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Vocational and educational initiatives to re- and upskill workers

A catalogue for just transition regions

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Vocational and educational initiatives to re- and upskill workers – A catalogue for just transition regions

Contents

Aim and scope

This catalogue provides tangible examples from public authorities, educational institutions, corporate-led programmes, multi-sector partnerships and bottom-up initiatives all across Europe of skill-development, vocational and educational programmes to educate, reskill and upskill coal+ and carbon-intensive workers and populations. They demonstrate replicable solutions for **how other Just Transition Fund (JTF) regional** practitioners might adopt the very spirit of the **European Year of Skills** to facilitate new knowledge and skills in a way which can empower whole communities.

Who is this toolkit for?

This catalogue is aimed at public authorities and other relevant stakeholders in JTF regions. It may be of particular interest to local and regional governments and those operating educational and/or vocational programmes.

Introduction

More than two centuries ago the first Industrial Revolution proved the catalyst for countless carbon-intensive activities – mining of coal, energy generation, production of metals and manufacture of chemicals – that resulted in European regional development where fossil fuels were accessible and abundant. Now as the world transitions away from fossil fuel use to mitigate climate change and its effects, those regions – and within them communities that owe their very existence to an indigenous fossil fuel - are in real danger of being left behind by that green tide. For them the reliance on fossil fuel production and carbon-intensive industry that needs to be decarbonised has transitioned from an asset that has sustained generations to a potential liability that threatens their sustainability.

Universities as key drivers for long-term structural change

Universities are an important source of research and future workers. While targeted research can be beneficial to JTF territories, training young people for new and growing industries in JTF regions is vital to the regions' success and longevity.

Of course, the real draw for JTF regions are the iterative benefits of universities, especially when they adopt a strategic approach to defining and updating study programmes targeted at reducing, or even overcoming 'brain drain'.

Though there are many forward-thinking examples of educational institutions across Europe, two that stand out are Cologne's University of Applied Science (TH Köln) near the German JTF territory of the Rheinisches Revier and the University of Western Macedonia (UoWM) in the Greek JTF region of the same name. Both universities have realised that students across Europe, and even worldwide, are interested in sustainability-oriented coursework and degree programmes. They recognise that academic offerings like green energy or circular economy are attractive, and are an opportunity for universities and regions to shape and retain potential workers

Both universities come from areas that have historically been reliant on coal mining, energy production and (heavy) industry. Germany has committed to phase out coal by 2038 and Greece by 2025. Phase outs will have severe employment effects in both regions if not managed well. Both academic institutions have increased course offerings that give students a future-thinking direction contributing positively to the just transition. Meanwhile, UoWM is greening itself in line with reforming its curricula to place a stronger emphasis on greentech and other futureproof sectors.

TH Köln is expanding its scholastic options into a nearby JTF territory with a focus on teaching the science of transformation within a living lab of a region in transition. TH Köln is expanding its scholastic options by opening a large, new campus nearby, within the Rheinisches Revier itself. Its intended focus is on teaching the science of transformation within a living lab of a region in transition, thereby supporting their intended coal phase-out by 2030. The regional development agency for the Rhenish lignite mining area is a key platform managing the structural change, but still a lot of work must be done to ensure a just transition. Once the new campus is opened, the aim is for 2000 students to be able to focus themselves especially onto subjects of high interest and directly applicable in practice to this region itself, namely: sustainable spatial development and infrastructure systems, including an emphasis also on geoinformatics.

- In addition to modern classrooms and laboratories, the campus will also synergise with existing and emerging enterprises (in the area) and support the development of startups and spin-offs from research, making this campus a central component of the eventual transformation of the mining region into the "Innovation Valley Rhineland". As part of this programme, TH Köln is contributing its expertise in more than 30 project outlines developed by researchers for the structural change of the area.
- The university's long-term goal is to create a new generation of specialists conversant in diverse aspects of structural change, but also able to learn from real-life scenarios around them for making just transition a reality. They will prepare students in an integrative approach of no longer considering and working on the fields of spatial planning and infrastructure systems separately from each other. Spatial planning creates the framework for sustainable development in which the transformation of infrastructure systems must take place.

Meanwhile in Western Macedonia, the UoWM has ambitions to become the first green Greek university and demonstrate in practice that "life after lignite" is worthwhile. In part, this is about putting theory into practice, by switching towards green energy (for heating, cooling, electricity and transportation), but this is not the end of this university's transformation.

- Coursework taught on their campuses are also moving away from previously rather-dominant subjects related to mining and coal-based energy production to instead attract students towards green energy production, greentech and sustainability topics.
- The university involves students in several projects in the pipeline to help achieve the net zero energy consumption. These include a new Energy Competence Centre (in collaboration with multiple sectors) with the aim to support and promote innovation, entrepreneurship and sustainability of enterprises that operate in the energy sector. Projects are mainly related to the renovation of buildings, RE installations, smart grids, etc. and have different funding sources, including European funding. They are meant to be technologically-minded, stimulate green innovation and entrepreneurship, and teach students to address socio-economic and policy aspects as well.
- Another great example is the UoWM's new department of Regional Development and Cross-Border Studies, which aims to educate students to be able to holistically manage the region's transition (from the perspective of multiple sectors),

but it also does so with a distinct focus on their triple border with Albania and North Macedonia, which each have their own (similar) just transition challenges and opportunities, many of which are worth cooperating on jointly. As an integral part of their degree, students acquire an extensive knowledge of the local, regional, national and global environment of development and cooperation, and with an emphasis on the design and implementation of policies within the framework of European Territorial Cooperation.

In partnership with the Chemelot Circular Hub, Maastricht University has launched the world's first Circular Engineering Bachelor's programme, and a Sustainable Manufacturing Master coming soon, invites lecturers from nearby companies. Meanwhile, Learning Labs and a "Circular Space" allow for practical experimentation and innovative interactions between students and the business community, and a Talent Office aims to steer youth across Limburg towards relevant jobs. To learn more please take a look at additional JTP publications and case studies here.

Building a pipeline to bring new talent into existing industries

Though formal education oriented towards youth can help prepare them to join new sectors, as in the previous examples, there is still a need to make sure that a competent workforce exists for those industries which will remain, even as they undergo transitions. Steel is known for being a difficult industry to decarbonise, though technology to decarbonise steel is becoming more efficient and viable, augmenting the importance of upskilling current workers and training new ones. As such, many manufacturers are turning to innovative programs and techniques to more effectively orient themselves and their current/future employees towards greener, more sustainable versions of their industries.

One such example is the GREENSTEEL Academy, a joint partnership between the Romanian Liberty Steel company in Galați, a JTF territory, and the local Dunărea de Jos University. Considering that Galați is home to the largest steel production area in Romania and remains one of the country's largest employers, a smooth transition is of the utmost importance.

Working at multiple levels, the Academy's aim is to stimulate students' eagerness to pursue a green-steel career primarily taking advantage of a dual-learning approach.

- University students are trained in various modules by lecturers in classrooms and by company experts for hands-on and on-site experiences. They are still taught about traditional steel making, but now within the context of climate change also comprehend the need and viable pathways for the industry to evolve towards carbon-neutral production.

- The university also recently announced a new two-year programme for graduates to empower young professionals to become change-makers and managers within the company. The programme will equip students with managerial skills, leadership and career paths, enabling them to support the company to successfully decarbonise and innovate by 2030.

These new approaches were inspired by over a decade of similar initiatives administered through the company's summer school/internship programme. Since its launch in 2012, around a thousand high school and university students have taken part in specialty training sessions, half of whom graduated from the entire programme with internships, and around 150 of whom went on to become company employees. In realising the importance of engaging young people, the steel plant also offers several iterations of a practical traineeship programme and multiple educational workshops aimed at engaging technical high-school students interested in pursuing Science, Technology, Engineering and Mathematics (STEM) studies with a green-tech focus.

Given the company's success in all these (dual) educational initiatives, Liberty Steel intends to replicate many of these university, high school and current-employee skills programmes in some of the other locations where it operates (i.e. Czech Republic, Poland and North Macedonia). Their goal is to motivate and retain as many skilled employees as possible to ensure that their workforce of today can implement the needed changes for tomorrow.

Such forward-thinking initiatives demonstrate that industries have realised the importance of fostering an educated workforce aligned with green industry developments and energy transition pathways. They understand that a successful pivot towards a greener future includes nurturing new and current employees to be prepared to shape the transformation themselves.

Fostering "green collar" skills for the transition

Though the previous Romanian example highlights ways that the just transition can be applied to decarbonising industries which will remain active, there is also a distinct need to accelerate workforce development via so-called "future-proof" skills. To a large degree, this means forward-thinking industries which are oriented towards fields such as digitalisation, green tech, circular economy, etc.

In many respects, much of the focus on skills development within a just transition context is focused on "blue collar" workers, who make up a majority of those most at risk from the transition, though "white collar" employees should also not be left behind. Given the definite emphasis on sustainability across the EU, it would be meaningful to highlight ways that certain countries are working to upskill all types of workers to become "green collar" workers and ensure a steady influx at all levels into emerging sectors.

The Green Tech Academy of Austria (GRETA) can be considered as a laudable example, as it offers a rather broad selection of opportunities particularly benefiting residents of Styria, part of the Austrian JTF territory. It actually has largely emerged as a spin-off from the Greenovet project (which itself features further education-related learnings in Finnish, Macedonian and Portuguese regions), but GRETA's own consortium of six educational and vocational institutions in the region responds to diverse needs of various types and ages of students seeking initial education or continued-learning opportunities.

GRETA itself ultimately counts on more than 2300 researchers from both the private and public sectors to conduct research and contribute to the educational/certification opportunities. It offers a variety of options for new and returning students, such as:

- Practical professional certifications (e.g. Photovoltaic technician);
- Advanced Master's programmes (e.g. green energy management, social business, future mobility, sustainable production, etc.);
- Executive studies (e.g. Twin Green & Digital Transformation executive MBA);
- A training series for secondary school teachers oriented towards environmental topics;
- Courses helping to qualify (company) participants in waste management, (corporate) responsibilities for sustainability, small-/medium-town planning, renewable energy community development and other topics; and
- A potential portfolio of individual lectures, workshops or innovation camps for groups (of company employees).

As seen by the variety of opportunities available, GRETA represents a solid example of how different sectors, in this case particularly academia and private businesses, can cooperate to establish an effective ecosystem for lifelong learning which inspires young people and established employees to find their way towards a greener future.

Meanwhile, in other parts of Europe, the "Keep It Local" programme presents another interesting example of "green collar" development. The Danish wind turbine company Vestas and the EDP Renewables unit in Spain, are cooperating on a socially mindful vocational training programme to help ensure a steady influx of competent workers, especially in remote regions where they are most active.

Their joint programme explicitly aims to train youth in areas in which wind farms are being deployed. This corporate-led initiative began in Spain, but has since expanded to Italy, and consciously targets those windy and rural areas where Vestas and EDP are most active. These regions often suffer from "rural flight" due to a general lack of employment options, and higher-level educational institutions and professional opportunities typically exist only further away in larger cities.

In order to help reverse some of the "brain drain" that these areas often experience, the companies together offer scholarships and training to become a Wind Farm Maintenance Technician. 18-30 years old who have completed a secondary education and are living in designated areas where the companies are active may be eligible to apply. Enrolled applicants receive 181 hours of training combining theoretical instruction and a few days of on-site practical experience, including certification in health and safety:

- Initially launched in 2021, and annually since then, representatives from the Spanish Wind Energy Association facilitate a six-week (mostly-online) course for participants, including from most Spanish JTF regions; and
- The newest programme began in 2023 in Italy, and is led by the non-profit Elis, for a five-week course first held in Rome and focused on windy areas all across southern Italy, including near both Italian JTF territories.
- Those who complete the programme are automatically considered within both companies' recruitment processes in an effort to share immediate benefits to both participants and the companies. For example, within half a year of completing the inaugural programme in Spain, already a third of those initial participants were hired, and within a year and a half had become wind sector employees. The programme demonstrates that training with a path to employment can be an effective tool for upskilling and job growth, all while helping communities to retain homegrown and economic opportunities.

The examples featured here demonstrate that JTF territories have future-oriented options for educational and vocational progress. The multi-stakeholder approach demonstrated by GRETA, even if rather robust, is not necessarily unique. Likewise there is no real reason that the "Keep It Local" programme could not be replicated for other countries, or even exclusively for green energy – the programme itself has already proven this feasibility in Italy.

The Cypriot Territorial Just Transition Plan (TJTP) recognises the challenges expected by the energy transition and the need to diversify the Cypriot economy, emphasising green economic activities and appropriate training of the country's human resources. Due to the lack of relevant education programmes, one of the flagship projects that the JTF will fund in Cyprus is the construction of the Green Technical School in Nicosia. The school will focus on a curriculum related to green development and will have all the necessary equipment and laboratories needed to train young people in green technologies and skills, filling a gap in the country's existing secondary education. The construction of the school will start in 2024 and completion is foreseen for 2027.

Reskilling and upskilling for the whole community

Work currently being done in the Irish Midlands is a positive example of a government-led approach to help a community striving to rebound from carbon dependency, in this case the extraction of peat for energy production. The ultimate aim is to offer viable educational opportunities and career training to those in need across these communities. Using blended funding from the Irish JTF and Ireland's Carbon Tax Fund, regional Education and Training Boards (ETBs) have been set up to offer a variety of options to a diverse set of residents, including those most affected by the transition away from peat as well as those struggling to remain afloat in affected communities.

In general, better educational and vocational options are sorely needed in the Midlands, an area comprising nearly 10% of the country, dominated by the peat industry, and subject to higher than average rates of poverty during the industry's decline since the 1990s. Data from the last Irish census (in 2016) shows that twice as many adults (than the national average) have only a primary-level education in many areas with peat-focused economies. At the same time, only a third (compared to the national average) of residents in these same communities have a university or similar level degree. Because unskilled labour was often sufficient for many peat sector jobs, educational investments were neglected.

To encourage growth within the Midlands and allow local workers to compete successfully with their counterparts nationally and abroad, new educational opportunities and retraining are urgently needed, especially in "green collar" fields. An intentional focus has been placed on offering retraining and support opportunities to a broad spectrum of workers, their families and the wider community. The ETBs in the Midlands have been established to help coordinate opportunities applicable for young people, those (already/formerly) in the workforce and other residents, including the following:

- Training support (e.g. frequent open-advice days and tailored skills analyses);

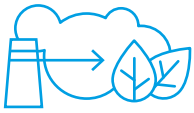
- Further Education and Training (FET) Centres to encourage youth and enable adults to return to a kind of education which suits their own vocational needs;
- Apprenticeships, trainings and reskilling for numerous topics: peatland rehabilitation, craftsmanship (e.g. bike engineering, culinary training and clothing design), sustainable agriculture (as well horticulture and biodiversity) or professional positions (e.g. management, remote work or heavy vehicle transport);
- Upskilling and certification at the National Construction Training Centre and Demonstration Park, including the use of digital tools and in aspects related to infrastructure and retrofitting for net-zero and low-carbon buildings (e.g. insulation, photovoltaics and heat pumps);
- Programmes supporting self-employment and new businesses, including via the Local Enterprise Office's "Start Your Own Business" initiative;
- Specialist-upskilling at the Midland Skills Centre, including in the fields of bio-pharma and medical technologies; and
- A new ETB partnership recently established with the Technological University of Shannon providing further diverse opportunities, as well as even more apprenticeships, which can benefit younger and older learners alike.

Skills for an active future despite closures

Portugal is one of an unfortunately few number of countries which has already phased out their own use of coal in thermal power plants (Médio Tejo power plant was the final one closed, in late 2021) – eight years ahead of schedule from the country's 2030 commitments. Now Portugal is using its JTF resources towards efforts to rebalance and diversify the economies of all three Portuguese JTF territories as well as tackling related socio-economic challenges in these regions, including education and available skills.

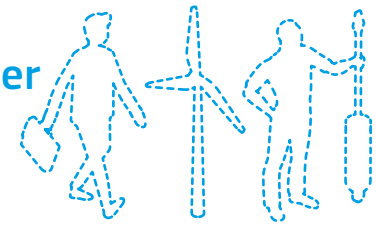
In Alentejo Litoral, situated along the Atlantic coast, the 2021 closure of the local power plant (the country's largest) eliminated around 330 jobs in Sines and 100 more in the town's port (together representing roughly 8% of local residents), as well as indirectly affecting many others in the rest of the region.

In Alentejo Litoral, Portugal, former power plants workers are offered:



200 new 'green collar' jobs for former power plant workers

tailored career pathways



knowledge, financial & psychological support

JTF funding appropriated for this territory has also been earmarked to support the creation of around 200 new ("green collar") jobs and provide job opportunities to former power plant workers through re-/up-skilling activities. Assistance can also be provided for those who choose to seek self-employment or innovative entrepreneurship (through a new business incubator, which also includes capacity-building elements to its programme).

One advantage of having a relatively smaller group of remaining workers requiring new skills is that they can be more individually targeted for retraining, for which EDP has co-developed an innovative just transition programme called Sines' Active Future.

- As a key first step, the main developmental opportunities of the region were analysed as part of a socio-economic assessment by two Portuguese universities (Évora University and the Superior Technical Institute) and factored into what the best employment outcomes for retrained employees might be.

- Individual interviews with workers also fed into the creation of tailored career pathways based on their own interests and abilities (e.g. training related to solar or wind turbine installations).

Meanwhile, a new Local Office for Social Referral was established by the local government and the Institute for Employment and Vocational Training to provide social support for workers and their families. Its services include employment support and relevant training, but also psychological counselling.

Slovakia's JTF region of Upper Nitra provides another good example of an effective re-skilling programme. Although Upper Nitra's mining activities contribute a rather small share to the national economy, it still has been a major driver at the regional and local levels, with nearly four thousand employees in 2018 when the closure decision was made. For this reason, the country's JTF includes investments into vocational training and support programs. This educational orientation is particularly important considering that Slovakia suffers from the EU's highest rate of low-qualified people lacking employment.

Even though ~40% of these workers are near retirement age, a programme developed by regional authorities and supported by national and local policymakers, was launched in 2019 and aimed at helping miners and colleagues to reskill themselves (e.g. through sponsored retraining and qualification courses, as well as personal skills like financial literacy or public speaking). The programme provides wage compensation for a half-year period, and guides participants through a series of group sessions, personalised tutoring, job-search assistance and counselling services (e.g. mental health and legal advice) at three contact centres in the region.

At the same time, a series of dual-education opportunities have arisen with contributions of other actors. Though these tend to be more of benefit to younger generations, vocational schools have co-developed new programmes with companies already in the region (e.g. automotive suppliers, food processing or tourism).

Though currently not pursuing a full closure, there are interesting lessons for the carbon-intensive sector in the approach taken by the Acciaierie d'Italia Steel Plant in Taranto, Italy, as it reduces its own production levels. It remains not only the largest steel plant in Europe, but also one of the oldest and most polluting. Considering that it employs thousands of people, and represents the economic foundation for communities across the region, a skills-oriented economic diversification strategy was seen as a high priority for funding within the wider just climate transition plan in Italy.

Given that a third of all industrial workers in Taranto work for the plant, funds have been mobilised for over 4,300 workers to receive training for jobs in greener steelmaking, but also "green collar" fields outside the company, like clean energy and circular economy. This has resulted in the establishment of skills-hubs and -accelerators, as well as SME-oriented service centres, all meant to help develop and synergise workers' (new) skills to be in line with emerging sectors like aerospace, green energy (e.g. wind turbines, geothermal plants, proposed hydrogen production) and restoring degraded land and infrastructure to provide natural and cultural space benefitting the whole community.

To learn more about the role that social actors have played in Taranto's just transition, readers are also encouraged to read another JTP publication devoted to it, found within the JTP Knowledge Hub.

Higher-level frameworks for enabling education and skills

Concrete examples of vocational initiatives and training programmes which have been highlighted in previous sections are meant to serve as inspirational initiatives which other JTF regions and sectors might replicate on the ground. At the same time, it is also important to highlight higher-level efforts which have the potential to act as important enablers to augment re-/up-skilling, vocational training, etc. even further, and possibly layout a framework for doing so in a more systematic manner.

Sweden's three JTF territories are focused on how decarbonisation policies will affect heavy industries, such as metals and minerals sectors, and what it means for those communities and employees dependent on them. Workers in those sectors have benefited from a recent pair of collective agreements negotiated by national social partners and backed up by legislative acts which are valid across multiple sectors. Each intensely focuses onto bolstering educational opportunities for different types of employees, thereby assuring that workers across the country benefit, e.g. through financial support for both shorter and longer courses. The overall aim is to foster a countrywide culture of lifelong learning, with a component being the enshrinement of an individual's right to training which enhances their skills and employability, as well as support for workers' professional mobility to transition well from one job to another. The agreements are applicable not only to long-term employees with permanent contracts, but now also medium-term workers with fixed contracts and even those who are between jobs. Separate non-profit entities provide counselling services dedicated to re-/up-skilling people for either white-collar (TRR) or blue-collar positions (TSL).

What makes the programme robust is that the legislation enacted by Sweden's Riksdag parliament not only provides a legal framework outlining rights, but even establishes a dedicated financial support scheme. It also enables Swedish workers to exert a higher level of autonomy in shaping and defining a transition just for themselves.

- Workers taking part in such recognised full-time studies may receive "education support for transition" covering up to 80% of their net income (within limits, of course) over the course of two semesters, and a possible extension for one additional semester.
- Part-time studies are also allowed, providing reduced income from the grant, but over longer durations.
- Workers may also be eligible for additional small loans, such as "complementary study aid" which provides compensation on top of "transition support aid" covering a share of reduced income for the same period.

Meanwhile, all these new schemes remain in addition to employers' other legal obligations before these new agreements and legislation, namely that companies must still cover the costs for any (obligatory) training and skill development.

Embracing the green tide

This catalogue highlights initiatives that should give policy-makers and all types of decision-makers at multiple levels food for thought.

Although public authorities should certainly play a strong role in leveraging educational opportunities' ability to enhance the just transition (e.g. Higher-level frameworks for enabling education and skills), it is not only public entities which need to do their share. Many companies, including those mentioned in earlier chapters have already realised that it is both ethical and economically beneficial to support their employees' transitions in-line with just transitions. The results can include new

generations of competent workers coming in (e.g. in Building a pipeline to bring new talent into existing industries or Fostering "green collar" skills for the transition) new, innovative fields (e.g. in Skills for an active future despite closures). Businesses and industries can contribute to the just transition alongside public authorities.

Of course, considering the educational nature of the approaches discussed here, learning institutions ought to play an instrumental role within the just transition. Some universities have already demonstrated that they can leverage their own history and infrastructure, even their own location within JTF regions, to stimulate and shape the change-makers of tomorrow (e.g. in Universities as key drivers for long-term structural change). They might even be able to augment their own depth and breadth of learning opportunities if they cooperate amongst themselves and/or other sectors (e.g. in Fostering "green collar" skills for the transition or the Universities as key drivers for long-term structural change). At the same time, the example from Reskilling and upskilling for the whole community demonstrates that established universities are not the only centres of learning which can create new modes of learning and training to provide a broad set of "green-collar" skills-programmes to communities affected by the transition.

As can be seen, diverse types of sectors and actors can lead or contribute to strategically-oriented educational programs. The key question is to determine which kind of programs, implementers, and leaders are right for a specific JTF region.

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 regions to unlock the support in this transition. Visit the JTP website.

Endnotes

- European Commission. Just Transition Platform.
- European Commission. European Year of Skills.
- Ministry of Economic Affairs, Industry, Climate Action and Energy of the State of North Rhine-Westphalia. EFRE/JTF-Programm Nordrhein-Westfalen 2021-2027.
- Greek Government. Just Transition Development Plan.
- Cologne University of Applied Sciences. Das Projekt Campus Rhein-Erft der TH Köln.
- University of Western Macedonia. Life after lignite: The example of the University of Western Macedonia.
- University of Western Macedonia. Department of Regional and Cross-Border Studies.
- Maastricht University. Bachelor: Faculty of Science and Engineering: Circular Engineering.
- Chemelot Innovation and Learning Labs. Circulair leven, werken en ondernemen.
- Brightlands Chemelot Campus. Brightlands Circular Space included in 'Duurzame Materialen' growth-fund proposal.
- Brightlands Chemelot Campus. Chemelot Talent Office.
- Liberty Steel Group – Romania. Course module: Discover GREENSTEEL.
- Liberty Steel Group – Romania (2023). LIBERTY launches the GRADUATES programme.
- European Commission (2022). EU Cohesion Policy: €2.14 billion for a just climate transition in Romania.
- Green Tech Academy of Austria. Green skills for the future.
- Austrian Conference on Spatial Planning. Fonds für einen gerechteren Übergang (JTF).
- GreenoVET. A sustainable future with green innovation.
- Graz University of Technology (2022). Neue Green Tech Academy Austria: GRETA macht Unternehmen fit für den grünen Wandel.
- EDP Renewables. Keep it local.
- EDP Renewables (2022). EDP Renewables and Vestas launch a new edition of 'Keep it local' to drive employment in rural areas.
- Spanish Ministry for the Ecological Transition and the Demographic Challenge. Transición Justa.
- Italian Agency for Territorial Cohesion. Just Transition Fund.

- European Commission (2022). EU Cohesion Policy: More than €1 billion for Cyprus for economic and social development and a fair green transition in 2021-2027.
- Eastern and Midland Regional Assembly. EU Just Transition Fund in Ireland.
- OECD (2021). A credible carbon tax trajectory for Ireland.
- Midlands Ireland. Education and Training Boards.
- Offaly Express (2022). Skills training critical for Offaly's 'just transition' from peat economy.
- Further Education and Training Course Hub. Main page.
- Mount Lucas. National Construction Training Centre.
- Ireland's Local Enterprise Office. Start Your Own Business Programme.
- Laois & Offaly Education and Training Board. Midlands Skills Centre.
- Tipperary Education and Training Board (2023). TUS and Tipperary ETB sign commitment to enhance region's education and training opportunities.
- Energy Monitor (2022). What Europe can learn from Portugal's accelerated coal exit.
- European Commission (2022). EU Cohesion Policy: €223.8 million for a just climate transition in Portugal.
- Portugal 2030. Main page.
- Institute for European Energy and Climate Policy (2022). Measures to address the policies' impacts on low-income households in the target countries.
- EDP. Sines' Active Future – NAU.
- University of Évora & EDP (2022). Executive summary.
- World Economic Forum (2021). Futuro Ativo Sines Programme, Portugal.
- European Economic and Social Committee (2023). Energy policy and the labour market.
- Centre of Social and Psychological Sciences (2018). Coal region in transition: Energy, jobs and wealth in Horná Nitra, Slovakia.
- Joint Research Centre (2018). Socio-economic transformation in coal transition regions: Analysis and proposed approach – Pilot case in Upper Nitra, Slovakia.
- European Commission (2022). EU Cohesion Policy: €1 billion for a just climate transition in Italy.
- EuroMetal (2022). Acciaierie d'Italia to receive EU funds to decarbonise.
- Swedish Agency for Economic and Regional Growth. "Fonden för en rättvis omställning.
- IndustriAll (2022). Sweden: Ground-breaking agreements on education support to enable a Just Transition.

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