Initiating the Just Transition in Serbia

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Baseline Analyses for the Just Transition Roadmap for Serbia

December, 2020

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United Nations Development Programme

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UNDP

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UNDP
https://pixabay.com/

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This report was prepared within the project "Establishing Transparency Framework for the Republic of Serbia", implemented by the Ministry of Environmental Protection with technical support by the United Nations Development Programme (UNDP) and financial support by the Global Environment Facility (GEF) and UNDP's Climate Promise Initiative.

Contents

Acronyms

CHP	Combined Heat and Power
COP	Conference of the Parties
EBRD	European Bank for Reconstruction and Development
EPS	Elektroprivreda Srbije
EU	European Union
EU-ETS	European Union Emissions Trading System
GHG	Greenhouse Gas
GWh	Gigawatt hour
HPP	Hydro Power Plant
ILO	International Labour Organization
IOE	International Organizations of Employers
IPA	Instrument for Pre-Accession Assistance
IPARD	Instrument for Pre-Accession Assistance for Rural Development
ITUC	International Trade Union Confederation
JTM	Just Transition Mechanism
NDC	Nationally Determined Contribution
NGOs	Non-Governmental Organizations
NUTS	Nomenclature of Territorial Units for Statistics
R&D	Research and Development
TPP	Thermal Powerplants
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

Summary for Policy Makers

The transition towards low carbon development is ongoing and is expected to pick up speed all over the world, with particular intensity in the European Union. Serbia's transition to low carbon development will, like for its neighbouring countries, become inevitable when the country joins the EU and it implements the EU climate acquis. Of all the European rules, the Emissions Trading System will have the greatest impact on emissions and on the economic fabric, by reducing the economic competitiveness of carbon intensive electricity production.

Like many of its neighbours, several EU Member States and other countries around the world, Serbia is faced with a particular challenge related to the direct impacts of low carbon development in the coal sector and its workers, and in the coal regions and their communities.

The transition to a low carbon economy is set to bring important social, economic and environmental benefits to Serbia as a whole, but like any deep transformation these benefits, and the associated costs, are not equally distributed across the society.

[PUBLIC POLICIES ARE REQUIRED TO] **"MINIMIZE THE DISPARITIES AMONG PUTATIVE WINNERS AND LOSERS THAT ARISE IN THE TRANSITION TO A LOW CARBON ECONOMY, AND TO MINIMIZE JOB LOSSES AND OTHER SOCIALLY AND ECONOMICALLY DISRUPTIVE IMPACTS"**

(UNEP, ILO, IOE, and ITUC, 2008).

It is therefore of the utmost importance that Serbia includes elements of a just transition in its planning towards low carbon development, namely, in the draft Climate Law and the draft Low Carbon Development Strategy with Action Plan.

This report recommends, based on international guidelines and practices, that Serbia implements a Roadmap for a Just Transition, composed of seven clusters of activities and that will culminate in the adoption, implementation and monitoring of a Plan for a Just Transition to a Low Carbon Economy in Serbia.

As per the roadmap approach proposed, in which the impacted communities are to be able to decide about their future – through structured social, **tripartite dialogue**, this report does not make recommendations as to which measures should be applied in Serbia to ensure a just transition that leaves no one behind.

This report does, however, provide a list of measures that have been distilled from international best practices from several countries in the world, including some EU Member States and Serbia's neighbours. These measures are classified in two main groups: **Welfare and Reskilling measures and Economic Diversification** measures.

This report concludes that, irrespective of any transition process, promoting the economic diversification of a region dependant on a single activity increases the resilience of communities to many different shocks that may affect such activity. As such, it is recommended that Serbia initiates this process of economic diversification of the coal regions as soon as possible.

WELFARE AND RESKILLING MEASURES

- **Gradual reduction of the workforce and internal reskilling**
- **Compensation and incentive to restart**
- **Reskilling of coal workers**
- **Promoting employability of coal workers in the diversifying economy**

ECONOMIC DIVERSIFICATION MEASURES

- **Rehabilitation of the affected lands and their reintroduction into the economic circuit**
- **Preservation of the coal mining cultural heritage**
- **Tourism**
- **Production of energy**
- **Retrofit coal TPP**
- **Enhance infrastructure in affected communities**
- **Create an innovation hub dedicated to the area of specialization**
- **Invest in the education and training system**
- **Combating energy poverty: a just transition for the poorer and most vulnerable communities.**

1 Introduction

The goal of this report is to propose a **Roadmap for a Just Transition to a Low Carbon Development in Serbia**, which sets out set out the social, economic, and environmental challenges related to the phasing out of fossil fuel-related activities, and decarbonising greenhouse gas-intensive processes or products, in accordance with the provisions included in the draft Low Carbon Development Strategy with Action Plan.

In the next chapter, we describe the decarbonizations scenarios that may impact coal use in Serbia, including and their respective potential socio-economic impacts, as modelled for and included in the draft Low Carbon Development Strategy with Action Plan.

A brief socio-economic characterization of the population most impacted by the transition to a low carbon future ensues in the subsequent chapter.

The final three chapters are the core of this report, as they constitute a set of recommendations to be considered by the Serbian government and relevant stakeholders. Chapter 5 proposes the roadmap, i.e. the recommended steps, including recommended institutional arrangement, for the planning and implementation of key measures to ensure a just transition. Chapter six provides an indicative list of potential measures to be considered by the relevant stakeholders. Both the roadmap and the potential measures are based on an intensive research of international practices, which are described in dedicated annexes.

Finally, in chapter eight a brief description of options for a financial mechanism for the just transition is offered.

The concept of just transition

The concept of just transition originated in the United States of America (USA), when it was argued by the trade unions that the government should "support wartime workers at risk of losing their jobs as a result of disarmament" (Cahil & Allen, 2020).

This concept was later applied to jobs being lost due to environmental regulations. In defending a just transition due to environmental regulations, the Unions did not oppose protecting the environment and, also, they did not defend job maintenance an all costs.

PRINCIPLES FOR A JUST TRANSITION

1. **Respect for workers, unions, communities, and families;**
2. **Worker participation at every stage of transition;**
3. **Transitioning to good jobs;**
4. **Sustainable and healthy communities;**
5. **Planning for the future, grounded in today's reality;**
6. **Nationally coherent, regionally driven, locally delivered actions; and,**
7. **Immediate yet durable support.**

(Task Force on Just Transition for Canadian Coal Power Workers and Communities, 2018)

THE TRANSITION TOWARDS INCLUSIVE AND LOW-CARBON ECONOMIES MUST BE JUST AND FAIR, MAXIMIZING OPPORTUNITIES FOR ECONOMIC PROSPERITY, SOCIAL JUSTICE, RIGHTS AND SOCIAL PROTECTION FOR ALL, LEAVING NO ONE BEHIND.

(UNFCCC, 2016)

They argued that "those who work with toxic materials on a daily basis in order to provide the world with the energy and the materials it needs deserve a helping hand to make a new start in life." This implies that behind the concept of just transition, there is a notion, a recognition that, when specifically considering a transition to a low carbon economy, "the net impact of environmental policy measures will be positive, but "job losses are likely to occur in economic sectors, regions and communities, particularly where a dependence on fossil fuel resources is significant and where opportunities for economic diversification are limited." (Cahil & Allen, 2020).

The concept has, of course, evolved and still today there are different understandings of it. An important element is that just transition should not be just welfare, or "a fancy funeral" (Galgóczi, 2018), but that through a just transition, adequate planning will provide for decent and quality jobs (perhaps even more than before) for all, in particular to those more hardly hit by the job losses resulting from the regulations.

This is where public policies are required to "minimize the disparities among putative winners and losers that arise in the transition to a low carbon economy, and to minimize job losses and other socially and economically disruptive impacts" (UNEP, ILO, IOE, and ITUC, 2008).

The Paris Agreement, climate neutrality and just transition

In order to achieve the goal of the Paris Agreement of holding the increase of global temperature to well below 2°C and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, will require, as determined in Article 4 of the Agreement, to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century.

The pathway to achieving this balance, the so-called carbon neutrality, will require substantial shifts, transformations across the economy, in all sectors, from agriculture to waste management, but in particular in energy production and consumption: "this transformation will affect ways in which people heat up their homes, how they travel, what products they buy, and even what they eat and drink." (Bureau of COP 24 Presidency, 2018).

THE FRAMEWORK OF THE 2015 ILO GUIDELINES ON JUST TRANSITION

The following are the key components for a well-managed transition towards a low carbon future.

(1) Greening of economies requires a coherent country-specific mix of macroeconomic, industrial, sectoral and labour policies. The aim is to generate decent jobs along the entire supply chain with employment opportunities on a wide scale.

(2) As the challenge cuts across several domains, sustainable development needs to be addressed across all policy fields in a coherent manner. For such a policy framework, institutional arrangements are needed to ensure the participation of all the relevant stakeholders at all levels.

Governments should:

(a) provide a coherent and stable policy framework for sustainable enterprise development and decent work for all.

(b) promote and engage in social dialogue, at all stages from policy design to implementation and evaluation and at all levels, from the national level to the enterprise, in line with international labour standards.

(c) integrate provisions for just transition into national policies, plans and line ministries' agendas

(d) establish and strengthen institutional and technical capacities at national, regional and local levels

Social partners should:

(a) raise awareness and provide guidance among their members for the just transition framework.

(b) play an active role in the formulation, implementation and monitoring of national sustainable development policies.

(c) encourage their members to participate in social dialogue at all levels.

(d) promote the inclusion of environmental provisions through collective agreements at all levels.

(ILO, 2018); (ILO, 2015)

It is in this context, that the Paris Agreement embraces the concept of just transition, in its preamble: Taking 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[1].

The ILO guidelines for a just transition

The International Labour Organization (ILO) has been working on just transition for many years. In the scope of this work, the ILO has issued the "Guidelines for a just transition towards environmentally sustainable economies and societies for all" (ILO, 2015).

For the ILO Just Transition Guidelines, the concept of "managing well" the transition is core: "Managed well, transitions to environmentally and socially sustainable economies can become a strong driver of job creation, job upgrading, social justice and poverty eradication" (ILO, 2015). In applying the ILO Guidelines, a country will have a well-managed transition to a low carbon economy, leaving no one behind and creating a better future for all. Creating jobs and protecting the environment and the climate jointly, at the same time, is not an option, but a necessity (ILO, 2015).

[1] The work on just transition is undertaken in the context of the UNFCCC, by the forum on the impact of the implementation of response measures and its Katowice Committee of Experts on the Impacts of the Implementation of Response Measures.

The guidelines identify nine key policy areas that are to address environmental, economic, and social sustainability simultaneously, so as to ensure a just transition for all:

- Macroeconomic and growth policies
- Industrial and sectoral policies
- Enterprise policies
- Skills development
- Occupational safety and health
- Social protection
- Active labour market policies
- Rights
- Social dialogue and tripartism

In addition, the guidelines list a set of actions that Government and social partners should perform (see box in previous page, for a brief summary), in the following areas:

- Policy coherence and institutional arrangements for a just transition for all
- Social dialogue and tripartism policies
- Macroeconomic and growth policies
- Industrial and sectoral policies
- Enterprise policies
- Skills development policies
- Occupational safety and health policies
- Social protection policies
- Active labour market policies

KEY GUIDING PRINCIPLES OF THE ILO GUIDELINES FOR A JUST TRANSITION

Strong social consensus, through social dialogue and collective bargaining

Respect for fundamental rights at work

Consideration of the gender dimension

Provision of enabling environment for all stakeholders through coherent policies across the different portfolios

No "one size fits all"

Adapted from (ILO, 2015)

2 Lessons learned from international practices in planning for a just transition

Transition is intrinsically part of evolving, of developing. History is made of transitions from one paradigm to another. In the 21st century, there seems to be two main drivers for evolution and transition: digitalization and greening. Nonetheless, deep transformations of economic sectors or part of societies take place driven by other factors. In Serbia, for example, the agriculture sector is bound to be deeply transformed (with a steep reduction of jobs [2]) through the adoption of modern technologies, even when climate change and GHG emissions are not considered.

This means that all countries in the world have gone through several transition experiences, in several sectors and regions and driven by different motors. Learning for experiences in managing such transitions "well", therefore, need not be limited to transitions to low carbon development, away from fossil fuels. Nonetheless, given the wealth of information of initiatives to "manage well" the transition to a low carbon future, in particular in coal dependent regions and countries, this report focuses on them.

As previously mentioned, the specific examples of international practices that inspire the recommendations for the roadmap and the potential measures are referenced to next to said recommendations and described in the annexes. This chapter is, thus, limited to the presentation of a set of lessons learned from such international experience.

[2] Background studies (Result 4) for the Draft Low Carbon Development Strategy (unpublished)

Lessons learned from international experience

- Where workers and communities are at the table building plans for a Just Transition, in Canada, Spain, Germany, the Netherlands, New Zealand, Scotland, Norway, and elsewhere, climate action gains popular support and moves forward (Just Transition Centre, 2019)
- Often the coal mines / TPP are the main employers in a region / city / community and often these are the best paid jobs.
- Mining and TPP support an important number of indirect formal and informal jobs that need to be considered for a just transition. As such, affected workers and communities must be at the heart of decision-making during the transition to a low-carbon economy. (Task Force on Just Transition for Canadian Coal Power Workers and Communities, 2018)
- The institutional arrangements need to be designed in such a way as to promote gaining of trust among the stakeholders.
- Those affected by this public policy decision need to be well informed. (Task Force on Just Transition for Canadian Coal Power Workers and Communities, 2018)
- Workers and community members were dissatisfied with how the Government decided and announced the phase-out in the first place, pointing to limited or no consultation about the impacts for both provin-

cial power grids and for the coal mine and electricity-generation workforces. (Task Force on Just Transition for Canadian Coal Power Workers and Communities, 2018)

- There seems to be a limit to the amount of handholding that's desirable. Some experts preach a gospel of self-reliance: regions should define their destiny for themselves, then seek help to realise their plan, rather rely on plans to be made for them. (Arrowsmith, 2020)
- It is important to target financial resources on some well-chosen industries, i.e. to "smart-specialise. The Flemish region of Limburg quickly executed a strategy ("SALK"), based around nurturing companies in a few specific sectors when the Ford automotive plant closed in 2014 with the loss of 14 000 jobs. Wielkopolska (Greater Poland) has a smart specialisation strategy based on renewables, electromobility and hydrogen technologies.
- Mining sites can be transformed and reused so that they contribute to the sustainable development of the region in which they are located. In most cases, closed mines and quarries have been transformed into tourist, recreational and/or educational facilities, and in some cases, they have even taken another industrial function. (Irimie, et al., 2020)
- Consumers should be compensated for part of the increase in electricity prices that is anticipated by the [German Coal] Commission. Power plant operators are to be compensated for the early closure of their assets. Those directly employed in the coal industry are to be supported by targeted labour market policies. (Agora Energiewende und Aurora Energy Research, 2019)

3 Overview the transition to a low carbon development and respective relevant impacts in Serbia

The post-coal transition is in full swing – In 2018, 36 governments and 28 global companies have committed themselves to eliminate coal power generation by the year 2030 and are implementing measures and initiatives to achieve this goal. (Burlacu, Suditu, & Gaftea, 2019)

Serbia has not yet adopted any document which sets out a coal phase-out. The Energy Sector Development Strategy of the Republic of Serbia for the period up to 2025, with the projections up to 2030, which defines the three main priorities: improvement of energy security, development of energy market and sustainable development, and implement the obligations under the Energy Community Treaty, rests mainly on the indigenous lignite and RES, primarily hydro and wind. This is substantiated in the state-owned Serbian electricity utility Elektroprivreda Srbije (EPS), whose long term planning foresees to continue construction of the new lignite power plant Kolubara B with 1 or 2 units of 300 MW rated capacity, thus completing the generation fleet aimed to operate until the lignite resources in the MB Kolubara would last[3].

This energy sector pathway is modelled as a baseline/reference scenario in the Serbian Draft Low Carbon Development Strategy with Action Plan. This is the so-called B2 scenario in the draft strategy which, compared to 2010, shows a projected emissions increase of 3,2% by 2030 and of 10,7% by 2050.

As Party to the Paris Agreement, Serbia is required, under Article 4 of the treaty, to undertake and communicate ambitious efforts as its nationally determined contribution (NDC) to the global effort to halt global temperature increase well below 2ºC and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels (Article 2 of the Paris Agreement). Article 4 of the Agreement sets out general guidance on the pathways all Parties collectively and individually are to follow in order to meet the global goal: peaking global GHG emissions as soon as possible, recognizing that peaking will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century. Finally, this article also stipulates that Parties should strive to formulate and communicate long-term low greenhouse gas emission development strategies, mindful of Article 2 taking into account their common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.

As a candidate to EU accession, Serbia is expected to implement the EU climate acquis, which includes a wide range of policies and measures with deep implications in the energy system and on GHG emissions. This scenario, in which Serbia accedes the EU (the so-called M2 scenario), has also been modelled in the

[3] https://tracer-h2020.eu/kolubara-district-serbia

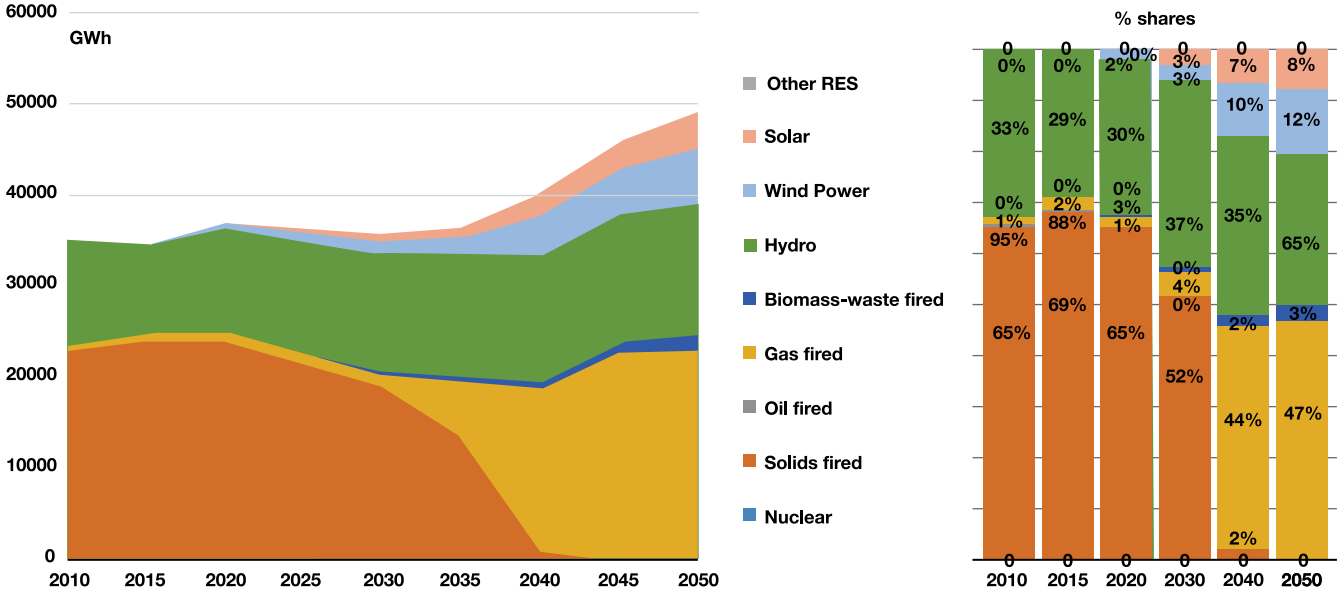
Draft Low Carbon Strategy. The full implementation of the EU acquis in Serbia reduces GHG emissions by 13,2% by 2030 and by 55% by 2050 compared to 2010. These emissions reductions are to be achieved through the implementation of a large set of measures, the most relevant of which are the ETS directive (and equivalent measures); the increase of the use of renewable energy sources (RES) in electricity production; improvement of energy efficiency is key sectors (such as industry and buildings – residential and commercial) and renewal of the transport fleet (passenger and freight).

The Draft Strategy models yet two other scenarios (M3 and M4), one of which - M4 – estimates the full technical potential for emissions reductions in Serbia. Under this scenario, emissions are reduced by 26,4% by 2030 and by 69,1% by 2050 compared to 2010. When compared to 1990, the full technical emissions reduction potential for Serbia was estimated at 76,2% by 2050.

The assessment of the social, economic and environmental impacts of the implementation of the measures in the different scenarios, shows the impacts of different pathways of the transition towards a low carbon future on employment.

The highest emission reductions can be expected in the **sector of Energy Industries** (dominated by the production of electricity and heat). The projected emissions reduction in 2050, compared to 2010, varies between 77% in the M2 scenario and 88,6% in M4 scenario, bringing a complete makeover of the current energy production fleet and completely phasing out of coal as part of the most cost-effective approach driven by increasing EU-ETS carbon price (Figure 1)[4].

Figure 1 Structure of power generation by plant type (GWh net) in the M2 Scenario of the Draft Low Carbon Development Strategy[5]



[4] In scenarios M1 and M3, coal phase out is expected between 2040 and 2045, while in M4, the phase out is expected as early as 2035.

[5] Background document to the Draft Low Carbon Strategy - Combined Result 3 and Result 4: Greenhouse Gas Mitigation Scenarios with Economic, environmental and social impacts of greenhouse gas mitigation scenarios for each of the following years: 2020, 2025, 2030 and 2050

This assessment also shows that the impact on overall jobs in Serbia is limited. In 2030, in the M2 scenario, an impact of -1.4% on net jobs [6] created is expected. For 2050, the impact on net jobs created is of 2% in the M2 scenario, 1.7% in the M3 scenario and of 2.5% in the M4 scenario.

Table 1 Impacts on employment of the different scenarios included in the Draft Low Carbon Development Strategy with Action Plan

	2020	2025	2030	2050
B2 (000 jobs)	2 462	2 468	2 473	2 483
M2 (%)	0,0	-1,3	-1,4	-2,0
M3 (%)	-	-	-	-1,7
M4 (%)	-	-	-	-2,5

Source: Draft Low Carbon Development Strategy with Action Plan

As is the case in all transitions, including in the transition towards a low carbon economy, the negative impact and the benefits will not be felt equally across society: the greatest transformations, could be expected in the "Mining and Quarrying" and in the "Electricity, Gas and Steam Supply"[7], where a net job loss is expected [8]. On the other hand, an important job growth is expected to take place in the "Agriculture and Forestry" sectors, in particular in the forestry and the forestry related sectors (for example, wooden products)[9]. Table 2 shows the impacts on employment on the energy sector (this includes jobs gained minus jobs lost).

Table 2 Impacts on Employment in the energy sector, compared to net jobs in Scenario B2 (% on B2 net jobs)

	2020	2025	2030	2050
M2	0,0	-7,3	-9,3	-22,5
M3	-	--	-	-24,0
M4	-	--	-	-30,2

Source: Draft Low Carbon Development Strategy with Action Plan

As can be seen, while the overall impacts on economy-wide employment are low, the transition implies important job losses in the energy sector (which are, to a certain extent, compensated with jobs in others sectors as mentioned above).

Taking into consideration the composition of the Serbian economy, as a rule, the negative impacts on employment can be expected in sectors dominated by large companies, and the positive in sectors with micro and small enterprises.

In accordance with the strategy background studies, these impacts may be reduced, namely if low carbon investments are financed through loans (instead of own resources) and if revenues of ETS auctioning are used to support the implementation of climate change

[6] Net jobs equals jobs created minus jobs lost.

[7] In these two sectors, respectively, 77% and 89% of employees work at large companies, in accordance with the Statistical Office of the Republic of Serbia

[8] This means that more jobs will be lost than new jobs will be created.

[9] In this sector, 64% of employees work at micro, small and medium enterprises, in accordance with the Statistical Office of the Republic of Serbia

measures and to reduce costs of labour, instead of used to reduce public debt.

The transition to a low carbon development has impacts on other key socio-economic aspects, which have been assessed in the scope of the preparation of the draft Strategy. Of these, two are most relevant in the context of a just transition: the share of energy costs in household expenditure and energy poverty (2M[10] indicator).

As can be seen in Table 3, despite the increase in each year compared to the same year in the baseline scenario (B2), the share of energy costs in households will decrease or stabilize in the long term (2050) compared to the short term (up to 2030) in all scenarios. This means that by 2050, the weight (share) of the costs with energy will mostly remain unaltered in the total expenditures of Serbian families.

Table 3 Share of energy costs in household expenditures (change from B2)

	2020	2025	2030	2050
B2	18%	19%	18%	15%
M2	+0,3%	+0,8%	+1,1%	+2,7%
M3	-	-	-	+2,8%
M4	-	-	-	+5,3%

Source: Draft Low Carbon Development Strategy with Action Plan

[10] The 2M indicator, developed by the European Commission's Energy Poverty Observatory, presents the proportion of households whose share of energy expenditure in income is more than twice the national median share. This indicator has been used to assess the impacts of the implementation of the Draft Low Carbon Development Strategy and Action Plan on energy poverty

As regards energy poverty, the impact assessment shows a decreasing trend up to 2050 in all scenarios (except in M4, where the indicator remains stable), which means that less households will be considered energy poor in 2050 than in 2020. However, the increase in energy price will slightly slow the decreasing trend in energy poverty from 3% in the baseline scenario to 4% in M2 and M3 Scenarios.

Table 4 Energy Poverty: 2M indicator

	2020	2025	2030	2050
B2(%)	5%	5%	5%	3%
M2	5%	5%	5%	4%
M3	-	-	-	4%
M4	-	-	-	5%

Source: Draft Low Carbon Development Strategy with Action Plan

The draft Low Carbon Development Strategy with Action Plan is the only nationally driven/endorsed document that lays a pathway to decarbonization and assesses the economic, social and environmental impacts of such decarbonization, including of a coal phase-out. As such, the roadmap proposed in this report is based on the assumption that coal will be phased out at the pace described in Figure 1, with the positive and negative social impacts described above. This means that, for the purpose of this report, it is assumed that the share of coal in electricity production will start gradually decreasing as early as 2025, with the sharpest decrease in the late 2030's and complete phase out to be reached by the mid 2040's.

4 Socio-economic characterization of Serbia and identification of the most vulnerable regions and sections of the population

Coal mining and coal-based electricity production takes place mainly in the regions of Kolubara and Kostolac.

For a just transition to a low carbon development, there are three main sections of the Serbian population that need to be well know: the coal sector workers, including in the mines and in the TPP; the general population of the coal regions; and the energy poor.

This chapter provides a brief description of the key traits of the three types of sections of the population mentioned above.

In the proposed Roadmap for a Just Transition below, it is recommended that a wide set of data that provides for a detailed characterization of the relevant stakeholders is collected in the scope of preparing and monitoring the implementation and effectiveness of the, so as to ensure that the social change operated can be properly managed.

Coal workers

EPS employed, in 2019, a total of 29 153 (EPS, 2020) workers in 2 mines, 6 thermal power plants (TPP), 3 combined heat and power plants (CHP), 16 hydro power plants (HPP) and 16 small HPP (EPS, no date), as well as in other units and services as detailed in Table 5.

Table 5 EPS workers per Organizational Unit

Organizational unit	Number of employees
"KOLUBARA" MB BRANCH	11.349
"KOSTOLAC" TPPs-OCMs BRANCH – OPEN CAST MINES	2.079
OPEN CAST MINES	13.428
"NIKOLA TESLA" TPPs BRANCH	1.996
"KOSTOLAC" TPPs-OCMs BRANCH – THERMAL POWER PLANTS	704
"PANONSKE" CHPs BRANCH	376
THERMAL POWER PLANTS:	3.076
"ĐERDAP" HPPS BRANCH	709
"DRINSKO-LIMSKE" HPPs BRANCH	417
"RENEWABLE ENERGY RESOURCES" BRANCH	50
HYDRO POWER PLANTS:	1.176
TC "BEOGRAD"	778

TC “NOVI SAD”	1.053
TC “KRALJEVO”	1.512
TC “KRAGUJEVAC”	415
TC “NIŠ”	844
TECHNICAL CENTERS:	4.602
PE EPS HQ	787
BRANCH “EPS SUPPLY”	1.101
DA “BEOGRAD”	940
DA “NOVI SAD”	727
DA “KRALJEVO”	858
DA “KRAGUJEVAC”	284
DA “NIŠ”	550
DISTRIBUTION SYSTEM OPERATOR	3.359
TOTAL: PUBLIC ENTERPRISE “ELECTRIC POWER INDUSTRY OF SERBIA”	**27.529**

Source: (EPS, 2020)

A total of 16 504 workers are employed at the coal mines and at the TPP. These are the jobs, at EPS, directly impacted by a transition to a low carbon economy. Other jobs at EPS (for example, at corporate services), may also be impacted by a reduction or phase of coal mining and of coal fired TPP.

Coal Regions

The Kolubara coal basin with its related sectors (mining supply and power generation chain) belongs to two statistical NUTS 2 regions: Sumadija and West Serbia region with affected municipalities of Lajkovac, Ub (NUTS 3 Kolubarski District) and Aranđelovac (NUTS 3 Sumadijski District) and Belgrade region (affected municipalities: Obrenovac and Lazarevac).

The Kostlac basin is located the Kostolac village, in the Municipality of Požarevac, in the Branicevo District (NUTS 3 Level), in the Sourthern and Eastern Serbia NUTS2.

The data in Table 6 and Table 7 aims at providing a brief snapshot of the Serbian municipalities associated with coal. This is snapshot does not intend to provide a socio-economic analysis of the coal sector or of the coal regions and does not intend to replace or even mimic the diagnosis included in Cluster 3 of the Roadmap mentioned above.

Table 6 shows that all municipalities, with the exception of Aranđelovac (97/1000) present a lower unemployment ratio per 1 000 inhabitants than the average of the country (79/1000). The lowest ration (45/1000) is observed in Požarevac. With regards to the ratio of employed per 1000[11] inhabitants, half the municipalities present a better situation that the national average (305/1000) and the other half a worst situation. The best employment ration is observed in Lazarevac, with 384/1000 and the worst ratio is found in Ub with 274/1000.

The discrepancies between these two ratios (for example, the worst employed ratio – Ub, 274/1000) is not observed in the same municipality as the worst unemployed ratio –

[11] Note that this ratio is not the same as the unemployment rate. For definitions and methodologies, please refer to the source.

Aranđelovac, 97/1000), may be explained by different factors. One could be the age structure of the municipalities, with a large proportion on children and old age people, compared with adults in active life period. The other, may be due large proportions of informal economy, which is not picked up by these indicators. The explanation of such discrepancy has extremely important implications on the transition and is, therefore, an example of the socio-economic analysis that is required under Cluster 3 of the Roadmap.

Table 6 Key population and employment data for the principal coal municipalities (2018)

	Lajkovac	Ub	Aranđelovac	Obrenovac	Lazarevac	Požarevac	Serbia
Population	15475	29101	44625	72524	58622	75334	7186862
Male	7738	14617	22647	35801	28742	36276	3499176
Female	7737	14484	23578	36723	29880	39058	3687686
Employed per 1000 inhabitants	296	274	292	327	384	310	305
Unemployed per 1000 inhabitants	62	56	97	61	49	45	79
Average net salaries and wages per employee (RSD)	59080	46507	44672	51135	64243	52348	49650

Source: (Statistical Office of the Republic of Serbia, 2019)

The data on Table 7 is not detailed or disaggregated enough to allow for any robust analysis. To complete the information on this table, the data on mining and quarrying needs to be disaggregated into the different types of mining, so that coal mining workers can be extracted. The same with regards to Electricity. With this disaggregated data on the activity, it will be possible to further identify any other municipality with meaningful registered employment in the coal sector, thus ensuring its proper coverage in the implementation the Roadmap and in the Just Transition Plan.

Table 7 Registered employment by municipality of work by activity type (2018)

	Lajkovac	Ub	Aranđelovac	Obrenovac	Lazarevac	Požarevac	Serbia
Total	3492	6339	11415	16948	22815	22187	2131079
Mining and quarrying	1326	112	99	13	9094	46	24246
Electricity, gas, steam and air conditioning supply	3	38	83	1925	748	3315	27295

Source: (Statistical Office of the Republic of Serbia, 2019)

5 Roadmap for a just transition

Energy transitions are about people—workers, consumers, businesses, communities, taxpayers and voters. [...] the actors involved have a tendency to protect the status quo and keep carbon-intensive industries alive. Inaction can be costly. Experiences with past transitions have shown that prolonging the lifetime of declining industries often leads to subsidies, higher costs for worker retraining and unemployment, health and environmental costs, and missed opportunities for the diversification of an economy. Early action on a just transition can minimize the negative impacts and maximize positive opportunities.

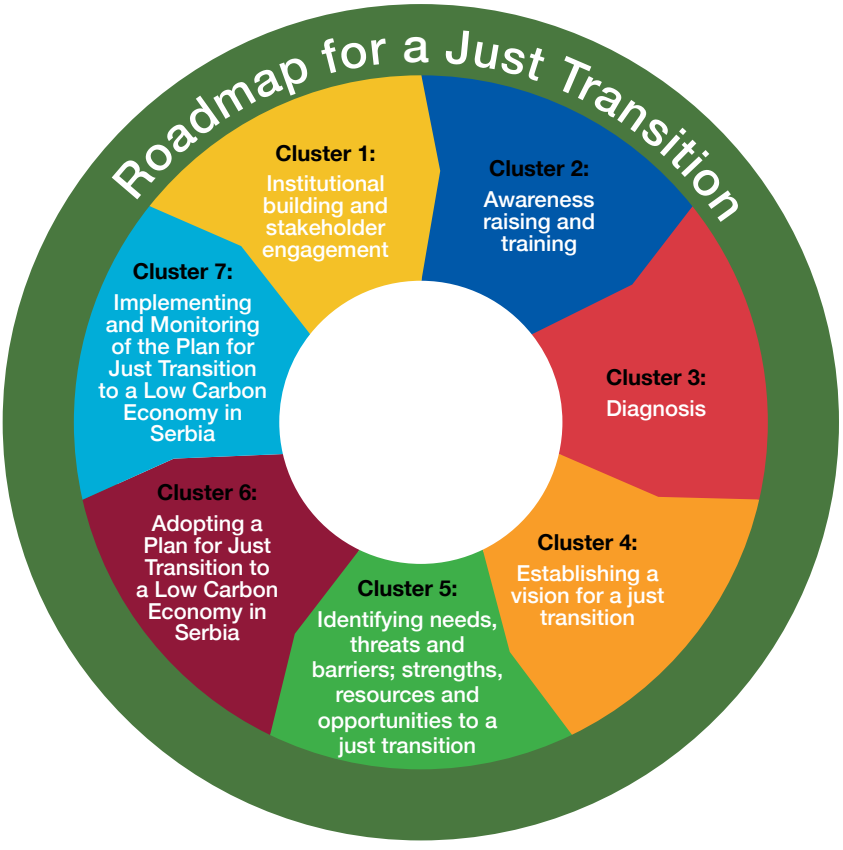
(Zinecker & al, 2018)

The roadmap proposed in this chapter is based on international best practices which are described next to each proposal.

This roadmap is composed of seven clusters of activities or seven main steps (Figure 2), which follow a good policy management approach, starting with the institutional set and engagement of stakeholders, ending with the implementation and monitoring of a Just Transition Plan.

This roadmap does not include proposals for actual measures to promote a just transition, as it is good practice to allow the affected workers and communities decide for their own future. Nonetheless, in the next chapter a list of such potential measures is described so as to facilitate future work on the matter.

Figure 2 Activity clusters for the Serbian Roadmap for a Just Transition



Cluster 1: Institutional building and stakeholder engagement

Ensuring that the impacted communities have the most important say about what comes next is core to a just transition: if the need for transition is externally imposed, the impacted communities should be able to decide on their post-transition future.

This requires structured and effective participation and strong institutions, through the **creation, development and formalization of dialogue mechanisms** for the planning, implementation, monitoring and evaluation of the transition process. In order to be successful, this process needs to be participated by national, regional and local institutions and stakeholders, each with specific roles and responsibilities.

The International Labor Organization's Guidelines for a Just Transition required this process to be conducted by **social dialogue and tripartism**, meaning that all relevant stakeholders, in particular, the government, the employers and the workers need to seat at the table with the same capacity to make proposals and to see them discussed and, eventually, accepted by the other social partners.

There are ample international practices in the establishment of social dialogue mechanisms for a just transition, such as the so called "Coal Commission" in Germany, the Just Transition Taskforce in Canada and the Working Group on Just Transition in Slovenia.

PRINCIPLES OF ENGAGEMENT FOR A JUST TRANSITION

Inclusiveness – engage all categories of stakeholders (public and private**)**

Effectiveness – secure smooth execution to reach the results (not be overly bureaucratic and burdensome)

Accountability – raise awareness on responsibilities and roles

Authenticity – understand the real problems affecting people's life in the coal region and get to know their utmost expectations

Tailor-made – customize our approach to the local specifics

Flexibility – promote various formats for interaction with the stakeholders

Innovation – generate ideas and recommendations with potential for realistic implementation

(PWC, 2020)

The following is an indicative list of stakeholders that should be considered to be engaged in the institutional arrangements and/or more broadly in the stakeholder engagement mechanism to be defined:

- Ministries with responsibility over the following policies:
  - Energy
  - Environment
  - Employment/ Labour Market
  - Social Protection
  - Industry
  - Enterprise/ Entrepreneurship
  - Education
  - Science
  - Infrastructure
  - Economy
  - Innovation
  - Tourism
  - Agriculture
  - Forestry
- Local self-government
- Trade unions for coal mining and TPP workers
- EPS
- Key coal mining and TPP value chain
- Life-long learning organizations
- Local school administrations
- Academia
- Non-Governmental Organizations focused on the following topics:
  - Poverty
  - Social protection
  - Environment
  - Business
  - Youth
  - Elderly
  - Women / Gender issues
  - Informal economy
  - Religious groups
  - Community-based (such as neighbours associations)
  - Consumers
- Banking and insurance

For international best practices that serve as benchmark for this proposal, please see: Annex A: International best practices - International experiences for Cluster 1: Institutional building and stakeholder engagement.

The following are the proposed key activities to be performed under this cluster:

- Establish the Working Group on Just Transition to a Low Carbon Economy in Serbia tasked with producing, overseeing, and evaluating the implementation of a Plan for a Just Transition to a Low Carbon Economy in Serbia (hereinafter, Just Transition Plan or Plan)
- Agree terms of reference and deadline to produce the Plan, including sub-working groups of thematic and/or regional nature
- Identify all stakeholders to be involved
- Define a stakeholder engagement strategy

Cluster 2: Awareness raising and training

Serbia, like many countries (Poland, Romania, Slovenia), is faced with a situation where talks about just transition are taking place or need to take place, without a decision to phase out coal. This creates great challenges to communication and perhaps even more so for the transition itself but should by no means prevent dialogue and awareness raising for a just transition to start.

The kick-off of the work on the just transition (including the establishment of the Working Group) needs to be supported by a clear **communication** of the:

- Why? Why is Serbia discussing just transition?
- What? What is at stake with regards to the just transition? What are the options for the future?
- Who? Who is being impacted and who is going to be involved in preparing for the just transition?
- When? When will the transition happen? When will Serbia start preparing? When will Serbia be ready for the transition?

In accordance with the ILO's guidelines for a just transition, an **awareness campaign** should enhance understanding and provide guidance on the just transition, including its key mechanisms, sustainable development, decent and quality work and green jobs for women and men. A campaign set up in this fashion, covering a wider set of developmental issues, is likelier to focus on the issues that may harness support rather than resistance to the transition. In particular, the focus on the creation of decent work for all and of green jobs is perhaps an effective angle for a transition awareness raising campaign, when a phase out decision is not foreseeable in the near future.

This kick off awareness raising campaign, of a generalist nature, will need to be complemented by a targeted campaign aimed at supporting the buy in and the implementation of the Just Transition Plan, once it is adopted.

It is recommended that Serbia chooses a Just Transition "**Champion**" that can become the face Serbians and, in particular, the affected communities can relate to the process. This (or these) champion(s) can come from within government, but also public or civil society organizations (Zinecker & al, 2018). In some countries (such as Canada), this role was taken up by a minister. Once the champion is identified, he or she should be briefed /trained on the just transition ahead of Serbia.

Managing the transition is a complex process which requires specific training, in particular of the members of Just Transition Working Group. The main objective of this "inception" training it to make sure the institutional capacity for the transition is strengthened from the outset and that decision made by WG members are based on the best available information and practices.

The training programme could include the following topics:

- Transition(s) throughout history; transition to a low carbon economy
- Mechanisms for a just transition
- Stakeholder engagement for just transition
- Key options for a just transition
- Options for financing the transition
- International practices

This training is independent from the training associated with the required reskilling of workers to fit them to the new jobs and which is to be in integral and important part of the Just Transition Plan.

The following are the proposed key activities to be performed under this cluster:

- Raise awareness and enhance understanding on Just Transition Towards a Low Carbon Economy
- Train the relevant organizations
- Identify, train, brief champions

The forum of Mayors on Just Transition may constitute an opportunity for awareness and training of local self-governments in the Serbian coal regions https://regionsbeyondcoal.eu/3rd-forum-of-mayors/

Cluster 3: Diagnosis

Transitioning to a low carbon economy is a matter of large numbers: millions of tonnes of coal and of CO2, thousands of hectares, gigawatts, billions of euros, thousands of workers. A just transition is all that plus one simple, but extremely important number: one person. This number substantiates the **principle of leaving no one behind** that underlies any transition striving to be fair.

The Just Transition does require a sound knowledge base of the impacts of the transition to low carbon in three main perspectives: a full socio-economic characterization of the **workers** and **communities** most impacted by job losses and a characterization of those most **vulnerable to energy poverty** due to the potential increase of energy costs.

The socio-economic analysis of the affected communities should be done at the NUTS 3[12] level and, where possible, at the level of the relevant municipality.

The following key data for the characterization of the regions most impacted (Kolubara and Kostolac) should be collected in the Just Transition Plan preparation phase and regularly after adoption as part of the plan's monitoring system. Where available, the historical time series should be comprised of 10 years.

Data required for the characterization of the coal workers

- Total number of workers
  - Gender
  - Age
  - Salary level
- Workers at the mines
  - Total number of workers
  - Gender
  - Age
  - Type of function
    - Age
    - Gender
  - Salary level
    - Per type of function
- Workers at the TPP
  - Total number of workers
  - Gender
  - Age
  - Type of function
    - Age
    - Gender
  - Salary level
    - Per type of function
- Workers at corporate services
  - Total number of workers
  - Gender
  - Age
  - Type of function
    - Age
    - Gender
  - Salary level
    - Per type of function

[12] https://ec.europa.eu/eurostat/web/nuts/background

Data required for the characterization of the coal communities

- Resident population
- Age structure
- Gender
- Rate of at risk of poverty
- Average size of household
- Level of education
  - By gender
- Life expectancy at 65
- Employment rate (percentage of total population employed)
  - Per age group
  - Per gender
  - Per level of education
- Unemployment rate (percentage of active force population unemployed)
  - Per age group
  - Per gender
  - Per level of education
- Number of employees per sector (including all sectors which account for at least 95% of jobs)
  - Per age group
  - Per gender
  - Per level of education
- Average length of unemployment
- Ratio of long-term unemployment on total unemployment
- Average nominal monthly net wages
  - Total
  - Per sectors which account for at least 95% of jobs
- State aid for the unemployment
  - Monthly average per unemployed worker
    - Per sectors which account for at least 95% of jobs
  - Yearly total
- Number of new companies
  - Per sector

Other information required:

- List of employers which account for at least 95% of jobs
  - List of installations per employer
    - Number of employees per installation
  - Types of skills employed (e.g. electricians, welders, marketeers, accountants, mechanics…)
- Characterization of the informal economy
  - Number of people
  - Link to key sectors
- Characterization of public health
  - Incidence of respiratory diseases
    - Per age group
    - Per gender
    - In comparison with national total
- Characterization of occupational health
  - Per key sector

Data required for the characterization of energy poor households

As energy poor households can be found anywhere in the country, this data is to be collected at national level.

- 2M indicator [13]
  a. Per NUTS3
  b. Per municipality
- Share of energy in household expenditure
  a. Per NUTS2
  b. Per municipality

The following are the proposed key activities to be performed under this cluster:

- Perform detailed analysis of the coal workers, focusing on age structure and skills profile
- Perform detailed socio-economic analysis of the impacted regions / communities
- Characterize energy poverty

[13] The 2M indicator, developed by the European Commission's Energy Poverty Observatory, presents the proportion of households whose share of energy expenditure in income is more than twice the national median share. This indicator has been used to assess the impacts of the implementation of the Draft Low Carbon Development Strategy and Action Plan on energy poverty.

Cluster 4: Establishing a vision for a just transition

This cluster is the core of the planning for the just transition: allowing the people to decide for their own future. As mentioned before, while the people, the communities cannot control departing from coal, they should be allowed to control their destination.

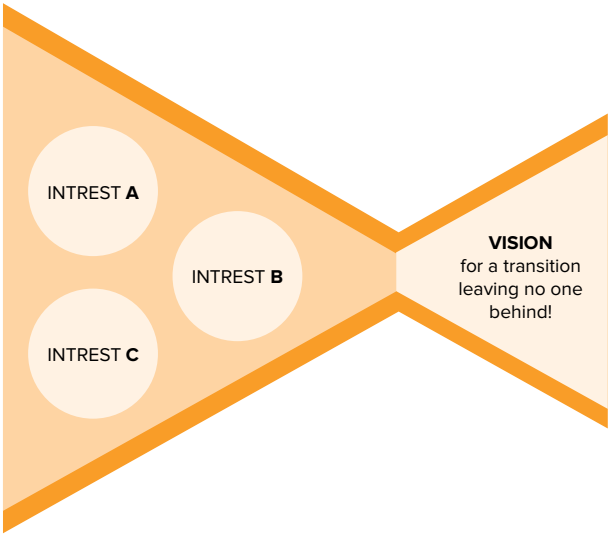
This needs to be a very well-crafted public participation and consensus building exercise. People need to have all the information required to make the best decision about their future as individuals and as a community, as present and as future generations. In addition, the process needs to be set up in a way that it is a true two-way dialogue. Providing clear and comprehensive information to stakeholders should provide them with the boundaries necessary to ensure their vision to the future is grounded on material feasibility (Irimie, et al., 2020).

The vision for the just transition defines what a community will be like in a post-coal era. It needs to be made up of everyone's future and should include something for all. This does not mean a unified future for all, but it means that no one is left behind.

The vision, being driven by the need to provide decent and quality work in new activities to a large number of coal sector working men and women, needs to be mindful that, within these, three main categories whose interests are different and for which different approaches for the transition need to be conceived (Irimie, et al., 2020):

- older workers who lose their jobs and need compensation for income loss;
- middle age (mid-career) workers who need re-skilling and upskilling;
- younger people and new entrants whose employment depends on new jobs created through diversification.

Creating a vision for a post-coal era in a coal intensive region, aims at providing a sense of direction to those that will progressively stop working on coal mines or coal fired TPPs, but it is also about the future of the whole community which, directly or indirectly is dependent on this economic activity which is to be phased out. The importance of coal in these coal intensive regions, make it, nonetheless, nearly impossible to distinguish the first from the rest. The interests of one are the interests of the other. Combined, they form a vision for a just transition that leaves no one behind.



The following is the proposed key activity to be performed under this cluster:

- Define a participated vision for a just transition

Cluster 5: Identifying needs, threats and barriers; strengths, resources and opportunities to a just transition

Needs

Threats

Barriers

Strengths

Resources

Opportunities

The vision for a transition and the discussions that lead up to it, provide an important bases for a SWOT+ analysis that needs to be done in order to lay the grounds for the definition of policies and measures to ensure a just transition for all.

The definition of the vision has allowed for the identification of different potential pathways for the regions in transition which take into consideration the inputs of the local, regional and national stakeholders engaged. This SWOT+ exercise applied to such pathways will allow for the identification of needs (such as skills or infrastructure), threats (e.g. regional competition or indecisive agenda), barriers (such as expensive financing); strengths (e.g. dynamic civil society), resources (such as buildings, land or sunshine) and opportunities (such as funding from the European Union).

The following is the proposed key activity to be performed under this cluster:

- Identify, assess, and analyse needs, threats, barriers, strengths, resources and opportunities

Cluster 6: Adopting a Plan for Just Transition to a Low Carbon Economy in Serbia

The Plan for a Just Transition to a Low Carbon Economy in Serbia is to include a set of objectives and measures aimed at achieving the vision and the different components that make it up, as determined in the previous cluster.

The plan should mostly include three types of measures:

- welfare
- economic diversification
- combating energy poverty

The welfare measures are mostly addressed at the older workers that are close to retirement or are eligible to an early retirement scheme specifically set up to compensate for income losses due to the transition from a coal based economy.

The economic diversification measures are addressed at the middle age and younger workers, who need reskilling and job opportunities in the new activity sectors defined as priority in the process to define a vision for the transition. These measures may benefit the community as a whole, beyond the coal workers directly affected by the transition.

In many cases, a mix of welfare and economic diversification measures will be required to support the transition of specific workers.

Finally, the energy poverty measures are aimed at ensuring Serbia's capacity to achieve Sustainable Development Goal 7 (Ensure access to affordable, reliable, sustainable and modern energy for all) in the context of a transition to a low carbon development.

This National Just Transition Plan should be constituted or complemented by regional plans. While some instruments, including incentives or compensations should be the same at the national level, it is expectable that the different regions chose different economic diversification paths.

Chapter 6 below, presents a list of potential measures that could be included in Serbia's Just Transition Plan and any regional plans. The measures for a just transition must be decided upon by the stakeholders. As such, such a list is merely indicative, based mostly on experiences in other countries and aiming at providing a basis to kick off discussions.

No attempt has been made to assess technical, financial, or any other type of feasibility of the measures listed.

For international best practices that serve as benchmark for this proposal, please see: Annex A: International best practices - International experiences for Cluster 6: Adopting a Plan for Just Transition to a Low Carbon Economy in Serbia.

The following is the proposed key activity to be performed under this cluster:

- Identify measures to achieve the vision for a just transition
- Adopt a Plan for a Just Transition to a Low Carbon Economy in Serbia

Cluster 7: Implementing and Monitoring of the Plan for Just Transition to a Low Carbon Economy in Serbia

The implementation of the Plan is the most complex of the clusters proposed in this report. It is when all wills need to come together and when change is going to be requested of the coal workers and of the coal communities. Not all will be happy, but the plan needs to strive not to leave anyone behind. A tight support network needs to be built to that effect.

Implementing the Just Transition Plan will require, as recommended in the ILO guidelines, the mainstreaming of the transition measures into the key sectoral policies and key line ministerial agendas. It will require a steadfast leadership, as the transition will occur through several decades, with periods of greater intensity and periods of adjustment and settlement.

As during the planning phase, communication is crucial. Coal workers and communities need to aware of the long-term vision and to understand the relevance of each step towards achieving such vision, which is aimed at providing with decent and quality work in a diversified economy.

The implementation of the Plan needs to both promote and meet the needs of the diversifying economy. Coal will not be phased out in a day, the same as other jobs will not be created in one day. Not everything can happen at once, (Donnari & al, 2018) but evidence suggests that the sooner and the more gradual the action, the lesser the costs (Agora Energiewende und Aurora Energy Research, 2019).

There are two main challenges that can be identified for this stage: securing the necessary resources for the implementation of the measures and keeping all relevant stakeholders closely and actively engaged and committed to the efforts required for the transition.

Burlacu, Suditu, & Gaftea, 2019 argue that it is of the utmost importance to strengthen administrative capacity: employee training in specific areas of public administration, such as accessing funds and writing projects on various priority axes, developing language skills in International languages, financial management, project management, technical expertise [to] unlock some existing barriers in identifying and capitalising on opportunities development.

The implementation of the Plan needs to be closely followed by the implementation of a monitoring system, which must aim at monitoring the implementation of the measures and the effectiveness of the resources employed, but also to monitor social change and ensure no one is left behind.

For international best practices that serve as benchmark for this proposal, please see: Annex A: International best practices - International experiences for Cluster 7: Implementing and

Monitoring of the Plan for Just Transition to a Low Carbon Economy in Serbia.

The following are the proposed key activities to be performed under this cluster:

- Secure resources required for each measure
- Keep stakeholders engaged and committed
- Monitor the implementation
- Manage the change

6 Compilation of potential measures to promote a just transition

Affected workers means workers who have permanent jobs
(full-time or part-time) at a coal mine or a coal-fired generating station, now and throughout the transition [...];

Affected communities means communities that depend on a coal mine or a coal-fired generating station for employment, tax or royalty revenue, services, impact benefit agreements, or economic activity.

Task Force on Just Transition for Canadian Coal Power Workers and Communities 2018

The measures compiled in this chapter are merely indicative. As stressed before, the vision, objectives and measures should be defined by those most affected by the transition, through the stakeholder engagement process and the institutional setting described in this document. The following list aims mostly at facilitating future discussions, by showing possible avenues, but should not limit or constraint the stakeholders discussions and decisions.

The measures described here are aimed at ensuring a just transition to both coal mining and TPP plants as well as to the communities where these activities take place. They are divided in two large sections: **welfare and re-skilling measures** aimed at the affected workers and **economic diversification measures** aimed at both the affected workers and the affected communities.

Figure 3 lists the measures that, taking into consideration international practices, are included in this report with a view to proposing their consideration for the just transition to low carbon development of the Serbian coal regions.

Figure 3 List of potential measures for a just transition described in this report

WELFARE AND RESKILLING MEASURES	ECONOMIC DIVERSIFICATION MEASURES
• Gradual reduction of the workforce and internal reskilling • Compensation and incentive to restart • Reskilling of coal workers • Promoting employability of coal workers in the diversifying economy	• Rehabilitation of the affected lands and their reintroduction into the economic circuit • Preservation of the coal mining cultural heritage • Tourism • Production of energy • Retrofit coal TPP • Enhance infrastructure in affected communities • Create an innovation hub dedicated to the area of specialization • Invest in the education and training system • Combating energy poverty: a just transition for the poorer and most vulnerable communities.

6.1 Welfare and reskilling measures

A timely planning of the transition to a coal phase out allows for the progressive implementation of different combinations of measures. This reduces the burden on the available resources for the transition, but, in particular, has the potential to minimize the intensity of the negative socio-economic impacts.

Gradual reduction of the workforce and internal reskilling

A gradual reduction of the workforce can alleviate the intensity of the impacts and of the resources required in the long term. In accordance with (Ciuta & Gallop, 2018), the Serbian coal sector presents productivity ratios (tonne of coal or GWh per worker), which are still far from regional benchmarks and from EU averages, which is partly explained by the important role the sector had in avoiding joblessness in recent Serbian history.

Measures aimed at enhancing the productivity of the sector do not need to be justified by a decision on a coal phase out. Several countries, to name only two in the region - Romania (Initiative for Coal Regions in Transition - European Commission, 2020) or Slovenia (European Commission, 2020) - are preparing for a just transition without having decided on the phase out.

The main goal of this measure is to gradually reduce the coal work force by, in particular, allowing older workers to leave the labour market at an earlier age. In order to deepen the reduction, a moratorium on hiring new workers would be implemented and schemes for voluntarily leaving the sector (and which are not eligible for early retirement) would also be supported. Gaps in functions would primarily be filled through internal mobility backed up by the necessary reskilling.

As such, four main tools could be used to gradually reduce the workforce and increase the productivity of coal mines and thermal powerplants:

- a moratorium on new hiring,
- early old-age retirement scheme
- special unemployment benefit for workers voluntarily leaving
- reskilling of workers to perform functions left vacant.

Compensation and incentive to restart

While the previous measure is mostly aimed at allowing workers to enjoy retirement at an earlier age, it may also release workers which are well within the active life period. For those, support in finding a new occupation, a new source of income should be provided (technical detailed studies would determined whether different types of support can be accumulated or whether they are mutually exclusive).

Two types of support to restart can be conceived:

- Special compensation to start own business
- Compensation for relocation in case of employment in other part of the country

With regards to the compensation to start own business, while support should be geared towards new businesses aligned with the vision for a just transition, support to other types of business could also be considered.

This measure needs to be fully articulated with measures for reskilling, for promotion of entrepreneurship and innovation, which are mentioned below and are to be aligned with the vision for the just transition. As Arrowsmith (2020) mentions, in relation to experience in Romania, "there's pessimism and optimism around the effectiveness of using money to try to make entrepreneurs out of coal miners. "It is difficult to create an entrepreneur overnight."

All support provided should be based on application demonstrating the business case, so as to ensure support goes to viable projects.

As for compensation for relocation in case of employment in other part of the country, while the just transition for the coal intensive regions should not be based on promoting worker migration to other parts of the country, that may be equated in particular, when the skills of the coal workers may be needed elsewhere. For example, this type of measure could prove useful in a situation where coal miners could be employed in other types of mines. In accordance with different accounts[14] [15] [16] [17], Serbia has one of the world's greatest potentials for the production of lithium (in particular in the Jadar basin), which is a fundamental mineral for the transition to a low carbon economy and is moving ahead in exploring such resources.

For international best practices that serve as benchmark for this proposal, please see: Annex B International practices for potential measures to promote a just transition - International experiences for Gradual reduction of the workforce and internal reskilling and Compensation and incentive to restart.

Reskilling of coal workers

This measure provides the bridge between the set of measure for direct support to coal workers and the measures aimed at supporting the transition of the community as a whole.

As workers leave the coal industry, they are to be able to find decent and quality work in their communities. These new jobs are to be created through the implementation of a set of measures aimed at achieving the vision for a just transition and they will likely require a set of skills which may not be available in the community and most even more so among the coal workers.

Based on the skills required for the transition, and while still working in the coal industry, a special reskilling programme for coal workers could be implemented to prepare them be competitive in the transition labour market.

[14] https://serbia-energy.eu/serbia-has-the-worlds-largest-lithium-reserves/;

[15] https://www.bloomberg.com/news/features/2019-08-29/there-may-be-a-fortune-buried-in-a-forgotten-corner-of-europe;

[16] https://www.australianmining.com.au/news/rio-tinto-advances-serbian-lithium-project/

[17] https://www.miningsee.eu/rio-tinto-in-serbia-lithium-exploitation-plan-presented/

A WORKER IN TRANSITION – AN EXAMPLE

Worker A, is a 43 year old male truck operator at a coal mine. He accepts to be part of the voluntary contract terminations programme and wants to start his own business: driving a tourist electric minibus.

While still working at the mine, he receives training in a foreign language and the training required to upgrade his driver's licence to driving passenger buses.

After reskilling is completed, Worker A leaves the coal sector and receives a special incentive to start his tourist electric minibus company, which he could accumulate with any incentives in place for the acquisition of electric buses (in the context of the promotion of the Low Carbon Development).

Promoting employability of coal workers in the diversifying economy

With the transition, the labour market suffers great changes. What was once dominated mostly by one large employer, very well known to all, is now, in a diversified economy, most likely populated by many small, innovative, experimental, dynamic start-ups.

This dynamic labour market needs to be backed up by a system that can quickly identify the needs of the companies and is promptly able to set up the education a training required to answer such needs.

While this system should be set up for the whole community, it should have a special focus on the coal workers in transition by creating an inventory with labour market information, such as skills profiles, demographics, locations, and current and potential employers, promoting an active match making with potential employers.

For international best practices that serve as benchmark for this proposal, please see: Annex B International practices for potential measures to promote a just transition -International experiences for Promoting employability of coal workers in the diversifying economy.

A CITY THAT TRANSITIONED TWICE

Genk, a city in Belgium with 65 000 inhabitants, once flourished with its coal mine. The need for labor force was met, to a great extent, by emigrants. About 54% of current Genk population originates from about 85 different countries*.

Between 1960 and the late 1980s, as the coal mines closed, the city turned to other industries, in particular the auto industry.

In 2014, a car factory was shut down, affecting the livelihoods of nearly 10 000 people, 4300 of which worked directly at the factory.**

The gradual decline of the coal industry was countered by a vibrant auto industry. The decline of the latter, however, left a mark in Genk. Despite the compensation workers received, the labor market has not yet recovered from the gat created by the shutdown of the factory. As the shutdown came by surprise, all the authorities could say was: "If you know a big company that would like to come to [Genk], please let them come."***

* https://en.wikipedia.org/wiki/Genk

** https://financialpost.com/news/black-day-for-belgium-as-ford-closes-factory-putting-4300-out-of-work

*** https://www.nytimes.com/2013/11/06/business/international/ford-pays-a-high-price-for-plant-closing-in-belgium.html

pixabay.com

6.2 Economic diversification measures

A country, a region, a city, a neighbourhood will be hardest hit by a transition, any transition and as such, by the transition to a low carbon development as well, the most dependent it is on the economic activity being reduced or phased out. As mentioned before, transitions may have different drivers. More often than not, the biggest driver for transition is economic development and market conditions. Developed economies evolved, or transitioned, from primary sector to secondary sector during the industrial revolution and have transitioned to a heavy reliance on the tertiary sector in the post WWII era. This latest transition, mostly driven by globalization and by loss of global competitiveness, has in many cases led to important job losses and deep crisis in some communities.

The case of the Belgium city described in the box comes to show that economic diversification – not relying on a single activity be it coal, auto industry, tourism or any other – is fundamental for increased resilience to any shock that may hit such activity. As show, the same region, the same city may be hit more than once if it is not able to learn from past experience.

The transition towards a low carbon future for the coal intensive regions in Serbia should be guided by this principle of economic diversity. This should be clearly communicated to stakeholders in the process for definition of a vision.

The following list of measures for a just transition towards a low carbon future, are described with the single purpose of allowing Serbian stakeholders to be inspired by the experiences of other regions or cities which have transitioned, are transitioning or are planning to transition from a coal dependant to a diversified economy. It cannot be stressed enough that the future should be decided by the workers and the communities affected.

Rehabilitation of the affected lands and their reintroduction into the economic circuit

The Serbian Law on Mining and Geological Explorations requires that lands used for mining and rehabilitated and reclaimed. As expected, there is great experience in Serbia in rehabilitating mining land to other uses, sometimes the pre-mining use, more often than not, a use which is determined in consultation with stakeholders. Of these uses, many are nature-bases solutions such as “nature conservation, semi-natural revegetation;” “water areas/residual lakes;” “agriculture” and “forestry.” (Knoch, Rademacher, & Schlepporst, 2020).

The process for rehabilitation of the land is, therefore, a legal requirement, and is part of most, if not all, plans for just transition across the world. It is likely that the miners have most of the required skills for this job and any reskilling required should be fairly simple. Nonetheless, the actual reclaiming and rehabilitation process will employ a “superfluous” number of people (Ristovic, Stojakovic, & Vulic). The future use of the land may have a more important contribution to sustainable development and the just transition.

The future use of the reclaimed and rehabilitated land will be dependent on several factors, interconnected among each other:

- legal framework
- the vision for the just transition
- suitability of the land for specific uses (for example, some lands may not be suitable for agriculture due to soil pollution)

Mine sites, particularly large coal open pits, are usually returned to their pre-mine uses, primarily when prime farmland is mined, but where conditions for land restoration are poor, an adaptive management approach allows reclamation of disturbed land in line with different surrounding land uses and conditions. The choice of reclamation method depends on geological, soil and climate conditions, the planned use of land (crop and ornamental plant production, forestry, wildlife habitats, water accumulations, infrastructural networks, sport and recreation objects, tourism and culture events, etc.), the phase of the mine lifetime and available technological solutions, equipment and financial resources. There is evidence that the benefits of sustainable, multi-functional use of natural and semi-natural landscapes exceed the gains from their conversion to single-purpose land use types. Rehabilitated mine sites should be able to take advantage of the existing infrastructure and contribute to the local economy after the mine has closed

(Popovic, et al., 2015).

Based on international experiences, some of the measures described below reflect different choices for the use of the land previously occupied by coal mines, including its infrastructure. Some may be mutually exclusive, many could be considered in combination.

For international best practices that serve as benchmark for this proposal, please see: Annex B International practices for potential measures to promote a just transition - International experiences for Rehabilitation of the affected lands and their reintroduction into the economic circuit.

Preservation of the coal mining cultural heritage

Transitioning from coal does not imply forgetting coal. Coal mining is part of the history and culture of the regions. Additionally, an activity and a place that powered a country for decades merits being preserved and celebrated.

The first step to preserve the sites and their memories is to provide it with a legal protection state, that ensures future uses honour the heritage of the mines and of the miners.

The protected sites are often the grounds for a transition that promotes the creation of innovation hubs, start-up nests (through rehabilitation of its infrastructure, in particular buildings) and with tourism, as described below.

For international best practices that serve as benchmark for this proposal, please see: Annex B International practices for potential measures to promote a just transition -International experiences for Preservation of the coal mining cultural heritage.

Tourism

There are several approaches to promoting tourism in the transition towards low carbon development in coal intensive regions.

One is based on an industrial musealization of the site, which typically follows their respective legal protection as described above.

Another approach is based on the choice for land use after rehabilitation. Some mining lands are reconverted into forest, which are then promoted as hunting sites. In many cases, the mining pits have been transformed into artificial lakes providing a myriad of opportunities for tourism activities.

For international best practices that serve as benchmark for this proposal, please see: Annex B International practices for potential measures to promote a just transition -International experiences for Tourism.

Production of energy

As mentioned before, the decision on the future land use of the mining pits is conditioned by several aspects, including of technical, biophysical and regulatory nature. As mentioned above, mining pits can be transformed into multipurpose lakes, but they can also be rehabilitated for multiple uses.

In keeping with the regions' history and tradition, the mining pits can be rehabilitated to continue producing energy. They can become solar power plants (either PV or Thermal Concentrate, in the later case creating a unique opportunity to employ some key skills from the TPP workers) or wind farms.

When the soils are not suitable for agriculture, they be used to produce energy crops, which can be used to replace fossil fuels. Forests may also be grown in these lands, which can become part of the supply chain for biomass fired power plants.

In many circumstances, more than one such use can be combined. For example, a wind farm is compatible with the production of energy crops or even with food production.

DRMNO – VIMINACIUM SCIENCE-TOURISM CASE STUDY

The Viminacium Science Centre – dedicated to a 2000 years old Roman City and to pre-historic natural findings (such as a mammoth), is mostly surrounded by the Drmno/Kostolac mine. The opportunity for an integrated science-tourism post-coal development seems to be grounded on the experience already on the ground.

A PV power plant can be mounted on a lake, thus giving a double use to the same land and reducing evapotranspiration, due to shading.

For international best practices that serve as benchmark for this proposal, please see: Annex B International practices for potential measures to promote a just transition - International experiences for Production of energy.

Retrofit the coal TPP

A coal fired thermal powerplant can be retrofit to other uses consistent with a low carbon development, such as switching to biomass fuel. This retrofitting of coal TPP allow retaining of many of its skill workers, while still attracting investment and innovation to coal regions.

For international best practices that serve as benchmark for this proposal, please see: Annex B International practices for potential measures to promote a just transition - International experiences for Retrofit the coal TPP.

Enhance infrastructure in affected communities

Investing in infrastructure has both short- and long-term contributions to a just transition to a low carbon development for coal intensive regions. Given the closeness of the TPP to the coal mines, the coal intensive regions did not require strong connectivity infrastructure to thrive. This is the opposite to a diverse economy where efficient connections are fundamental for the attractiveness of the regions. The relative proximity of the two coal intensive regions to the main urban centres in Serbia (namely to Belgrade), is a competitive advantage.

CLIMATE RESILIENT TRANSITION

Serbia is vulnerable to the impacts of climate change, in particular to extreme weather events such as droughts and floods.

In order to be sustainable, the vision for the transition of the coal regions and the measures to achieve it are to be resilient and to contribute to the regions adaptation to climate impacts.

For example, in Australia*, the conversion of a mine pit to an artificial lake is being considered as a measures to fight persistent droughts.

In Serbia, such artificial lakes could also be an important tool in major flood management.

* https://www.newcastleherald.com.au/story/6555738/hol es-in-hunter-coal-mine-lakes-plan-as-company-seeks-government-funds-for-feasibility-studies/

Nonetheless, roads, railways and inland waterways are only part of the key infrastructures required. When the regions are transformed into innovation hubs, solid high-speed internet infrastructure, for example, also needs to be built.

"Concerning quick wins, we gave the utmost importance to infrastructure. Without roads or highways to connect to regions, R&D, innovation and soft actions are difficult to work on."

(Arrowsmith, 2020)

Any economic diversification strategy for the coal intensive regions will have to rely on a strong education system. There are several examples, including in Romania, where the just transition plan included the construction or improvement of school buildings from kindergarten to higher levels of education, including infrastructure for adult learning.

Create an innovation hub dedicated to the area of specialization

A common approach to a just transition is to, in the context of economic diversification, elect an area of specialization for the region to enhance its competitiveness. This area of specialisation is defined in the context of the vision for the just transition, and some argue it can be materialized in a **Smart Specialisation Strategy** (Donnari & al, 2018). Serbia has adopted a **Smart Specialisation Strategy**[18]. It is recommended that the experiences and methods used could inspire the replication of an exercise of a similar nature in the regions in transition.

[18] https://pametnaspecijalizacija.mpn.gov.rs/wp-content/uploads/2020/09/Smart-Specialization-Strategy-of-the-RS-for-the-period-2020-to-2027.pdf

DRMNO – VIMINACIUM ACCESSIBILTY CASE STUDY

The hypothetical Drmno-Viminacium integrated science-tourism post-coal development (described in a box above) offers an interesting testing ground for infrastructure development.

In accordance with the Archaeological Park Viminacium website (http://viminacium.org.rs/en/arheoloski-park/turizam/**), the current distance to Belgrade is between 97,1 and 107km. The shorter rout takes 1h22 minutes and the longer route 2h12m. There is no train access, and the closest Bus station is at TPP Kostolac B, 1km away. Visitors are advised to use personal car.**

Interestingly enough, the Park has a dock at the Danube river, 5km away. A transportation to the site can be organized upon request.

Infrastructure building opportunities could include: a train line; improvement of the road between the E-75 highway junction and the park to reduce road travelling time and construction of a canal to bring the dock to the park (this canal would divert water from the Danube to feed the artificial lake(s) that could be created in the mining pits).

If there are no established and well-coordinated networks that include R&D institutions as well as industry clusters, a high-carbon industry region may lack the innovative capacity to drive low-carbon transitions.

(Roelfes, et al., 2018)

In this context, it is fundamental to create an enabling environment to attract and promote Research & Development into the regions and, which usually follows closely, promoting entrepreneurship and innovative companies.

Often associated with the promotion of R&D and entrepreneurship is the rehabilitation of industrial buildings which allow for the clustering of companies, NGOs and academia and promotes cooperation among the different actors.

For international best practices that serve as benchmark for this proposal, please see: Annex B International practices for potential measures to promote a just transition -International experiences for Create an innovation hub dedicated to the area of specialization.

Invest in the education and training system

The transition is a long-term process which aims at delivering sustainable and enduring results. This can only be achieved through significant investment in the education system, from, elementary to superior levels, including in the adult learning and reskilling system.

The need for investing in the quality of the education system is irrespective of any transition system, but it is fundamental in any economic diversification effort. In this circumstance, priorities in terms of creating skills though education need to be aligned with the vision and objectives of the just transition. In this report, it is argued that this should not be prejudged but left for decision by the stakeholders, namely through implementing Cluster 5 of the proposed Roadmap (Identifying needs, threats and barriers; strengths, resources and opportunities).

Table 8 illustrates an exercise for the identification of skills needed for green jobs.

Table 8 Results of an exercise for identification of skills gaps for green jobs.

Green job	Skill gaps identified
Forest and environment agents	Prevention of forest fires; topography; use of compass; driving of vehicles
Qualified workers in hunting activities	Veterinary first aid, environmental protection, plants, wildlife, fire prevention and management
Forest fire workers	Use of specific radio networks (Tetrapol)
Qualified workers in forestry and natural environment activities	Occupational risk prevention, pruning, fabrication of biomass, natural environment, use of chainsaw

Prevention of labour and environment risks agents	Law, new chemical substances, nanotechnology
Waste classification workers	Differentiation of types of waste and treatment for each type of waste. In the future, training on new regulations, new materials and new waste management systems can be needed
Environmental and forest technicians.	Cost and process analysis of forest exploitation, forest certification (PEFC and FSC), forestry-related legislation, management and planning methodologies
Vehicle cleaners	Environmental background
Sweepers	Waste classification according to enwvironmentally friendly criteria
Power plant technicians	Electric cogeneration in small power plants; wind turbines
Electricity technicians	Renewable energy; energy efficiency; electric and hybrid vehicles; LED lighting

Source: CEDEFOP, 2019

Applied to the roadmap proposed in this report, the green jobs would be identified through Cluster 4: Establishing a vision for a just transition; the skill gaps would be identified in Cluster 5, and the measures to address such skill gaps through the education system, would be identified in Cluster 6: Adopting a Plan for a Just Transition.

For international best practices that serve as benchmark for this proposal, please see: Annex B International practices for potential measures to promote a just transition - International experiences for Invest in the education and training system.

6.3 Combating energy poverty: a just transition for the poorer and most vulnerable communities

The **Sustainable Development Goal (SDG) 7: Ensure access to affordable, reliable, sustainable and modern energy for all** is a key concern to Serbia, in particular in light of the energy poverty indexes of the countries and of the share of energy in household expenditures.

As described in chapter 3, the transition to a low carbon economy is expected to have a barely noticeable impact on such indicators. Nonetheless, Serbia should continue to search for opportunities to alleviate energy poverty and reduce the share of household expenditures, in particular for the poorest and most vulnerable families.

In accordance with a World Bank's Energy Sector Management Assistance Program country brief (World Bank, 2018), Serbia has, since 2014, been implementing an energy bill discount program (energy benefit) for vulnerable households, which is one of the most common approaches to alleviate energy poverty and reduce energy costs for poorer families. However, the World Bank assesses, "the coverage of the electricity benefit was low, at less than 4 percent of all households in June 2014, with low take-up among those eligible because the program had been defined and implemented in ways that made it difficult for many households to qualify for it". With technical assistance provided by the WB, Serbia has introduced several changes to the benefit, namely increasing the eligibility thresholds, streamlining the application process and very importantly, increasing the program's budgetary endowment.

In order to enhance the sustainability of alleviation of energy poverty through discounted tariffs, it is important to invest in energy efficiency, which allows for a reduction of energy consumption. In the context of a just transition to a low carbon economy, Serbia needs to develop mechanisms that specifically target supporting energy poor families in investing in energy efficiency of their households and household appliances.

The Commission Staff Working Document on the Green Agenda for the Western Balkans (European Commission, 2020), has a specific reference to the approach recommended to address energy poverty, which is defined as the social dimension of energy transition that must be addressed for households that cannot afford key energy services to secure a basic standard of living and citizens buy-in. Effective programmes should be designed to address affordability issues, reduce energy bills and help the environment.

For international best practices that serve as benchmark for this proposal, please see: Annex B International practices for potential measures to promote a just transition - International experiences for Combating energy poverty: a just transition for the poorer and most vulnerable communities

7 Options for financial mechanisms

Financing a just transition is as much an exercise of combining taxes, subsidies, incentives, guaranteed prices, loans and guarantees to encourage a transition towards economically sustainable activities, as it is using public procurement to incentivize a shift to environmentally sustainable goods and services and promote social inclusion, as well as it is identifying and tapping into the financial resources specifically made available to support the worldwide movement to transition to a low carbon development leaving no one behind.

Delivering a just transition will in many cases require blended finance. Blended finance involves mixing the Bank's own finance and the finance offered on commercial terms by other investors, with donor-provided concessional finance in either private or public sector projects for the benefit of EBRD clients. These products may include capital expenditure grants, concessional risk-sharing, extended tenors, grace periods and/or below-market interest rates to improve the commercial viability of projects that can demonstrate good (just) transition impact and — due to structural market failures — would not be considered commercially viable.

(EBRD, 2020)

This report argues that promoting economic diversification increases resilience of communities irrespective of any transition process which may be occurring or in planning, which, in turn, may have many different drivers, including market conditions or regulations. Nonetheless, the foreseeable transition in the Serbian coal regions is driven by restriction to carbon dioxide emissions as a result of the implementation of the EU climate acquis in the context of Serbia's accession to the EU. It is, thus, fair to assume, that Serbia will profit from the EU Just Transition Mechanism, including the Just Transition Fund, during the accession phase and, more intensively so, after accession. Likewise, it may also be assumed that Serbia will have access to all EU funds and support mechanism available to Member States. Given the myriad of such funds and mechanisms across many policy areas, this report highlights only those specifically relevant to support a just transition. An adequate mainstreaming of the just transition into sectoral policies and ministerial agendas will ensure the channelling towards or, at least, the compatibility of the use of such other funds (such as IPA III or IPARD) with the just transition objectives.

The October 2020 European Commission Staff Working Document Guidelines for the Implementation of the Green Agenda for the Western Balkans states that: "a system equivalent to the European Just Transition Mechanism foreseen in the European Green Deal could be explored" (European Commission, 2020). The box below provides a transcript of key relevant parts of such document, with regards to the availability of the Just Transition Mechanism and of the EU Platform for Coal Regions to Serbia.

WESTERN BALKANS JUST TRANSITION MECHANISM

The transition to climate-neutrality must be socially just and inclusive in order to be a success. It must be recognised that not all regions and partners start the transition from the same point or have the same capacity to respond, and that the most vulnerable are the most exposed to the harmful effects of climate change. The European Green Deal proposed the establishment of the Just Transition Mechanism and Fund to support societies in the transition process. This system could be a model for a similar mechanism for the Western Balkans economies. The mechanism could focus on regions and cities most affected by the transition, marked by high energy intensity and fossil fuels reliance. It would mobilise resources for providing access to re-skilling programs and jobs in new economic sectors.

INVOLVING LOCAL AND REGIONAL GOVERNMENTS

The EU supports coal and carbon-intensive regions in transition with a view to ensuring a just transition, in which no region or citizen is left behind. The EU Platform for Coal Regions in Transition facilitates the exchange of best practices, strategies and projects with a potential to kick-start the transition process. It also delivers tailor-made assistance such as e.g. development and implementation of long-term transition strategies. Extending the Platform to the Western Balkans could help the region in the transition towards climate neutrality (European Commission, 2020).

This document also lays out EU technical assistance initiatives that may be pursued or intensified that are particularly relevant to promote a just transition in the Serbian coal regions:

- Assist partners in implementing programmes addressing energy poverty in the region
- Associate the Western Balkans partners with the Coal Regions in Transition EU initiative
- Carry out an assessment of the socio-economic impact of decarbonisation in the region

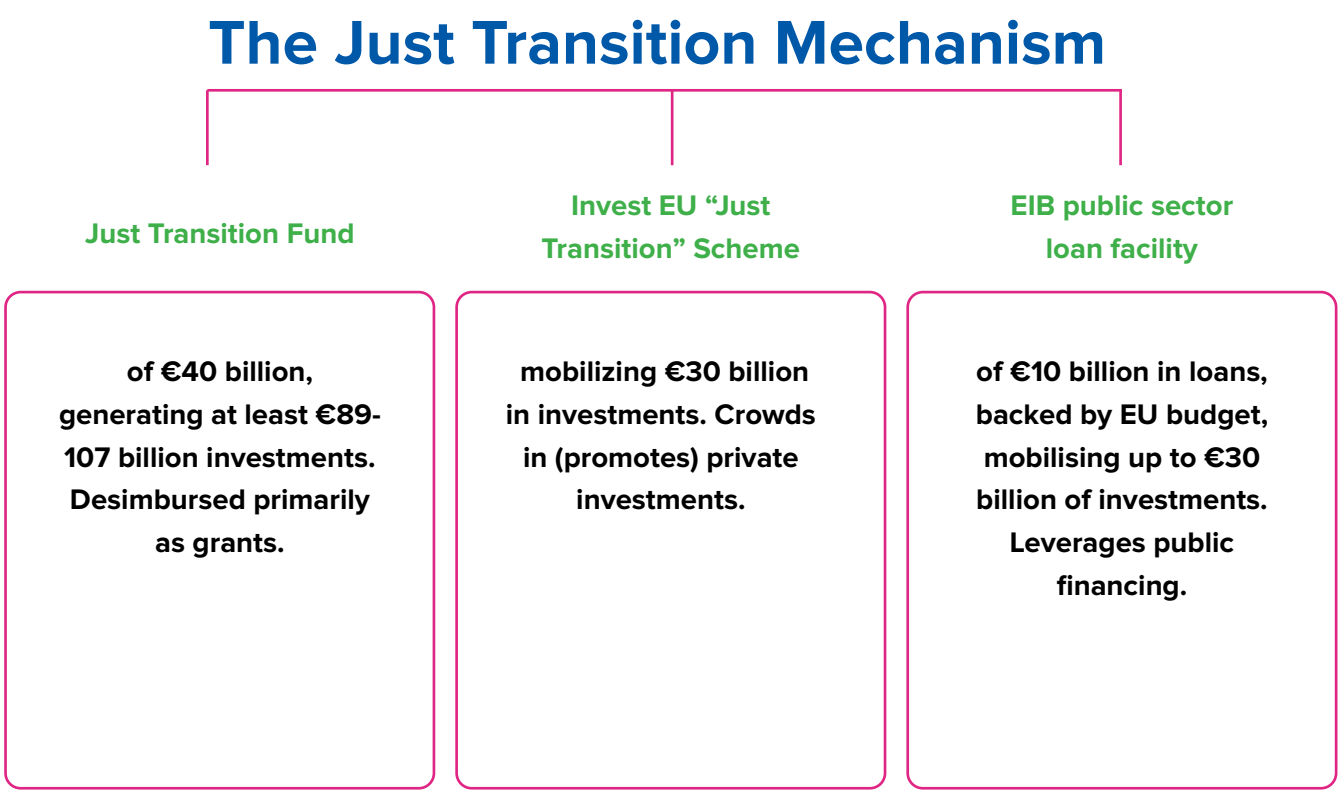
The EU Just transition mechanism

It is expectable that a Western Balkans Just Transition Mechanism mirrors the EU Just Transition Mechanism and therefore, a brief description is provided. The EU JTM is constituted by the three pillars described in Figure 4.[19] [20]

[19] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/actions-being-taken-eu/just-transition-mechanism_en

[20] https://ec.europa.eu/info/sites/info/files/eu_regional_and_urban_development/contact/presentations/presentation_day_2_-_introduction_to_the_jtm.pdf

Figure 4 The EU Just Transition Mechanism



Accessing the JTM requires EU Member States to prepare territorial just transition plans that cover the period up to 2030, identifying the territories that should get the most support.

The JTM will benefit people and citizens (e.g. by offering re-skilling opportunities and investing to fight energy poverty), companies and sectors (e.g. by supporting the transition to low-carbon technologies and economic diversification based on climate-resilient investments and jobs and providing easier access to loans and financial support), and member states and regions (e.g. by providing technical assistance, investing in public and sustainable transport, and by providing affordable loans to local public authorities).[21]

To assist MS and regions to unlock the support available through the JTM, the Just Transition Platform was created as a single access point for support and knowledge related to the just transition [22].

The EBRD Just Transition Initiative

Through its Just Transition Initiative, the EBRD will proactively identify investment and policy activities that can accelerate a just transition, with a focus on three priority themes:

- **Green economy transition:** The EBRD will work with clients with high-carbon assets in the transition to a low-carbon economy.

[21] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/actions-being-taken-eu/just-transition-mechanism_en

[22] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/actions-being-taken-eu/just-transition-mechanism/just-transition-platform_en

This includes targeting the reconversion of high-carbon assets, remediation and rehabilitation of land, and a range of other green investments that create access to local employment.

- **Supporting workers:** The Bank will promote access to alternative livelihoods for those whose livelihoods are affected by the transition process through reskilling and enhancing entrepreneurship within the context of addressing underlying drivers of inequality.
- **Regional economic development:** Emphasising activities that provide access to quality employment, including tailored support for competitive SMEs and larger firms as well as the financing of projects in sustainable infrastructure[23].

To support dialogue between carbon-intensive regions across the EU neighbourhood countries (including the Western Balkans), the EBRD is working with the European Commission, the World Bank and the Energy Community Secretariat to set up a platform similar to the EU Just Transition Platform (EBRD, 2020).

The World Bank

The World Bank, together with the College of Europe, the European Commission, the EBRD, the Energy Community Secretariat and the government of Poland, have created the Platform in Support of Coal Regions in Transition in Western Balkans and Ukraine. This Platform is mostly dedicated to support capacity building but also includes financing of pilot projects. The key areas of work are:

- Knowledge-sharing platform meetings
- EU-Western Balkans and Ukraine coal regions twinning
- Coal Regions Learning Academy (to formalize the dissemination of good practices)
- Technical assistance for pilot coal regions
- Financing transition projects and programs[24].

For international best practices, see Annex C: Experiences and lessons learned on funding the transition in EU Countries.

[23] https://www.ebrd.com/what-we-do/just-transition-initiative

[24] https://www.worldbank.org/en/topic/extractiveindustries/brief/platform-in-support-of-coal-regions-in-transition-western-balkans-and-ukraine

CRITERIA FOR EBRD JUST TRANSITION PROJECTS

1. The project should be deemed consistent with the aims of the Paris Agreement.
2. The project should benefit a geographical area considered vulnerable to the green economy transition or make a systemic change to a high-emission sector at a country level.
3. The project should be aligned with a strategic approach to tackling just transition, for example with a clear link to a national energy and climate plan, territorial just transition plan (or similar) or result in a contribution to the development of such plans or strategies.
4. The project should contribute to the three priority themes of the EBRD's just transition initiative. Where a project can be linked to a formally endorsed strategic plan for just transition a clear link to one theme will suffice, otherwise it is envisaged that two of the three objectives described before should be pursued as part of the project.
5. The project should not do any significant harm to any other environmental objective.

(EBRD, 2020)

SUBSIDY REFORM

Many countries are undergoing a greening of public finances, through several mechanisms including green taxation, subsidy reform and public procurement policies. The Spanish case below is one, among many, illustrating that supporting transition from a given activity can be done with the same resources which have historically been used to support it.

In Spain, approximately 22 billion € is estimated to have been spent in government subsidies just on supporting the profitability of mining activities between 1992 and 2014 (€1bn/yr on average), i.e. independently of any transition. Historically, payments were often higher in previous periods. It is estimated that the average cost of supporting each mining job implied by these payments was in the order of €250000 in total over the period 1998 to 2014.

(Caldecott, Sartor, & Spencer, 2017)

POLLUTERS PAY THE JUST TRANSITION

In the context of a transition to a low carbon development driven by the implementation of the EU acquis, in particular the EU-ETS, Serbia could, as Greece is doing, allocate part of the revenues of the ETS auctioning to finance a just transition in the coal regions of Serbia.

Aviation will continue being responsible for increasingly higher shares of GHG emissions well into the future. Serbia could decide to apply a charge to each passenger using its airports that could be directed to funding the just transition (the Portuguese Parliament has adopted a rule for the 2021 state budget, charging €2 per passenger which will be used to finance the Environment Fund). Assuming 5 million passengers/year, a 50cents charge could raise 2,5million euros/year.

8 Conclusion

The transition to a low carbon economy is taking up speed in many places of the world, with a particular focus in Europe. The social, economic and environmental benefits of this transition have been demonstrated, such as it has been demonstrated that these benefits will not be distributed equally across society. In fact, many will hurt, in particular those working in the coal and fossil fuel sectors. The poorer and most vulnerable are also likely to benefit less, mostly due to a potential increase in energy costs.

In order to address this unfair burden of the low carbon development, many countries are preparing – with several already implementing, measures to promote a just transition.

Addressing the challenges Serbia will face in the transition towards low carbon development can benefit for the experience of such countries, some of which are neighbours and share social, economic and cultural realities.

Serbia's transition to low carbon is expected to be driven by the country's accession to the EU, namely through the implementation of the EU acquis, in particular of the EU Emissions Trading System. In this context, it should be expectable that Serbia has access to the Just Transition Mechanism, which has been set up to support the transition, in particular, of coal intensive countries and regions.

Two main lessons can be extracted from the analysis of literature and international experiences conducted for the preparation of this report: the later the efforts for a just transition are implemented, the more expensive and the least likely to be successful the transition will be; and diversifying an economy (reducing its reliance on a single economic activity) is important, irrespective of whether or not a transition to low carbon development is planned or underway. As such, it is recommended that Serbia starts without any delay to implement the roadmap for a just transition proposed in this report, so as to ensure that no one is left behind.

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Annex A: International best practices for key proposed roadmap clusters

The proposals for a Just Transition Roadmap are based on an extensive international best practice research. This annex contains the description of such international experiences for the key proposed roadmap clusters.

International experiences for Cluster 1: Institutional building and stakeholder engagement

Slovenia

Slovenia is establishing a national working group on just transition for the purpose of cooperating in the Platform and preparing the national coal phase-out strategy [25]

Germany

The "Commission on Growth, Structural Change and Employment" was tasked with, among other:

- developing concrete prospects and transition plans for the economic future of lignite-mining regions and identify strategies to reconcile climate action with economic stability;"
- Agree on a roadmap and an end date to phase out coal-fired power production
- Identify measures to ensure Germany meets its 2030 climate target.

Its members included:

- Commission leaders: two former heads of mining federal states; one climate economist and a board member of large company (train company)
- Representatives of eight federal ministries: economy and energy; environment; internal affairs; labour; transport; finances; agriculture; education and research
- Representatives of six federal states
- Three members of parliament
- Twenty four other members with the following backgrounds/functions: academia, research institutes, think tanks, citizens associations, environmental NGOs, parliamentary groups, political parties; mayor of coal town, industry association, trade union confederation, large companies; utility companies; chamber of commerce [26]

[25] https://ec.europa.eu/energy/sites/ener/files/documents/1.5_vrankar_plenary.pdf
[26] https://www.cleanenergywire.org/factsheets/germanys-coal-exit-commission

Canada

The Task Force for Just Transition for Canadian Coal Power Workers and Communities is mandated to:

- engage with relevant stakeholder groups, provinces, and municipal governments to receive information and suggestions on:
  - the scale and types of impacts on directly affected workers and communities
  - opportunities to transition affected workers and communities
  - oeveraging existing allocations of infrastructure funds, economic development funds, employment and training supports, and any other programs to enable workers and communities to succeed through the transition
  - gaps in policy and programs to support the transition
- provide a summary of what was heard
- provide options and recommendations to the Minister on what could be included in a just transition plan for coal power workers and communities
- provide options and recommendations to the Minister on how to structure a subsequent phase of consultation and analysis concerning just transition, specifically the skills, training and other planning necessary for Canada to prosper throughout the global transition to clean growth and a low-carbon economy

The Task Force consists of 9 members and two chairs. Members and the chairs will be appointed through a ministerial appointments process with representation from each of the following:

- a workforce development expert
- a sustainable development expert
- a past executive from a major Canadian electricity company or utility
- a municipal representative, identified in collaboration with the Federation of Canadian Municipalities
- a representative from the Canadian Labour Congress
- a representative from a provincial Federation of Labour in an affected province
- a representative from a union responsible for coal extraction
- a representative from a union in coal power generating facilities
- a representative from a union in the skilled trades related to coal power

Membership will reflect the need for diversity and gender balance [27].

Romania – Jiu Valley

The “Strategy for the transition from coal of the Jiu Valley” will employ various methods of engaging with stakeholder throughout the life of the project, which will be selected depending on the specific objective, the profile of the stakeholders and the deliverable (stage of project).

[27] https://www.canada.ca/en/environment-climate-change/services/climate-change/task-force-just-transition.html

These can be categorised in the following way:

- **Project-led activities** – these may be non-participatory planned project activities over the period – ongoing communication with the stakeholders
- **Consultative participation** – involves seeking the views of the stakeholders on any specific issue/s related to the project to help decision-making, planning, implementation, and monitoring and evaluation. Consultations will be used to gather information, to design the Strategy and to identify the strategic projects. We will organize interviews, workshops and thematic focus groups with separate categories of stakeholders but also with several groups. Public authorities will also be engaged together with representatives of the civil society/NGOs with the purpose of gathering consensus on important issues to be agreed.
- **Collaborative participation** – involves the project team partnering with stakeholders in some capacity, working in partnership to make decisions and implement projects. The NGOs willing to be engaged in the strategic approach for Jiu Valley (Coalition "Valea Jiului Implicata"), as well as members of the local business associations or other business entities at central level such as RWEA who can support our efforts to define important projects such as reskilling the work force will be actively engaged as partners in the key phases of the project adapted to their profile.
- **Stakeholder-led participation** – empowers the stakeholders to lead on activities or initiatives either individually or as part of groups. These activities will support the sustainability of the project objectives beyond the project end. It will be relevant for the general perception to have voices other than the local authorities take the lead in e workshops, promote initiatives that could translate into concrete projects for our envisaged pipeline. (PWC, 2020)

International experiences for Cluster 6: Adopting a Plan for Just Transition to a Low Carbon Economy in Serbia

In accordance with the National Energy and Climate Plan (NECP), Slovenia must prepare a long-term national strategy for the restructuring and transition of coal regions, which will deliver a timetable for a just plan for the early closure of coal mine Premogovnik Velenje and phasing out coal in thermal power plant Termoelektrarna Šoštanj (TEŠ).

The strategy will define a plan for the closure of coal mine in Velenje and phasing out coal in Termoelektrarna Šoštanj (TEŠ).

The list of documents under preparation includes a national strategy for phasing out coal and the restructuring of coal regions in line with the principles of a just transition, as well as regional plans for the Savinjska-Šaleška and Zasavje regions, according to the Ministry of Infrastructure.

Slovenia will also prepare just transition plans for coal regions Savinjska-Šaleška, and Zasavje regions [28].

[28] https://balkangreenenergynews.com/slovenia-launches-online-platform-for-preparation-of-coal-phaseout-strategy/

International experiences for Cluster 7: Implementing and Monitoring of the Plan for Just Transition to a Low Carbon Economy in Serbia

Romania

Examples of **action** to support transition – already implemented or in implementation in the Jiu Valley:

- Energy transition
  - Increasing the energy efficiency of blocks of flats in Petroșani municipality
  - Intervention works at I.D. Sîrbu Secondary School Petrila in order to increase energy efficiency
  - Intervention works at Constantin Brâncuși Technical College in order to increase energy efficiency
  - Energy efficiency of public buildings, Uricani city, Hunedoara county
  - Modernization of the street public lightning in Uricani city
- Rehabilitation and repurposing
  - Regeneration of urban public space
  - Rehabilitation of Kindergarten No. 1, Uricani city
- Sustainable spatial development
  - Construction of kindergarten with 4 classrooms
- Mobility
  - Green line of electric buses between Petrila-Petrosani-Aninoasa-Vulcan-Lupeniuricani Green Line Jiu Valley
  - Modernization of streets and pedestrian alleys in Uricani city
- Social cohesion and welfare
  - Now for the Future of Vulcan – Local Partnership for Social Inclusion
  - Bahtalo! Together we Fight Poverty and Discrimination
- Heritage and culture
  - Rehabilitation of the Mining Museum building and museum arrangement
- Others: administrative capacity
  - ePas - streamlining the Administrative Procedures by Simplification at Petroșani City Hall
  - Simplified administrative procedures through digital efficiency at Lupeni Municipality Town Hall

Annex B International practices for potential measures to promote a just transition

The Compilation of potential measures to promote a just transition are (Chapter 6) is based on an extensive international best practice research. This annex contains the description of such international experiences for the key proposed measures.

International experiences for Gradual reduction of the workforce and internal reskilling and Compensation and incentive to restart

Romania

Romania offered “special pensions” to retired miners for two years “until the money ran out”, and an “unemployment benefit” to miners who accepted to leave the industry, also for two years. The latter were offered state support to find another job or open a small business, but few took up the offer (Arrowsmith, 2020).

Germany

For employees of the coal industry aged 58 and up, the goal is to enable early retirement without financial losses. (Agora Energiewende und Aurora Energy Research, 2019).

Canada

Income enhancement for workers approaching retirement: workers to maintain 75% of their previous weekly earnings until they are eligible for employer pensions (to a maximum of 72 weeks)

Payment of up to $5,000 in expenses for workers who relocate at least 40 km to start a new job

A maximum of $12,000 in tuition vouchers for any post-secondary education and career retraining initiated within five years of the lay-off (Task Force on Just Transition for Canadian Coal Power Workers and Communities, 2018).

International experiences for Reskilling of coal workers

Poland

Retraining should be centrepiece of any strategy, argues Undersecretary of State at Poland’s Ministry of Energy Tomasz Dąbrowski. Work by the University of Economics in Katowice has shown that retraining a coal worker costs five times less on average than simply sacking the worker.

The biggest mining company in the EU, Poland's PGG, foresees a need for 44 bn EUR to transform its current business into one focused on "mature and technologically specialised branches - e.g. automotive, comprehensive construction", including by retraining its staff. It has taken steps towards diversification by getting into welding, which is a skill for which demand is growing in the wind industry. (Arrowsmith, 2020)

International experiences for Promoting employability of coal workers in the diversifying economy

Canada

Transition centres have been used in North America in numerous instances to provide active support to people affected by rapid labour market changes.

These centres are designed to ensure that individuals already under stress from job loss or displacement receive personalized, one-on-one, face-to-face assistance to navigate the complex and often depersonalizing challenges of government programs and service delivery. Transition centres have some unique characteristics, including that they are:

- Located within the communities or at job sites that are impacted by the labour disruption they seek to address;
- Staffed preferably by people from the impacted industry sector or the community;

These centres provide the following support to coal workers in transition:

- Career counselling and job-search skills training at affected worksites;
- transition services to help develop individualized plans, identify existing skills, and administer short-term courses in skills development;
- help in establishing worker adjustment committees to arrange training or match skills to job openings .

(Task Force on Just Transition for Canadian Coal Power Workers and Communities, 2018)

International experiences for Rehabilitation of the affected lands and their reintroduction into the economic circuit

Romania

Stakeholders in the Jiu Valley, in Romania, are considering a set of options for the reconversion of land (Initiative for Coal Regions in Transition - European Commission, 2020).

- Reconversion of coal-related sites / locations for renewable / alternate energy
  - Biomass
  - Energy storage
  - Gas
  - Geothermal

    - Hydro power and pumped hydro-storage
    - Hydrogen
    - Solar
    - Wind
- Reconversion of coal-related sites for new economic and social activities
- Repurposing of coal-related industrial infrastructure
- Heritage, culture and tourism

Planned coal transition, economic diversification, and social development initiatives: a combination of measures for the Jiu Valley, Romania.

- Increasing energy efficiency in the public and residential buildings from the localities of Jiu Valley
- Development of tourism, heritage and culture in Jiu Valley
- Supporting SMEs and creating technology parks
- Rehabilitation of the local transport infrastructure at the level of Jiu Valley, as well as of the national transport infrastructure for the opening of Jiu Valley to the East (DN 7A Petroșani - Voineasa) and to the West (DN 66A Câmpul lui Neag – Herculane);
- Improvement of environmental conditions in Jiu Valley (production and use of renewable energy, regularization of water courses, landfills for materials resulting from demolitions)
- Development of an industry for the construction of components for photovoltaic and wind farms
- Improving the life quality of the inhabitants in Jiu Valley (regeneration of green areas, parks etc.);
- Development of social infrastructure
- Improvement of the educational infrastructure in the Jiu Valley.

International experiences for Preservation of the coal mining cultural heritage

Romania

The recognition of the mine as a heritage site of national importance, in the field of industrial heritage has attracted many tourists from the country and abroad. (Irimie, et al., 2020)

Germany

The World Heritage Protected Site of Zollverein Coal Mine Industrial Complex in Essen consists of the complete infrastructure of a historical coal-mining site, with some 20th-century buildings of outstanding architectural merit. It constitutes remarkable material evidence of the evolution and decline of an essential industry over the past 150 years.

Rest of the world

There are many examples around the world of protected coal and other types of mining sites: Iron Bridge George Museum Trust in Sandal (United Kingdom), Centre Historique Minier de Lewarde in Douai (France), Bergbau und Stad Museum in Weilburg (Germany), Musee du Fer et du Charbon in Lieja (Belgium), Museo Minerario in Abadia-San Salvatore (Italy), the Sorachi Coal-mining Landscape in Hokkaido (Japan), Sitio Minero de Villa Cacique-Barker (Argentina), Salitreras de Humberstone y Santa Laura (Chile) and the Huancavelica mines (Peru).[29]

International experiences for Tourism

Spain

The As Pontes Coal Mine, has been turned into an anthropic lake, becoming the largest lake of this type in Spain, increasing the interest for this area from the touristic point of view. With an investment of over 250 million euros, the entire area of 2400ha has been transformed into a natural area populated with 217 plant species and 205 animal species. Following the diversification of economic activity, over 1200 jobs were created. (Burlacu, Suditu, & Gaftea, 2019).

Germany

The Lusatian Lake District in the former East Germany where brown coal pits that were closed in the 1990s have been converted to a series of more than 20 recreational lakes, tourist attractions, cycle paths and water sports.

International experiences for Production of energy

Romania

A retraining programme proposed for Romania specifically targets the wind industry. The Romanian Wind Energy Association and the network operator CEZ Oltenia Distribution want to create a professional academy in the Jiu Valley that will retrain up to 800 miners annually for ten years creating a workforce of 8000 by the end. They would work as technicians in the installation, operation and maintenance of RES projects and energy distribution grids (Arrowsmith, 2020).

International experiences for Retrofit the coal TPP

United Kingdom

The Drax Power Station is the biggest single-site renewable energy generator in the UK. Three of its six 645-MW units have been converted from burning coal to biomass in the form of compressed wood pellets. The plant currently burns about 7 million tons of biomass annually.[30]

[29] https://whc.unesco.org/en/tentativelists/5139

[30] https://www.powermag.com/the-shift-from-coal-to-biomass-is-on-in-europe/

Portugal

Portugal will shut down its last two coal fired powerplants. Their retrofitting to biomass fired or for hydrogen production or a mix of this and other solutions is being considered[31].

International experiences for Create an innovation hub dedicated to the area of specialization

Belgium

C-mine (in the city of Genk, Belgium) is a creative hotspot for artistic talent, clustered on a unique industrial mining heritage site.

Today at C-mine you will find 42 companies and organizations that together account for more than 330 jobs, of which about 200 jobs in the creative sector in 33 creative companies. Every day at C-mine, entrepreneurs work to create and realize, think of games, apps, websites, television sets, drones, light shows, design objects, stage productions ...

The C-Mine hub, besides housing companies, has an extensive offer for tourists and schools[32].

France

Some of the former mining sites have become part of a UNESCO World Heritage site and since 2012, another production unit has been transformed into a resource centre for sustainable development, responding to the need to convert abandoned assets. Currently, the site hosts several non-governmental and research organisations, with an important role in ensuring the city's vitality (Burlacu, Suditu, & Gaftea, 2019).

International experiences for Invest in the education and training systemInvest in the education and training system

Slovakia

Small and Medium Enterprises in Slovakia reported to a survey funded by the European Commission that they saw the "professional school system" was of poor quality. In response, an indicative project for Slovakia's coal region is to create the Upper Nitra Education Centre at a cost of €8,2 M, to be built 2019-202271.

Belgium

The Limburg region [where the city of Genk is located] is also focusing on education as the first part of its FRIS ("Full Regional Innovation System") strategy.

Czechia

Primary education is a focus of attention, too. Czechia, on the other hand is channeling €12M of RESTART money there. (Arrowsmith, 2020). RE:START is a Strategic Framework aimed at resurrecting the three regions lagging behind in the country – which are also the country's coal mining regions (https://restartregionu.cz/in-english/).

[31] https://zap.aeiou.pt/no-pego-sines-carvao-pode-transformar-hidrogenio-300733

[32] https://www.c-mine.be/

Romania

A retraining programme proposed for Romania specifically targets the wind industry. The Romanian Wind Energy Association and the network operator CEZ Oltenia Distribution want to create a professional academy in the Jiu Valley that will retrain up to 800 miners annually for ten years creating a workforce of 8000 by the end. They would work as technicians in the installation, operation and maintenance of RES projects and energy distribution grids (Arrowsmith, 2020).

International experiences for Combating energy poverty: a just transition for the poorer and most vulnerable communities

Several EU MS, including Bulgaria and Slovenia[33].

Action in low-income households to improve energy efficiency through visits and energy diagnosis (ACHIEVE) –In ACHIEVE, long-term unemployed people, volunteers or students are mobilized and trained to develop a large-scale energy advice service towards low-income households facing difficulties with their energy bills

Romania and Slovenia[34]

Disconnection protection vulnerable consumers: It is prohibited to disconnect vulnerable consumers from the electricity network . In Slovenia, it is prohibited to disconnect vulnerable households from electricity supply in those circumstances where disconnection could be life endangering or have serious health consequences

Several EU MS, including Bulgaria, Croatia, and Slovenia as well as North Macedonia

Reduced Energy use And Change Habits (REACH) - This project contributed to energy poverty abatement at the practical and structural level by empowering energy poor households to take actions to save energy and change their habits, and by establishing energy poverty as an issue that demands structural solutions. In cooperation with social actors who helped to identify the energy poor households, energy advisors carried out 1,600 home visits and distributed tailor-made advice, and post-visit support to energy poor households. It was expected that REACH will achieve energy savings of nearly 300 toe/year.[35]

[33] https://www.energypoverty.eu/measure-policy/action-low-income-households-improve-energy-efficiency-through-visits-and-energy

[34] https://www.energypoverty.eu/measure-policy/disconnection-protection-vulnerable-consumers; https://www.energypoverty.eu/measure-policy/disconnection-protection-vulnerable-households

[35] https://www.energ ypoverty.eu/measure-policy/reduced-energy-use-and-change-habits-reach

Annex C: Experiences and lessons learned on funding the transition in EU Countries

Germany

Access to finance is probably the most widely named barrier for a regional transition by the respective local stakeholders. Even though – looking at the plain numbers – it seems there is abundant EU funding available for a low-carbon development (e.g. for Silesia it adds up to 791 Million EUR; 291 Million EUR for North-Rhine Westphalia from 2014-202012), it still represents a challenge to access this funding successfully and use it then in a transformative way (Bukowski, Śniegocki, & Wetmańska, 2018). (Roelfes, et al., 2018)

Poland

When in looking at Poland, there has been a strong focus on public funds (namely EU structural funds) to foster the regional transition. However, public funds will likely not be enough to cover the costs for a low carbon modernisation of the regions. To succeed in an effective mobilisation of funds requires combining various financial tools at regional, national as well as EU level that leverage private investments as well (Bukowski et al., 2018). (Glynn, Błachowicz, & Nicholls, 2020)

A strategy for public financial support to a region doesn't necessarily have to take the form of a cash hand-out by the public to the private sector. It can also take the form of foregone tax receipts. Poland has set up "special economic zones", two of which are mentioned in the context of coal regions: Walbrzych and Katowice. Walbrzych offers entrepreneurs the use of "different sources of public aid, not only income tax exemption but also European donations, government grants, real estate tax exemptions." The advantageous conditions are intended to be time-limited. (Arrowsmith, 2020)

Romania

The funds earmarked for Romania under the Just Transition Fund, aimed at helping European Union countries cut the CO_2 emissions by 50 % by 2030, went up significantly from 700 million euros to 4.4 billion euros, as the total size of the fund was increased by 7.5 billion to 40 billion euros.

European Commissioner for Energy Kadri Simson said that the EU will support the sectors and regions most affected by the transition. Coal-intensive regions, such as those in Romania, are an example for this. (https://serbia-energy.eu/romania-just-transition-fund-could-give-romania-larger-funds-for-closing-of-tpps/)

Romania has drafted the decision to grant RON 110 million (EUR 22.6 million) for the closure of coal mines Lonea and Lupeni in the Jiu Valley. The mines are operated by energy company Complexului Energetic Hunedoara (CE Hunedoara).

The money will be used for payments to employees, costs of the closure of the mines' pits and the recultivation of the area. The state aid was approved by the European Commission (https://balkangreenenergynews.com/romania-to-allocate-eur-23-million-for-closure-of-two-coal-mines-in-jiu-valley/).

Greece

Greece has set up a "national fund for just transition" of around €30 M per year, funded up to 60% (Arrowsmith, 2020) by the revenues of the ETS auctioning [36].

[36] https://regionsbeyondcoal.eu/europe-is-finally-starting-to-deal-with-the-losers-of-the-energy-transition/

Annex D: Recommendations for awareness raising and knowledge sharing.

Mindsets as well as perceptions of regional identity and cultural heritage can become strong barriers to structural change. Even if transition processes offer great benefits, public discourse may focus on losses. 'Organized cost bearers' may build on this discourse and attempt to slow down the transition process

(Roelfes, et al., 2018)

Communicating Just Transition should come in tandem with communicating Low Carbon Development. One aspect should not be dissociated of the other. Those advocating for low carbon development should simultaneously argue that the transition shall leave no one behind, promoting social fairness in environmental protection.

It is likely that addressing just transition is required to facilitate the interministerial discussion concerning the adoption of the draft Low Carbon Development with Action Plan. The following recommendations can be made in that regard:

- Introduce the concept more clearly and prominently in the draft Climate Change Law and draft Low Carbon Development Strategy and Action Plan, including with regards to the institutional arrangements
- Prepare lines to take and brief key decision makers on just transition and mainstream it in discourse
- Acknowledge the transition will be hard on some Serbians and show openness to make efforts to alleviate burden
- Create a location at the Ministry for Environmental Protection's website dedicated to the matter and populate it with information
- Design a set of communication pieces, such as leaflets and brochures, to communicate the basic aspects of just transition (see publications of SWOP - Society, Work and Politics Institute for an example).

To facilitate and effective communication, Webster & Shaw, 2019 propose a set of recommendations for communicating just transtion that are loosely transcribed below.

- **Security, attachment to place and pragmatism:** The imagery and language used in just transition communication needs to draw on the identity of the audience. Work and place play fundamental roles in people's sense of identity, making this even more important in the just transition debate.
- **Honesty about the nature of the transition:** Simplistic, utopian statements about a shift to a world of green jobs are unlikely to go down well with these audiences. In contrast, honesty about the nature of the challenge is likely to be far more effective.
- **Gratitude and respect for the history of fossil fuels:** Refer to the fact that workers in extractive industries often work under dirty and dangerous conditions, and have done so for all of our benefit; people are grateful for the benefits and prosperity created by their hard work.
- **Pride in natural resources and renewable power:** water, wind, forests and the sun can supply the energy needs for people far into the future. The money generated by developing these natural resources can be reinvested in local jobs and opportunities.
- **Avoiding the blame game:** In communications with communities and workers associated with fossil fuels, it is important to avoid messaging that blames the fossil fuel industry, as this is likely to close down the conversation[37].
- **Working with trusted messengers:** It is important to identify, nurture and support trusted communicators. These may for example be union leaders, people who work in the frontline of the fossil fuel industry and prominent people within their own communities.
- **Respectful dialogue:** A successful just transition needs to involve people creating change together, rather than having it imposed upon them.
- **A conversation on common ground:** with climate change at the core: Centring a conversation on the social and economic issues that matter most to those who are affected by transition, and whose support is needed, is respectful and likely to be effective. But climate change is a fundamental part of the conversation and should not be ignored.
- **Include respectful images of fossil fuel workers, as people, in materials and communications:** The debate around just transition, with its focus on people's lives and work, offers an important opportunity to use respectful and authentic imagery of people who work in fossil fuel industries.

[37] Note that the example above bluntly does not meet this requirement when it mentions: "the immediate cause of this [climate change] is mining and burning coal".

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