

# Assessment Tool for Just Energy Transition Plans



Support for policymakers, stakeholders, and practitioners

April 2024

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## Just Energy Transition in Coal Regions



The Innovations Regions for a Just Energy Transition project is jointly funded by the German Federal Ministry for Economic Affairs and Climate Action (BMWK) under the International Climate Initiative (IKI) and by the European Commission's Directorate-General for International Partnerships (DG INTPA) for the Just Energy Transition in Coal Regions Interregional Platform (JET-CR). The project is implemented by a consortium of five organisations led by GIZ as Joint Project Coordinator and with the Climate Action Network (CAN), International Institute for Sustainable Development (IISD), International Labour Organisation (ILO), and Wuppertal Institute für Klima, Umwelt, Energie gGmbH as implementing partners.

IKI JET and its JET-CR Platform aim to support and accelerate just energy transitions away from coal to renewable energies and other sustainable economic activities in Colombia, Chile, South Africa, Indonesia, Vietnam, Thailand, and Mongolia.

The Just Energy Transition in Coal Regions (JET-CR) Knowledge Hub is an online platform building bridges between experts, policymakers, coal industry, trade unions and civil society organizations. It's a space to bring together different perspectives, share real stories and search for effective tools and solutions.

It aims to particularly amplify the voices of workers and communities dependent on coal showing how knowledge can work in practice. It also turns practice into knowledge by bringing local experience into global conversations and advancing just energy transition expertise.

Providing regular digests of articles, research papers, news stories and events it serves as a “one-stop shop” for collecting up to date information related to just energy transitions away from coal around the world.

[Just Energy Transitions in Coal Regions | Empowering Sustainable Change \(jetknowledge.org\)](https://jetknowledge.org)

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## Assessment tool for just energy transition plans

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**Assessment tool for just energy transition plans. Support for policymakers, stakeholders, and practitioners**

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## Executive Summary

In continuation of the 2015 Paris Agreement, the United Nations Framework Convention on Climate Change's Conference of the Parties (UNFCCC COP) 28 in Dubai in November 2023 reaffirmed the necessity of urgent globally coordinated climate action and adopted a work programme on just transition. However, recent progress in international efforts to better coordinate just energy transition (JET) policymaking is set against a context where developing and emerging economies face significant challenges as they strive to both grow and decarbonize their economies in an equitable manner.

Adequate planning of JET measures is a crucial precondition for a fair and sustainable transition. Devising, implementing and monitoring a JET plan is a complex undertaking often requiring the reconciliation and alignment of competing policy objectives. The assessment tool for JET plans presented here aims to support policymakers, implementation agencies and concerned stakeholders in the evaluation of the effectiveness and usefulness of existing JET plans as evaluated against a set of eleven internationally recognised environmental, social and economic sustainability criteria, here articulated as 'core principles'. A series of indicators has been defined in order to objectively review the performance of a JET plan against these principles. The assessment tool is intended for use by involved national and regional policymakers, planners or planning agencies as well as public administrators and other stakeholders to give guidance on what elements should be included in a sustainable JET plan. Primarily, the qualitative assessment tool is meant to be used during the evaluation and monitoring phase of existing or recently developed JET plans. Furthermore, the tool can support policymakers during the planning phase when developing new JET plans. In both cases, it can also support discussion and participation in JET plan review and development with a wide range of stakeholders including civil society, trade unions, businesses, academia and others. The assessment tool has been developed based on an earlier, EU-focussed tool published by the WWF European Policy Office and has been comprehensively revised and adapted for a broader, international use. The present tool has been developed in the framework of GIZ's Safeguards and Gender management system and was peer-reviewed by members of the Powering Past Coal Alliance (PPCA) Expert Group on Just Transition.



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## Abbreviations and Acronyms

<b>CIF</b>	Climate Investment Funds
<b>CH<sub>4</sub></b>	methane
<b>CO<sub>2</sub></b>	carbon dioxide
<b>CSO</b>	Civil society organisation
<b>CoC</b>	Code of Conduct
<b>EIB</b>	European Investment Bank
<b>EITI</b>	Extractive Industries Transparency Initiative
<b>EU</b>	European Union
<b>GIZ</b>	Deutsche Gesellschaft für Internationale Zusammenarbeit
<b>GHG</b>	greenhouse gas
<b>IFI</b>	international financial institution
<b>ILO</b>	International Labour Organisation
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>ITUC</b>	International Trade Union Confederation
<b>JET</b>	Just Energy Transition
<b>JETP</b>	Just Energy Transition Partnership
<b>LTS</b>	Long-Term Strategies
<b>MRV</b>	monitoring, reporting and verification
<b>NDC</b>	Nationally Determined Contributions
<b>NGO</b>	Non-governmental organisation
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>SMART</b>	specific, measurable, achievable, relevant, time-bound
<b>SMEs</b>	small and medium-sized enterprises

Assessment tool for just energy transition plans

**UK** United Kingdom

**UNFCCC** United Nations Framework Convention on Climate Change's Conference

**UNCTAD** United Nations Conference on Trade and Development

**WWF** World Wildlife Fund



## 1.0 Introduction

### 1.1 Rationale for an assessment tool for just energy transition plans

Devising sound just energy transition (JET) plans for coal regions is a complex undertaking involving numerous stakeholders with contrasting interests, values, legacies and levels of vulnerability. Rendering a sustainable and effective JET strategy therefore entails balancing diverging forces in a just and equitable manner, without compromising on climate and environmental policy aspects. While the starting point for coal phase down planning processes varies starkly for different developing and emerging economies, the initiation of Just Energy Transition Partnerships (JETPs) in recent years and the broad international commitment to the Paris Agreement raise similar questions regarding pertinent JET planning and implementation measures. Past examples of initiated and/or accomplished just energy transition plans elsewhere can provide lessons learnt to improve the quality of JET planning and implementation at international, national and regional level.

The assessment tool for JET plans presented here aims to support policymakers, implementation agencies and concerned stakeholders in the evaluation of the effectiveness and usefulness of existing JET plans as judged against a set of eleven internationally recognised environmental, social and economic sustainability criteria, here articulated as ‘core principles’. A series of indicators has been defined in order to objectively review the performance of a JET plan against these principles.

In addition, this qualitative tool also provides planners of JET plans with guidance for the development of adequate plans and related strategies.

The tool is based on a [previously published tool](#) developed by the WWF entitled “Toolkit for assessing effective Territorial Just Transition Plans”, which focussed on plans drawn up for territories within EU member states under the [EU Just Transition Mechanism](#). However, international development agencies, such as the GIZ, and their international partners in developing and emerging economies (including those of the Western Balkans, Central Asia and Eastern Europe) who were concerned with the development of JET plans have shown an increasing interest in such an assessment tool. Hence, a revised assessment tool specifically addressing the needs and contexts of low- and middle-income countries was developed and is described in the following sections.

## 1.2 Using the assessment tool for JET plans

### Who should use the tool?

The assessment tool is intended for use by involved national and regional policymakers, planners or planning agencies as well as public administrators to give guidance on what elements should be included in a sustainable JET plan. Furthermore, the tool can support civil society organisations, communities, individuals, private businesses and other concerned stakeholders to engage more actively in national or regional JET planning and evaluation processes and related debates through advice on how to critically rate and assess the sustainability and effectiveness of JET plans and how to improve them with a participative approach.

### How to use the tool

Primarily, the qualitative assessment tool is meant to be used during the evaluation and monitoring phase of existing or recently developed JET plans. Furthermore, the tool can support policymakers during the planning phase when developing new JET plans.

When using the assessment tool for evaluation and monitoring purposes (e.g. before implementing a newly developed JET plan – see below – or during routine monitoring cycles), it offers users the possibility of checking a JET plan against a set of sustainability principles with the help of defined indicators, using a traffic-light based scorecard approach (red = indicator not met; yellow = indicator partially met; green = indicator fully met). This facilitates alignment of the JET plan with sustainability criteria (environmental, social and economic) and allows for benchmarking and comparison between JET plans. As such, it helps to identify fields of improvement and related interventions areas and actions for long-term usability and impact of the JET plans.

During JET plan planning processes, the assessment tool aims to leverage the full potential of innovative measures for a sustainable just transition to climate neutrality. It provides guidance on whether suggested measures and strategies are in line with overall JET goals. Furthermore, it helps to secure sound involvement of affected stakeholders (e.g. civil society organisations, interest groups, individuals etc.) through the evaluation of active participation processes and integration of analysis results of these processes into the JET plan. The tool can also support environmental and social safeguarding as well as gender mainstreaming processes as typically requested by donor and/or implementing agencies. After finalising the JET plan planning process and before implementing the new JET plan, it should once again be evaluated for a last quality check (see above).

## Limits of the tool

The tool does not intend to make any political statements or claims about the quality of a specific national or regional JET plan or suggest broader policy changes. Rather, in acknowledging the often conflicting interests of different stakeholders involved in JET planning, the tool aims to provide an orientation on how to strengthen and maintain key elements of sustainability in different subsets of JET-related policymaking, e.g. in terms of energy systems transformation, regional economic diversification, as well as stakeholder and community engagement.

Also, the tool does not aim to provide concrete policy or legislative changes for a specific country or regional context from that evaluation. Doing so would require detailed analyses of socio-economic implications of a JET plan in a specific geographically delineated context, as well as broad stakeholder consultations and collective bargaining measures to balance future policies, which would go far beyond the scope of this tool.

However, past experience can be leveraged to point to some best practice examples and tools for practitioners which support the development and governance process of JET planning in more detail. This includes:

- The Wuppertal Institute's (2022) [“Just Transition Toolbox for coal regions”](#)
- The Climate Investment Funds' (2023) [“Just Transition Planning Toolbox”](#)
- Good practice examples and [knowledge products from EU coal regions in transition](#), e.g. on regional economic diversification, stakeholder engagement or environmental rehabilitation and other JET issues published by the EU Initiative for Coal Regions in Transition (CRiT)<sup>i</sup>

## A note on the traffic-light system

The traffic-light system used by the assessment tool aims to give stakeholders an indicative, qualitative overview of which areas of a specific JET plan consist of environmentally, socially and economically sustainable elements (green light), which areas generally pursue sustainable policy goals, but lack detail or alignment with existing or planned (national or local) policies (yellow light), and what provisions are unsustainable and not in line with JET criteria (red light). A yellow or red light indicates that improvements to the JET plan should be made to secure a successful, long-lasting and sustainable shift away from a region's dependency on coal (and other fossil fuels) to an economy that is using energy from renewable sources and that is ecologically-sound, equitable and just for all its members. In line with above-mentioned limitations of the tool, it is important to note that the traffic-light system does not attempt to evaluate the overall quality of a JET plan, but to shed light on areas where action is required to safeguard the sustainability of a proposed JET plan.

## Core principles for a just energy transition plan

### What does a sustainable just energy transition plan look like?

We consider a just energy transition plan to be sustainable and effective at delivering a just transition if it:

1. Makes a strong and decisive commitment to the Paris Agreement and national/regional climate objectives (NDCs, National Climate Strategy, Long-Term Strategies (LTS), Regional Standards), i.e. to cut GHG emissions quickly.
2. Prevents prolonged fossil fuel use and delay of transition to climate neutrality.
3. Aims for sustainable economic diversification (at national, regional, local level)
4. Adapts education and training to transition plans.
5. Addresses social inequalities and potentially affected human rights.
6. Supports gender equality and addresses women's and girls' rights in transition region/plan.
7. Addresses environmental, climate, human health and cultural safeguards across all objectives.
8. Identifies public and private funding sources for just energy transition and how to leverage and manage them.
9. Establishes governance of development and implementation of just energy transition plan coherent with respective policies.
10. Follows participative approach (stakeholder engagement, social dialogue, inclusive communication strategy etc.) to just energy transition plan development, its implementation and linked communication.
11. Uses high-quality, independent, and objective analysis of challenges and opportunities of implementation of the just energy transition process.

## 2. Assessing climate and sustainability standards in-depth

### 1) Commitment to climate objectives

<p><b>Principle 1.</b> Makes a strong and decisive commitment to the Paris Agreement and national/regional climate objectives (NDCs, National Climate Strategy, Long-Term Strategies (LTS), Regional Standards), i.e. to cut GHG (CO<sub>2</sub>, CH<sub>4</sub>) emissions quickly</p>	
<p>Indicator 1.1. Alignment with the commitment to cut GHG (CO<sub>2</sub>, CH<sub>4</sub>, etc.) emissions quickly</p>	<p>Indicates some commitment to reduce GHG emissions, but without defined timeline and percentage reduction target OR does not indicate a need for reduction at all; below ambition of country-specific NDCs and LTS.</p>
	<p>Makes some commitment to the Paris Agreement and national/regional climate objectives, i.e. to cut GHG emissions quickly; mostly in line with country-specific NDC and/or LTS ambition including some indication (e.g. stepwise plan) how to achieve the NDCs and/or LTS and how to monitor progress towards this achievement.</p>
	<p>Indicates a strong and decisive commitment that is at least in line or above the current country-specific NDC and/or LTS ambition with concrete stepwise action plan (milestone definition) how to achieve NDCs and or LTS by a certain date and how to monitor progress towards this achievement.</p>
<p>Indicator 1.2. Transition from fossil fuel to renewables-based energy system in the region</p>	<p>Does not recognise the opportunities to increase renewable energy use nationally and/or in the region, including the improvement of the respective infrastructure.</p>
	<p>Recognises the opportunities to increase renewable energy including the respective infrastructure nationally and/or in the region, but no development of respective energy/transition plans and/or contributions to specific</p>

	<p>(national) renewable energy targets (actions, projects etc.) are proposed.</p>
	<p>Contributes to ambitious national/regional renewable energy targets and/or supports the development for a full plan for a transition to energy generation from renewable sources including the improvement of the respective technical, financial and administrative infrastructure, and specific actions and projects are proposed for the near-, mid- and long-term (clearly distinguished), including progress monitoring towards the achievement of these targets/plans.</p>
<p>Indicator 1.3. Proposals to increase energy efficiency and reduce energy demand in the region</p>	<p>Does not recognise the opportunities to increase energy efficiency and/or reduce energy use nationally and/or in the region.</p>
	<p>Recognises the opportunities to increase energy efficiency and/or reduce energy use nationally and/or in the region, but no contributions to specific (national) Energy Efficiency and/or Energy Saving targets (actions, projects etc.) are proposed.</p>
	<p>Contributes to ambitious national/regional Energy Efficiency and Energy Saving targets and plans, and specific actions and projects for better energy efficiency and reduced energy demand are proposed for the near-, mid- and long-term (clearly distinguished).</p>

Negative climate change impacts are felt most strongly by the most vulnerable.

Although the transition away from fossil fuels and high-carbon activities is happening already in many places across the globe, it is not happening fast enough to avoid catastrophic climate change. The 2023 IPCC’s Climate Change Synthesis report highlights that in order to mitigate climate change, limiting warming to 1.5°C and 2°C requires rapid, deep and in most cases immediate GHG emission reductions<sup>ii</sup>. The report also assesses that “regions and people (3.3 to 3.6 billion in number) with considerable development constraints have high vulnerability to climatic hazards”<sup>iii</sup>. The most vulnerable also suffer disproportionately due to existing inequalities and

differences in capacities to adapt to climate change effects, such as increased extreme weather events and resource distribution changes.

The decade up to 2030 is crucial for climate action. In spite of this, global average temperatures remain on track to surpass 3°C. Unless significant efforts are made, climate change is likely to entrench further existing inequalities and drive the creation of new ones. Reaching climate neutrality too late and backloading mitigation actions to after 2030 is therefore incompatible with a just energy transition.

Countries in transition must provide long-term direction and clarity for investors through binding greenhouse gas emissions targets, thereby accelerating the transition process.

Many nations across the globe have ratified the Paris Agreement<sup>iv</sup> as Parties to the UNFCCC<sup>v</sup>. This landmark agreement commits ratifying parties to limit global average temperature rise to no more than 2°C and to make efforts to limit it to 1.5°C.

To keep within the limit of 1.5°C and avoid catastrophic climate change, the EU and OECD countries must commit to reduce greenhouse gas emissions by at least 65% compared to 1990 levels by 2030 and achieve climate-neutrality by 2040 at the latest. These countries should also take the lead in providing financial assistance to those developing nations that are less endowed and often more vulnerable. At the same time, emerging economies and developing nations must also commit to their fair share of GHG emission reduction, while at the same time following a sustainable development pathway, including the transformation of the energy sector away from fossil fuels to renewables and increased energy efficiency. In fact, most of the developing nations have by now proven their active engagement in GHG mitigation action and have developed ambitious NDCs.

Country-specific GHG mitigation commitments towards climate neutrality by a certain date (ideally 2050 or earlier), which also include plans for JET at the national and sub-national level, should be supported by respective national laws, which are in place in most developing nations. Consistent policies will also reduce the risk that investments are made in the wrong technologies, leading to costly stranded assets. A stark example of the need for clear frameworks and direction for JET from the developed world is the Ruhr valley where, in the absence of a commitment to phase out coal throughout most of the second half of the 20th century, the region's coal phase out was slow and costly as new mining activities were subsidised with public funds while other opportunities were foregone or unrealised<sup>vi</sup>. These mistakes should be prevented in future JET processes, for both developed as well as developing nations.

JET strategies should be consistent with climate action commitments and policies both to remain relevant and to seize the opportunity to send a loud and clear signal to investors. The International Labour Organisation (ILO) calls for governments to establish: “coherent policies across the



economic, environmental, social, education/training and labour portfolios need to provide an enabling environment for enterprises, workers, investors and consumers to embrace and drive the transition towards environmentally sustainable and inclusive economies and societies”<sup>vii</sup>.

## 2) Avoiding prolonged fossil fuel use

<b>Principle 2.</b> Prevents prolonged fossil fuel use and delay of transition to climate neutrality	
Indicator 2.1. Fossil fuel subsidy cessation (if within mandate of authority responsible for JET plan development and implementation)	Does not propose to phase out (implicit and explicit) fossil fuel subsidies, nor commit to review their existence, or even proposes to introduce new or increase existing ones.
	Proposes to phase out (implicit and explicit) fossil fuel subsidies but over an undefined time and without clear milestones.
	Identifies all existing (implicit and explicit) fossil fuel subsidies, or proposes to review them, and clearly defines how and by when to phase them out (e.g. 2030 for OECD and EU countries, 2040 for rest of world).
Indicator 2.2. Phase-out of coal mining/coal combustion (if within mandate of authority responsible for JET plan development and implementation)	Does not include phase-out plan with clearly defined standards and milestones for the phase-out for coal mining and coal combustion or even plans an increase in use.
	Includes a phase-out plan for coal mining and coal use for power generation (or for at least some coal-fired power stations) or phase out is implied (the fossil fuel is recognised as in terminal decline), but the end date is undefined.
	Includes a full phase-out plan for coal mining and use of coal for power generation by a defined date (e.g. 2035 for OECD and EU countries, 2045 for rest of world; net zero by 2050 for entire world), including implementation plan with clearly defined milestones.

Indicator 2.3. Phase-out of fossil gas, oil shale, non-renewable biomass, peat and other non-renewables (if within mandate of authority responsible for JET plan development and implementation)	Does not include phase-out plan for non-renewables, or even plans an increase in use/infrastructure (e.g. for fossil gas).
	Includes a phase-out plan for non-renewables or phase out is implied (the fossil fuel is recognised as in terminal decline), but the end date is undefined.
	Includes a full phase-out plan for non-renewables by a defined date (e.g. depending on fuel 2030 to 2040 for OECD and EU countries, 2040 to 2050 for rest of world; net zero by 2050 to 2060 for entire world), including implementation plan with clearly defined milestones.
Indicator 2.4. Exclusion of new fossil fuel infrastructure investment	Foresees investment in new fossil fuel infrastructure, including for example for power generation (incl. black/brown hydrogen), heating, fossil fuel-based chemicals manufacture, aviation capacity etc. and/or just energy transition plan foresees investments that prolong life of existing fossil-based infrastructure, e.g. retrofitting existing fossil-fuel based power generation infrastructure.
	Foresees investments in infrastructure which could <u>indirectly</u> lead to greater greenhouse gas emissions and fossil fuel-based activities, such as motorways (especially if alternatives such as rail travel have not been explored), internal combustion engine manufacturing facilities.
	Foresees no new direct or indirect investments in fossil fuel-based infrastructure or infrastructure that could indirectly promote the use of fossil fuels; ideally re-investment in infrastructure for renewables.

New investments in fossil gas, oil and coal cannot be consistent with just transition and effective climate action.

Investing in fossil fuels will delay the transition and therefore increase the cost. These extra costs are most likely to fall on the taxpayers and communities quite literally at the coalface of the

transition. Fossil fuel-generated heat and power prices will further increase as carbon prices rise<sup>viii</sup>, driving the risk of generating stranded assets and threatening energy price increases for consumers. Most crucially, it will aggravate climate change's negative impacts and damages.

Nuclear power is less economic than the same output investment in renewables. The construction times and costs of building new nuclear power plants have increased dramatically, as recent examples in Europe have shown: The Finnish nuclear power plant Olkiluoto 3 with 1,6 GW capacity was connected to the grid in March 2022, i.e., with a 14-year delay and nearly tripled final costs (11 billion euros) compared to the original plan<sup>ix</sup>. This in turn can lead to high fixed energy prices for long periods. Investments in new nuclear not only take decades to come online, they also lock consumers into high energy prices and put them at higher risk of energy poverty. Moreover, they can crowd out investments in renewables that are more reliably linked to emissions reduction. Also, recent studies<sup>x</sup> have shown that the costs for renewables have been falling dramatically over recent years, with wind and solar energy now clearly presenting the cheapest (clean) energy solutions, thereby offering a very convincing basis for a strategy of clean and affordable energy for all.

On the other hand, renewable energy can generate many more and more resilient jobs compared to fossil fuels and the fossil fuel-related job losses incurred by the global energy transition. As IRENA's World Energy Transitions Outlook 2023 1.5°C Pathway report shows, substantial job losses in fossil fuels (around 12 million) are more than offset by gains of 45 million jobs in the energy transition – namely in renewables (around 11 million) and other energy transition-related sectors (energy efficiency, power grids and flexibility, vehicle charging infrastructure and hydrogen at around 34 million) by 2030.<sup>xi</sup> However, it remains a concern that these job creation potentials will geographically not be equally distributed.

This rule also applies to fossil gas. IEA figures also show that unabated gas power generates around 3.5 construction and manufacturing jobs per million euros invested, with high CO<sub>2</sub> abatement costs (€62/tonne CO<sub>2</sub>), while new solar PV generates 8.5 to 12<sup>xii</sup>. Renewables can also work as decentralised solutions, increasing its compatibility with sustainable economic diversification.

Proactive strategies will still be required to ensure new jobs are both supported by collective bargaining, providing good conditions and, where possible, are located in the regions that need them most. This can also entail joining international campaigns such as the “Fossil Fuel Non-Proliferation Treaty” initiative that was launched in recent years. It has since been politically endorsed by a growing number of (island) states that are particularly vulnerable to the effects of climate change, e.g. Vanuatu, Fiji and Timor-Leste, but also Colombia and the European Parliament<sup>xiii</sup>.

### 3) Economic diversification

<b>Principle 3.</b> Aims for sustainable economic diversification (at national, regional, local level)	
Indicator 3.1. Encouragement of sustainable economic diversification (away from fossil fuel dependent industries) on the basis of objective analyses of the strengths, potentials and opportunities of each region concerned	Does not promote economic diversification, or promotes the ongoing support of incumbent, dominant industries only, including through a dominance of fossil fuel dependent industries.
	Promotes economic diversification, but there is no consideration of the necessity for new industries to be carbon-neutral or -positive.
	Promotes economic diversification, and explicitly recognises (e.g. in the assessment of the transition challenges) that all sectors of the economy must become carbon-neutral or -positive.
Indicator 3.2. Support for investment in SMEs and start-ups	Fails to recognise the importance of SMEs or start-ups for economic diversification and foresees little to no support for them. Focuses on attracting big new industries to directly replace declining fossil fuel industries.
	Recognises the value of SMEs and start-ups for economic diversification, but does not set out clearly how it will provide support to develop and incentivise them.
	Recognises the value of SMEs and start-ups for economic diversification and sets out a clear plan (with milestones) for their support and incentivisation, including specific measures such as dedicated incubators, innovation hubs etc.
Indicator 3.3. Investment planning with consistency with national energy, climate and transition plans	Provides no link of investment planning to - or indication of need for consistency with - national energy, climate and transition plans.
	Indicates a link of investment planning to - and a need for consistency with - national energy, climate and transition plans, but does not clearly link sustainable economic

	<p>diversification and decent (i.e. sustainable and resilient) job creation to it.</p>
	<p>Links investment planning to national energy, climate and transition plans. Provides a clear prioritisation of funding and investment needs into different sectors, labour market adjustments and for relevant reskilling and upskilling in line with - or going further than - the most up to date national energy, climate and transition plans for sustainable economic diversification and to create decent (i.e. sustainable and resilient) jobs.</p>

Sustainable economic diversification increases resilience to future shocks and changes and can increase overall economic well-being. Banks and financial analysts increasingly recognise the need to factor climate risks into investment decisions, as well as the merits and resilience of sustainable investment.

The European Commission’s Joint Research Centre (JRC) has developed a conceptual framework for resilience, defining it as “the ability to cope with and react to shocks or persistent structural changes by either resisting it, or by adopting a degree of flexibility and making small changes”<sup>xiv</sup>. Resilience means a system can continue to provide for societal wellbeing (both individual and as a whole). It recognises the need for measures that both decrease the likelihood of system shocks (prevention) and which increase absorptive, adaptive and transformative capacity.

A more diverse and sustainable local or national economy, based on multiple different sectors and industries is more resilient to shocks than an economy based on few, large industries. Policy changes or economic downturns are far less likely to have devastating impacts across a whole community if only a small percentage of the businesses are affected at any one time. This is more likely to be the case where there are many small businesses than where the region is dominated by a single sector or large employer.

Adaptive capacity of the economy is boosted when the economy is more diverse. A shock - stemming for example from natural resource availability or trade policy - is only likely to affect a small proportion of businesses in a more diverse system. Some businesses may be able to take advantage of the changes, exploit synergies with others or diversify to address the impact of changes. A just transition strategy should therefore look to support economic diversification of the local economy and in particular, the incubation and development of small and medium enterprises. This is essential to move away from carbon-intensive, fossil fuel-dependent

industries and to provide decent (i.e. sustainable and resilient) jobs for the entire workforce of region (thereby limiting job market-initiated migration and/or even promoting immigration).

Such economic diversification should not happen blindly. In order to further boost resistance to shocks, economic diversification should also focus on diversification into sustainable business models aligned with countries' environmental commitments. This both reduces the risk of future shock from policy change and the risks that businesses 'run out of resources' (as in the case of coal mines) or generate negative impacts on other parts of the system, such as ecosystem service provision, that contribute to resources and wellbeing.

Analysis by financial services firm Morningstar has also clearly demonstrated the greater resilience and long-term performance of sustainable investments that take into account environmental, social and governance criteria<sup>xv</sup> versus conventional ones which do not take these into account.

A transition which fails to address economic fragility will not be just. Many coal regions in transition are dominated by a single large employer. In these regions, single policy changes, a relocation or another unforeseen event can cause the loss of a main employer and be catastrophic for livelihoods and quality of life in a region. This has been illustrated by both former coal regions, such as the UK coalfields in the 1980s, and by many of the industries that were encouraged to take their place<sup>xvi</sup>.

Regional-level economic analyses also point to economic advantages of a more diverse economy. For example, the Roadmap for Western Macedonia<sup>xvii</sup> shows how a sustainable and more diversified economy, based on the primary and secondary sectors, would bring higher employment and GDP gains than investment in two new lignite plants for a lower cost. Economic diversification should be a guiding principle in any just transition plan. The inclusion of projects on reforestation, water resource management and support for indigenous communities in the rehabilitation plan of Colombia's coal region La Guajira is a positive example for regional economic diversification in an emerging economy. These provisions are bolstered by policies and incentives set at national level to expand renewable energies and to further develop the tourism sector<sup>xviii</sup>.

Climate action and green investment bring net positive economic benefits and generate more jobs than fossil investment. This facilitates sustainable economic diversification and a just transition.

Climate action is consistently shown to bring net positive economic benefits<sup>xix</sup>. Research furthermore suggests that it may reduce the negative impacts of other trends, such as automation, by generating new market sectors and service demand<sup>xx</sup>.

Policies which continue to support fossil fuels will only delay the transition and generate stranded assets, raising the overall costs of the transition and aggravating the negative impacts on countries most vulnerable regions.

## 4) Education and training

<b>Principle 4.</b> Adapts education and training to transition plans	
Indicator 4.1. Identification of upskilling, reskilling and education gaps at level of transition region/plan	Does not identify skills, training and education gaps at level of transition region/plan or does so in an incomplete or unjustified way.
	Identifies some of the existing and future skills, training and education gaps at level of transition region/plan on the basis of objective and high-quality skills forecasts or sets out a process how to identify them - but focuses on a limited range of sectors or only on workers directly (and not indirectly) affected by the transition or who have already lost their jobs.
	Identifies the existing and future skills, training and education gaps for all workers and sectors (incl. energy sector), at level of transition region/plans on the basis of objective and high-quality skills forecasts.
Indicator 4.2. Measures to address upskilling, reskilling and education gaps at level of transition region/plan	Does not identify any actions or investment strategies for relevant reskilling and upskilling of workers.
	Foresees only insignificant or non-specific actions and investments to address these gaps and ensure sufficient and decent (i.e. sustainable and resilient) jobs, or focuses only on reskilling workers directly affected by the transition.
	Foresees targeted investments sufficient to remedy these gaps and create and promote decent (i.e. sustainable and resilient) jobs in a wide array of sectors (incl. (renewable) energy sector) for all current and future workers in the region.



## The role of education and training for transitioning labour markets.

The workforce and skillset needs for energy systems dominated by fossil fuels differ from economies with higher shares of renewables. An in-depth, macroeconomic assessment of required skills and education programmes for a specific coal region in transition is therefore a prerequisite for a successful transition towards low-carbon energy system. Existing national labour market and skills policies will need to be scrutinised and realigned with projections for power capacity development and broken down into regional scenarios to address projected job losses and declining employment with reskilling and upskilling initiatives tailored to regional specifics (e.g. age, gender and education level of workers, availability of alternative jobs in the power sector or local services, tourism and agricultural industries).

A comprehensive strategy<sup>xxi</sup> to connect workforce and energy planning should contain the following elements:

1. **Workforce Alignment:** Understand employment factors and occupational demands to ensure the workforce meets energy plan needs.
2. **Economic Boost:** Leverage the energy sector as a key driver for economic growth.
3. **Reduced Unemployment:** Offer training and make the energy sector appealing to lower unemployment rates.
4. **Equitable Society:** Ensure inclusive opportunities in the energy sector for a just society.
5. **Global Competitiveness:** Equips a state to stay competitive in the global energy market by ensuring a skilled workforce ready for emerging technologies and practices.

In order to quantify energy and workforce planning needs for a specific country or region, a methodological approach developed by Rutovitz<sup>xxii</sup> and other researchers can provide a guidance. The approach analyses the number of jobs needed for every energy technology at each production step (manufacturing; construction and installation; operation and maintenance; fuel supply) and determines so-called employment factors (jobs/MW). As a first step, detailed industry surveys are conducted to assess the employment factor for specific regions and technologies. The survey findings can then be complimented by further local surveys and literature review to improve the employment factors' accuracy. Third, the targets of official national/regional power or energy development plans are used to develop estimates for future jobs based on the capacities projected in the plans and the aforementioned employment factors. Fourth, the survey data is used to identify specific job roles and skills needs in a breakdown of sectors and education level. Finally, to align demand and supply, the identified employment needs are compared with currently available labour and skill supply.

Just energy transition workforce planning will require a multi-stakeholder approach involving a sustained cooperation between energy and mining ministries, as well as power sector utilities on

the one hand, and education and labour market policymakers, universities, technical colleges on the other. Regional planning agencies are often well-positioned to steer and advance joint processes that require a matchmaking between energy and labour market policy actors to align education with transition plans. The design and implementation of technical, vocational and educational trainings (TVET) is an essential lever to realign skill programmes with fast-changing contexts and provides opportunities for developing and emerging economies to adapt more quickly and dynamically.

## 5) Addressing social inequalities and safeguarding human rights

<b>Principle 5.</b> Addresses social inequalities and potentially affected human rights	
Indicator 5.1. Equality of opportunity and employment support	Does not foresee or prioritise any measures to address - or indicators to measure - inequality of effects of transition (e.g. job loss, creation of jobs for the few highly-qualified, lack of opportunities for vulnerable groups etc.).
	Prioritises employment support and job search assistance, but only for workers directly losing their jobs as a result of the transition (and/or only for those who are formal workers).
	Prioritises employment support and job search assistance for workers directly losing their jobs as a result of the transition, but also any other worker groups who may be indirectly affected. Transition plan places particular emphasis on addressing opportunity and employment support access issues for vulnerable or at risk groups, including but not limited to those who have already lost their jobs, workers in associated industries, informal workers, workers from indigenous communities etc.
Indicator 5.2. Inclusion of measures and indicators to ensure the quality of new jobs	Does not consider the quality and sustainability of new jobs or does not include measures to address the issue.
	Recognises the risk that new jobs created don't offer the same quality or wages as jobs in declining industries and that disadvantaged (e.g. informal workers) might be left out, but doesn't consider all factors of decent work, such as safe, healthy working conditions, reasonable working hours,

	<p>pension contributions, explicit inclusion of the disadvantaged etc.</p>
<p>Indicator 5.3. Measures to address existing and potential inequalities</p>	<p>Recognises that new jobs created by the transition should represent decent work, meaning they provide an equivalent or higher wage than existing jobs, ensure safe, healthy working conditions, reasonable working hours, access for the disadvantaged, pension contributions etc. It foresees measures - and milestones how to achieve them - to address these issues.</p>
	<p>Does not consider social protection and inclusion measures or indicators, even if inequalities are recognised.</p>
	<p>Recognises some inequalities - existing ones and those newly arising from the transition process - and identifies some measures to address those arising from the transition, such as a minimum income support, jobs for those who have so far been informal workers, energy poverty reduction, early pensions, legal protection of indigenous communities, transparent land ownership etc. But the transition plan does not address all inequalities identified that may arise with planned measures.</p>
	<p>Identifies measures to address inequalities - existing ones and those arising from the transition process - , such as introducing a minimum income, jobs for those who have been informal workers so far, elimination of child labour, energy poverty reduction, early pensions, legal protection of indigenous communities, transparent land ownership etc. It also considers concrete measures to address them based on economic situation analysis.</p>
<p>Indicator 5.4. Analysis of effects on human rights</p>	<p>Just energy transition plan does not specifically address human rights (in the economic, social, cultural, civil, and political field) that could potentially be affected by transition process.</p>

	<p>Just energy transition plan addresses some human rights (in the economic, social, cultural, civil, and political field) that could potentially be affected by transition process.</p>
	<p>Just energy transition plan addresses all human rights (in the economic, social, cultural, civil, and political field) that could potentially be affected by transition process and clearly sets out how to secure these rights during the transition implementation phase.</p>
<p>Indicator 5.5. Securing of quality of life (criteria: good health, education, environmental quality, personal security, civic engagement and work-life balance)</p>	<p>Does not consider the impact of the transition on quality of life or includes only passive mentioning of some issues.</p>
	<p>Identifies the potential changes to quality of life (health, education, environmental quality (clean air and water, healthy soils, functioning ecosystem services), personal security, civic engagement and work-life balance) arising from the transition and includes some targeted measures to address residual negative factors, such as air and water quality issues.</p>
	<p>Identifies the potential changes to quality of life (health, education, environmental quality (clean air and water, healthy soils, functioning ecosystem services), personal security, civic engagement and work-life balance) arising from the transition and includes measures to address both residual negative factors, such as for example air and water quality issues, and identifies proactive measures to improve quality of life in line with SDG plans, such as improved social and health services, creation of recreation spaces and addressing corruption.</p>

A transition which truly leaves no one behind will address current and potential future inequalities that might develop as a consequence of the transition. It will ensure decent jobs and protect social standards including access to legal protection of indigenous people and transparency regarding land use ownership.

The specific objective of just energy transition (investment) plans is to enable regions and people to address the social, economic and environmental impacts of the transition towards a climate-neutral economy. To deliver and to be perceived as a just transition, these plans, e.g. investment plans within the framework of Just Energy Transition Partnerships (JETPs) or regional JET expenditure plans, must actively address social inequalities and strengthen solidarity between regions and between people.

Just energy transition plans should therefore entail concrete provisions to tackle social inequalities in three core areas:

- Equal opportunities and access to the labour market
- Fair working conditions
- Social protection and inclusion

This means that JET plans should include measures and indicators which enable communities and people to adapt to the transition. In line with the ILO Guidelines for a just transition<sup>xxiii</sup>, four pillars detailed in its Decent Work Agenda should be incorporated in JET plans to address social inequalities and disruptive effects on labour markets: **social dialogue, social protection, rights at work and employment**. To achieve this, JET plans should, for instance, require appropriate assessment of the future skills needed in the region as the job market adapts to a climate neutral economy. They should foresee measures to improve access to the necessary upskilling and reskilling opportunities to help them fill jobs in new sectors and requiring different skills, while also improving the equality of opportunity, for instance through diminishing the gender pay gap. The changing working landscape should be comprehensively assessed as although the transition is likely to be positive overall, it is not certain that macroeconomic trends in employment and wealth creation will be automatically reflected at the local level.

JET plans should also include measures to ensure that new jobs created are decent jobs. A truly just transition should see working conditions preserved and even improved. New jobs should also include fair working conditions from the get-go, meaning good wages, security and social protection, healthy working environments, and reasonable working periods, as well as access to collective bargaining and lifelong learning<sup>xxiv</sup>. Measures may be needed to ensure new jobs do not fall foul of these basic standards as new industries do not benefit in the same way as incumbent industries from historically gained collective bargaining and union support.

Any provisions and measures which would disproportionately burden vulnerable households (such as low-income households, including those that are dependent on the informal economy) should be actively avoided in JET plans.

Extensive extraction and use of fossil fuels can lead to long-term negative environmental effects, with detrimental impacts on human health. Plans should therefore also take into account the need to protect and improve the quality of life, including for example through provision of recreation

sites and social and environmental safety. The latter requires alignment with environmental quality standards for water, air and soils.

Solidarity between countries, regions and people is vital to deliver the support where it is needed.

Finally, a central tenet of the JET is ensuring solidarity between regions and between people. For a truly JET, the most vulnerable should be helped and must not carry the effort and cost of delivering the transition to climate neutrality disproportionately. This means that there should be a clear identification and justification for the groups, regions and sectors targeted by support under the just energy transition plans.

## 6) Gender equality

<b>Principle 6.</b> Supports gender equality and addresses women’s and girls' rights in transition region/plan	
6.1. Gender equality and women’s rights	Fails to recognise the importance of supporting gender equality and women's and girl's rights in the just energy transition plan.
	Makes reference to the importance of supporting gender equality and women's and girl's rights in just energy transition plan but does not propose any dedicated activities or priorities to achieve this.
	Includes provisions - and milestones how to achieve them - to actively support gender equality and women's and girl's rights through an in-depth analysis of legal, political, economic, social, cultural or other discrimination on grounds of gender, and specific measures how to overcome this discrimination.
6.2. Employment diversification plans and/or job creation schemes including creation of new job opportunities for women and screening for	Employment diversification plans and/or job creation schemes do not address systemic (sector-specific) under-representation of women and girls.
	Employment diversification plans and/or job creation schemes do indicate systemic (sector-specific) under-

detection and prevention of systemic discrimination of women and girls	representation of women and girls but do not offer specific solutions how to overcome the under-representation.
	Employment diversification plans and/or job creation schemes do address systemic (sector-specific) under-representation of women and girls through analysis of gender-specific job-related risks as well as sector-specific sexual and gender-specific violence and harmful traditional practices, and through developing solutions how to overcome this under-representation.

### Protecting and supporting the rights of women and girls.

The impact of coal phase-out strategies on women and girls is often insufficiently addressed in political strategies. Partly, this is linked to structural imbalances, e.g. more targeted reskilling and compensation programmes are directed at the predominantly male workforce in coal mines and coal-fired power plants. Bearing in mind that coal mining companies are often the biggest employer within a particular region and wages often exceed above-average levels in those areas, women living in single-income households are financially dependent on their spouses and are disproportionately negatively affected from a transition away from coal, if no decisive actions are taken.

JET plans should therefore support gender equality and enable women with targeted skills programmes and access to future employment opportunities. International organisations and initiatives such as the ILO<sup>xxv</sup> and the Extractive Industries Transparency Initiative (EITI)<sup>xxvi</sup> have developed policy guidelines to assess in more depth, what role gender considerations in the extractive industries and mining sectors play and why they matter for a just energy transition. Their analyses emphasise *inter alia* that using gender-sensitive data and enabling stakeholder dialogues can lead to various benefits for governments, citizens and private companies. Through the EITI Standard, for instance, complying countries and companies disclose employment figures disaggregated by company, project, gender and occupational level, as well as the gender pay gap. This data can then be used to design policies that aim to strengthen the role of women and marginalised groups in the extractives sector<sup>xxvii</sup>.

In the same vein and based on experiences by European countries and findings of independent researchers, the European Commission has published a globally applicable toolkit<sup>xxviii</sup> to provide guidance for regions in managing the impacts of structural transformations on gender in which five key action areas (each with specific challenges and strategies) are detailed and linked to broader social and community-related issues of JET planning:

- Identity: redefine identity in a community; introduce participatory budgeting



- Political processes: build on grassroots movement; involve trade unions; analyse the local context
- Education: dismantle gender stereotyping; focus on gender-transformative upskilling and reskilling
- Labour: branch out from carbon-intensive sectors; improve conditions in the care sector; improve representation
- Finance: introduce green and gender-just budgeting and taxation; activate inclusive entrepreneurship

## 7) Environmental, climate, health and cultural safeguards

<b>Principle 7. Applies environmental, climate, human health and cultural safeguards across all objectives</b>	
7.1. Exclusion of investment in measures which could harm human health, climate and biodiversity objectives	Includes activities that would negatively impact human health, climate and and environmental indicators relating to: - Biodiversity - Ecosystems and their functions/services - Air quality - Landscape protection - Water quality - Soil quality And/Or includes significantly harmful activities as evaluated against measurable sustainability principles (e.g. the emission performance limit set by the EIB energy lending policy criteria). <sup>xxix</sup>
	Includes no investments that would negatively impact human health, climate and environmental indicators relating to: - Biodiversity - Ecosystems and their functions/services - Air quality - Landscape protection - Water quality - Soil quality; Nor does it include significantly harmful activities that would lead to unsustainable use of natural resources or that would lead to human health and ecosystem harm. However, no exclusion list is defined by the plan.
	Includes no activities that would negatively impact human health, climate and environmental indicators relating to: - Biodiversity - Ecosystems and their functions/services - Air quality - Landscape protection - Water quality - Soil quality, nor does it include significantly harmful activities that would

	<p>lead to unsustainable use of natural resources or that would lead to human health and ecosystem harm, and includes a comprehensive exclusion list to prevent harmful activities, or defines a measurable sustainability principle to apply to all investments.</p>
<p>7.2. Improvement of environmental quality and biodiversity of region</p>	<p>Does not foresee actions or possible activities which would improve any biodiversity or environmental indicators relating to biodiversity, air, water and soil pollution, accessible greenspace.</p>
	<p>Identifies actions or possible activities to improve some biodiversity and environmental indicators. These activities and actions cover at least one of the following categories: biodiversity, air, water and soil pollution, accessible greenspace.</p>
	<p>Identifies actions or activities to improve a wide range of environment and biodiversity indicators in the region concerned. It includes, as a minimum, actions or activities relating to at least 3 of the following categories: biodiversity, air, water and soil pollution, accessible greenspace.</p>
<p>7.3. Abatement of environmental legacies of coal mining and coal-based power generation, as well as other fossil fuel-induced exploitation impacts</p>	<p>Just energy transition plan does not address environmental legacies of coal mining, coal-based power generation and other fossil fuel inflicted environmental legacies and how to overcome them, such as restoration, reclamation and rehabilitation of mined-out land, decontamination and protection of surface and ground water, management of toxic and hazardous waste such as mineral topsoil overburden, waste rock and tailings, mitigation of coal mine methane etc.</p>
	<p>Just energy transition plan does address environmental legacies of coal mining, coal- and other fossil fuel-based power generation in rehabilitation and closure management plan compliant with international standards, and how to overcome these legacies through e.g. restoration, reclamation and rehabilitation of mined-out land, decontamination and protection of surface and ground</p>

	<p>water, management of toxic and hazardous waste such as mineral topsoil overburden, waste rock and tailings, mitigation of coal mine methane etc., but no specific measures are given, nor a concrete time plan (incl. milestones).</p>
	<p>Just energy transition plan does address environmental legacies of coal mining, coal- and other fossil fuel-based power generation in rehabilitation and closure management plan compliant with international standards, and how to overcome these legacies through e.g. restoration, reclamation and rehabilitation of mined-out land, decontamination and protection of surface and ground water, management of toxic and hazardous waste such as mineral topsoil overburden, waste rock and tailings, mitigation of coal mine methane etc., including specific measures and a concrete time plan (incl. milestones).</p>
<p>7.4. Promotion of circular economy (and waste reduction)</p>	<p>Includes investment in waste incineration or new landfill capacity and thereby negates circular economy approach (including reusing, repairing, refurbishing and recycling existing materials).</p>
	<p>Foresees no new investment in waste incineration or landfill capacity. However, neither does it include measures for increasing economic circularity nor to reduce waste.</p>
	<p>No new investment in waste incineration or landfill capacity is foreseen AND new activities that would favour a circular (including reusing, repairing, refurbishing and recycling existing materials) rather than a linear economy and which will not increase greenhouse gas emissions are planned. No new investment in waste incineration or landfill capacity is foreseen.</p>
<p>7.5. Exclusion of investment in measures which would harm cultural and/or heritage assets</p>	<p>Does not exclude investment that would harm cultural and/or heritage assets (such as buildings and other structures, natural formations, art, music, language, traditions, stories, and histories that make up a community's</p>

	identity, character and customs) and/or does not provide measures how to safeguard these assets.
	Excludes investment that would harm cultural and/or heritage assets (such as buildings and other structures, natural formations, art, music, language, traditions, stories, and histories that make up a community's identity, character and customs) but does not provide any or very few specific measures how to safeguard these assets and/or does not define the timing of these measures.
	Excludes investment that would harm cultural and/or heritage assets (such as buildings and other structures, natural formations, art, music, language, traditions, stories, and histories that make up a community's identity, character and customs) and provides specific measures how to safeguard these assets, including a time plan (with milestones).

## Protecting the environment in JET regions.

A just energy transition is a transition to a climate neutral and circular economy which spreads benefits equitably and which does not disproportionately burden any person or group. In an attempt to provide a clear benchmark for sustainable economic activities and redirect investments into sustainable activities, the European Union has adopted the so-called EU Taxonomy Regulation<sup>xxx</sup> in 2020, which defines six climate and environmental objectives: climate change mitigation; climate change adaptation; sustainable use and protection of water and marine resources; transition to a circular economy; pollution prevention and control; protection and restoration of biodiversity and ecosystems. These climate and environmental objectives are applicable to JET regions globally.

In order to be just, a JET should respect the do-no-harm principle, meaning that it must preserve both environmental and social integrity. Harmful impacts on national environmental and social objectives should be avoided. The six climate and environmental criteria as well as the do-no-harm principle can serve as an inspiration for policymakers who aim to reconcile sustainable finance, energy systems transformation and environmental and social justice policy targets in a coherent manner. On the one hand, this includes avoiding investments in new fossil fuel infrastructure (do-no-harm principle). New fossil fuel investments prolong the use of fossil fuels, which generate harmful pollution and contribute to dangerous climate change, directly

contradicting national climate objectives. Investments in fossil fuels (e.g. in natural gas or oil) risk becoming “stranded assets”, which make these investments both economically and environmentally harmful. On the other hand, it also entails abating environmental legacies of coal mining and coal-based power generation, as well as other fossil fuel-induced exploitation (e.g. decontamination of industry sites, restoration of peatlands, mitigation of coal mine methane emissions etc.) with measures financed by the polluter pays principle to internalise costs.

The polluter pays principle is a well-established concept first proposed and adopted by the OECD in 1972, and later enshrined in the 1992 Rio Declaration on Environment and Development<sup>xxxii</sup>. It refers to the condition that the polluter should bear the cost of any damage caused to the environment by their actions or operations, particularly if their actions gained profit.

National (private and public) and/or international funds can all contribute to sustainable and renewable investments. The polluter pays principle should therefore be applied wherever possible. The operator of an industry having polluted the environment should pay for any necessary decontamination or restoration which would bring the land back to the environmental value before the polluting operations took place. In fact, this principle has been included in the national legislation of many countries. In a JET context, the polluter pays principle is highly important as regions heavily dependent on fossil fuel activity often experience significant hurdles to future social, economic and environmental development due to land, water and soil pollution as well as associated biodiversity loss from former activities - such as subsidence, heavy metal soil contamination or drainage. A just transition requires that no one pays a disproportionate cost for the transition: the polluter must pay for the damage caused rather than the community.

### Protecting cultural and heritage assets.

Cultural and heritage assets can play a crucial role in coal mining communities and the JET process<sup>xxxiii</sup>. Coal mining communities often have a rich history and cultural heritage associated with their mining activities. Cultural assets such as museums (incl. historic sites), traditions, language, art, music etc. serve as reminders of the community's past, preserving its unique identity and providing a sense of pride and belonging. These assets can help to foster a connection between the post- and the pre-JET generation, thereby ensuring the continuity of their cultural heritage. Cultural and heritage assets can also have significant economic benefits for mining communities, as they attract tourists and visitors, stimulating local businesses and creating job opportunities in the tourism and hospitality sectors, and provide educational opportunities. Finally, these assets also provide educational opportunities for current and future generations by conveying the community's heritage and the significance of coal mining in shaping the JET region's history.

For all these reasons, it is of high importance to not only exclude investments in a JET plan that would harm the region's cultural and heritage assets, but to also include measures that specifically

safeguard and value these assets. The protection and restoration of cultural and heritage assets can even become a critical economic driver in economically distressed JET regions.

## 8) Funding sources

<p><b>Principle 8.</b> Identifies public and private funding sources for just energy transition and how to leverage and manage them</p>	
<p>Indicator 8.1. Identification of domestic just energy transition funding sources (incl. mandatory post-mining rehabilitation funds set aside by the private and public sector) and set up of respective finance plan</p>	<p>No public (local/regional/national) or private funding sources dedicated for development and implementation of just energy transition plan are identified, OR no solutions for identified funding gaps are provided.</p>
	<p>Public (local/regional/national) or private (including funding that is generated from the polluter pays principle) funding sources dedicated for development and implementation of just energy transition plan are identified, but no coherent just energy transition finance plan how to access, coordinate or utilise them is provided; funding gaps might be identified, but no solutions how to overcome these gaps are provided.</p>
	<p>Public (local/regional/national) AND private (including funding that is generated from the polluter-pays principle) funding sources dedicated for development and implementation of just energy transition plan are identified, and a coherent just energy transition finance plan how to access, coordinate or utilise them is provided; this approach also addresses funding gaps and how to close these gaps.</p>
<p>Indicator 8.2. Screening of relevant international financing options and, if suitable, identification of access to funding sources and their integration into respective JET finance plans</p>	<p>Access to international finance is mentioned in key national policy documents, but without concrete identification of IFIs, suitable programmes and clearly defined scope of financing needs which go beyond available national financing options.</p>
	<p>Access to international finance is mentioned in key national policy documents, and potentially relevant IFIs and suitable programmes are identified. However, identified IFI programmes are not prioritised for action and lack political</p>

	<p>consideration and/or sufficient administrative capacities in countries.</p>
	<p>Access to international finance is mentioned in key national policy documents, and relevant IFIs and suitable programmes are identified, prioritised and pursued in concrete policy action. Policy action can e.g. include concrete steps within the framework of Just Energy Transition Partnerships (JETPs), and/or in IFI's targeted programme schemes, such as the World Bank's "Support to Energy Transition in Coal Regions" programme; the Asian Development Bank's "Energy Transition Mechanism" (ETM) or the Climate Investment Funds' Accelerating Coal Transition (CIF ACT) investment programme. Data on accessed and disbursed international JET finance is regularly monitored and made available to the public.</p>

The just energy transition will require high levels of public and private investment to succeed.

Financing a JET in developing and emerging economies will require a combination of public and private investment sources that mobilise domestic and international financing options. Many countries with operating mines usually legally require mining companies to set aside sufficient funds for the post-mining phase to finance the ecological rehabilitation of mining sites. Effective legal frameworks are essential for holding mining companies financially liable and accountable to the polluter pays principle in practice. However, the focus of mine closure laws and related financial obligations is too often exclusively on physical and environmental aspects and falls short of addressing socio-economic impacts of closure<sup>xxxiii</sup>. In recent years, the Rocky Mountain Institute published an analysis with an overview of a three-step-approach of financing the early retirement of coal-fired power plants. The three steps involve: refinancing (e.g. with asset-backed securities or green bonds); reinvesting in new in clean energy assets (replacing the revenues from coal with revenues from renewables); and providing transition financing (e.g. to coal workers and affected communities)<sup>xxxiv</sup>. The authors do point out that in country contexts where coal-fired generation is still competitive (e.g. in regulated markets with state-owned enterprises and long-term power purchase agreements as is the case in many emerging economies), additional public, concessional finance (e.g. “carbon bonuses” for each ton of emissions abated or debt forgiveness) might be necessary in an early phase to initiate and advance the process<sup>xxxv</sup>.

Multilateral development banks, e.g. the World Bank, the Asian Development Bank, the African Development Bank, the Inter-American Development Bank, the European Investment Bank or the European Bank of Reconstruction and Development offer specific coal phase-out financing frameworks tailored to the needs of developing and emerging economies.

Ultimately, JET plans will need to scrutinise available funding options for each aspect and step of the transition and carefully align them in a coherent way, in order use taxpayers’ monies efficiently and avoid resource inefficiency or potential incentives for corruption.

## 9) Governance and policy coherence

<p><b>Principle 9.</b> Establishes governance of development and implementation of just energy transition plan coherent with respective policies</p>	
<p>Indicator 9.1. Transparent governance mechanism of development of just energy transition plan and/or its implementation</p>	<p>Lacks detail on the coordination body for the development and implementation of just energy transition plan (who does what when), relevant documents and data are not available to policymakers and stakeholders, transparency is lacking.</p>
	<p>Coordination body (e.g. coordination centre for transition region with clearly defined management bodies) for the development and implementation of just energy transition plan (who does what when) is set up, but processes and roles are not clearly identified, and/or transparency is missing, and/or relevant documents and data are not available to policymakers and stakeholders.</p>
	<p>Coordination body (e.g. coordination centre for transition region with clearly defined management bodies) for the development and implementation of just energy transition plan (who does what when) is set up according to transparent criteria, processes and roles are clearly identified and relevant documents and data are available to policymakers and stakeholders; the utmost transparency is guaranteed.</p>
<p>Indicator 9.2. Policy coherence of just energy transition plan</p>	<p>The just energy transition plan is not coherent/aligned with respective local, regional, national and/or international just energy transition policies, regulations and concepts.</p>
	<p>The just energy transition plan is in parts but not fully coherent/aligned with respective local, regional, national and/or international just energy transition policies, regulations and concepts.</p>



	<p>The just energy transition plan is fully coherent/aligned with respective local, regional, national and/or international just energy transition policies, regulations and concepts. Conflicting or contradictory measures that could undermine the just energy transition process are therefore prevented.</p>
<p>Indicator 9.3. Adequacy of policy measures with JET implementation targets and alignment of legislation, standards and/or processes with timescale of transition implementation</p>	<p>Local/regional/national legislation, standards and/or processes are not aligned to timescale outlined in transition implementation plan, or no respective legislation/standards/processes and/or transition implementation plan exist, and policy measures are not adequate for JET implementation targets.</p>
	<p>Local/regional/national legislation, standards and/or processes are partly aligned to timescale outlined in transition implementation plan and/or policy measures are adequate for JET implementation targets.</p>
	<p>Local/regional/national legislation, standards and/or processes are fully aligned to timescale outlined in transition implementation plan and policy measures are adequate for JET implementation targets.</p>
<p>Indicator 9.4. Justification for target regions receiving support</p>	<p>Does not justify why certain regions/municipalities/stakeholder groups (e.g. local communities, informal workers, NGOs etc.) should receive support or does so only with superficial or subjective data.</p>
	<p>Justifies why certain regions/municipalities/stakeholder groups (e.g. local communities, informal workers, NGOs etc.) should receive support with reference to the underlying economic and employment impacts arising from the transition but does not justify why on the basis of objective criteria or comparative data.</p>
	<p>Justifies why certain regions/municipalities/stakeholder groups (e.g. local communities, informal workers, NGOs etc.) should receive support with reference to the underlying economic and employment impacts arising from the transition and uses</p>

	objective criteria or comparative data. This may be included via the creation of an index.
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## Governance

Developing a comprehensive and effective JET governance framework for implementing, monitoring and adapting a country's or region's specific vision for a JET is crucial to ensure the sustainability and long-term success of planned measures. Planning a JET process requires attention to territory-specific factors such as geographical location and geological endowment, socio-economic conditions as well as potential options for embedding a JET plan in a broader governance system. As the ILO guidelines for a just transition point out, there is no “one size fits all” when it comes to governing a JET<sup>xxxvi</sup>.

However, there are certain recurring central building blocks for a viable governance strategy, which should ideally be features of all JET governance mechanisms. The UN's eight good governance principles<sup>xxxvii</sup> can provide general orientation in this regard as they define good governance as participatory, consensus oriented, accountable, transparent, responsive, effective and efficient, equitable and inclusive, and abiding to the rule of law.

As JET governance and planning is a complex undertaking of devising new policy processes and linking different existing sectoral policies with climate and energy goals, several institutions with expertise in the field have worked on practical toolboxes to help map out the challenge for policymakers and give guidance on how to design policies. The Wuppertal Institute's “Just Transition Toolbox for coal regions” is one example for such a tool, that provides in-depth information about how to develop effective JET governance models<sup>xxxviii</sup>. This toolbox highlights e.g. the importance of combining multi-level (different government levels) and multi-actor (stakeholders from industry, community representatives and civil society) approaches, as well as early stakeholder involvement, social dialogue and collective bargaining mechanisms as key governance elements. Beyond a specific chapter on governance, the Wuppertal's institutes toolbox also has three topical sections on energy, industry and employment. A complementary and alternative guide for practitioners is the Climate Investment Funds' (CIF) Just Transition Planning Toolbox<sup>xxxix</sup>. CIF's toolbox consists of five different modules that include mobilizing stakeholders; developing objectives and vision; analysing impacts and opportunities; devising strategies; and resources and partnerships.

## 10) Stakeholder engagement and communication

**Principle 10.** Follows participative approach (stakeholder engagement, social dialogue, inclusive communication strategy etc.) to just energy transition plan development, its implementation and linked communication.

<p>Indicator 10.1. Identification of stakeholders and definition of their roles</p>	<p>Does not identify relevant stakeholders (such as regional and local authorities, local communities, CSOs, NGOs, social partners, research institutions and universities etc.), their roles and status in the process OR an incomplete identification of stakeholders is done, leading to missing key groups and inconsistency with internationally established and accepted codes of conduct on partnerships (see e.g. EU CoC<sup>xl</sup>).</p>
	<p>Includes a comprehensive identification of relevant stakeholders, including regional and local authorities, local communities, CSOs, NGOs, social partners, research institutions and universities etc., but no indication of or justification for their roles and status in the process.</p>
	<p>Clearly identifies relevant stakeholders to be involved in the process, including regional and local authorities, local communities, CSOs, NGOs, social partners, research institutions and universities etc., and that are consistent with groups identified in internationally established and accepted codes of conduct on partnerships (see e.g. EU CoC<sup>xi</sup>) and clearly justifies and defines their roles and status in the process.</p>
<p>Indicator 10.2. Provisions to enable and ensure effective public participation in the design, monitoring and implementation of plans</p>	<p>No detail on stakeholder (e.g. regional and local authorities, local communities, CSOs, NGOs, social partners, research institutions and universities etc.) engagement plans and/or no detail on how stakeholder views and consultation inputs were - or will be - integrated into the final just energy transition plan is given.</p>
	<p>Limited detail on how stakeholder (e.g. regional and local authorities, local communities, CSOs, NGOs, social partners, research institutions and universities etc.) views and consultation inputs were - or will be - integrated into the final just energy transition plan is given (beyond a commitment to a consultation, for example). Detail on stakeholder engagement plans for the preparation, implementation,</p>

	<p>monitoring and evaluation of the just energy transition plan is also limited.</p>
	<p>Concrete detail on stakeholder (e.g. regional and local authorities, local communities, CSOs, NGOs, social partners, research institutions and universities etc.) engagement plans (e.g. meeting and consultation schedules and arrangements), as well as provisions to address stakeholder capacity-building needs is given AND the just energy transition plan includes sufficient details on how stakeholders have or will be involved in the preparation, implementation, monitoring and evaluation of the plan and how their views and inputs were or will be integrated into the final plan.</p>
	<p>Additional green flag: the plan recognises the need to support capacity building of some stakeholders to enhance their engagement.</p>
<p>Indicator 10.3. Sufficiency of time and resources provided at each stage to ensure meaningful participation is carried out and reflected by qualitative feedback indicators</p>	<p>The just energy transition plan is prepared without consultation of stakeholders (e.g. regional and local authorities, local communities, CSOs, NGOs, social partners, research institutions and universities etc.) OR consultation and engagement of all stakeholders only occurs when options have been limited or a near-final plan is prepared/discussed.</p>
	<p>Consultation and engagement of all stakeholders (e.g. regional and local authorities, local communities, CSOs, NGOs, social partners, research institutions and universities etc.) while all options are open is provided for, but the period of consultation and engagement is launched with insufficient time prior notice AND/OR the period for consultation and engagement is too short AND/OR there is insufficient time to comment on the final draft AND/OR not all relevant stakeholders have been given the opportunity to participate in a public consultation.</p>
	<p>Consultation and engagement of all relevant stakeholders (e.g. regional and local authorities, local communities, CSOs, NGOs, social partners, research institutions and universities etc.) while all options are open is provided for, the period of</p>

	<p>consultation and engagement is launched with sufficient prior notice, the period of consultation and engagement is sufficient and there is sufficient time to comment on the final draft; qualitative feedback indicators are applied (e.g. executive summary of all received feedback/questionnaires is send to participants).</p>
<p>Indicator 10.4. Support of the transition of the regional labour market through the explicit inclusion of frameworks for social dialogue in the development and implementation of the plan</p>	<p>Social dialogue is not a part of the planning process or is mentioned only passively. Labour unions and/or social partners have not been engaged in social dialogue during the development of the just energy transition plan.</p>
	<p>Comprehensive social dialogue involving all relevant stakeholders (e.g. regional and local authorities, local communities, CSOs, NGOs, social partners, research institutions and universities etc.) is part of the planning process. At least some labour unions and social partners have been engaged in social dialogue during the development of the just energy transition plan. Social dialogue is conducted to address the impacts of the transition on sectors which are phasing out and transforming, but not necessarily for emerging sectors.</p>
	<p>Comprehensive social dialogue involving all relevant stakeholders (e.g. regional and local authorities, local communities, CSOs, NGOs, social partners, research institutions and universities etc.) is an integral part of the planning process. All labour unions and social partners have been engaged in social dialogue during the development of the just energy transition plan and there is commitment and a defined framework to continue these processes during implementation of the plan. Social dialogue is conducted to address the impacts of the transition on sectors which are phasing out and transforming, as well as emerging sectors.</p>
	<p>Additional green flag: The importance of collective bargaining, as well as rights and protections at work, is recognised for all sectors.</p>

<p>Indicator 10.5 Communication strategy about just energy transition plan</p>	<p>No communication strategy accompanying the various development and implementation steps of the just energy transition is available.</p>
	<p>An incomplete communication strategy accompanying most development and implementation steps of the just energy transition is available.</p>
	<p>A comprehensive communication strategy targeting different audiences and accompanying every development and implementation steps of the just energy transition is available. It includes aspects such as vision for repurposed region, develop ownership of and identification with transition process and new purpose of region, perspective of specific members of society (youth, the elderly, the sick, immigrants etc.). International best practice sharing of communication strategy.</p>

Meaningful partnerships, including with civil society and local stakeholders, are essential for effective just energy transition plans.

The transition will have far-reaching effects, going beyond the industries which must transform, or which must be phased out. The changes brought about by the transition may affect many different policy goals, local environments and services. It may even have implications for culture and perceived regional identity. These changes will affect many different stakeholders, who must all be heard, and their views taken into account. Based on careful analysis of who might be most affected by the transition, targeted capacity buildings for vulnerable or marginalised groups can help to empower these groups in developing and shaping their own alternatives trajectories.

Meaningful partnerships - where all stakeholders can contribute to the development of a national or regional JET plan - facilitate the sharing of knowledge about challenges and opportunities and allow frank exchange of views and, eventually, enable agreements on direction. Involving the local community in strategic transition plan development recognises the importance of local knowledge and increases local ownership of the plans. Crucial to a successful participative approach is a comprehensive communication strategy which includes clear avenues for feedback and engagement, and which is considerate of the needs of different affected stakeholders (e.g. marginalised groups, diverging levels of a priori awareness in different groups etc.).

Stakeholder engagement can only be meaningful and foster a sustainable buy-in of affected actors and communities if it is adequately adapted to local contexts. This is especially relevant in political contexts where JET policies are less formalised and institutionalised. As part of its multi-year project “South-to-South (S2S) Just Transitions”, the think tank Climate Strategies summarised their findings and developed a set of recommendations<sup>xliii</sup> for fostering strong stakeholder engagement:

- **Understand and adapt to each stakeholder’s position.** Government officials, in particular, may be concerned about discussing new subjects. It was found that planning informal one-on-one engagements to build trust and subject familiarity ahead of larger meetings could resolve this issue.
- **Key stakeholders might not be reflected in organisational structures.** As one finding revealed, the people making relevant decisions are often mid-level senior officials. To identify these people, it’s helpful to speak to trusted individuals within target organisations who can help researchers navigate decision-making hierarchies.
- **Partner with other institutions** that are working on similar topics (i.e. think tanks, NGOs, or national newspapers) to maximise impact and reach.
- **Use a bottom-up approach.** Two S2S member organisations found that connecting the just transition to on-the-ground realities and tangible needs was an effective way to engage decision-makers, as opposed to relying on theoretical data. A third organisation found that connecting just transition frameworks to existing development goals was also successful.
- **Make the interactions recurrent.** Going back to stakeholders with new information is a useful way to maintain trust and engagement. One of the S2S actors continues to engage with key actors to identify new gaps and opportunities for future research that can support policymaking needs.

Climate Strategies also identified key barriers<sup>xliiii</sup> to stakeholder engagement, such as e.g. getting high-level officials to participate in the activities organised by S2S or dealing with varying levels of just transition knowledge among participants. Another barrier involved difficulties in accommodating (high-level) stakeholders’ schedules. Solutions for these barriers involved building personal relationships with the stakeholders; organising capacity building programmes and sending surveys to cater to stakeholders’ needs; and, related to the schedules aspect, conducting interviews and small focus groups rather than more time-consuming roundtables and workshops.

In its guidelines for a just transition, the ILO argues that “strong social consensus on the goal and pathways to sustainability is fundamental”<sup>xliv</sup> and it underlines the importance of social dialogue and informed, regular consultation embedded in institutional decision-making and implementation frameworks. Open dialogue between all stakeholders, including NGOs, Trade

Unions, academics and other social and civil society partners will help achieve such social consensus.

Social dialogue and collective bargaining rights should be respected in order to ensure that the interests of current and future workers are properly represented in the labour market transitions which sit at the heart of regional just transitions. As the International Trade Union Confederation (ITUC) notes, the “right to free trade unions, collective bargaining and occupational health and safety are essential to ensure a Just Transition”<sup>xlv</sup>. It is vital that social dialogue is explicitly and adequately accommodated in the process of developing JET plans.

Furthermore, drawing from experience in Europe, the formulation and ratification of a binding code of conduct for stakeholder engagement and social dialogue can help to strengthen the role of multi-actor decision-making. The European Code of Conduct on Partnership<sup>xlvi</sup> was adopted in 2014. For EU member states, it is legally binding with regards to the EU’s Just Transition Fund. The Code of Conduct obliges authorities to:

- Ensure transparency in the selection of partners, to be appointed as full members in the monitoring committees;
- Provide partners with adequate environmental information and sufficient time to engage;
- Effectively involve partners in all phases of the decision-making and implementation process;
- Support the capacity building of the partners to improve their competences and skills in view of their active involvement in the process.

The transition itself cannot be negotiated. Conflicts of interest should be identified early.

Although all stakeholders should be involved, the roles of each stakeholder and their decision-making power must be clearly defined, recognising that some stakeholders may have conflicts of interest and that the inevitability, direction and swiftness of the transition itself cannot be negotiated.

## 11) Objective analysis, monitoring and review

<b>Principle 11.</b> Uses high-quality, independent and objective analysis of challenges and opportunities of implementation of just energy transition process			
Indicator	11.1.	Quality, and	The indicators included in the just energy transition plan focus on national-level goals such as economic growth only AND/OR the indicators are inappropriate or contradict the



<p>appropriateness of indicators to monitor and evaluate plans</p>	<p>goals of the fund to address the socioeconomic challenges arising from the transition to climate neutrality.</p>
	<p>The indicators included in the just energy transition plan are focussed on the appropriate administrative level the plan is targeted at and are appropriate to address the socioeconomic challenges arising from the transition to climate neutrality, but do not cover all aspects of the just transition, focusing for example on the energy transition only.</p>
	<p>The indicators included in the just energy transition plan are focussed on the appropriate administrative level the plan is targeted at and are appropriate to address the socioeconomic challenges arising from the transition to climate neutrality, plus they are SMART and comprehensive, i.e. encompassing both quantitative and qualitative measures as well as evidence-based scenarios. A time plan with milestones is set out for the monitoring and evaluation of the plans.</p>
<p>Indicator 11.2. Opportunity to revise just energy transition plan during the implementation phase based on a review process</p>	<p>The just energy transition plan does not foresee a revision process even to remedy poor performances or ensure consistency with revised national/regional/local energy and or climate plans (if available).</p>
	<p>The just energy transition plan foresees a revision process by an independent organisation/group/body but the process is vague, for example it does not include a date, specific revision indicators or an evaluation of implementation so far.</p>
	<p>The just energy transition plan foresees a revision process by an independent organisation/group/body following for instance revised national/regional/local energy and or climate plans (if available) or the mid-term review of transition programmes (if available). The revision process includes a definition of revision indicators and an evaluation of implementation so far, and is to be carried out in consultation with key stakeholders and partners.</p>
<p>Indicator 11.3. Data management strategy for</p>	<p>The just energy transition plan does not foresee a data management strategy for the transition and revision process.</p>

development of just energy transition plans and analysis of their implementation process	The just energy transition plan includes an incomplete data management strategy for the transition and revision process according to international data standards (on data accuracy, validity, completeness, consistency, integrity, timeliness, reliability, confidentiality, availability etc.).
	The just energy transition plan includes a comprehensive data management strategy for the transition and revision process including state-of-the-art data collection, storage and usage approaches in line with international data standards (on data accuracy, validity, completeness, consistency, integrity, timeliness, reliability, confidentiality, availability etc.).

Just energy transition strategies informed by quality, objective and independent analysis are more likely to be effective and to be accepted by the public.

JET strategies and plans should be informed by quantified, transparent and objective analysis. They should also be formulated with the aim to achieve true environmental, social and economic sustainability in order to ensure that the transition is durable.

Strategies developed with analysis of the impacts and opportunities of the transition from partisan or political sources representing only a subset of a community or group risk opportunities being missed. In turn, they can lead to higher transition costs as concentrated industrial interests, often from incumbent industries, can be prioritised. As such, analysis of impacts and opportunities should ideally be conducted independently of any single industry and should be comprehensive. This can then also serve to encourage unity and agreement on a way forward for a region as the independence of the evidence is not questioned.

The effective implementation of a JET plan requires regular and transparent monitoring with safeguards to adapt plans at a later stage should circumstances change and lessons learnt from first implementation steps would suggest a change in course. A comprehensive monitoring and evaluation (M&E) framework should therefore be mandatory and introduced already at the conception stage of each JET plan. Measuring the progress of JET processes is a complex undertaking that necessitates the definition of a mix of qualitative and quantitative indicators for each region, sector and field of activity, (e.g. GHG emissions reduction with target year compared to a baseline year, regional economic diversification reflected by SMEs' share of gross regional domestic product) as well as an appropriate stakeholder inclusion while formulating these indicators. Several organisations have developed tools that support policymakers in tracking progress of JET implementation processes and attempt to establish a set of indicators to facilitate a more objective monitoring. One example for this is the Wuppertal Institute's tool for Just

Transition Readiness Evaluation<sup>xlvii</sup>, another recent index focussing specifically on the case of Indonesia has been provided by the NGO Center of Economic and Law Studies (CELIOS)<sup>xlviii</sup>.

Data is a central but often underestimated prerequisite for the development, implementation and monitoring of JET plans. Data-driven processes during these JET plan phases include scenario modelling, evidence-based policymaking, reporting (MRV), information/awareness raising campaign (using social media) etc. To support these processes and to enable them to be the basis of informed, transparent, inclusive and accountable decision making on and good governance of JET, multiple kinds of data are needed, for example data on climate, emissions, energy, finance/expenditure, impacts, perceptions, inclusivity etc. For that reason, it is of utmost importance to produce reliable, coherent and accessible data, and to agree on standards for the production, management and use of JET-relevant data, including policies on data protection, sharing and privacy. This is also of importance as an increasing proliferation of environmental, climate change and socio-economic data from public and private sector entities has led to challenges on coordination, governance and data quality, while at the same time enabling the development of new solutions for sustainable development and JET.

Finally, the successful development and implementation of JET plans also require good and fairly distributed data literacies and comprehensive digital skills among all involved stakeholders and decision-makers.

In a recent report, the United Nations Conference on Trade and Development (UNCTAD), distinguished between two interconnected perspectives on data: On the one hand, data can be used as assets during the economic development process itself, i.e. as a catalyst for value creation and innovation. On the other hand, robust data can act a critical tool for decision-making processes, when they are used as the basis for evidence-based policymaking to increase the effectiveness of achieving specific policy objectives<sup>xlix</sup>. UNCTAD also provided a set of recommendations for governments to assure the high quality of data and its efficient use in an economic and development cooperation governance. These recommendations<sup>l</sup> include promoting data literacy and education; encouraging citizen participation in data governance; implementing data auditing mechanisms; promoting research and development in data technologies; establishing a national data ombudsman; investing in robust data infrastructure; upholding data quality; integrating and valuing indigenous knowledge; and strengthening regulatory policies to promote digital innovative business through public-private partnerships (PPPs).

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