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A black and white photograph of an industrial facility, likely a power plant, situated in a valley. Two tall smokestacks with horizontal stripes are prominent, emitting thick plumes of white smoke that rise into the sky. In the foreground, there are two large, white, lattice-structured cooling towers. The facility is surrounded by a forested area and a body of water in the foreground, which reflects the scene. The background shows rolling hills and mountains under a cloudy sky.

# Towards a Just Transition in Bulgaria

Unlocking the Green Transformation Potential  
of Stara Zagora, Pernik and Kyustendil



# **TOWARDS A JUST TRANSITION IN BULGARIA**

**UNLOCKING THE GREEN TRANSFORMATION  
POTENTIAL OF STARA ZAGORA,  
PERNIK AND KYUSTENDIL**



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The Territorial Just Transition Plans (TJTPs) are strategic documents developed by the European member states for addressing the social and economic effects of the transition to a low-carbon economy in Europe's carbon-intensive regions. The Plans set out the transition challenges and development needs in each territory and define development objectives for 2030, as well as the specific actions and governance mechanisms to ensure that these objectives will be met.

This publication provides an assessment of the draft version of the Bulgarian TJTPs based on CSD's comparative methodology for evaluating the just transition process in Central and Eastern Europe. It identifies key policy, socio-economic and governance barriers in the process of strategic planning and provides targeted policy recommendations for improving the stakeholder engagement process, scaling up the ambition of the decarbonisation targets in the plans, supporting the economic transformation process towards higher value-added sectors, and boosting the regional innovation potential.

Authors:

**Dr. Radostina Primova**, Senior Analyst, Energy and Climate Program, Center for the Study of Democracy

**Martin Vladimirov**, Director, Energy and Climate Program, Center for the Study of Democracy

**Dr. Mariya Trifonova**, Research Fellow, Energy and Climate Program, Center for the Study of Democracy

Editorial Board:

**Dr. Ognian Shentov**

**Ruslan Stefanov**

**Dr. Todor Galev**

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# ABBREVIATIONS

BEMF	Bulgarian Energy and Mining Forum
BGH2A	Bulgarian Hydrogen Association
CEE	Central and Eastern Europe
CO <sup>2</sup> Emissions	Carbon Dioxide Emissions
CSD	Center for the Study of Democracy
DEC	District Just Transition Committee
ESSF	Electricity System Sustainability Fund
ETS	Emission Trading System
EU	European Union
ERDF	European Regional Development Fund
GHG Emissions	Greenhouse Gas Emissions
GVA	Gross Value Added
ICT Solutions	Information and Communications Technology Solutions
JTF	Just Transition Fund
JTM	Just Transition Mechanism
LTS	Long-Term Decarbonisation Strategy
MS	Member States
MFF	Multiannual Financial Framework
MW	Mega Watt
NECP	National Energy and Climate Plan
NJTPC	National Just Transition Plan Council
NRRP	National Recovery and Resilience Plan
NGO	Non-Governmental Organisation
NUTS 3	Nomenclature of Territorial Units for Statistics
OPIC	Operational Programme “Innovations and Competitiveness”
PM10	Particulate Matter
PwC	PricewaterhouseCoopers
PV	Photovoltaic
R&D	Research and Development
RDP Monitoring Committee	Monitoring Committee for the Rural Development Programme
RED II Directive	Renewable Energy Directive
RES	Renewable Energy Sources
RRF	Resilience and Recovery Facility
SMEs	Small and Medium Enterprises
SO <sub>2</sub>	Sulfur Dioxide
SZEDA	Stara Zagora Regional Economic Development Agency
TJTP	Territorial Just Transition Plan
TSO	Transmission System Operator
TWh	Terawatt-hour
VET	Vocational Training and Education
WWF Bulgaria	World Wildlife Fund Bulgaria



# EXECUTIVE SUMMARY

Bulgaria's coal regions are still facing considerable decarbonisation challenges. The regions' economies are fossil-fuel dependent and the bulk of the local industries are energy intensive and slow to take up low-carbon technological solutions or to diversify away from their dependence on fossil fuels. The coal phase-out in Bulgaria is further complicated due to the existence of entrenched state capture networks in the energy and mining sector at local and at national level. These networks have aimed to preserve the status-quo by securing costly coal subsidies (estimated at EUR 1 billion per year). This seriously undermines the process of developing strategic documents for a long-term decarbonisation. The coal regions are also facing wide information and education gaps that have weakened the social acceptance of the transition process. In addition, the limited administrative capacity of the local authorities and the lack of common tripartite vision for the energy transition at the central government level are preventing the development of transformational local-level initiatives and projects that aim at the wider involvement of the business community outside the companies directly linked to the coal industry.

The delayed debate about the impact of the European Green Deal on regional level has led to a limited progress on building a consensus around the common regional decarbonisation strategies. The assessment carried out in this report reveals that the discussions have not been centred around specific data-driven issues related to the just transition process and the TJTPs and have been overwhelmed by disinformation narratives about the economic future of the most vulnerable regions and the stability and security of the electricity system. The decarbonisation of the most vulnerable Bulgarian regions is still largely seen as a threat by local communities, regional policy-makers, the trade unions and industry incumbents, in part because the opportunities linked to the goals and benefits of EU decarbonisation policies have not been effectively communicated. The results from the expert survey clearly illustrate that the decarbonisation goals and policies have been hardly even communicated at the regional level. The stakeholder consultation process has been marked by the lack of transparency, responsiveness and inclusiveness, with a limited involvement and representation of vulnerable groups, in particular women and youth groups during the TJTP process.

The cleavage between the regional debates in the coal regions and the centralized decision-making process has also contributed to the spreading of disinformation narratives. These narratives have portrayed the transition away from fossil fuels and highly emitting industries as the main reason for the increase of energy prices and, thus, of energy poverty levels.

The stakeholder influence in the consultation process was also significantly imbalanced. The representation of the interests of certain private lobby groups and the incumbents outweighed significantly the voice of SMEs and vulnerable groups. This is also reflected in the lack of clear selection criteria for the just transition priorities outlined in the plans and the strong focus

in the plans on large infrastructural projects without clear milestones, project objectives, timeframes, socio-economic and sustainability justification, which also concentrate the financial benefits of the TJTPs in the hands of a selected few.

The mapping of decarbonisation policies and targets has not been the leading factor of the just transition consultation process in the three Bulgarian regions under consideration. Socio-economic considerations have been prioritized over environmental and health issues, and sustainability has not been driving the Plans' priorities and measures. The survey results show that the decarbonisation ambition of the three plans ranges between "low" and medium', while their comprehensiveness falls in the "low" category. The sectoral targets and performance indicators related to the decarbonisation policies and measures included in the TJTPs have been evaluated as ranging from "poorly ambitious" to "moderately ambitious".

The TJTPs have addressed to a limited extent the socio-economic aspects of the transition process. The measures included in the Plans put a strong emphasis on large-scale projects that face significant governance risks and would benefit specific private interests rather than the economy at large. Facing steeply rising prices of the CO<sub>2</sub> emissions since 2018 in tandem with the delayed planning of the energy transition by the Bulgarian government and the lack of alternative sources of power generation has led to a heavy reliance on lignite power plants and financial losses for the state-owned electricity sector.

The Russian invasion in Ukraine and the ensuing energy prices crisis has turned the losses of the coal power plants into enormous profits that have sharply weakened the Bulgarian government's ambition to deliver on its commitment to a partial coal phase out by 2026 as part of the binding agreement on the National Recovery and Resilience Plan (NRRP). The Bulgarian government pledged a 40% reduction of emissions in the power sector with concrete targets for CO<sub>2</sub> emission cuts for each lignite-fired power plant. There is no clarity, however, on how these emission reductions would be possible without shutting down the plants completely or expanding the already generous capacity support they receive. Hence, the current baseline target for a complete coal phaseout is 2038 with the government trying to rescind on its 2026 emission reduction commitment.

Bulgaria has consistently promoted the narrative that the extension of the life of the lignite plants could play a crucial role for safeguarding not only the security of electricity supply in Bulgaria but also of the entire SEE region. This line of reasoning and the lack of political leadership to implement the commitments to the EU threaten to undermine the transition process locking-in some of the most productive Bulgarian regions in a backward economic development model. Under the pressure of the rising energy prices and the current energy security challenges in Europe, Bulgaria has a unique political opportunity to accelerate the transition process by channelling the substantial EU funds it receives into a green transformative shift of the coal regions.

The current report is the outcome of piloting CSD's comparative assessment methodology for TJTPs in CEE countries. It evaluates the draft version of the

Bulgarian TJTPs, identifies key policy, socio-economic and governance bottlenecks in the process of strategic planning and provides targeted policy recommendations for improving them. The report's recommendations aim to: (i) improve the stakeholder engagement process, (ii) enhance the ambition of the decarbonisation targets in the plans, (iii) support the economic transformation process towards higher value-added sectors; and (iv) boost the regions' innovation potential. The assessment also aims to increase the Plans' complementarity with other long-term strategic documents such as the NRRP, the Long-Term Decarbonisation Strategy (LTS), and the National Energy and Climate Plan (NECP).





# INTRODUCTION

The Just Transition Mechanism (JTM) launched by the EU in 2020 is a key instrument for facilitating the decarbonisation of the European regions most dependent on fossil fuel industries. Member-states (MS) would have the opportunity to tap into €150 billion in funds coming from four main streams. The EU target of 30% for climate mainstreaming of the overall spending and the additional climate conditionality for the Just Transition Fund (JTF) will be a significant challenge for member-states in Central and Eastern Europe (CEE), which are also among the most vulnerable to the consequences of a profound socio-economic transformation of fossil-fuel-dependent regions.

Due to the strong focus of the new EU Recovery and Resilience Facility (RRF) and the next Multiannual Financial Framework (MFF) on the objectives of climate neutrality and environmental transition, the TJTPs have to reflect these focal points. Developing ambitious, sophisticated and well communicated Territorial Just Transition Plans (TJTP) will be of crucial importance for Bulgaria if the country is to benefit from the JTF and other EU green transition instruments. Overcoming existing policy and administrative bottlenecks requires a more profound engagement of all relevant stakeholders in the development of the TJTPs with a bottom-up involvement of the most vulnerable actors in the regions.

Key challenges in Bulgaria's coal regions are the fossil-fuel dependency of the local economies and the energy-intensive industry that is slow to take up low-carbon technological solutions or to diversify away from its dependence on fossil fuels. The Bulgarian government has been reluctant to phase out the utilization of the country's large lignite reserves for power production as it claims that the lignite-based plants are critical for the security of electricity supply and the independence of the national electricity system. The lignite mining and power generation industry is also one of the main employers in the largest coal region, Stara Zagora. Across the country, the coal industry provides jobs to over 14,000 workers directly and over 29,000 indirectly (in companies supplying and servicing the coal industry).<sup>1</sup> The coal phaseout will be particularly challenging for the three NUTS3 regions of Stara Zagora, Pernik and Kyustendil. Under the pressure of the rising energy prices and the current energy security challenges in Europe, many policy makers and stakeholders in the country are tempted to see the windfall profits as a justification or an excuse to delay or re-base the decarbonisation and just transition processes. Yet, there seems to exist a global agreement on the irreversibility of the transition. And Bulgaria has a unique political window of opportunity to accelerate the energy transition process by leveraging the vast EU resources at its disposal that would transform the economic fundamentals of these vulnerable regions.

Coal phase-out in Bulgaria is particularly complex due to the entrenched state capture networks in this sector that aim to preserve the status-quo by securing

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<sup>1</sup> Szabo, L. et al., *Accelerated Lignite Exit in Bulgaria, Romania and Greece*, REKK, 2020.

costly coal subsidies (estimated at EUR 1 billion per year before the energy crisis of 2021 – 2022) and by undermining the process of developing strategic documents for long-term decarbonisation. The coal regions are also facing wide information and education gaps that have limited the social acceptance of the transition process. In addition, the limited administrative capacity of local authorities and the uncooperative (often militant) stance of labour unions and incumbent industry representatives at the central government's decision-making level are preventing the development of truly transformational local-level initiatives and projects that aim at the wider involvement of the business community outside the companies directly linked to the coal industry.

The aim of this report is to pilot CSD's comparative assessment methodology for TJTPs in Central and Eastern Europe<sup>2</sup> by evaluating the draft version of the Bulgarian TJTPs, identifying key policy, socio-economic and governance bottlenecks in the process of strategic planning and by providing targeted policy action for improving the incisiveness, transparency and quality of the stakeholder engagement process, enhancing the ambition of the decarbonisation targets in the plans, supporting the economic transformation process towards higher-added value sectors, boosting the regional innovation potential and increasing the Plans' complementarity with other long-term strategic documents such as the NRRP, the LTS and the NECP.

The report is based on comprehensive desk research, an expert survey and interviews with more than 25 key stakeholders that have been directly and indirectly involved in the development of the TJTPs in the three regions, as well as an analysis of the statements on the TJTPs submitted for public consultations.<sup>3</sup> A detailed summary table with the assessment of the indicators making up the three pillars has been included in the report's Annex.

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<sup>2</sup> Trifonova, M. et al., *Territorial Just Transition Plans: Guidelines for a Comparative Evaluation Framework*, Sofia: Center for the Study of Democracy, 2021.

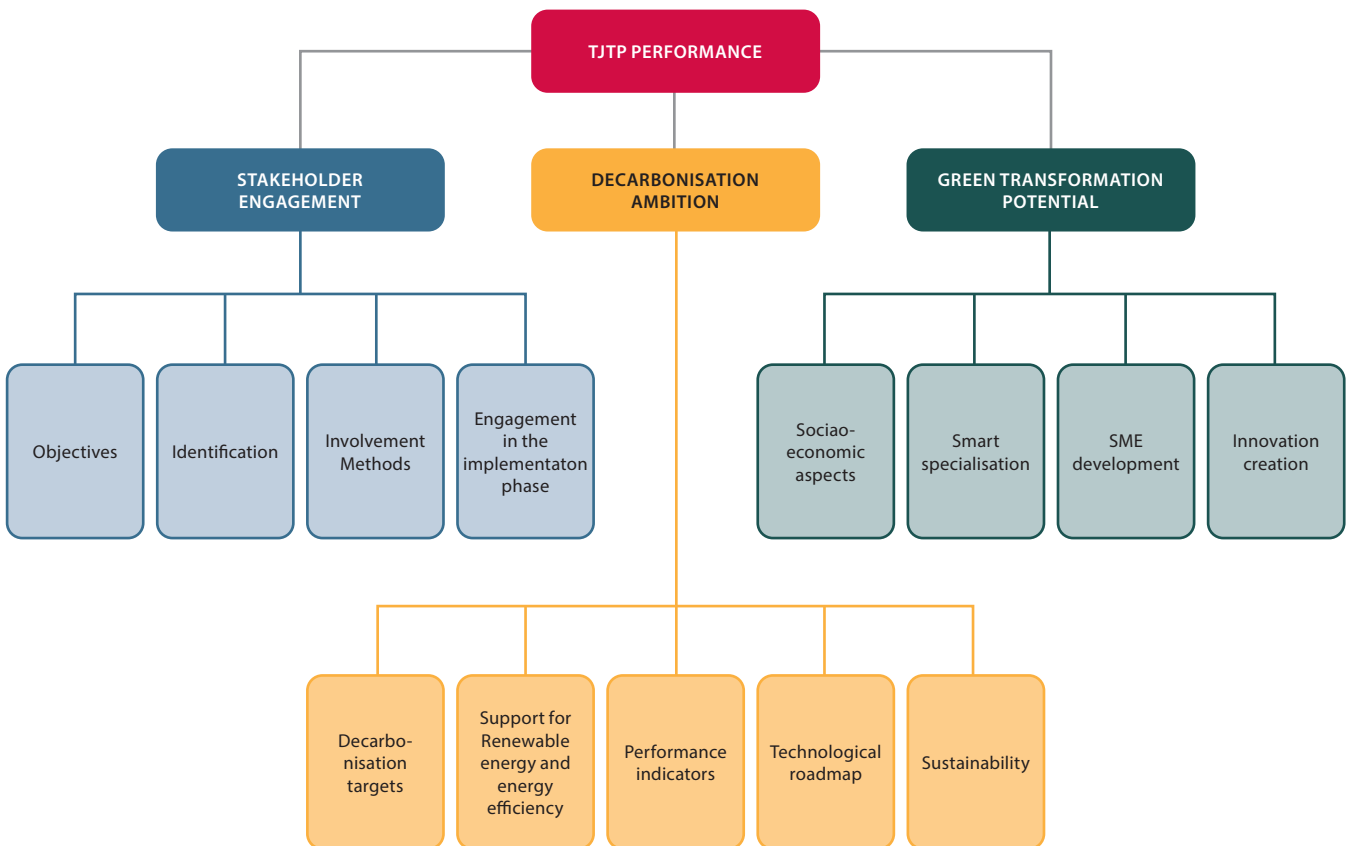
<sup>3</sup> Strategy.bg, *Териториални планове за справедлив преход* [Territorial Just Transition Plans]. While two of the statements have been published on the website by the Ministry of Energy, the statements of other organisations were not published on the official website. CSD obtained access to the statement of 4 additional stakeholders by requesting them from the respective organizations.

# ANALYTICAL FRAMEWORK

The evaluation framework is organised under three pillars and is guided by the principles of inclusiveness, ambition, and impact. The three pillars encompass the key objectives and requirements that are outlined in the JTM Regulation, as well as reflect wider EU economic and climate policy:

- Under the **Stakeholder Engagement** pillar, the methodology evaluates the inclusiveness and partnership arrangements of the TJTPs development process, in line with EU's requirements for better regulations.
- The **Decarbonisation Ambition** pillar assesses to what extent the TJTPs meet the climate conditionality of the JTM and make an ambitious contribution to achieving the agreed EU climate and environment policy objectives.
- The **Green Transformation Potential** pillar assesses to what extent the TJTPs meet the objective of promoting economic diversification and enhancing research and innovation in the field of advanced and sustainable technologies.

Figure 1. TJTPs Performance Evaluation



Source: CSD.






The different indicators cover both the depth and comprehensiveness of the proposed actions and targets in the Plans, and in some cases also the supportiveness of measures related to the pillars “Decarbonisation ambition” and “Green transformation potential”. The three pillars and the indicators are based on expert assessments and empirical data for the relative importance of the different components obtained through the expert survey, in-depth interviews and desk research. The qualitative part of the report elaborates on the context of the indicators and provides an in-depth analysis by looking at the specific processes and issues in the regions. Furthermore, the analysis looks into regional performance indicators and the availability of a technological roadmap to ensure that key targets are met.

The Stakeholder engagement has four main dimensions: objectives, identification, engagement in the planning phase, and engagement in the implementation phase.

The decarbonisation criteria measure the ambition and comprehensiveness of the targets and measures, the support for sustainable energy policies (in particular renewable energy and energy efficiency) and their compatibility with

Figure 2. Decarbonisation Targets

Decarbonisation targets at the respective territorial unit of planning – example ambition definitions

2030 commitment to:	Performance indicator		
<b>GHG emissions reduction</b> 1. At national level 2. Of industrial facilities in NUTS2 regions	Very high/frontrunner region		<ul style="list-style-type: none"> <li>• 65% GHG emissions reduction by 2030</li> <li>• A coal phase out by 2025</li> <li>• Fossil fuel phase-out between by 2026</li> <li>• &gt; 50 % RES target by 2030</li> <li>• More than 45% EE target by 2030</li> </ul>
<b>Coal phase out</b>	High		<ul style="list-style-type: none"> <li>• 55% GHG emissions reduction by 2030</li> <li>• A coal phase out between 2025 and 2029</li> <li>• Full fossil fuel phase-out between 2035 and 2044</li> <li>• Between 41% and 50% RES target</li> <li>• At least 45% EE target by 2030</li> </ul>
<b>Other fossil fuels phase out</b>	Medium		<ul style="list-style-type: none"> <li>• Between 45 and 50% GHG emissions reduction</li> <li>• A coal phase-out between 2030 and 2035</li> <li>• Fossil fuel phase out between 2045 and 2050</li> <li>• Between 31% and 40% RES target by 2030</li> <li>• Between 31% and 35% EE target by 2030</li> </ul>
<b>RES targets</b>	Low		<ul style="list-style-type: none"> <li>• Below 45% GHG emissions reduction</li> <li>• Coal phase out after 2035</li> <li>• Fossil fuel phase out between 2051 and 2055</li> <li>• At least 30% RES target by 2030</li> <li>• At least 30% EE by 2030</li> </ul>
<b>EE targets</b>	No commitment		<ul style="list-style-type: none"> <li>• &gt; 45%</li> <li>• At least 45%</li> <li>• At least 40%</li> <li>• At least 35%</li> <li>• At least 30%</li> </ul>


Source: CSD.

national and European decarbonisation strategies. Finally, the sustainability dimension evaluates if key sustainability criteria are incorporated in the selection of programme priorities and projects.

The Green Transformation Potential pillar covers four dimensions – social-economic aspects, smart specialisation, SME development, and innovation creation. For each group of indicators there are evaluation guidelines, which are used to define the main parameters of the indicators, followed by the actual indicators. They measure both the adequacy and the comprehensiveness of the measures but also the supportiveness of the measures for SME development, smart specialization and innovation creation.

**Figure 3. Sustainability Criteria**

**Sustainability impact of the selected projects**

Sustainability/ Decarbonisation criteria	Yes	No	Impact
Exclusion list of significantly harmful activities or such that would lead to unsustainable use of natural resources, harm the local ecosystems or have a negative impact on biodiversity in the region			
Fulfilling the average lifecycle emissions' intensity threshold of 100g CO2e /kWh, leading to a reduction of the threshold every 5 years and declining to 0g CO2e / kWh by 2050			
Inclusion of performance indicators with regard to:			
1) GHG emissions			
2) Energy savings			
3) RES integration			
4) Waste reduction			
5) Transport efficiency			
6) Reducing air pollution			
7) Circular economy efficiency			
Integration of sustainability criteria in the tendering process (Green procurement included in the plan)			
Environmental impact assessment, including the impact of the supported technologies on water resources, air pollution, green space, the local ecosystems and biodiversity			

Source: CSD.



# ASSESSMENT OF THE BULGARIAN JUST TRANSITION PROCESS

The first drafts of the Bulgarian TJTPs are fairly short (30-35 pages) documents, giving only general indications of the socio-economic development and the transition challenges of the respective region, without providing a long-term development vision or indicating specific projects and initiatives. The Plans lack sufficient quantitative indicators and concrete projects and measures to achieve the program priorities of the three just transition pillars. The documents outline general priorities for the areas, but fail to develop a long-term strategy with an elaborated implementation timeline. Most worryingly, the Plans do not indicate a clear timeline for the coal phaseout, which is not only the most important prerequisite for the JTF but also creates investment uncertainty that only further entrenches existing oligarchic networks dependent on the preservation of the coal power plants.

## **Pillar 1: Stakeholder Engagement Process**

Stakeholder engagement is the set of actions aimed at stakeholder identification (who), in response to pre-defined objectives (why), and meaningful stakeholder participation in the decision-making and in the Plan's implementation (how). Public participation in the development of the TJTPs is understood as a common framework for the process of communication, consultation, and contribution to the final version of the strategic documents and their subsequent implementation. Stakeholders are the citizens, businesses, informal groups, and organizations interested and affected by the proposed measures and projects. Stakeholder participation in the planning process is more than just a legal requirement for the approval of the strategic documents. It is also key for the success of the TJTPs, as it ensures knowledge-sharing, governance continuity, and the legitimacy of the process. Giving stakeholders access to the decision-making process helps those governing it to collect better information, ideas and perspectives, to increase compliance and acceptability, and to reduce uninformed opposition. These elements are crucial for dealing with the complexity of the transition challenges, as well as for identifying and reaping all the potential benefits. However, the methods, depth, and quality of engagement vary greatly from simple provision of information and mainstream approaches such as public consultations, surveys, and focus groups to a truly collaborative decision-making process, such as foresight and voting.

## **Assessing the Governance Mechanism**

The TJTP planning and development process has been coordinated centrally by the Ministry of Energy in a top-down approach, with parallel consultations in the coal regions with the locally and regionally affected stakeholders. Yet, the consultation process at national and regional level has been fragmented and poorly coordinated, whereas it has not been separated from the discussions

on the National Recovery and Resilience Plan or the Regional Plans for Integrated Development and the Operational Programmes under the EU Regional Development Fund leading to more confusion among stakeholders.

The delayed debate about the impact of the European Green Deal on regional level has led to a limited progress on building consensus around a common regional strategy. The discussions have not been centred around specific issues related to the just transition process and the TJTPs but have been flooded with disinformation narratives about the economic future of the most vulnerable regions and the stability and security of the electricity system.<sup>4</sup>

The consultant, providing the technical assistance to the Bulgarian government on the preparation of the TJTPs, first set up an ad-hoc national working group consisting of 15 independent experts and owners of coal power and mining assets. This expert-level working group format was followed up with bilateral consultation meetings with national and local authorities, businesses, trade unions and environmental NGOs throughout 2021. During the whole consultation period, the government and the consultants engaged the civil society only in a limited manner and no multi-stakeholder meetings took place for the exchange of views and the gathering of concrete project proposals.

The consultation approach also lacked a targeted focus on the involvement of youth groups, vulnerable communities and women, although in his work the consultant had highlighted the importance of this target group for the Plans' implementation stage. The Consultant organized separate dialogue formats that took place at regional level, which enabled a dialogue between the local authorities, regional stakeholders and citizens, such as the 4th meeting of the EU-wide Forum of Mayors for the Just Transition in Stara Zagora organized by the civil society organizations, SZEDA and WWF Bulgaria.<sup>5</sup>

To ensure a multi-level stakeholder involvement, the Bulgarian government foresaw the establishment of a governance structure for the implementation of the TJTPs, namely the creation of a National Just Transition Plan Council (NJTPC), responsible for strategic coordination of projects and the selection and prioritisation of measures initiated by the district level, i.e. District JTP Commissions, which will enable a well-functioning bottom-up approach by proposing specific measures according to the specific needs of districts and support the monitoring of the TJTPs there. Both the National JTP Council and the District JTP Commissions will be responsible for the content, process, monitoring and evaluation management at their respective levels. The members of the District JTP Commissions, which include regional trade unions, regional employers' organisations, regional businesses and NGOs, among others, will be the major drivers of the transition process locally

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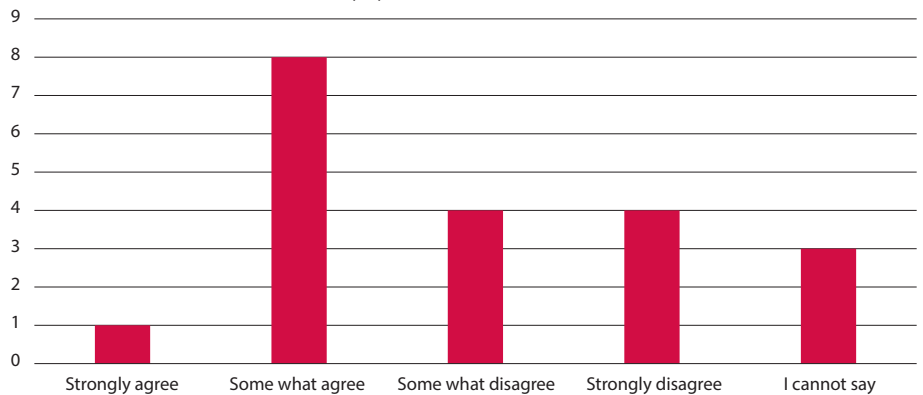
<sup>4</sup> The consultancy firm PricewaterhouseCoopers (PwC) provided the technical assistance to the Bulgarian government in developing the TJTPs and consulting all the relevant and national stakeholders. A series of regional seminars organised by the consultant served as the basis for the last four of the five deliverables. The partnership with relevant stakeholders in the first consultation stage has been managed mostly by PwC at the national level and the local authorities in the three coal regions.

<sup>5</sup> The hybrid mayors' forum was one of the most significant events in the region that gathered various local authorities from Bulgaria, different Member States, representatives from the European Commission and NGOs, including youth representatives from student organisations to discuss the current just transition challenges, best practices and the future green economic perspectives.



**Figure 4. Adequacy of the Stakeholder Engagement Strategy**

Please indicate to what extent the measures and actions taken to engage stakeholders have ensured inclusiveness and balance of the interests of all actors in preparation of the Plan?

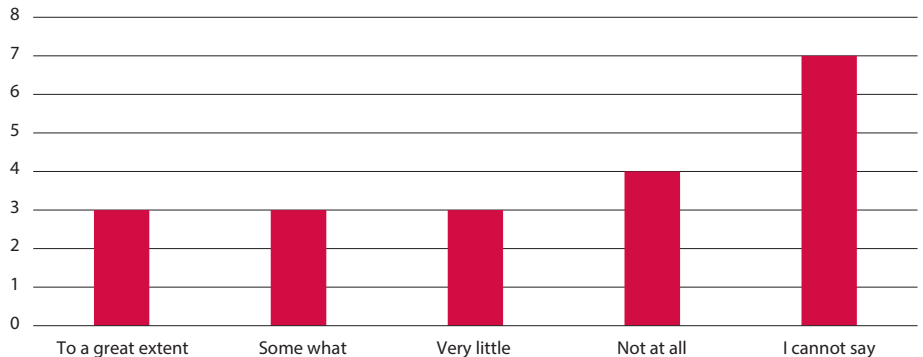


Source: CSD data based on an expert survey on the TJTPs.

ensuring a bottom-up perspective to the TJTPs' implementation. Although the TJTPs mention the development of a stakeholder consultation strategy, a structured consultation framework was lacking in all three regions – a perception shared by the majority of the respondents in the expert discussions led by CSD for the purposes of this report.

**Figure 5. Inclusiveness of the Stakeholder Engagement Process**

To what extent were your recommendations and comments considered in the consultation process for the preparation of the Plan?



Source: CSD data based on an expert survey on the TJTPs.

## Regional Decarbonisation Narratives

The decarbonisation of the most vulnerable Bulgarian regions to the transition is still largely seen as a threat by local communities, regional policy-makers and trade unions, largely because the opportunities linked to the transition, the goals and benefits of EU decarbonisation policies and Bulgaria's need to accelerate the shift to a greener economy have not been effectively communicated. The results from the expert survey clearly illustrate that the decarbonisation goals and policies have been misunderstood and hardly even communicated at the regional level. The discussion around the implementation of the European Green Deal has been described as an external foreign policy agenda 'imposed by EU bureaucrats and elites from Sofia' that would destroy the economic welfare and development opportunities of the region. This information and trust gap have been widening exactly due to the

lack of a consistent stakeholder engagement strategy and responsiveness by the Bulgarian government. Some of the expert survey respondents from these regions have reported that they were neither consulted nor engaged by public institutions and felt abandoned by the whole process. The cleavage between the regional debates in the coal regions and the centralized decision-making process has also contributed to the spreading of disinformation narratives, in which the transition away from fossil fuels and highly emitting industries has been used as the scapegoat for the increase of energy prices and, thus, of energy poverty levels.

The lack of a consistent communication strategy and actual engagement from successive Bulgarian governments towards the local stakeholders and affected communities has further fuelled the disinformation narratives in coal regions that are reflected in the electoral support for political parties that are opposing the implementation of the European Green Deal. This trend is visible also in other Central and Eastern European countries where communities with a long history in fossil fuel-intensive sectors refuse to give up deeply-rooted socio-cultural habits and traditions linked to these industries. For these communities, the transition has been seen not only through the lens of job losses but also as the loss of their cultural heritage and identity. What is more, the employment in these sectors has been providing decent working and living conditions and high value-added in the regions.

### **Adequacy of the Stakeholder Engagement Objectives**

In term of the adequacy of the objectives, half of the respondents confirmed that the main objectives of the consultation process have been to formally meet the legal requirements set up by the Governance Regulation on the Energy Union and to ensure the legitimacy of the measures in the Plans. 7 out of 20 experts consider acquiring local knowledge as a major objective, while only 6 of them deem the objective of ensuring higher public support of the measures included in the Plans as a key motivation for the consultations. The different spectrums of the replies reveal that the objectives of the consultation have not been clearly communicated for most of the respondents.

### **Transparency, Inclusiveness and Responsiveness**

The level of transparency and inclusiveness of the stakeholder engagement process based on the overall perceptions of the involved stakeholders has been assessed as low. The initial formal announcement of the government was that plans would be ready in January 2022, but the first draft of the Plans was only published on 2 August 2022. The short 2-week public consultation period in the summer peak was a major obstacle to involving a wide range of stakeholders and civil society organizations. In addition, most of the submitted statements and opinions of the stakeholders were not published on the official website after the consultation period, which is another major impediment for the transparency of the process.

The majority of respondents in the survey reported lack of involvement, dialogue and transparency in the stakeholder consultation process, mostly due to the unwillingness of the government to involve regional authorities and civil society groups. According to some stakeholders that took part in the public consultations, the development of the consultant's interim and final reports has not been done in cooperation with independent experts from the most relevant stakeholders. Some stakeholder groups felt less involved and they highlighted the lack of a socio-economic analysis to beef up the NEEDS assessment for the TJTPs. Stakeholders also complained of the lack of feedback on the integration of their proposals into the assessment reports and viewed critically the lack of publicity on the feedback and comments from the European Commission on the TJTPs.

While some organisations reported inconsistencies in the application of the partnership principle, others pointed out that it was applied adequately in the initial phase by the consultant, as well as in the preparation phase of the draft TJTP by the Cabinet of the previous Deputy Prime Minister for Climate Policies.

More than half of the respondents stated that the TJTP engagement process struck little or no balance in reflecting the interests of the stakeholders. They also reported that their comments and recommendations were not reflected in the final version of the Plans and that there were stakeholders whose interests were not considered, despite their involvement in the engagement process.

The local vulnerable groups (workers, trade union representatives and other individuals dependent on the coal industry), as well as local business leaders were not motivated to engage in the debates. In addition, 'hard-to-reach' groups (e.g., youth, rural communities, etc.) have not been included in the process through appropriate channels. In fact, national and regional public authorities did not even recognize the need to reach out to these groups. On the contrary, every attempt of local NGOs to engage the youth groups in Stara Zagora has been met with strong resistance and scepticism of the local authorities.

Since vulnerable groups, women and youth groups were not sufficiently covered during the TJTP process, the overall assessment of the inclusiveness of the process is poor. The stakeholder influence was also significantly imbalanced, with the interests of certain private lobby groups and the incumbents outweighing significantly the influence of SMEs and vulnerable groups. This is also reflected in the lack of clear selection criteria for the just transition priorities outlined in the plans and the strong focus in the plans on large infrastructural projects without clear milestones, project objectives, timeframes, socio-economic and sustainability justification but at the same time providing preferential treatment for entrenched private interests in the regions.

**Box 1. A bottom-up approach to stakeholder consultation in Pernik, with a strong focus on youth participation and local green economic solutions**

The municipality in Pernik has applied from the very beginning a proactive, bottom-up and open consultative approach that aimed at broader involvement of civil society groups and affected stakeholders, including SMEs and industry representatives. The discussions featured a strong focus on involving the youth in all questions related to the just transition and providing a high-level information and awareness campaign. It is the first municipality to set up a Consultative Committee on Youth Policy and launch an International Youth Centre in Pernik.

Parallel to official consultations of PwC, additional local stakeholder meetings in Pernik have been initiated and inspired primarily by civil society organisations in the region and facilitated by the municipality, where youth organisations, NGOs and think tanks have been actively involved. One of the most notable is the youth dialogue in Pernik in the framework of the project „GENERATION GREEN – the youth vision for the transition to a circular and low-carbon economy”,<sup>6</sup> financed by the Erasmus+ programme, which has reflected the youth vision for the transition to a circular and low-carbon economy. Additional discussion fora and bottom-up initiatives have been organized by local civil society initiatives, such as “Breathe Pernik” and the local representations of Greenpeace, WWF Bulgaria and Za Zemiata. These initiatives have been driven almost entirely by the local civil society organisations and have not been publicly supported by national institutions. The recommendations provided by the local actors have been partially taken into consideration in the draft version of the TJTP. However, the strategic document remains vague in nature as no specific projects or initiatives have been developed so far.

## Engagement Methods

Most stakeholders reported that the one-way stakeholder communication approach such as emails, publication of reports and announcements was the dominant one in the engagement process. Effective engagement methods – such as stakeholder participation in strategic decision-making procedures in the region – was applied once or not at all. There was also no use of participatory foresight techniques for the development of joint stakeholder-led visions for the development of the regions.

The overwhelming majority highlighted the poor communication between the Ministry of Energy and the Ministry of Regional Development and the need for more active follow-up engagement of central authorities in the RDP Monitoring Committee and the District Just Transition Committees (DECs) for the Southeast and Southwest regions. The prevailing perception among the participants in the survey is that stakeholder consultations should have been carried out more adequately in line with the requirements for the

<sup>6</sup> EPI, “The „Green transition” through the eyes of the young people”, December 11, 2020.

development of the strategic documents. The limited and inconsistent use of different communication tools, the one-way and top-down communication process, as well as the limited engagement of vulnerable groups and their needs suggest a low level of involvement depth.

The overall poor assessment of the stakeholder engagement process could be explained by the interdependence of populism, climate scepticism and the low level of policy support for climate and environmental policies.<sup>7</sup> The highly centralized governance mechanism for developing strategic low-carbon transition policies, the decline in the trust in public institutions, and the lack of evidence-based dialogue on sustainable energy alternatives have created a fertile ground for climate-sceptic group think in Bulgaria. The politics of coal phaseout has largely been shaped by power elites linked to existing business schemes blocking the advancement of more ambitious decarbonisation policies.<sup>8</sup> State capture networks have peddled disinformation narratives around the just transition process based on fearmongering about the high cost of transition against a background of widespread energy poverty and social exclusion. This has resulted in a policy inertia, in which political actors avoid the topic even when ample resources are at place to transform the most vulnerable communities and unleash their potential for economic growth based on an alternative development model.

## Pillar 2: Decarbonisation Ambition

The endorsement of more ambitious EU 2030 emissions reduction targets and the climate conditionality rules for the Just Transition Fund and the whole EU stimulus package will require member states to align the economic restructuring process with the enhanced EU decarbonisation objectives. The decarbonisation objectives are already embedded in the main JTF Regulation.<sup>9</sup> It sets as main objective the promotion of investments in the deployment of technology and infrastructure for affordable clean energy, in greenhouse gas emissions reduction, energy efficiency, and renewable energy, as well as support for circular economy activities. In addition, the TJTP has to contain a transition timeline that has to be consistent with the latest version of the National Energy and Climate Plans (NECP). The TJTP also has to establish synergies with other relevant EU programs and pillars of the Just Transition Mechanism to enhance the coherence of policy actions and cover the identified regional needs.

The mapping of decarbonisation policies and targets has not been the leading factor of the just transition consultation process. Socio-economic considerations

<sup>7</sup> Lockwood, M., "Right-wing populism and the climate change agenda: exploring the linkages", In: *Environmental Politics*, vol. 27, issue 4, 2018; Huber, R., "The role of populist attitudes in explaining climate change skepticism and support for environmental protection", In: *Environmental Politics*, Vol. 29, Issue 6, 2020.

<sup>8</sup> Stefanov, R., and Vladimirov, M., "Bulgaria and the South Stream Pipeline Project: At the Crossroad of Energy Security and State Capture Risks", In: *Suedosteuropa Mitteilungen*, vol. 5-6, 2014; Stefanov, R. et al., *Energy Sector Governance and Energy (In)Security in Bulgaria*, Sofia: Center for the Study of Democracy, 2014.

<sup>9</sup> EUR-lex, [Proposal for a Regulation of the European Parliament and of the Council establishing the Just Transition Fund](#), COM/2020/22.

have been prioritized over environmental issues, and sustainability has not been included as the main selection criterion in priorities and measures of the Plans. This is the result of wide knowledge and information gaps about low-carbon solutions among representatives of the Bulgarian public authorities at different governance levels. The intersection between EU decarbonisation policies, the green economic transformation, the unlocking of the regions' innovation potential and the promotion of regional competitiveness has not been the driving force behind the Plans' thinking. What is prevailing is the lack of awareness and understanding about the energy transition topic and its implications for regional economic development standpoint as a result of low education levels, limited public information on the topic and low trust in national institutions and politicians.

The predominant attitude towards the viability of the energy transition process is scepticism, which is seen as a barrier for real stakeholder engagement in the process of defining the objectives of the green economic diversification. The sectoral targets and performance indicators related to the decarbonisation policies and measures included in the TJTPs have been evaluated as ranging from "poorly ambitious" to "moderately ambitious". With regard to their contribution to greenhouse gas emissions reduction, the surveyed stakeholders consider them only partially impactful and even weak. Although the broadly formulated program priorities and measures are seen to contribute to some extent to the fulfilment of the national decarbonisation priorities, their impact is difficult to quantify and measure due to the lack of concrete performance indicators in the plans.

### National Coal Phase-out Strategy and Timeline

Bulgaria does not yet have a long-term national strategy for a coal phase-out. The National Recovery and Resilience Plan foresees the development of two scenarios for a coal phaseout in Bulgaria – a more ambitious one with a timeline until 2030 and another one with a coal exit date no later than 2038. Although 2038 is mentioned as the latest coal exit date in the TJTPs, the date is still subject to a parliamentary approval by the National Assembly based on the two scenarios that will be developed by the Energy Transition Commission as part of the Consultative Council on the Implementation of the European Green Deal.

Coal power plants are already heading fast towards becoming stranded assets. The combined load factor of coal-fired power plants in Bulgaria has been declining over the past decade, standing at just over 50% in 2020. Maritsa Iztok 2, the largest plant with 1.6 GW nameplate capacity, has been making consistent losses in recent years amounting to over EUR 700 million as of Q2-2021.<sup>10</sup> Meanwhile, the RRP commits to not extending long term contracts for electricity purchases from Maritsa Iztok 1 (AES) and Maritsa Iztok 3 (Contour Global) after their expiration, in 2024 and 2026, respectively. The end of the long-term contracts of the two coal plants with a combined capacity of 1.6 GW is expected to significantly erode their profitability in the absence of

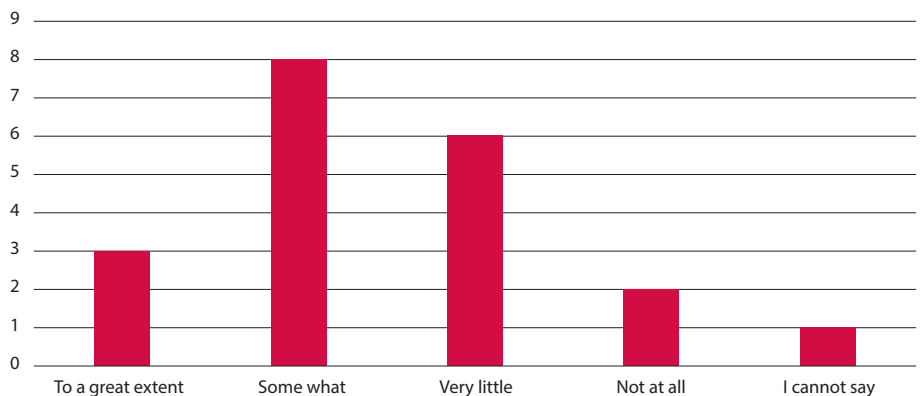
<sup>10</sup> Rangelova, K. et al., *Switching the Gears of Decarbonisation: Policy Action for a Low-Carbon Transformation of the Bulgarian Economy*, Sofia: Center for the Study of Democracy, 2021.

government subsidies.<sup>11</sup> Taken together, regulatory and indirect subsidies amount to approximately €800 million for the 2021/2022 regulatory period, representing 1.2% of the country's GDP.<sup>12</sup>

#### Figure 6. Assessing the Decarbonisation Ambition of the TJTPs

*To what extent do you believe that the objectives and measures set out in the Plan will contribute to achieving national decarbonisation objectives?*

*Reducing greenhouse gas emissions from industrial facilities*



*Source: CSD data based on an expert survey on the TJTPs.*

At this backdrop, the skyrocketing electricity prices since at least the summer of 2021 have prompted lignite-fired power plants to raise their power generation output by at least 20%. Their business operations have become very profitable even when the two independent lignite power producers, TPP AES Galabovo and Contour Global Maritsa Iztok 3, have continued to receive availability capacity support from the Electricity System Sustainability Fund (ESSF).

The increase in lignite-fired power production goes directly against the commitment under the National Recovery and Resilience Plan (NRRP) for reducing GHGs by 40% until 2026. There is strong opposition from the trade unions, the coal power plant operators and even from the TSO that the lignite-fired capacity halts production, which means that for the 40% target to be achieved, the government would have to continue providing subsidies in the form of a capacity mechanism that keeps the plants open during peak demand hours. However, according to the EU law, all power plants with CO<sub>2</sub> emissions above 550 g/kWh, i.e., all coal plants in Bulgaria, will not be able to receive state aid after 2025. In addition, the continuation of the overall support for coal power plants could also divert crucial funds away from developing economically and environmentally attractive alternatives and in this way put at risk the fulfilment of the decarbonisation objectives in the regions. In short, the coal phase out timeline is seen as a crucial prerequisite to enable long-lasting decarbonisation effects.

### Decarbonisation Ambition and Sustainability Fitness of the Plans

One of the most important criteria for the effectiveness of the TJTPs is the level of ambition and the decarbonization potential of their sustainable energy

<sup>11</sup> Ibid.

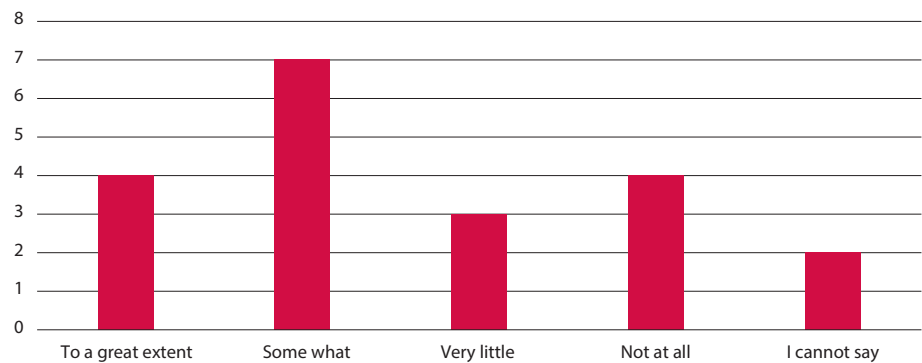
<sup>12</sup> Based on CSD's calculations.

targets linked to renewable energy-based power generation, energy efficiency and, more generally, investments in low-carbon infrastructure and industries. Based on the various performance indicators, the decarbonisation ambition of the three Plans could be ranked in the range between “low” and medium’, while their comprehensiveness falls in the “low” category.

**Figure 7. Assessing the Decarbonisation Ambition of the TJTPs**

*To what extent do you believe that the objectives and measures set out in the Plan will contribute to achieving national decarbonisation objectives?*

*Timeframe/strategy for coal phase-out in the electricity sector*



*Source: CSD data based on an expert survey on the TJTPs.*

The perception of stakeholders on the level of the decarbonisation ambition and feasibility of the proposed strategic priorities and measures in the TJTPs differs significantly from one another.<sup>13</sup> While the decarbonisation targets in the TJTPs, including the commitment to reduce the annual CO<sub>2</sub> emissions from the electricity sector by 40% by 2026 (compared to 2019), are seen as undermining the security of supply, the energy sector and the labour market by trade unions and utility-based think tanks, environmental NGOs and academic experts insist on more firm commitments. For the majority of stakeholders directly or indirectly linked to the coal and coal power industry claim that there is a need for an extension of the timeline for coal phase-out and a renegotiation of the government’s commitments to the EU.

A major focus of all TJTPs is the development of a comprehensive coal mine recultivation plan on a regional level. Although this has been evaluated positively by civil society organisations and the European Commission, the recultivation targets in the TJTPs need to be more concrete. There must be a specific mapping of the recultivation areas to have been carried out in the past 15 years, as well as an estimate of the necessary costs and milestones for the next 10-15 years, identifying the available funds and financing gaps for the process. The proposed recultivation measures in the TJTPs, including support for the development of a concept and a plan for recultivation, as well as improving the recultivated land for specific economic activities, such as for industrial zones, RES capacities or sustainable agricultural use, have failed to develop nature-based solutions that would allow an entire ecosystem restoration, including in areas indirectly affected by long-standing coal mining and burning activities. These could include measures that contribute to the improved maintenance of ecosystems via the restoration of landscapes, improving water retention, carbon sequestration, microclimate regulation, and others.

<sup>13</sup> This could be seen also in the statements of the different stakeholders as a response to the public consultations to the Territorial Just Transition Plans (TJTPs).



In terms of the scope of sustainability indicators, most measures in the Plans focus on the reduction of GHG emissions in the energy sector and do not encompass the emissions from other economic activities. The plans also lack environmental indicators linked to the impact on air, water and soil pollution from the energy sector. The output indicators should therefore also include air pollution indicators such as an 'estimated improvement in air quality' (i.e., PM10 concentration levels as measured in  $\mu\text{g}/\text{m}^3$ ). As limit values for particulate matter (PM10) and sulphur dioxide (SO<sub>2</sub>) in ambient air are constantly exceeded in the three regions, it is crucial that the plans develop specific measures and actions that contribute to improving air quality.

The Plans also lack requirements for biogas/biomethane investments, which could be an important component for the future economic development of these largely agricultural regions, whereas waste management approaches could be leveraged in renewable energy-producing systems. The Plans should also develop a wider application of heat pump systems for individual and local heating installations in combination with the unlocking of renewable energy sources and thermal energy storage as to reduce the dependence on natural gas in the heating sector.

Despite the lack of specific energy transition indicators, the TJTPs set high renewable energy-based power production targets, such as 15,33 TWh per year RES-based electricity and heat generation, emphasising on the creation of industrial parks for climate-neutral technologies, the development of a support scheme for solar power parks with battery storage attached, the integrated use of green hydrogen, as well as the production and distribution of biomethane and wind-based power under Pillar 1 "Industry for Sustainable Energy Solutions" of the Plans. The TJTPs aim to redeploy the labour force in the coal mining and electricity production sector in the whole supply chain for the manufacturing of RES-related equipment. The TJTPs also include the unlocking of the regions' hydrogen potential within the programme priorities. Some stakeholders identified the need for a pilot green hydrogen production facility and the development of an associated R&D centre.

Although renewable energy initiatives and green hydrogen visions are well represented in the TJTPs, the lack of performance indicators and sectoral goals for the various areas calls into question the implementation of the ambitious goals for the integration of RES-based capacities, power storage systems and the general reduction of emissions. The plans have also not defined sustainability criteria for the selection of projects at a later stage and they overall lack a technological roadmap for their implementation. In the current draft of the Plans, there are no capacity building measures for municipal administrations to plan and manage urban-based low-carbon projects, as well as to design targeted programs to support local farmers and the development of organic farming and food production.

Another key governance weakness of the Plans is the lack of consumer empowerment mechanisms for participating in a free energy market via decentralized RES-based energy production. TJTPs should build on the synergy and complementarity of these measures and develop further mechanisms for supporting prosumers and energy communities. A major gap is also the lack of measures for reducing energy demand and developing energy efficiency

solutions, including the development of career opportunities in the field of energy efficiency in the buildings, industrial and transportation sectors.

There is also a need for more specific measures for the promotion of research and development of CO<sub>2</sub> capture, storage and utilisation technologies although they currently do not comply with the EU sustainable taxonomy.

### **Support for Renewable Energy Policies and Energy Efficiency Measures**

In terms of the level of support for existing and additional RES-based policies, assessed as the scope for funding RES-based projects and energy efficiency, the Plans reveal a mixed picture. When it comes to the national RES support framework, Bulgaria is a laggard compared to other EU countries. The latest EU Renewable Energy and parts of the EU Internal Energy Market Directives are yet to be transposed in Bulgarian law. At the same time, Bulgaria has some of the most constraining administrative procedures in the EU when it comes to the installation and exploitation of small-scale RES-based power production facilities, particularly in terms of providing grid access and power system operation.<sup>14</sup> In addition, owners of renewable energy installations have been subject to numerous taxes, fees, and administrative charges (access fee, a 5% tax on the revenue of selling excess electricity, and/or a 10% corporate tax on the income generated from electricity sales) that in some cases exceed the profits of selling the excess electricity.

The governance mechanisms for small-scale RES-based power production plants are even less streamlined. The lack of targeted financial mechanisms and even basic awareness about the functioning of and the regulatory requirements for the creation of renewable energy communities in Bulgaria have bottlenecked the process of energy supply decentralization. As a result, there is no legal framework and no legal definition for prosumers and renewable energy communities in Bulgaria. The implementation of the RED II Directive will not be in itself sufficient for establishing a comprehensive policy framework for renewable energy communities in Bulgaria, as various laws, bylaws and ordinances that need to be updated and synchronized as well. The absence of clear regulations for the possibilities for energy communities to sell surplus power to the grid is a major loophole that have to be addressed. In addition, Bulgarian financial institutions have not been active in lending to small-scale distributed RES and community energy projects in Bulgaria.

To close this funding gap, the National Recovery and Resilience Plan entails some low-carbon energy support solutions geared towards small producers and decentralized systems, such as single-family house energy efficiency measures, the introduction of a net-metering and power-sharing regulatory framework, as well as support for small-scale RES projects by allocating 25% of the budget of the RES installations below 5 MW. The NRRP also increases the share for financing solar panels on rooftops and heat pumps in residential buildings from BGN 20 million to BGN 140 million, as well as covering these

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<sup>14</sup> Round table “Decentralisation and democratisation of Bulgaria’s energy sector”, Sofia, National Assembly, November 27, 2018.

costs for energy-poor households at 100%. However, the focus of the low-carbon measures in the electricity sector in the NRRP remains on one large-scale tender scheme for RES investment with a mandatory quota for installed storage capacity. The renewable energy project for the installation of 1.7 GW in new renewable energy puts a strong emphasis on electricity storage and requires a very high minimum storage capacity threshold – 25% of the capacity of the whole plant. Thus, such financing model provides discriminatory support for utility-scale renewable investors. The Bulgarian parliament also passed a legislative framework simplifying the rules for the connection and exploitation of PV-based power plants for own use, which facilitated the installation of solar panels on the rooftops and facades of residential and commercial buildings.

In the TJTPs, there is no detailed information about the amount of financial support or concrete project proposals for the implementation of RES support measures. Nonetheless, the definition of the program priorities and the thematic focus in the strategic documents suggest high supportiveness of renewable energy projects. Meanwhile, energy efficiency and demand-side measures are not included in the plans meaning that the level of support could be assessed as low or missing at this stage of the TJTP development.

The depth of the RES support, assessed based on the type of support measures, is quite low because of the stronger focus on utility-scale and large infrastructural projects providing preferential treatment to a small group of renewable energy investors, as well as the lack of adequate support for small-scale renewables and energy community projects. The design of some of the support schemes mentioned in the plans is also not clearly outlined. The Plans also include support measures such as the development of a scheme for solar parks with power storage, the integrated use of green hydrogen and the establishment of storage equipment manufacturing and recycling. The Plans, however, provide no further details what these schemes will consist of and how the tendering process will be designed. This applies also to the support for the creation of a cleantech (zero-emission) industrial parks where again there is no specific allocation of the funds.

According to the stakeholders that took part in the consultation process, the TJTPs need to incorporate stronger provisions of administrative support, as well as infrastructural and tax incentives for expanding low-carbon industries. The development of RES-based generation capacity should not be limited to PVs only, but should support wider diversification of the generation mix, both locally and nationally. There is also a need for a more comprehensive reform of the RES investment support needs for households, including the improvement of energy efficiency measures, the electrification of heating and the elaboration of support mechanisms for energy communities. In addition, stakeholders have highlighted the need for the application of more efficient energy management using digital technologies and smart grids to reduce energy consumption, to reduce power system losses and improve the automation of energy management activities. This goes through measures that support the development of low voltage power distribution networks that are currently missing from the Plans.

### Pillar 3: Green Transformation Potential

The transition to carbon neutrality would see the affected regions suffer substantial job losses at the beginning, not only in coal mines and power plants but also in other carbon-intensive industries (e.g., chemicals, metal processing, cement, engineering and construction contractors, and the transportation sector). To revive the local economy in these regions, significant investments should be mobilized to boost their innovation potential, the growth of SMEs, the building of new infrastructure and the provision of financial and regulatory incentives for local entrepreneurs. Investment priorities should be aligned with the EU member states' updated industrial and smart specialisation strategies and foresee the development of special micro-grants and innovative financial schemes for decentralised sustainable solutions. A top-down centralized planning of the TJTPs could potentially favour the development of a small number of large projects and the support for large businesses only.

The JTF regulation explicitly states that one of its key objectives is the promotion of economic diversification and the enhancement of research and innovation in the field of advanced and sustainable technologies. The scope of the support in the JTF<sup>15</sup> puts strong emphasis on SME and start-up-related activities that contribute to the transfer and deployment of technologies with a strong focus on renewable energy, GHG emission reduction, and the enhancement of the circular economy. The benchmarking framework defines specific indicators to measure the coverage, ambition, and potential impact of the TJTPs in meeting these broad objectives.

### Socio Economic Aspects

The TJTPs do not sufficiently address the socio-economic aspects of the transition process. Although reskilling and new job placement criteria are partially in place, they lack a clear direction and vision. Moreover, the measures are not in sync with the long-term regional development objectives and socio-economic characteristics of the regions. Firstly, the three strategic documents do not contain an in-depth socio-economic analysis of the impact of the transition process, including a preliminary assessment of the regional job creation potential, the impact on investments/jobs/tax revenues, an estimate of the potential number of jobs in low-carbon industries, an analysis of the type of jobs to disappear, as well as the overall demand for new skills.

In the three most vulnerable regions to the transition process, the number of employees that will be directly affected is roughly 14,000 with around 75% of these working in the lignite mining sector, and the remaining 25% in power plants. Around 20% of workers are above 55 years of age.<sup>16</sup> There are significant differences among the regions regarding the number of employees.

<sup>15</sup> EUR-lex, [Proposal for a Regulation of the European Parliament and of the Council establishing the Just Transition Fund](#), COM/2020/22.

<sup>16</sup> Szabo, L. et al., *Accelerated Lignite Exit in Bulgaria, Romania and Greece*, REKK, 2020.

**Table 1. Expected job losses from a coal phase-out and government payments to compensate for lost jobs, Bulgaria**

Industrial Sector	Number of Jobs Lost		Financing Needs (EUR Million)
	< 55 years	55 years or older	
Power Plants	1943	412	220
Mines	9705	2058	
Total Direct Jobs	11648	2470	
Indirect Jobs	29120		141
Total Financing Needs for Reskilling and Early Retirement			361

*Source: CSD based on corporate databases and review of typical compensation mechanisms in other EU coal regions.*

Another 29,000 jobs in related industries would also be indirectly impacted by the closing of the plants and the associated lignite mines.<sup>17</sup> This would require the development of targeted programs for retraining and job replacing programs for all workers below 55 years. The cost of such government initiatives would be around EUR 361 million, which also includes the early retirement costs.<sup>18</sup>

Labour unions generally dispute these numbers claiming instead that at least 100 000 jobs will be lost if coal power plants and lignite mines are closed. This estimate contradicts the company data on employment figures in commercial registries and is likely inflated as trade unions often include jobs that are only tangentially related.

Stara Zagora is the region most affected by the transition, with the highest number of workers in the coal sector. At the same time, Stara Zagora is also the most dynamically growing region, therefore it has good potential to absorb coal sector workers made redundant by the phase-out.

The outlined strategy on diversification and adaptation of enterprises to the economic transition as part of **Pillar 3 “Diversification of the local economy”** in the TJTPs has a strong focus on the business sectors with the highest added value and identified as priorities for the regions, such as mechatronics, chemical industry, agriculture, industrial ICT solutions, production of electrical components and renewable energy. Although the strategy identifies broadly the sectors with the highest potential, the proposed measures do not include concrete targets and timelines for the reskilling and alternative job placement programs.

**Pillar 2 “Social and employment support”** of the Plans fails to identify the socio-economic impacts of the transition on the regions and does not include special measures to mitigate them other than via employment support. In particular, the measures defined under this pillar do not address the need for additional support to:

<sup>17</sup> Ibid.

<sup>18</sup> Ibid.

- the family members of workers directly employed in the coal and carbon intensive industries;
- the vulnerable energy consumers who might be disproportionately affected by the potential increase in power prices as a result of the coal phase out,
- the most vulnerable communities in the regions, which are indirectly dependent on the carbon-intensive activities including in the services industries attached to the coal sector

The measures under the pillar “Social and employment support” are limited only to the establishment of interregional vocational training and education (VET) centres that will be focused on coal miners and power plant employees as their primary target group, as well as on vulnerable young men as a secondary group. The scope of the target group initiatives for training and reskilling does not extend to other vulnerable social groups including women and marginalized communities.

Most stakeholders agree that the TJTPs provide the necessary policy tools for assisting workers in carbon-intensive industries in finding new jobs. In addition, they consider the proposed re-skilling and training measures as generally able to meet the needs of those affected by the transition. However, the stakeholders participating in the survey expressed scepticism about the ability of the Plans to propose adequate measures for job creation.

The Plans have mapped comprehensively the most affected economic sectors in the regions, as well as have identified the region-specific advantages and barriers to the development of the local economy. Around of the half of the stakeholders surveyed also say that the measures proposed in the Plan are tailored to the specifics of the regions taking advantage of their economic and geographic potential, as well as their education and skills profile.

With regard to the training and education programmes, some stakeholders taking part in the public consultation process emphasised the need for the creation of favourable training conditions for young people focusing on renewable energy-related subjects, the circular economy and low-carbon manufacturing in vocational high schools that should receive funding and administrative support to update their curricula to the modern needs of the energy business. There is also the need for the introduction of new university courses that are linked to sustainable development and the uptake of renewable energy sources in different economic areas.

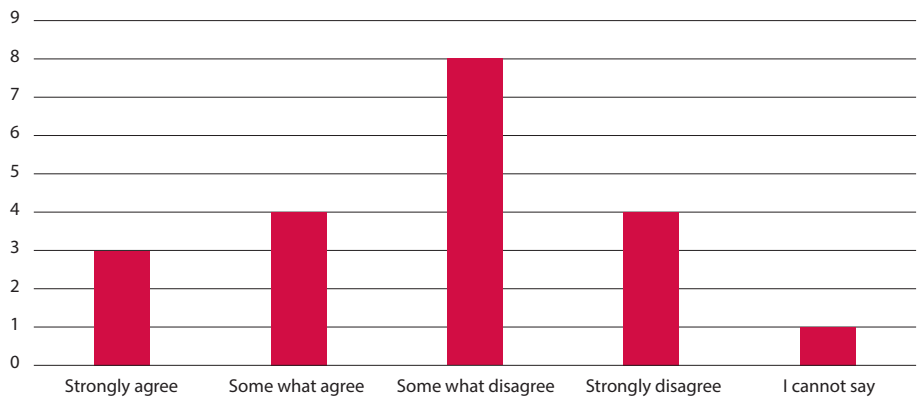
### **Economic Diversification, SME and Innovation Support**

A key ingredient missing in the TJTPs is the lack of a financial compensation schemes for coal-dependent workers encouraging them to develop start-ups and or invest in already-existing small and medium-sized enterprises (SMEs). Such programs could incentivize workers to become engaged in alternative economic activities, and will develop the entrepreneurship potential of the region. This is especially true for Kyustendil and Pernik regions where the

respective TJTPs do not even foresee financial support even to large-scale investors.

#### Figure 8. Economic Diversification Potential of the TJTPs

*To what extent do you agree that the set of measures and projects set out in the Plan have the potential for green transformation in terms of presenting sufficient opportunities to support small and medium-sized enterprises in alternative sectors so that they become the engine of decarbonisation?*



Source: CSD data based on an expert survey on the TJTPs.

The just transition process goes beyond compensations for workers and involves the creation of an institutionalized support structure for the worst affected economic sectors and regions. This requires the rechanneling of funding streams towards the most vulnerable areas including the mining, manufacturing, electricity, construction and transportation sectors where the estimated lost value-added (GVA) would be EUR 425 million with the Stara Zagora region impacted the worst.<sup>19</sup> It is estimated that a total investment of around EUR 531 million is required to offset the GVA losses in coal regions resulting from the phase-out. When including the figure required for compensating for employment losses, the total just transition funding required is EUR 891 million. Some of this, if made in productive investment, may come in the form of loans and other financial instruments. This figure is small compared to the annual Bulgarian state support for the coal industry of around EUR 500 million (according to estimates before the start of the energy crisis in mid-2021) needed to keep lignite plants operational.

Despite the focus on developing industrial parks, battery storage projects and the creation of a hydrogen valley in Stara Zagora, the Plans lack a consistent smart specialisation strategy and support. The TJTPs also do not indicate which industrial parks (existing or new ones) will be supported, what will be the costs for improving industrial clusterisations between companies and for upgrading the parks' infrastructure, as well as social and administrative facilities.

The measures included in the Plans put a strong emphasis on large-scale projects that face significant governance risks and could potentially benefit specific private interests rather than the economy at large. One example is the proposed funding for a large-scale battery production and recycling facility in the Stara Zagora TJTP and integrated green hydrogen projects. Such mega-projects will be difficult to manage by the Bulgarian industry and

<sup>19</sup> Szabo, L. et al., *Accelerated Lignite Exit in Bulgaria, Romania and Greece*, REKK, 2020.

administration considering the disruption of supply chains and the lack of a special regulatory framework for power storage. Hydrogen and storage solutions are unlikely to become commercially viable before 2030, as these technologies are yet to become cost-effective.<sup>20</sup>

**Box 2. Transforming Stara Zagora into a Hydrogen Valley: a pathway towards green diversification or another techno fix megaproject?**

Stara Zagora is the first Bulgarian region with a large-scale hydrogen development initiative, which aims to transform the largest energy complex in Bulgaria into a hydrogen valley worth EUR 15 billion.<sup>21</sup> The project is developed by Holding Zagora in collaboration with a wide range of industrial, energy and municipality actors, including the owners of the Maritsa Iztok power plants – TPP AES Galabovo, Contour Global Maritsa Iztok 3 TPP, and the state-owned Maritsa Iztok 2 TPP, industrial producers, technology developers, equipment producers, the Bulgarian Electricity System Operator (ESO), the Bulgarian Hydrogen Association (BGH2A), as well as the municipalities of Stara Zagora, Radnevo, Galabovo, Nova Zagora, Dimitrovgrad. The capacities will be installed on 25,000 ha industrial area.

As part of the initiative, the BLion project foresees the production of 380 thousand tons of solar-powered hydrogen, of which 150 thousand will be used by the local industry (mainly for the production of ammonia and in a refinery operating on synthetic fuels), 36 thousand tons will be used to balance the energy grid, and 11 thousand – for transport needs.<sup>22</sup> The project envisions the export of 180 thousand tons of green hydrogen through the ports of Burgas, Ruse and Alexandroupolis. For this purpose, the project developers are planning to build additional hydrogen pipeline infrastructure.

BLion is among the five projects in the European organisation “Hydrogen Europe”, which is supported by the European Investment Bank. The project is planned to run in two stages and aims to create 7,500 direct and 18,000 indirect jobs by 2033.

Most stakeholders agree that the Plans do not offer sufficient support opportunities to SMEs in low-carbon business sectors. Similarly, the Plans will not contribute to the development of innovation ecosystems. There is also the need for more transparent and comprehensive indicators that will assess the effectiveness of the SME support. This means including in the Plans indicative budgets, target beneficiaries and success indicators for initiatives such as entrepreneurship and the start-up ecosystem support.

Some of the surveyed stakeholders highlighted the need for investments in a manufacturing line for industrial-scale electric batteries that should be developed in synergy with the battery projects in the NRRP. There is also

<sup>20</sup> Center for the Study of Democracy, *Technological and Policy Innovation Scenarios for the Low-Carbon Transition of the Bulgarian Energy Sector*, Policy Brief No.109, April 2022.

<sup>21</sup> [Hydrogen Europe Lighthouse Project Initiative](#).

<sup>22</sup> Ibid.



demand for more outreach activities in the coal regions that will aim to attract major technology companies to invest in new technological solutions facilitating the low-carbon transition process. Such investments could include the opening of an electric vehicle production line, as well as the development of charging stations.

Sustainability criteria have not been incorporated in the SME development strategy and have not even been recognized as key competitiveness drivers in the SME support measures. The innovation creation component in the Plans is still in its infancy. The TJTPs lack a concept for promoting low-carbon innovation, including tax incentives and regulatory changes, support measures for incentivizing technology transfer from universities and research institutes and financial support for regional innovation centres. Measures related to building regional administrative capacity for the implementation of innovation policies are also absent in the plans.

### **Box 3. A focus on more decentralized local energy solutions in Pernik**

The overall approach for the just transition process in Pernik is based primarily on attracting new investors, laying the foundations of a long-term sustainable green economic basis for the region and creating incentives for green economic diversification instead of relying on compensation schemes or reskilling programmes.

Pernik is exploring small-scale local solutions such as the development of decentralised renewable energy- based district heating networks in each neighbourhood or in a group of buildings that could form an independent energy community. Decentralized local solutions including the installation of heat pumps are also seen as potential solutions to the fossil fuel dependent district heating system of the town.

The municipality has also established complementarity between the just transition project proposals and other green economic initiatives supported by EU funds. In the framework of the SPRITE project the municipality is planning to create smart grids and local renewable energy communities, including launching a pilot community as a first step.

The comprehensiveness and supportiveness of innovation creation measures is seen as rather low by most stakeholders and an area that needs to be further developed. The most important indicators measuring the level of support for regional innovation, i.e., the share of the total funding allocated to innovation projects in low-carbon businesses and the circular economy and the share of non-ETS projects related to innovation in green technologies cannot be assessed. In the current versions of the TJTPs, there are no concrete projects and the funding priorities are not described in financial details. However, the Stara Zagora encompasses some indicators for SME support when the beneficiary companies introduce an innovative business process or product, (the Plan sets a target of 30 SMEs by 2029). Meanwhile, the Pernik and Kystendil TJTPs foresee direct support for only 9 enterprises in the creation/deployment of an innovative product or process by the end of the decade. These measures

are largely insufficient to incentivize the uptake of low-carbon innovations in local enterprises. Some stakeholders also highlighted the need for a clear plan for leveraging the grants from the Plans with private investments. The financial support to SMEs should also be attached to specific measures on company level and the aim to reach the proposed decarbonisation measures.

# AN ALTERNATIVE VISION FOR THE IMPLEMENTATION OF THE JUST TRANSITION FUND IN BULGARIA

The green energy transition in Bulgaria poses many political, administrative, regulatory and governance dilemmas. The use of the large lignite reserves in the country for electricity generation has been seen as the foremost guarantee of the security of energy supply and the independence of the national electricity system. It is also the source of income for several regions, various businesses and the employment of over 14,000 workers directly and close to 29,000 indirectly.

In the years before the start of the energy price surge, the EU's higher air quality requirements aiming to reduce the serious negative environmental and health risks associated with the operation of lignite power plants have led to a gradual reduction of the subsidies for the industry. Since at least 2018, the sector has also faced steeply rising prices of CO<sub>2</sub> emissions. These developments combined with the delayed planning of the energy transition by the Bulgarian government and the lack of alternative sources of electricity generation have meant that the continued reliance on lignite power plants has begun to form sizable financial losses at the state-owned electricity sector.

Yet, the Russian invasion in Ukraine and the ensuing energy crisis has turned the losses of the coal power plants into enormous profits that sharply weakened the Bulgarian government's ambition to deliver on its commitment to a partial coal phase out by 2026 as part of the binding agreement in the NRRP. The Bulgarian government pledged a 40% reduction of emissions in the power sector with concrete targets for CO<sub>2</sub> emission cut for each lignite-fired power plant. There is no clarity, however, on how these emissions cuts would be possible without shutting down the plants completely or expanding the already generous capacity support they receive. Hence, the current baseline target for a complete coal phaseout is 2038 with the government trying to rescind on its 2026 emission reduction commitment.

In fact, the Bulgarian government has begun insisting that the extension of the life of the lignite plants will play a crucial role for safeguarding not only the security of electricity supply in Bulgaria but also of the whole SEE region. Hence, the impetus to develop ambitious and truly transformative TJTPs has declined, which could undermine the whole transition process locking in the Bulgarian coal regions in a backward economic development model.

The following recommendations can be seen as a non-exhaustive list of suggestions to improve the final version of the TJTPs and to build political will for the long-term decarbonisation of the Bulgarian economy:

- There is a need for a clear coal phase out timeline before 2030 that is grounded in evidence-based scenarios. The proposed 2038 date for a coal phase out in the NRRP is not in line with the economic viability of the main coal producing plants in the country, and should not be adopted also in the TJTPs.

- The coal phase out should be accelerated to improve the economics of the remaining coal fleet. Earlier dismantling of lignite-fired power plants in Bulgaria would yield overall higher socio-economic welfare than delaying the process. It would also eliminate existing subsidies for lignite power production, estimated at around EUR 1 billion per annum before the energy price spike of 2021 – 2022.
- Bulgaria is the country with the highest net welfare impacts of an early phase-out, with around EUR 500 million per year of consumer surplus loss annually. The impacts of an early phase-out on consumers are high in comparison to other countries in the CEE region. Addressing the welfare impact of the price increase needs to be part of the government's just transition agenda to make an early phase-out successful.
- This means the channelling of funding streams from the JTF towards the most vulnerable sectors including mining, manufacturing, electricity, construction and transportation.
- There will be an urgent need for additional investment in a number of absorption sectors that have shown the greatest potential for economic growth. These include businesses with high value-added like manufacturing, construction, agriculture and commerce. There is a need for incentives for new green start-ups in the automotive industry and its supply chain, processing of secondary materials, services, research and development, etc.
- With regard to the potential for green economic transformation, an annual socio-economic analysis of the implications of the transition is needed. The analysis should include as a minimum the following elements:
  - Quantitative and qualitative sectoral assessment of the most vulnerable sectors and the impact on investment/jobs/tax revenues,
  - Identification of the fastest growing economic areas in the region,
  - The inclusion of specific plans, projects and initiatives to support value-added job creation in areas with high economic potential.
- A detailed skills mapping exercise is necessary to identify the gaps in the preparation of the regional labour force for its integration in the most advanced economic sectors with the highest value-added potential.
- The government has used a one-size-fits-all approach to the three planning regions, which does not consider regional specifics. A differentiated strategy is necessary for the development of the program priorities and the specific measures.
- Due to the severe deficits in the transparency and stakeholder engagement process, the government has to restart the consultations by involving the most vulnerable groups and covering all relevant economic sectors. There is a need for a targeted communication strategy to inform and engage pro-actively the different societal groups. In fact, the process needs to be seen as ongoing as to continuously improve the Plans.

- The TJTPs have to define sector-specific targets and performance indicators, including the following:
  - Production of energy from renewable energy sources and generation/storage capacity installed per year by type;
  - Annual decline of GHG emissions overall and per sector;
  - Annual reduction of energy consumption;
  - Size of the annual investments in low-carbon sectors (overall and per sector);
  - Annual data on the expansion of sustainable transportation infrastructure (e-charging sections or other sustainable transport modes such as rail, cycle lanes, etc.);
  - Shift in the fuel mix via the introduction of sustainable fuels in industry, such as increased use of synthetic fuels, biofuels or electrification).
- There needs to be better links between the indicators that measure the performance of the measures and projects within the operational programs, the NRRP and the other strategic instruments at the government's disposal.
- The decarbonisation measures should more comprehensively consider air pollution reduction, as well as address energy sector emissions to air, water and soil.
- Sustainability criteria should be incorporated into the tendering process for the allocation of the funds under the TJTPs.
- The TJTPs should outline specific support mechanisms for small-scale renewable energy projects based on technology-neutral auctions, rather than locking all RES investments into a few large-scale projects prioritizing utility-scale storage and hydrogen technologies.
- The strong focus on power storage system integration and manufacturing in particular in the TJTP for Stara Zagora will increase capital expenditures and would be an impractical solution for both industrial consumers and utilities<sup>23</sup>. Industrial users that would typically consume 100% of the output of their RES installation during working hours would see limited benefits from having storage capacity and would gain only limited additional energy produced and stored during non-working hours. Recent modelling assessments show that the entry of battery storage capacity in the system would be more suitable after 2030 when the technology costs decline rapidly and regulatory bottlenecks are removed<sup>24</sup>.
- The TJTPs need to include a detailed roadmap with specific milestones for the market uptake of different low-carbon technologies. Hence, there is a need for dedicated support to the creation of clean-tech industrial parks and research and development centres that will facilitate the commercialization of cutting-edge technologies in the region.

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<sup>23</sup> Center for the Study of Democracy, *Technological and Policy Innovation Scenarios for the Low-Carbon Transition of the Bulgarian Energy Sector*, Policy Brief No.109, April 2022.

<sup>24</sup> Ibid.

- To ensure a better representation of the SME and vulnerable communities, and hence put citizens at the centre of the just transition process, the TJTPs should include a threshold for the inclusion of community-led or small-scale SMEs projects (e.g., 30%), as well as special support mechanisms or social entrepreneurship initiatives in low-carbon technologies with the goal of incentivizing a wider group of stakeholders to take part in the just transition process.
- The education of energy specialists should be among the highest priorities of Pillar 2 “Social and employment support” and therefore the Bulgarian employment strategy should be better aligned with those objectives and measures. For this purpose, the Bulgarian government could make use of the Pact for Skills that has been launched by the European Commission to bring together private and public stakeholders with the shared objective of up- and re-skilling Europe’s workforce.
- The TJTP for Stara Zagora should consider the possibility of developing a regional secondary market for raw materials in Southeast Europe and turn Bulgaria into a regional hub for the recycling of materials and products that are crucial for the European manufacturing supply chains. This will require a comprehensive assessment of the availability of the critical raw materials, as well as the potential for secondary and new raw materials that could satisfy the increasing demand in the mobility, renewable energy, and building sectors. For this purpose, the Operational Programme “Innovations and Competitiveness” (OPIC) needs to be fully mobilized for kick-starting a sub-program on recycling raw materials in service of the industrial decarbonisation.

# ANNEX: JUST TRANSITION BENCHMARKING CHECKLIST

## Pillar 1. Stakeholder Involvement

TJTP	Kyustendil		Pernik		Stara Zagora	
Indicators	Yes/No	Performance indicator assessment	Yes/No	Performance indicator assessment	Yes/No	Performance indicator assessment
<b>Adequacy of objective</b>		Mostly a legal requirement; while gathering local knowledge and seeking legitimacy are seen secondary;		At national level – only a legal requirement;  At local level – a broader spectrum of objectives was covered (Seeking knowledge and information from local experts with significant experience in the region);		Low (mostly a legal requirement; while gathering local knowledge and seeking legitimacy are seen secondary);
<b>Identification of inclusiveness</b>		Medium; youth groups have been identified as a major target groups. On the other hand, SMEs have not been a specific target group;		At national level – low.  At local level – between “medium” and “high”; youth groups have been identified as a major target groups. A broad range of civil society actors, industry players, investors, local communities have been identified as relevant stakeholders and involved in the local discussions. Marginalised groups and women have not been identified as particular target groups locally;		Low;  Vulnerable groups have been mostly excluded; no specific focus on marginalised groups, energy poor groups, women and youth; SMEs weakly represented;

TJTP	Kyustendil		Pernik		Stara Zagora	
Indicators	Yes/No	Performance indicator assessment	Yes/No	Performance indicator assessment	Yes/No	Performance indicator assessment
<b>Balance of stakeholder influence</b>	No	To a certain extent; the consultations have been strongly dominated by the energy incumbents and their initiative “Brown to Green” that requested to be joined to the Southwest coal region; less involvement of SMEs and vulnerable groups;	Yes	To a great extent; there was a good balance between different civil society organisations, industry producers, trade unions, youth representatives and potential green entrepreneurs. This was reflected in the variety of specific proposals and project ideas developed at local that however have not been incorporated yet in the TJTP in the programming stage;	No	Strongly dominated by the incumbents, private lobby groups and the labour unions resisting any transformation towards low-carbon development;
<b>Engagement methods</b>						
<i>Information about the process</i>	Yes	Limited; one-way communication;	Yes	At national level – one-way and limited;  At local level – two-ways information and comprehensive information and awareness raising campaigns and policies by the municipalities and local civil society actors;	Yes	Limited; one-way communication;



TJTP	Kyustendil		Pernik		Stara Zagora	
Indicators	Yes/No	Performance indicator assessment	Yes/No	Performance indicator assessment	Yes/No	Performance indicator assessment
<i>Communication</i>	Yes	Limited and delayed; dominated by the “Brown to Green” communication campaigns; WWF Bulgaria’s targeted communication and awareness raising activities, including a stakeholder consultation table (however after the end of the public consultation of 3 weeks);	Yes	Fragmented, sporadic and very limited communication between national and local authorities;  Frequent two-ways communication between actors at local level; roundtables, discussions, information campaigns, youth initiatives as the main communication channels;	Yes	Mostly steered by SZEDA; very limited involvement of public authorities;
<i>Consultation</i>	Yes, but only during the first stage by the consultant PwC	Led by PwC; lack of a more regional approach;	Yes	The first stage of the consultation was led by PwC;  A more bottom-up, inclusive and open approach was applied at local level by the municipality and civil society actors that enabled an interactive exchange of ideas and the development of concrete proposals;	Yes, but only during the first stage by the consultant PwC	Led by PwC, perceived as very distant from the local stakeholders, local discourses and needs of the stakeholders; lack of a more regional approach;

TJTP	Kyustendil		Pernik		Stara Zagora	
Indicators	Yes/No	Performance indicator assessment	Yes/No	Performance indicator assessment	Yes/No	Performance indicator assessment
<i>Involvement</i>	Yes	Very limited and the use of few engagement channels; youths engaged by NGOs but lacking representation;	Yes	The use of a broad spectrum of engagement tools in complementarity with other parallel initiatives; good synergy between the different projects and initiatives; proactive engagement of the youth groups in particular (especially through the Municipality's Consultative Council on Youth Policies;	Yes	Very limited and the use of few engagement channels; youths engaged by NGOs but lacking representation;
<i>Negotiation</i>	No		Yes	To a certain extent	No	
<i>Legitimacy</i>	Yes	To a limited extent	Yes	To a great extent	No	
<b>Depth and proper timing of engagement methods</b>		Shallow		Medium depth; appropriate timing of the locally applied engagement methods;		Shallow
<b>Comprehensiveness of the engagement strategy</b>		Low		Medium		Low
<b>Potential depth of the engagement methods</b>		Shallow		Medium		Shallow

## Pillar 2. Decarbonisation Ambition

TJTP	Kyustendil		Pernik		Stara Zagora	
Indicators	Yes/No	Performance indicator	Yes/No	Performance indicator	Yes/No	Performance indicator
<b>Decarbonisation targets</b>						
<i>GHG emissions reduction (at national level and of industrial facilities)</i>	At national level – yes  At regional level – no target	Lower than 45%	At national level – yes  At regional level – no target	Lower than 45%	Yes	Lower than 45%
<i>Coal phase out</i>	Yes	After 2035	Yes	After 2035	Yes	After 2035
<i>Other fossil fuels phase out</i>	No		No		No	
<i>RES targets</i>	No %	installation of 2 847 000 MWh/per year of total produced energy from renewable energy sources (including electricity and heat);	No %	installation of 2 190 000 MWh/per year of total produced energy from renewable energy sources (including electricity and heat);	No %	installation of 15,330,000 MWh/year of total produced energy from renewable sources (including electricity and heat);
<i>EE targets</i>	No		No		No	
<b>Comprehensiveness of decarbonisation targets</b>		Low		Low		Low to moderate
<b>Ambition of decarbonisation targets</b>		Low		Cannot be fully measured; RES target high but lacking clarity about its fulfilment;		Low to moderate
<b>Composite supportiveness of existing and additional policies for renewable energy sources</b>		Low		At national level – low;  At local level – medium;		Low to moderate

TJTP	Kyustendil		Pernik		Stara Zagora	
Indicators	Yes/No	Performance indicator	Yes/No	Performance indicator	Yes/No	Performance indicator
<b>Performance indicators</b>						
<i>Storage (either for total capacity installed or as a share of RES capacity)</i>	No target		No target		No target	
<i>RES-based heating (either for total capacity installed or as a share of total heating capacity in the region)</i>	No specific target for the heating sector;		No specific target for the heating sector;		No specific target for the heating sector;	
<i>Sustainable transport (for the deployment of EV infrastructure, or other sustainable transport modes such as railway connections, bike lanes, etc.)</i>	No target		No target		No target	
<i>Fuel mix replacement in industrial processes (for the deployment of sustainable fuels in industry, such as the increased use of synthetic or biofuels, or electrification)</i>	No target		No target		No target	
<b>Comprehensiveness of the performance indicators</b>		Low		Low		Low
<b>Ambition of the performance indicators</b>		Low		Low		Low to moderate
<b>Technological roadmap</b>	No		No		No	
<b>Comprehensiveness of the technological roadmap</b>						
<b>Ambition of the roadmap</b>						
<b>Comprehensiveness of the sustainability criteria</b>		Low		Low		Low

TJTP	Kyustendil		Pernik		Stara Zagora	
Indicators	Yes/No	Performance indicator	Yes/No	Performance indicator	Yes/No	Performance indicator
<b>Impact of the sustainability criteria</b>						
<i>Exclusion list of significantly harmful activities or such that would lead to unsustainable use of natural resources, harm the local ecosystems or have a negative impact on biodiversity in the region</i>	No		No		No	
<i>Fulfilling the average lifecycle emissions' intensity threshold of 100g CO<sub>2</sub>e /kWh, leading to a reduction of the threshold every 5 years and declining to 0g CO<sub>2</sub>e / kWh by 2050</i>	No		No		No	
<b>Inclusion of performance indicators with regard to:</b>						
<i>GHG emissions</i>	Yes		Yes		Yes	
<i>Energy savings</i>	No		No		No	
<i>RES integration</i>	No		No		No	
<i>Waste reduction</i>	No		No		No	
<i>Transport efficiency</i>	No		No		No	
<i>Reducing air pollution</i>	No		No		No	
<i>Circular economy efficiency</i>	No		No		No	
<i>Integration of sustainability criteria in the tendering process (Green procurement included in the plan)</i>	No		No		No	
<i>Environmental impact assessment, including the impact of the supported technologies on water resources, air pollution, green space, the local ecosystems and biodiversity</i>	No		No		No	

### Pillar 3. Green Transformation Potential

TJTP	Kyustendil		Pernik		Stara Zagora	
Indicators	Yes/No	Performance indicator assessment	Yes/No	Performance indicator assessment	Yes/No	Performance indicator assessment
<b>Socio-economic aspects</b>						
<i>Ex ante evaluation of the job replacement potential of the region and for its scope for raising the skills profile of laidoff workers</i>	Yes	Only general estimation without in-depth socio-economic assessment;	Yes	Only general estimation without in-depth socio-economic assessment;	Yes	Only general estimation without in-depth socio-economic assessment;
<i>Training programs for marginalised social groups and women</i>	No		No		No	
<i>Identification of concrete sectors and targets, as well as funding streams and timeschedule for the reskilling programmes</i>	Yes	To a certain extent	Yes	To a certain extent	Yes	To a certain extent
<i>Assessment of the number of jobs in low-carbon industries that will be created</i>	Yes	Only general estimation without in-depth socio-economic assessment;	Yes	Only general estimation without in-depth socio-economic assessment;	Yes	Only general estimation without in-depth socio-economic assessment;
<b>Comprehensiveness of the reskilling and new job placement strategy</b>		Low		Low		Low
<b>Adequacy of the reskilling and new job placement measures</b>		Low		Low		Low
<b>Comprehensiveness of the economic transformation strategy</b>		Low		Low		Low
<i>Quantitative and qualitative sectoral assessment of the most vulnerable sectors to the transition process and the impact on investments/jobs/tax revenues</i>	No		No		No	

TJTP	Kyustendil		Pernik		Stara Zagora	
Indicators	Yes/No	Performance indicator assessment	Yes/No	Performance indicator assessment	Yes/No	Performance indicator assessment
<i>Identification of the fastest growing economic areas in the region</i>	Yes	To a certain extent	Yes	To a certain extent (mostly during local discussion forums and meetings);	Yes	To a certain extent
<i>Inclusion of specific plans, projects and initiatives for supporting value-added job creation in economic areas with high potential</i>	Yes	To a limited extent	Yes	To a certain extent (mostly during local discussion forums and meetings);	Yes	To a limited extent
<b>Comprehensiveness of the smart specialisation support</b>	Low		Low to medium		Low	
<i>Identification of growth potential in new economic areas</i>	No		No		No	
<i>A common vision for sectoral development</i>	No		Yes	This is not sufficiently reflected in the TJTP but in the overall approach of the municipality towards green economic diversification and smart specialisation of the region;	No	
<i>Improvement of the business environment for innovative companies</i>	No		Yes	To a certain extent; This is not sufficiently reflected in the TJTP but in the emerging industrial revival/ industrial digitalisation initiatives in the region supported by the municipality;	No	

TJTP	Kyustendil		Pernik		Stara Zagora	
Indicators	Yes/No	Performance indicator assessment	Yes/No	Performance indicator assessment	Yes/No	Performance indicator assessment
<b>Composite supportiveness of smart specialisation measures</b>	Low		Low		Low	
<b>Comprehensiveness of the SME development strategy</b>						
<i>SMEs cooperating with research institutions</i>	No target		No target		No target	
<i>SMEs investing in skills development</i>	No target		No target		No target	
<i>SMEs introducing product or process innovation</i>	Yes	9 SMEs by 2029	Yes	9 SMEs by 2030	Yes	30 SMEs by 2029
<i>SMEs introducing marketing or organizational innovation</i>	No target		No target		No target	
<i>SMEs investing in green energy or the circular economy</i>	No target		No target		No target	
<b>Composite supportiveness of smart SME development support measures</b>						
<b>Sustainability of the SME development strategy</b>						
<i>Existence of the polluter pays principle</i>	No		No		No	
<i>Environmental Impact Assessments, biodiversity and nonenergy effect assessments</i>	No		No		No	
<i>Identification of private funding sources for projects</i>	No		Yes	To a certain extent	No	



TJTP	Kyustendil		Pernik		Stara Zagora	
Indicators	Yes/No	Performance indicator assessment	Yes/No	Performance indicator assessment	Yes/No	Performance indicator assessment
Share of the total funding budget allocated to innovation projects in low-carbon businesses and circular economy	No target		No target		No target	
Share of projects outside the ETS related to innovation in low-carbon businesses and circular economy that are included in the support programs	No target		No target		No target	
Comprehensiveness of the innovation creation strategy						
<i>Tax incentives and regulatory changes at national and regional level to incentivize green innovations</i>	No		No		No	
<i>Specific targeted measures for supporting innovative and environmentally-oriented SMEs</i>	No		No		No	
<i>Specialized financial instruments for the support of innovation projects, including projects by startups and SMEs</i>	No		No		No	
<i>A target indicator for the funding of public research organisations (universities &amp; PRIs)</i>	No		No		No	

TJTP	Kyustendil		Pernik		Stara Zagora	
Indicators	Yes/No	Performance indicator assessment	Yes/No	Performance indicator assessment	Yes/No	Performance indicator assessment
<i>Additional support measures for the enabling of technology transfer from universities and research institutes</i>	No		Yes	The training of technicians and engineers in its university and professional schools, in particular in the ore development sector and the steel sector;	No	
<i>Support for the creation of regional innovation centres</i>	No		No		No	
<i>Expansion of the regional administrative capacity for the implementation of innovation policies</i>	No		Yes	Not in the TJTP itself but through other complementary project initiatives, such as the enhancing of regional capacity for the building of renewable energy communities and smart grids in certain neighbourhoods;	No	
<b>Supportiveness of innovation creation measures</b>		Low		Low to medium		Low



