efforts, the JTIG promotes a collaborative approach towards a sustainable and prosperous future for the affected territories.

*The JTIG is financed through a combination of Horizon Europe funding such as the [Coalition Project](#), and other collaborative efforts supported by EU and regional initiatives.*

### 3.2 Economic diversification: Catalysing new industries

In JTF territories, R&I entities can best contribute to economic diversification by focusing on local needs and collaborating with industry to bring new technologies to market<sup>11</sup>. This can also support the development of regional specialisations, fostering

sustainable growth and reducing dependence on carbon-intensive sectors. Key mechanisms through which R&I entities can support catalysing new industries are:



**Driving innovation in new sectors:** R&I entities drive innovation by developing new technologies or educational courses in emerging economic fields. This can shape new industries and help territories build more diverse and sustainable economies.



**Attracting investment:** Innovation makes territories more appealing to investors, bringing in funds and resources that support economic growth<sup>12</sup>.



**Enhancing competitiveness:** By connecting local industries with global research and trends, R&I organisations make territories more attractive to skilled workers, students, and businesses, strengthening their overall competitiveness<sup>13</sup>.



**Supporting businesses:** R&I entities can support small businesses or startups through business incubators, technology parks, and university spin-offs. These mechanisms foster local entrepreneurship, innovation, and economic diversification, which are essential for a just transition<sup>14</sup>.

- **Business incubators:** Provide office space, mentorship, and networking to help new businesses succeed and grow. *For more information about business incubators, please refer to: [The role of business incubators in a just transition: A case study highlighting good practices](#)<sup>15</sup>.*
- **Technology parks:** Bring together companies and research institutions to develop and share technology, creating new economic activities.
- **University spin-offs:** Transform academic research into new products or services, creating innovative businesses that contribute to sustainable growth and employment.



### Bioeconomy 360° Hub, Megalopolis, Gortyn, Oichalia, and Tripoli, Greece<sup>16</sup>

The Bioeconomy 360° Hub will operate in the municipalities of Megalopolis, Gortyn, Oichalia, and Tripoli. Its aim is to revitalise local businesses through sustainable, circular, and organic agricultural practices. Led by the University of the Peloponnese, the hub seeks to establish a collaborative network involving enterprises, research organisations, design intermediaries, municipalities, and civil society. This partnership focuses on innovation within the bioeconomy sector, harnessing the transformative potential of Industry 4.0 to enhance economic value and foster a sustainable future for the territory. Acting as the project's scientific lead, the University of the Peloponnese catalyses new industries

by installing demonstration facilities, fostering business development through incubators, enhancing research collaboration, creating digital platforms, offering industry-aligned scholarships and internships, and investing in research activities across smart agriculture, biotechnology, and energy management.

*The Bioeconomy 360° Hub is among the first investments financed by the Just Transition Mechanism in the region. It is funded by the JTF and additionally supported by the Invest EU Just Transition Scheme and the Public Sector Loan Facility.*



### Gaming and Technology Hub Katowice, Poland<sup>17</sup>

Katowice has transformed into a thriving economic centre focused on new technologies, information technology, and service production, including a strong presence in gaming and e-sports. Building on this, the Katowice Gaming and Technology Hub is set to commence operations on a former mining site by mid-2026. By hosting virtual reality research laboratories, recording and TV production studios, training facilities, and e-sports competitions, the hub aims to nurture the digital industry. The hub will support startups and boost innovation and entrepreneurship, and attract more investors by tapping into the potential of the local labour market. The presence of 11 university gaming courses and more than 50 companies in the sector makes the area particularly suitable for technological and creative innovation. The project builds on the expertise of

existing R&I entities, such as the Academic Consortium Katowice – City of Science, the Innovations Centre Erasmus+ InnHUB Katowice, and the Silesian Festival of Science. The collaboration with local universities plays a crucial role in providing targeted training, through which software developers are being trained as cybersecurity and information and communication technology experts. Through these efforts, the Gaming and Technology Hub seeks to drive job creation and reinforce Katowice's transformation into a modern, innovative economy.

*The Hub is financed through the JTF, with a total project value of PLN 617 million (approximately EUR 144.7 million), including co-financing of PLN 309 million (approximately EUR 72.6 million) provided by the City of Katowice.<sup>18</sup>*

### 3.3 Workforce development: Equipping for the future

In JTF territories, R&I entities are pivotal in aligning regional specialisations with future workforce needs. By synchronising their evolution with regional visions, they ensure that educational programmes and skill development initiatives are tailored to emerging industries, fostering a workforce ready to meet new economic demand<sup>19</sup>. For JTF territories, key mechanisms through which R&I entities support workforce development include:



**Designing tailored training:** R&I entities can work with local governments and industries to design training programmes that helps to respond to market demands. By focusing on local labour market needs, they ensure workers are prepared for roles that support economic diversification, through the transition.



**Supporting lifelong learning:** In territories undergoing significant industrial change, continuous learning is essential. R&I entities offer flexible certifications and courses so workers can update their skills and stay competitive in new industries.



**Industry partnerships:** Collaboration between businesses, industry, and R&I groups ensures training courses meet current market needs. This alignment not only enhances employability but also creates direct pathways to future job opportunities by fostering connections between trainees and potential employers.



**Countering brain drain:** R&I entities create opportunities for young people to train and work in future-focused industries, reducing the outflow of skilled workers, known as ‘brain drain’. This keeps skilled workers in the area, strengthens the local economy, and supports the long-term stability of JTF territories.



#### Life Environment Research Centre Ostrava (LERCO), Czechia<sup>20</sup>

The Life Environment Research Centre Ostrava (LERCO) is a new research hub transforming the Moravian-Silesian JTF territory from a coal-dependent area into a centre for health, innovation, and sustainable employment. LERCO develops degree programmes tailored to local industry needs, focusing on healthcare and non-industrial sectors to build a resilient workforce. Bringing together nine research teams across biomedical, natural, and behavioural sciences, LERCO collaborates with commercial partners to create research-driven job opportunities and spin-off companies. By linking

academic research with industry, LERCO provides hands-on training and advanced programmes that equip young people with essential skills, helping to retain talent, diversify the economy, and support a sustainable, knowledge-based future.

*Approximately 1.57 billion CZK (EUR 64.1 million) is financed through the JTF. Support from Czechia's state budget and contributions from the participating institutions bring the total project budget to approximately CZK 1.85 billion (EUR 75.5 million)<sup>21</sup>.*



#### Petrosani University (UPET), Romania<sup>22</sup>

The R&I ecosystem in the Jiu Valley includes a key state-owned entity, the University of Petrosani (UPET). UPET plays a crucial role in workforce development for Romania's Jiu Valley, a territory historically reliant on coal mining. The university has joined several R&I partnerships, including collaborations on robotics with local high schools and initiatives for postgraduate and university programmes focused on renewable energy production systems. It supports local skills development in emerging sectors, such

as timber processing, electronics, robotics, and battery technologies. UPET is also part of [EURECA-PRO](#), a consortium of nine prominent European universities with a long-term goal to establish a global educational hub and become an interdisciplinary R&I leader in responsible consumption and production of goods and resources.

*EURECA-PRO has secured Erasmus + funding for the second phase of implementation from 2023-2027<sup>23</sup>.*

## 4. Lessons learned

- **Ensure early stakeholder engagement:** Involve R&I entities, industry, government, and civil society from the outset to co-create transition strategies that reflect local needs, ensuring smoother and more inclusive outcomes.
- **Tailor innovation to just transition needs:** Utilise JTF resources to align R&I efforts with the territory's just transition priorities. In JTF territories, varying levels of innovation performance can help shape targeted intervention strategies: in leadership territories, strengthening existing structures and networks may be key, while in emerging territories, the emphasis could be on establishing new R&I capacity to support the development of new green sectors.
- **Align R&I efforts with industry and regional plans:** Facilitate collaboration between R&I entities and local industries to ensure R&I initiatives are practical and aligned with regional needs. This alignment helps drive economic diversification and job creation, enhancing the territory's resilience to transition-related changes.
- **Foster cross-sector innovation:** Leverage R&I expertise to act as a bridge across sectors by establishing collaborative platforms, providing research activities, and aligning stakeholder objectives. Through activities such as joint demonstration projects and innovation hubs, R&I entities can co-create solutions that integrate advanced technologies and new business models, accelerating transformation across various fields.
- **Facilitate investment for economic diversification:** Establish collaborative R&I hubs that showcase cutting-edge R&I potential, making the territory more attractive to external investment. Promote local entrepreneurship through business incubators and support the commercialisation of research through university spin-offs. By developing these initiatives, R&I entities contribute to economic diversification within the territory and build long-term resilience.

## Key resources

- The session, [Universities as key actors of just transition at regional level](#), hosted at the 8th Just Transition Platform Conference, explores the role of universities and other research or educational institutions in supporting and facilitating a just transition at the regional level.
- The [research and innovation for the European Green Deal](#) website outlines the role of R&I in the European Green Deal, Horizon Europe, and its green missions and partnerships, featuring successful EU-funded projects<sup>24</sup>.
- [The Research and Innovation Scoreboard](#) provides innovation indicators. For each region, entities can access data on a variety of indicators, such as R&I expenditure in the business sector and small and medium-sized enterprises introducing product innovations<sup>25</sup>.
- A literature review on [higher education institutions, community engagement, and just transition](#) explores academic and policy papers, as well as examples of good practices implemented by educational and research institutions. It examines the potential roles of higher education institutions in local and regional development in Ireland, particularly in County Offaly<sup>26</sup>.
- The [toolkit on vocational and educational initiatives to re- and upskill workers](#) presents tangible examples of skill development programmes led by public authorities, educational institutions, corporate entities, multi-sector partnerships, and grassroots initiatives across Europe<sup>27</sup>.

This document was prepared by researchers at Ecorys based on desk research and written input from stakeholders. Any information and views contained in the present document do not reflect the official opinion of the European Commission. Reuse is authorised provided the source is acknowledged.

This document is part of a series presenting information and lessons learned on policy approaches at national, regional or local level supporting a just transition to a climate-neutral economy. The Just Transition Platform (JTP) assists EU Member States and territories to unlock the support in this transition. Visit the [JTP website](#).

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