PES
SOCIALISTS & DEMOCRATS

Just Transition

Decent Green Jobs
Modernised Economy
Citizens' wellbeing

Report prepared by the PES Environment and Climate Change Network

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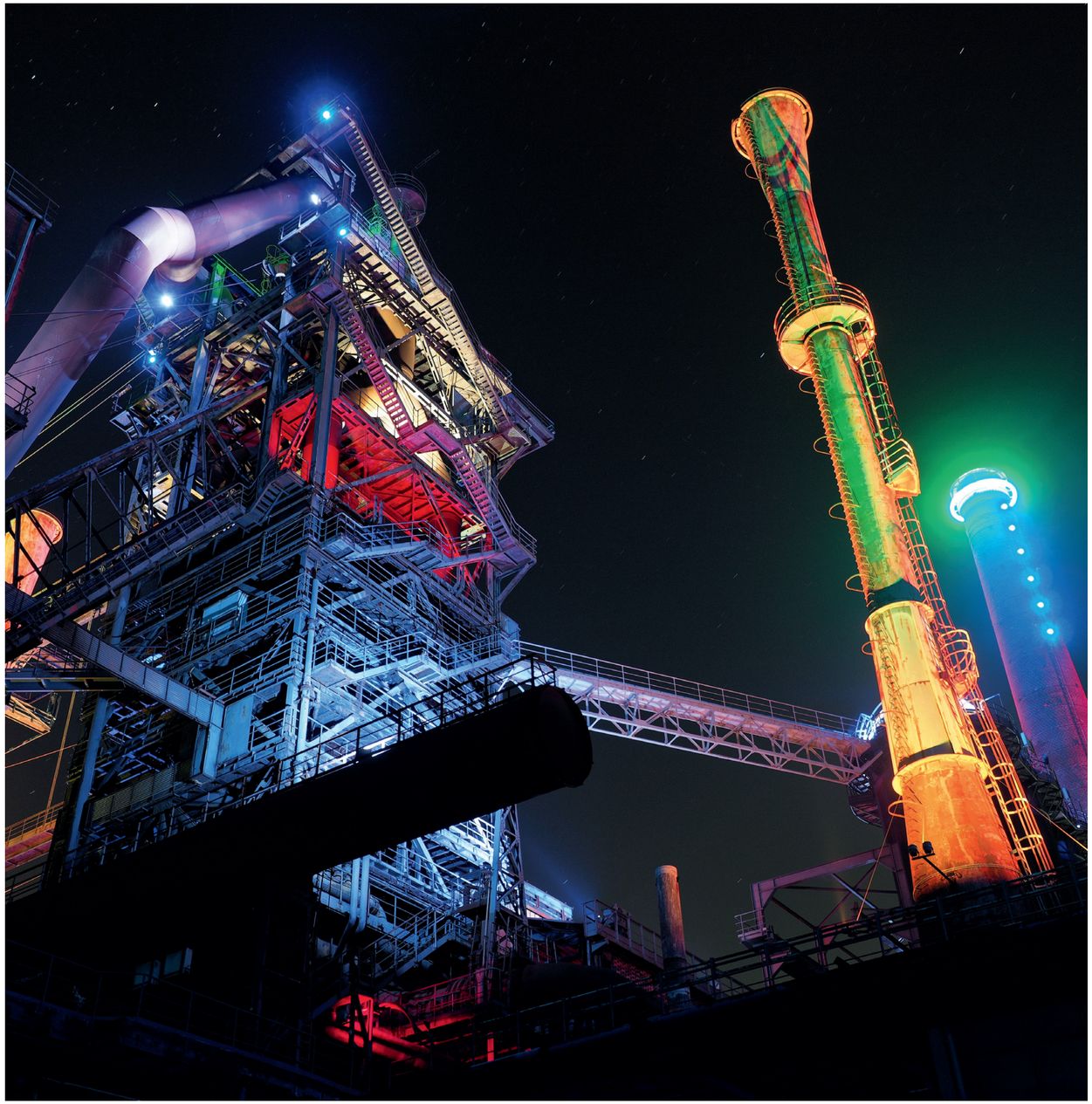

FOREWORD

Europe's **coal and steel workers and its heavy industries brought tremendous benefits to the continent.** They have contributed greatly to the **EU's prosperity and technological leadership.** But this economic model is being challenged by climate science: **More ambitious climate action is needed to keep warming of the planet well below 2 degrees Celsius** as stipulated by the Paris Agreement on climate change to ensure the future of humanity and biodiversity. The PES has repeatedly committed to implement the Paris Agreement and fight the climate crisis.

On the one hand, to pursue this target, the **Paris Agreement stipulates the mitigation of greenhouse gas emissions**, meaning to phase-out the use of fossil fuels, and making Europe's industries more resource and energy efficient, while increasing the deployment of renewable energies. **This may create enormous challenges as Europe's industries and workers to change and adapt**, which can create fears about job-losses, de-industrialisation and decay of industrial communities. But the **Paris Agreement's preamble** also demands that climate action shall "[take] into account the imperatives of a **just transition** of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities". Pursuing a just transition is furthermore imperative of the United Nations' **Sustainable Development Goals**, that inter alia call for decent work and economic growth (Goal 8), clean energy for all (Goal 7), climate protection (Goal 13), and poverty eradication (Goal 1).

Sergei Stanishev
President
Party of European Socialists

Thanks to the work of our political family, the concept of just transition is now an integral part of discussions about EU energy and climate policies. The Party of European Socialists we have repeatedly been calling for the green transition to be complemented by a social dimension.

A **well-planned just transition can prevent fears and opposition** over the potential social impacts of climate action. **It can provide a future** that, notwithstanding the challenges, **offers both security and opportunities.** A just transition will not happen by itself; job losses are not an automatic consequence of climate policies, but the consequence of a lack of planning, social and economic policies and investment.

We European Socialists and Social Democrats are ready to **turn these challenges into opportunities.** The **EU's Energy Union needs to be accompanied by a social pact for its industrial regions** in order to reap the benefits of energy transition.

In its report "Leading the Just Transition: A New European Industrial Policy – For a modernised industrial base and decent green jobs", the **PES Environment and Climate Change Network** elaborated elaborated aspects for a **European just transition strategy built on three pillars**:

1. Targeting, planning and participation

Coal and carbon-intensive regions should be identified at European level to facilitate targeted support. These regions should develop energy and climate action plans with long-term just transition strategies, with foresight of policy changes needed in all relevant policy fields. Stakeholders, in particular social partners, need to be closely involved in the planning and implementation of just transition strategies. Progress of the energy transition should be systematically monitored and evaluated.

2. Public Policy and Social Protection

The green transition needs to be accompanied by active labour market and economic policies. Our efforts must aim at creating decent jobs. Keeping workers up-to-date with the new skills needed in the green economy has to be a key objective to adapt to changing jobs and job-requirements. Carbon-intensive regions should be supported in identifying new business opportunities in a diversified local economy, and companies need better access to low-carbon technologies. To enhance people's living environment and soft locational factors, the urban space of industrial regions should be upgraded.

3. Investment and financing

Member States and regions should set up just transition funds, financed by revenues from allowance auctions in the European Emissions Trading System. Industrial regions should also finance the green transition from relevant funds under the current EU budget. The EU budget post-2020 should provide for substantial just transition funding.

A European approach is needed to support regions and workers in need to address this global challenge. We welcome that the **European Commission** in its **Clean Energy Package** of November 2016 announced that it will start "examining how to better support the transition in coal and carbon-intensive regions", a commitment it repeated in its second state of the Energy Union report. We fully support this approach, and want to reinforce it by calling for:

- a **Commission communication dedicated to the just low-carbon transition.** Along the lines of the recommendations by the PES Environment and Climate Change Network, such a communication should identify further initiatives on how to implement a just transition framework at European, national and regional level, including the identification of possible funding opportunities for a just transition.

- the integration of the just transition framework in the **EU's budget post-2020.**

- an **updated EU strategy for the decarbonisation of the economy by the middle of the century**, taking account of the new, more ambitious target of the Paris Agreement to limit global warming to well below 2 degrees Celsius, ideally 1.5 degrees Celsius. The just transition principle must be the basis of such a roadmap.

As Socialists and Social Democrats we do not maintain outdated structures of the past, but we are present to actively accompany change. As Socialists and Social Democrats we want to offer new perspectives for the future.

Jo Leinen
Member of the European Parliament
Chairman of the PES Environment and Climate Change Network

Yonnec Polet
Deputy Secretary General
Party of European Socialists

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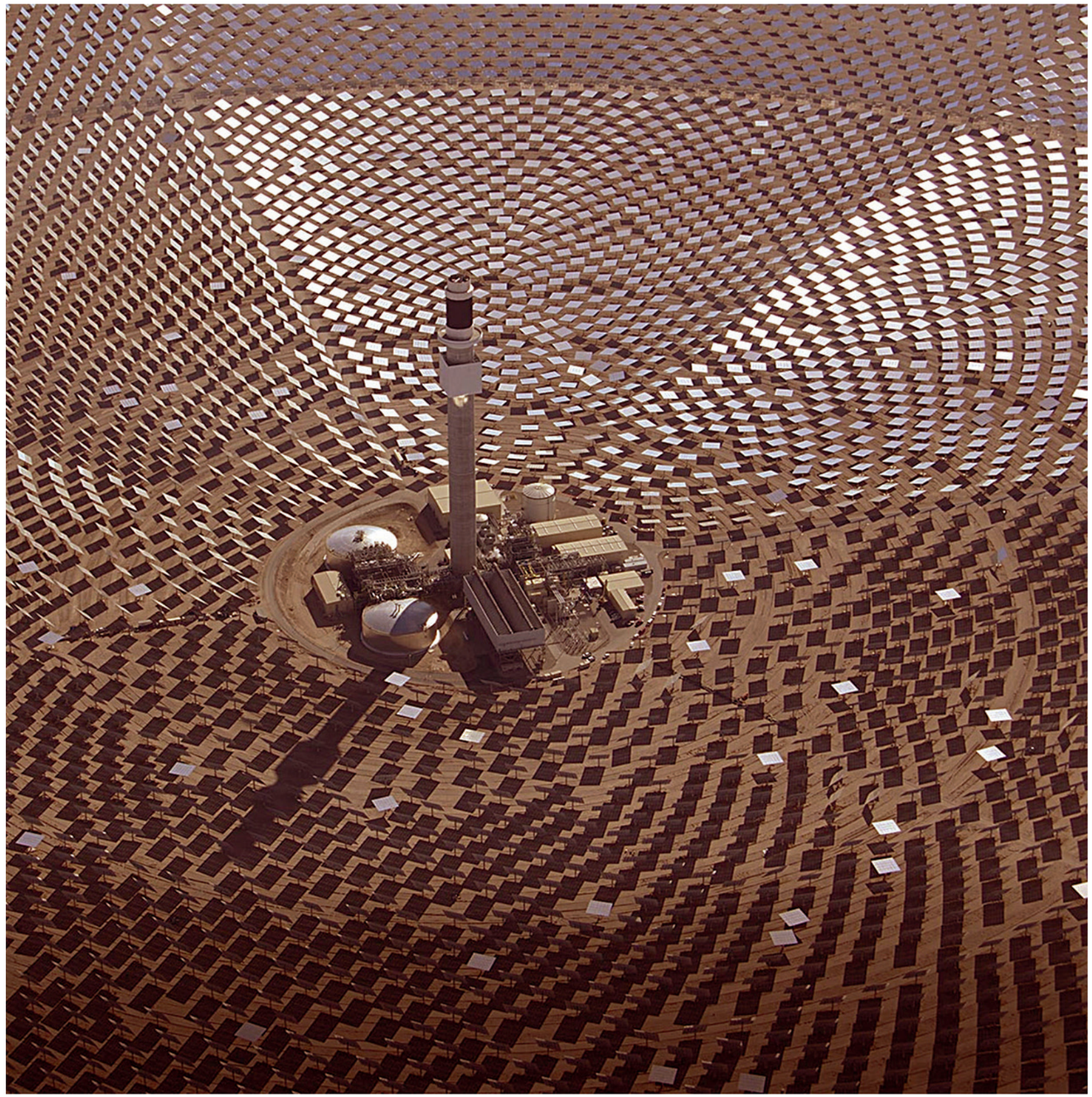
International commitments for more climate action

The Paris Agreement on climate change to keep global warming "well below 2 degrees", the EU's mid- and longterm climate targets, the United Nations' Sustainable Development Goal, the G7 commitment to "decarbonise the global economy" in the course of the century, as well as the EU's commitment to make its economy more circular, set the direction of travel for more ambitious EU climate and energy policy.

"The challenge is to organise this transition, and to provide clarity and orientation for everyone affected by this transformation. This will allow us to anticipate, prepare and manage the changes.

Maros Sefcovic (2016)[1]

Vice President of the EU Commission for Energy Union



1. INTRODUCTION

The objectives are already clear, change is inevitable: The transition to a greener economy is already happening but the EU has to **accelerate the transition** to lead and avert the climate crisis. People want a healthy environment and to avoid dangerous climate change.

Fighting the **climate crisis is a global challenge and an incredible opportunity as well.** If managed properly, climate action can be a source for change and social justice.

This might seem overwhelming for single regions or states. We know there will be disruptions in some industries. However we can learn from previous examples. What is more, the European Union proves its added value by supporting regions and workers in need to transit into a new economic model that profits all Europeans.

A just transition towards a decarbonised economy **can combine ambitious climate policies with the concern for jobs, health and business opportunities if planned providing protection to those in need of it, helping them develop new skills and by helping to diversify our economy.**

It gives us the opportunity **to upgrade Europe's industrial base** and to prepare Europe's workforce for the **green jobs** of the future, and to **make our cities more livable.**

To stay in line with its international commitments, the EU hast to **phase-out the use of fossil fuels** as soon as possible, particularly all the combustion of coal for energy production, while **increasing its use of renewable energies**, and to **make industries more re-source and energy efficient.** This must happen **without social and economic structural breaks**, while guaranteeing security of supply and affordability of energy. The energy transition must go hand-in-hand with eliminating energy poverty to profit the poorest and most vulnerable households.[2]

With its historic roots in and its proximity to the trade union movement, the industrial and mining communities, the **Party of European Socialists and its member parties and organisations** are in a good position to shape to **take political leadership** in order to shape this change. We will be guided by our basic value of **social justice.**[3]

In this effort, **regions with high-carbon and coal industries will play a key role.** They know best about their local needs and opportunities and should be supported to follow their own paths towards a cleaner economy.

2. CLIMATE ACTION: CHALLENGES AND OPPORTUNITIES FOR INDUSTRIAL REGIONS

This **change is not about de-industrialising** Europe for the sake of the climate. Rather it is about a targeted European industrial policy to upgrade Europe's industries to be compatible with more ambitious environmental targets by enabling the use of the most modern technology and processes.

Still, this may cause fears that ambitious climate policies will come at the expense of jobs and growth, and the destruction of the industrial culture that many communities are built upon. **Some industries will have to take more efforts to shift their industries** to a more carbon- and resource-efficient base, currently being particularly dependent on carbon-intensive industries. These fears can lead to resistance towards climate action, especially in regions that are dependent on carbon-intensive industries.[4]

The **EU steel sector** for instance, responsible for 1.3% of EU GDP, employs 328,000 workers and an even greater number of indirectly and directly dependent jobs.[5] While in the **mining and quarrying sector**, some 583,000 people are working in 19,000 enterprises Europewide.[6] Many of these jobs are concentrated in particular regions for which a loss of these jobs would pose significant challenges to people's livelihoods. Almost the entirety of EU coal mining jobs are concentrated in five states: Poland (54%), Germany (13.6%), Romania (8.1%), Bulgaria (6.3%), with high geographic concentration in some regions. From 2012 to 2015, employment in coal mining fell by 20%, from 240,000 to 185,000 directly employed workers in the EU.[7]

In a decarbonised economy, some carbon-intensive jobs will be replaced by low-carbon jobs; or some carbon-intensive jobs move outside the EU. Many businesses will adapt to the new environment. Existing jobs will be redefined. Clean energy deployment, energy efficiency measures and climate adaptation offer a huge net job creation potential.[8] Also, it will contribute to the EU industries' competitiveness, cleaner air, healthy environment and an upgrade of the urban space.

The transition to a decarbonised economy offers the potential for the creation of **new jobs in low-carbon sectors.** However, while mitigation and adaptation efforts will create new jobs in both existing and new sectors of the economy, it will also cause disruption in established industries and threat existing jobs. Still, most studies find **a positive (though modest) net employment and GDP growth effect of the low-carbon transition.** Climate targets can be considered as investment targets, as an ambitious climate policy can be translated into investment needs.[9] More ambitious Green House Gas reduction targets, coupled with ambitious targets for renewable energy production and energy efficiency levels tend to have higher net job and GDP growth effects than GHG reduction targets alone.[10]

	2012	2015	Change 2012-2015
PL	128 000	99 498	-22%
DE	34 200	25 068	-27%
CZ	22 000	18 000	-18%
RO	21 000	15 042	-28%
BG	13 000	11 765	-10%
EL	7 500	4 919	-34%
UK	5 800	1 975	-66%
SK	3 700	2 190	-41%
ES	3 400	3 324	-2%
HU	2 100	1 655	-21%
SI	1 600	1 274	-20%
EU	240 600	185 000	-23%

Number of people employed in the coal industry in the EU in 2015 compared to 2012.

The number of jobs in **renewable energy** has increased by almost 70% between 2008 and 2014, with almost **1.1 million jobs** directly or indirectly linked to renewable energies in the EU in 2014, representing 0.52% of total employment. However, the employment in the renewable energy sector has contracted since 2012, partly due to structural factors, such as the shrinking photovoltaic sector where the production of solar panels is increasingly being relocated to China, but mostly due to cyclical factors and policy decisions, where in the midst of a financial and budgetary crisis, the majority of Member States have decided to reduce investments in renewable energy.[11] [12]

Jobs in energy efficiency amounted to more than 900,000 in 2010, or 0.44% of employment in the EU as a whole.[13]

The European Commission estimates that its "Clean Energy for All Europeans" package could **create an additional 900,000 jobs by 2030 (of which 400,000 in energy efficiency).**[14]

Sectors most concerned about potential job losses or in which existing jobs are being redefend are those with a high carbon-intensity. Those are **energy production** (accounting for 26% of GHG emissions in the EU), **manufacturing** (19%), **agriculture** (12%), **transportation** (11%) and **construction** (11%, including other services), representing almost **one third of total EU employment** in 2015 **(70 million workers)**. Central and Eastern

European countries have higher rates of carbon intensive jobs than the EU average (for instance: Romania (57%), Poland (47%), compared to Luxembourg (16%) and the Netherlands (21%)).

This change must be organised to make it a win-win-win situation for the environment, jobs and the economy. It is not about an abrupt structural interruption, but about gradual structural change, involving society, politics and businesses.[15] This change has to be a just **transition** to a greener economy that is inclusive of all stakeholders, opening up paths to new jobs and industries, and where employment and social costs of the transition have to be fairly distributed and its benefits are fairly shared.

Climate policy, however, is only one driver of industrial transformation. It also happens in the context of broader economic trends that impact jobs and social welfare systems, such as globalisation, demographic ageing, automatisation, digitalisation and artificial intelligence, and the drop in world market prices for coal thanks to ever more competitive renewable energy.

A just transition must thus be **embedded in a broader European industrial strategy** based on more coherence between EU policies to address these challenges.

Achieving better economic resilience and social fairness is not only an issue for coal and carbon-intensive regions. These regions should clearly be at the heart of future action. However, we need a fair transition for the whole of Europe and targeted support measures would be needed in all regions and across sectors.

3. OUR PRINCIPLES: A JUST TRANSITION

In a **just transition social dialogue** is key, with a focus on creating jobs in emerging green sectors, but also greening existing **jobs** in carbon and resource-intensive sectors. It is about helping workers **access education and training** to stay up-to-date with skills needs in a decarbonised, resource-efficient economy. And it is about the public **providing a social safety net** through active labour market policies and social protection, and large scale **financial investments** to lay the ground for the establishment of new industries and to upgrade existing ones.[17] [18]

There are **examples to learn from**, where **socialists and social democrats have have led** the shift from old industries towards sectors fit for a greener future. For instance the Ruhr area within **North-Rhine Westphalia**, where a sustained and active structural policy on the level of several billion euros was successful in mitigating the collapse of the hard coal and steel industries, while promoting growth in the services and knowledge-intensive sectors. This included the establishment of new universities early on, as well as the promotion of innovation and a vibrant start-up scene.[19] Or Wallonia and its Plan Marshall 4.0[20] to harness the potential of digitisation by combining industrial production with the digital economy. The **North East of England** was identified as a Low Carbon Economic Area[21, 22] focusing on the development

and manufacturing of ultra-low carbon vehicles and innovation in off-shore energy sourcing. Strengthening local cultural heritage has given new economic impetus to some other cities and regions, like the construction of the Guggenheim Museum in **Bilbao**, or the title as Culture Capital of Europe for **Glasgow, Lille, Liverpool or Essen.** In **Lusatia**, the lake environment formed by reclaiming, cultivating and flooding former open-cast mines, as well as the industrial heritage museums and sights have boosted the tourist industry.[23] [24]

These examples also show that change does not happen overnight, it is a slow process that needs to be managed.

It is thus a welcoming step that the **European Commission** in its **Clean Energy Package** of November 2016 announced that it would start "examining how to better support the transition in coal and carbon-intensive regions"[25], a commitment it repeated in its second state of the Energy Union report.[26]

The just transition of high-carbon regions has also been the subject of projects conducted by the **European Trade Union Confederation (ETUC)[27], the International Trade Union movement[28] and the Foundation for European Progressive Studies (FEPS) in collaboration with Change Partnership.**[29]

The **PES** in its resolution of the **Prague Council in December 2016** fully committed to fostering a just transition that offers "new opportunities for workers in high-carbon, re-source-intensive jobs in the decarbonised, circular economy of the future" where "social dialogue should be key and can be benefitted by further strengthening regional capacities".[30] In its Lisbon Council Resolution of 1 December 2017, the PES restated its commitment for a just transition.[31]

The imperative to pursue a just transition is also enshrined in the international order, namely in the **Paris Agreement's preamble**. The agreement's signatories take into account "the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities."[32]

A just transition mandate also emerges from the United Nations' **Sustainable Development Goals** (SDGs), deriving from SDG 1 (poverty eradication), SDG 7 (clean energy for all), SDG 8 (decent work and economic growth), SDG 13 (climate action).[33]

To contribute to the fulfilment of these international commitments, and materialise the claims of the PES Prague and Lisbon Councils, and building on the studies by ETUC and FEPS/Change Partnership, this report by the PES Environment and Climate Change Network presents some **proposals for managing a just transition of European coal and carbon-intensive regions, based on three key policy proposals:**

1) targeting, planning and participation

2) public policy and social protection

3) investment and financing

4. POLICY PROPOSALS

4.1. Targeting, planning and participation

a) Identification of vulnerable regions

To target and channel support, **coal and carbon-intensive regions** should be identified at European level as "Just Transition Regions" which would facilitate targeted support to the regions in need. Those regions based on a single or a cluster of climate polluting industries, or where a high share of workers is employed in coal and carbon-intensive industries could be considered Just Transition Regions.

b) Local and regional authorities to develop energy and climate action plans

Including the concept of just transition and linked to climate and energy targets, regions in transition should **develop comprehensive energy and climate action plans, identifying a long-term strategy for decarbonisation** integrating all relevant policy fields. Regions often have the policy levers necessary to accelerate the transition towards a low-carbon economy, for instance innovation, business promotion, education, lifelong learning, transport infrastructures, employment services.

These plans should have a concrete timetable and should involve all levels of government, industrial sectors and policy areas, and ensure coherence between public and private initiatives to address the **specific decarbonisation paths tailor-made for the respective region.**

The action plans could include:[34] [35]

- A clear analysis of needs and underlying problems
- A stakeholder analysis to determine who should participate in identifying goals and objectives
- A feasible allocation of time, budgets and responsibilities
- Monitoring and evaluation as a constant tool for learning and adapting implementation.
- Networking, transnational cooperation and exchange of good practice
- Integrated financial planning, drawing on local, regional, national and EU financial sources
- Measures to protect land, water and air quality to safeguard regional and local biodiversity and natural resources
- The creation of innovation, competitiveness and entrepreneurship networks

The guidelines[36] by the United Nations Framework Convention on Climate Change could serve as a basis to develop local and regional energy and

climate action plans that take account of the just transition principle.

Local authorities are in a good position to take clear **ownership** of such long-term regional decarbonisation strategies to offer **stability and predictability** to policy-makers and investors. This should be the basis for European co-financing and European technical support.

Regional decarbonisation strategies would also include a **skills foresight and skills roadmap** to make and keep the workforce fit for future industrial needs.

Such regional strategies could also be **the basis for European financial and technical support** for the regional Just Transition.

c) Monitoring, evaluating and reporting

Local governments and regional authorities should be required to **report on the progress** of implementing their regional transition plans when receiving EU funds. Therefore, **systems of monitoring and evaluation** should be put in place by regions and **indicators** should be developed to measure transition progress and its social impact. This would prevent regions from competing against each other.

At European level, **a forum for peer reviewing regional strategies** should be established.

This forum should offer workshops where regional representatives can meet each other, European Commission staff, academic experts, social partners and civil society to discuss lessons learned form best practices and to peer-review each other's work.[37]

An effective system of control, transparency and accountability has to be set up, in order to ensure the compliance with the commitments made under the regional and local energy and climate action plans.

d) Forums of participation and dialogue

Development and execution of regional just transition strategies should be based on the broad involvement of society. **Political consensus** is an essential precondition for successful structural policy if it should be a stable and predictable long-term process.[38]

Consensus should be found on the need for decarbonisation amongst all stakeholders. But the input and participation of all stakeholders will constitute a firm and legitimate basis on which funding priorities and sustainable projects can be identified. That is why **fora a for local stakeholder involvement** should be established, involving for example local governments and authorities, trade unions, employers and business organisations – of those sectors affected by decarbonisation and of those sectors with growth potential in a decarbonised economy – , academia, and civil society to create long-term political frameworks.

It is important to equip **women** with the **proper skills and empower them to participate at all levels in the transition, including decision-making and implementation steps.** By implementing the transition procedure, women have the opportunity to approach the challenges arising from the green economy.

Tripartite structures should be established **at local level** to systematically involve the social partners and spur dialogue between local governments, trade unions and employers for steering the transition.

e) EU-wide long-term planning

The current European Commission low-carbon strategy for 2050 is based on the UN's Copenhagen (2009) and Cancun (2010) agreements with their objective to keep climate warming to 2 degrees Celsius. These have been now superseded by the new targets set by the Paris Agreement. With the new reference target in the Paris Agreement to keep global warming "well below 2 degrees Celsius", or even 1.5 degrees Celsius, and a commitment to reach greenhouse gas neutrality in the second half of the century. **The entire European Commission 2050 roadmap, including its interim greenhouse gas reductions targets, should be revised upwards** to get in line with these new, more ambitious international climate commitments. As called for by the PES at its 2017 Lisbon Council, "the EU (shall) set a formal and binding target to fully and fairly decarbonise its economy by the middle of this century, with a clear strategy on the economic, social and environmental transformations needed". This should also include just transition funding mechanisms for regions most in need.[39]

4.2. Public Policy and Social Protection

a) Creating and maintaining decent jobs and social protection for all

The aim must be to maintain and create decent employment opportunities, "jobs that provide adequate incomes and social protection, safe working conditions, respect for rights at work and effective social dialogue".[40]

Through new work processes and technologies, workers in the green economy face **new occupational health and safety hazards**, which need new combinations of skills to deal with them. Regulations should thus be put in place to ensure the health and safety of workers in the green economy.[41]

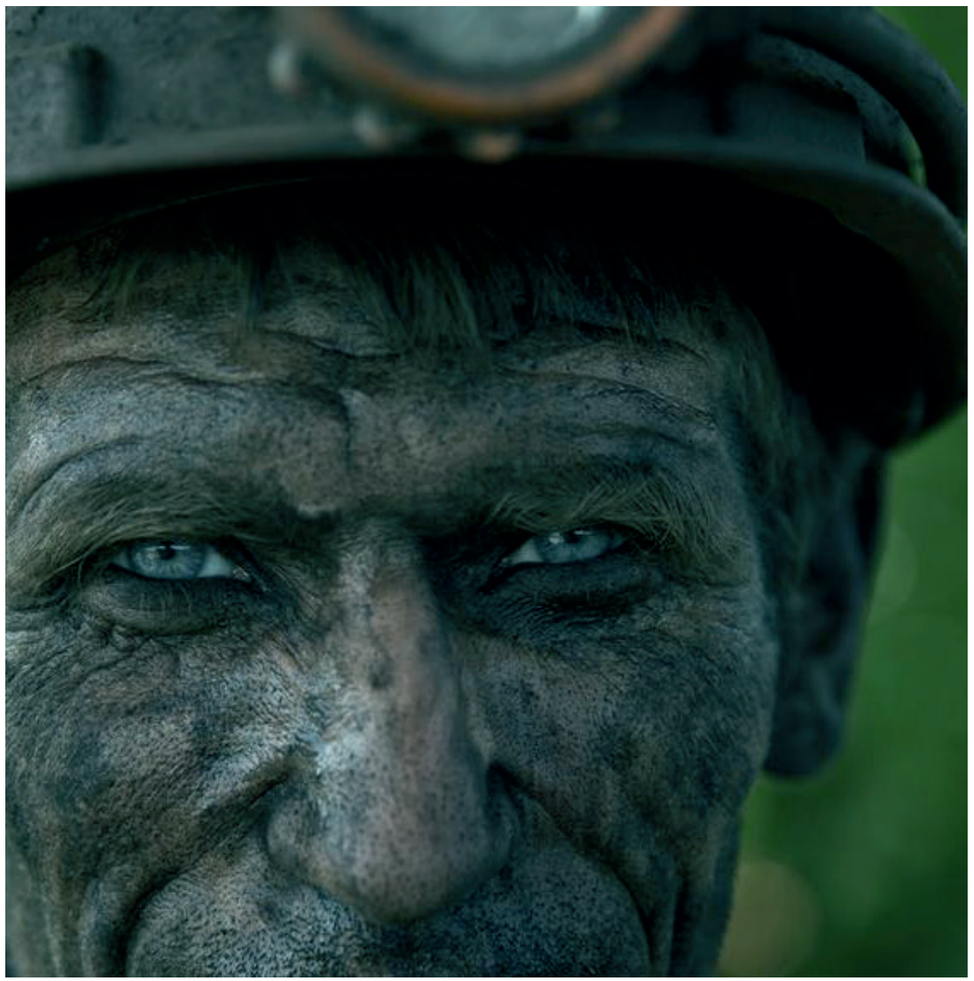
Attention should also be paid to **working conditions, salaries, and gender inequalities** in the green economy. As a study[42] by the German metal workers' union shows, working conditions and salaries of workers in the renewable energies sector are often worse than those of traditional industries.

Therefore, **regulation** should be put in place to improve workers' situation in the green economy and **unionisation** of workers in the green economy should be encouraged, as well as social dialogue at company level in "old" and "new" industries to better anticipate and manage restructuring.

b) Investment in skills

Building, running, and maintaining modern and competitive industries demands a highly skilled workforce. **Employees' skills need to stay up-to-date** in order to adapt to changing jobs and job-requirements in a cleaner economy. Workers in the most emitting industries, which on average have a lower skill level in comparison to those in low-carbon industries[43], and thus need special attention to update their skills.

Employers need a skilled workforce for the deployment of new or emerging technologies. The recent decision by the steel processing company Voestalpine to construct Europe's first new steel mill in forty years in the Austrian city of Kapfenberg because of the high concentration of motivated and qualified workers in the region proves this. [44]



Sectoral roadmaps on employment and skills for energy intensive industries, and investing in **education** as well as strengthening the **culture of life-long learning,** should thus be a foundation of regional just transition. Skills roadmaps should be underpinned by sufficient funding. **Sector skills councils** and **sectoral skills alliances** could provide stakeholder input at sectoral level.[45]

A good example of the **cooperation of private and public actors** is the Spanish region of Navarre. In cooperation with the Confederation of Entrepreneurs of Navarre and the Navarre Industry Association, the regional government identified the main skills shortages in the region, and on the basis of its findings set up CENIFER, a public training centre for renewable energies, it has become a major training provider for the renewable energy sector.[46]

Within the Erasmus programme a "green" budget line should be integrated, to allow apprentices and trainees to participate in mobility programmes in another Member State aimed at sectors that offer training for jobs in the energy transition. Many of the new jobs emerging in the energy transition are unknown to many people. Such a **green Erasmus** could make these jobs better known, and encourage young people to pursue training schemes in growth sectors.[47]

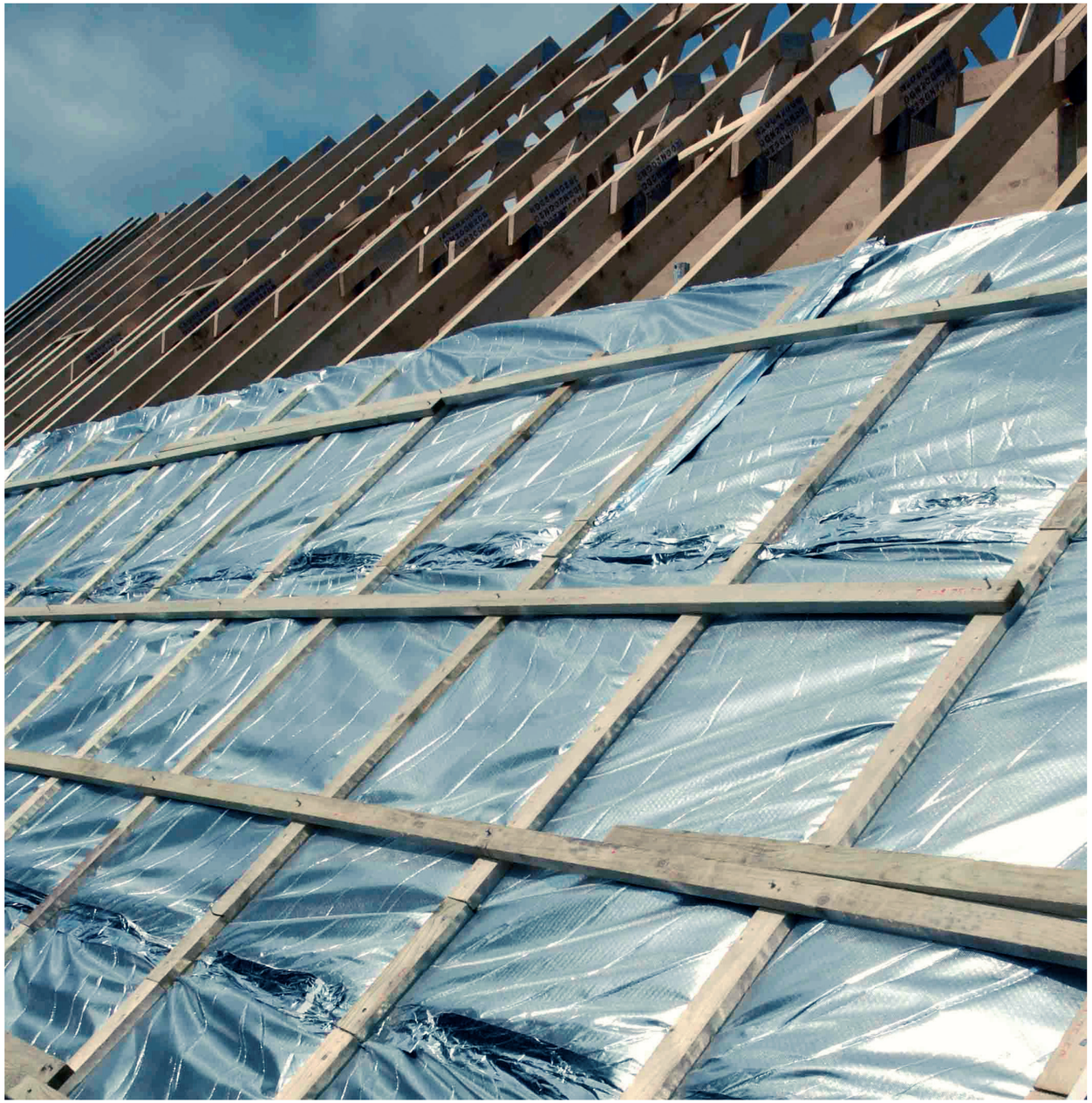
c) Mitigating the social impacts of the transition

To strengthen public support for climate action in coal and carbon-intensive regions, policies should be specifically **targeting workers from sectors and regions which could be negatively impacted** by the transition to a low-carbon economy. Special attention should be paid to the (re-)entry into the labour market in the green economy of women.

Policies should:

- Strengthen **public employment services**, with employment agencies and agents specifically trained to target workforce from coal and carbon-intensive industries, to provide career guidance and counselling services, qualifications plans and validation of non-formal and informal learning[48]
- Full deployment of **Youth Guarantee** schemes to facilitate the (re-)entry into the labour market of young people once they finish school, apprenticeship, university or become unemployed
- **(In-)job trainings and further education** programmes as preventive measures and not only in reaction to structural breaks
- Promotion of voluntary **geographical and occupational mobility**
- Facilitating the up- and re-skilling of older workers, and the transition of older workers into retirement
- Support for **early retirement**[49]
- Social support schemes to accompany structural changes, as for instance used in Germany to accompany rationalisation measures in coal mining:[50]
  - **Adjustment allowances** *(Anpassungsbeihilfe)* for training activities, re-imbursement of travel and relocation costs
  - **Adjustment money** *(Anpassungsgeld)* for bridging the gap until retirement and early retirement packages
  - **Severance packages**: short- or part-time working solutions that could be ensured that employees can remain in their jobs for longer (albeit temporarily working less) rather than abruptly being made redundant and facing unemployment. Such solutions need the consent and participation of the operating companies as well as their work councils
- Support for **business creation**

Whilst phasing-out fossil fuels, the transition also needs to happen in people's homes. If there are consumers who lose out from the energy transition it will prove difficult to have citizen support, which is essential for its success. Currently around 50 million people in Europe – every tenth European – suffer from **energy poverty.** Energy efficiency measures should be targeted at energy poor and vulnerable households, and consumers should be empowered to better take control of their energy bills by improved consumer information and rights, as called for by PES Energy Ministers.[51]



d) Access to low-carbon technology

Enhancing access to low-carbon technologies for industries is key to realising the decarbonisation of regions. Regional development banks can play a major role in enabling companies acquiring renewable energy technologies, energy efficiency measures and process innovation for a circular economy.

Investing in low-carbon technologies are key to prevent de-industrialisation: on the one hand, the proliferation of low-carbon technologies helps existing industries to adapt to higher environmental standards, while on the other hand, new technologies offer new business opportunities.

Local technology transfer centres could be set up. These centres could inter alia help companies especially small and medium-sized enterprises, universities and research institutions in linking local organisations with new markets and potential partners, offering expertise in innovation management, knowledge transfer and technology assessment, as well as information on financing opportunities.[52]

e) Fostering local industrial potentials

High-carbon industrial regions should discuss **possible regional development scenarios** and identify specific sectoral economic clusters, economic niches in the global market which the region in question can most successfully occupy. These scenarios should be **based on locational factors** taking into account needs and potentials of that region, ranging from bio- and knowledge-based industries to new local tourism and industrial heritage-based cultural industries. These strategies should identify the appropriate context specific structural change priorities, i.e. transitioning from an existing sector to a new one; modernisation of existing industry; economic diversification of existing specialisation and activities towards new ones; or the radical foundation of a new domain.[53]

Smart specialisation[54] is particularly well-placed to encourage this process of "related diversification" building on the existing strengths of regions and the skills of its workforce to develop new activities. The European Commission is currently testing new approaches to region-specific support within its smart specialisation pilot actions on boosting innovation capacities in industrial transition regions and on interregional partnerships for innovation projects, as well as within the initiative on coal and carbon-intensive regions. Those pilot projects could develop into a permanent EU programme after positive evaluation.

By **seeking a diversification of economic structures**, a narrow focus on a single or a very limited range of industries and clusters should be avoided in order not to risk the "nourishing of the declining areas of tomorrow".[55] [56]

Digital transformation needs to be recognised as one of the main features and coming challenges of structural change, whereby classic industries and innovative start-ups are brought together.[57] [58]

Light-house projects can contribute to a new image and new pathways and act as a focus for further public and private investment in regions formerly dominated by old industries. The establishment of universities – as seen in the example of the Ruhr area – can foster **research and development and spur industrial innovation.**

Culture plays a crucial role in this regard, as shown by the transformation seen by Culture Capitals of Europe formerly dominated by high-carbon, resource-intensive industries, like Glasgow (1990), Lille (2004), Liverpool (2008) or Essen (2010)[59] or the construction of the Guggenheim Museum in Bilbao.

While **industrial heritage tourism** does not replace the employment lost in former industries, it nevertheless brings notable direct and indirect income and can improve the image and reputation of former industrial areas. Industrial heritage tourism is expected to generate 9 bn euros of direct income in Europe. The indirect income is probably much higher, and its potential could be strengthened by building effective links to tourism agencies and tourism businesses, and by improving tourism skills.[60]

f) Upgrade urban space

From the point of view of outsiders, many heavy industry regions are often seen as unattractive, polluted territory, neither attracting outside investment, nor highly qualified human capital. Therefore, shifting towards greener industries should not only entail the modernisation of the industrial base, but also the **improvement of the urban space.** This way, former high-carbon regions can **enhance people's living environment and "soft" locational factors** to increase its business attractiveness.[61]

Measures could include[62]

- Upgrading city centres (renovation, creating attractive public spaces, pedestrian zones, cultural sites, etc.)
- The restructuring of the housing stock, with a proper regulatory framework to attract investment
- Investment in land regeneration, to restore a healthy environment and remove investment obstacles. Polluting companies could be required to contribute a certain share of their turnover towards a fund for financing land reclamation and cleaning[63]
- Enhance the accessibility of industrial regions as a key to exploit new development opportunities (i.e. connecting cities and neighbourhoods by underground networks, connecting regions by high-speed rail networks and airports)

4.3. Investment and financing

Financing needs are one of the big obstacles to the deployment of low-carbon strategies. The European Commission[64] estimates that, in order to meet the EU's 2030 energy and climate targets, an investment of around 379 bn euros annually over the period 2020-2030 is needed, mainly in energy efficiency, renewable energy sources and infrastructure, which is not yet including investments needed for the social dimension of the transition.

At European level, **specific funds for co-financing regional low-carbon transitions** need to be established. It could be made a requirement for regions in transtion to present credible long-term regional decarbonisation strategies as a precondition to attain European co-funding.

"Decent work", should be a guiding principle, where public subsidies are granted.

These funds to support workers and communities in the low-carbon transition could be fed by revenues of the European Emissions Trading System and by dedicated funds within the Multiannual Financial Framework.

a) Just Transition Funds

There was popular support to establish a specific European just transition fund to support the energy transition, **financed by 2% of the revenues from the European Emissions Trading System** (ETS)[65] to support coal and carbon-intensive regions in the green transition, as called for by the PES[66] , the S&D Group[67] and the trade union movement. This was unfortunately blocked by the conservatives during the negotiations to reform the ETS system for the post-2020 period.

Just transition considerations – to a more limited extent, however – were included in the post-2020 ETS reform in the framework of the ETS "**Modernisation Fund**". The Modernisation Fund will be financed by auctioning 2% of the total allowances to foster energy efficiency and the modernisation of the energy sector, as well as to support a just transition in carbon-dependent regions in Member States with a GDP per capita below 60% of the EU average.

The post-2020 ETS reform allows all Member States to use ETS revenues to contribute to a just transition to a low carbon economy, in particular in the most affected regions. These revenues could be used to **set up national/regional just transition funds.**

Social partners should be actively involved in the fund management and the participation of local social partners should be a key requirement for projects to get funding.

The ETS reform also sets up an Innovation Fund that provides support for low-carbon innovation in renewables and carbon capture and storage projects, and low-carbon in-novation in energy intensive industry. Endowed with 450 million euro allowances, it could raise up to 11.25 bn euros if the carbon price reached 25 euros.

b) Existing funds in the Multiannual Financial Framework

Full use should be made of **existing funds within the EU's budget** to support the low-carbon transition and workers affected by decarbonisation:

- EU Cohesion Policy: 69 bn euros are provided for investments related to all dimensions of the Energy Union (29 bn euros for energy efficiency, renewables, co-generation, smart energy infrastructure and low-carbon research and innovation; 40 bn euros for sustainable urban mobility and other low-carbon transport such as rail, sea- ports and inland waterways).

  Industrial regions need to be paid special attention in the negotiations for the **post-2020 cohesion budget**, as they face multiple challenges to be dealt with by cohesion policy, such as industrial transition, energy transition, digitisation, employment and social cohesion issues.[69] The new cohesion policy framework should focus on quality education, training and upskilling for youth, targeting unemployment and poverty,

increasing gender equality and social inclusion, and facilitating life-course transitions. This is also relevant in the context of a green and just transition, where workers in energy- and resource-intensive industries are offered paths to find employment in new and cleaner industries of the future. It is a policy framework for integrated territorial development which is well suited to address environmental transition and territorial equalities by ensuring that those regions which are least able to invest in the environment and climate change, have the resources to do so.

- **European Social Fund**: 1.1 bn euros are provided to improve education and training systems necessary for the adaptation of skills and for the creation of new jobs in sectors related to energy and the environment

- **Horizon 2020**: 650 million euros between 2016 and 2020 for research institutes and other stakeholders for innovative industrial projects

- **Research Fund for Coal and Steel**: 50 million euros annually for the modernisation of the steel sector

- **European Investment Bank (EIB)**: Development banks seek to invest in areas with high social value and are willing to invest in higher risk projects, when compared to the commercial sector[70]

  The European Investment Bank commits at least 25% of its lending portfolio to low-carbon and climate-resilient growth. In 2016, this amounted to 16.9 bn euros

- **European Fund for Strategic Investment (EFSI)**: The EFSI aims at mobilising an investment of 500 bn euros by 2020. 40% of EFSI financing shall contribute to climate action. However, currently the fund's investments are concentrated in certain geographic areas, and money is not going where i.e. energy efficiency measures are most needed

- **The European Globalisation Adjustment Fund** (EGF) supports workers who lose their jobs as a result of major structural changes in world trade patterns resulting from globalisation. It has a maximal annual funding of 150 million euros. A reform of the EGF could broaden the scope of the EGF to also include support for coalmining regions in EU countries that commit to a timely coal phaseout, and the redundancy requirements could be modified to allow the EGF not only to be used once the workers are already phased out, but also before this happens, to anticipate change[71]

The **European Commission should set up task forces for each industrial region** to provide advice on the European financial and technical help that is available. It should also **create specific programmes to strengthen the administrative capacity**, for instance by training staff in local and regional authorities in regards to managing transition-related funds, and how to use green public procurement.

Generally, European **fund's rules should be simplified** in order to facilitate access especially for smaller enterprises.

5. CONCLUSION

Fighting the **climate crisis is a global challenge that might overwhelm some single regions, or even countries.** Here, the **European Union proves its added value** by supporting regions and workers in need to transit into a new economic model that benefits all Europeans.

If managed properly, climate action can be an agenda for change and social justice: The move towards a greener economy will lead to **disruptions in some industries.** Still, this transition is inevitable for a healthy environment and to avoid the dangers of climate change. A just green transition will also, **at the same time, offer opportunities to upgrade Europe's industrial base** and to prepare Europe's workforce for the **green jobs** of the future, and to make **our cities more liveable.**

It is the task of **progressive parties to take political leadership and ownership** and to shape this change guided by their basic value of **social justice**.[72]

A just transition towards a decarbonised economy can **combine ambitious climate policies with concerns about jobs, health and business opportunities if anticipated, prepared and managed well, providing social protection, retraining of the workforce and economic diversification.**

In this effort, **high-carbon and coal regions have to play a key role.** They know best about their local needs and opportunities and should be supported to follow their own paths towards a cleaner economy.

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